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FCC Part 15, Subpart C, Section 15.231
Industry Canada, RSS-210 and RSS-GEN
Test Report

On

411 to 470 MHz Transceiver Module
FCC ID: TNE-400ULC1
IC: 6145A-400ULC1

Customer Name:	Magnetek
Customer P.O:	145756, 146371, 147367
Date of Report:	June 18, 2014
Test Report No:	R-2148P-1
Test Report Date:	June 20, 2014
Test Technician:	B. Willhauer, D. Fiore, S. MacDonald
EMC Test Engineer:	Dean F. Landers
Approved By:	Richard C. Gaynor
Report Prepared By:	C. Reitz

Technical Information

Report Number:	R-2148P-1
Customer:	Magnetek
Address:	N49 W13650 Campbell Drive
	Menomonee Falls, WI 53051
Manufacturer:	Magnetek
Manufacturer Address:	N49 W13650 Campbell Drive
	Menomonee Falls, WI 53051
Test Sample:	411 to 470 MHz Transceiver Module
Model Number:	71000-10400
FCC ID:	TNE-400ULC1
IC:	6145A-400ULC1
Type (IC):	Land-Mobile Transmitter and Receiver (27.41 to 960 MHz)
Power Requirements:	3.3 VDC derived from Host
Frequency of Operation:	411 to 470 MHz
Equipment Class:	DXT
Equipment Use:	Mobile >20 cm

Test Specification:
FCC Rules and Regulations Part 15, Subpart C, Section 15.231
Radio Standards Specification, RSS-210, Issue 8, December, 2010

Test Procedure:
ANSI C63.4:2003
RSS-GEN, Issue 3, December 2010

Test Facility:
Retlif Testing Laboratories
3131 Detwiler Road
Harleysville, PA 19438

The module complies with the requirements for a modular approval under Section 15.212(a) of the FCC Rules.

Tests Performed

The test methods performed on the 411 to 470 MHz Transceiver Module are shown below:

FCC Part 15, Subpart C	Industry Canada RSS-210 Issue 8, Dec. 2010	Industry Canada RSS-GEN Issue 3, Dec. 2010	Test Method
15.231(b)	A1.1.2(1)	N/A	Field Strength of Emissions
15.231(b)(2)	A1.1.2(2)	4.5	Duty Cycle Determination
15.231(b)(3)	A1.1.2(3)	N/A	Field Strength of Spurious Emissions
15.231(c)	A1.1.3	N/A	Bandwidth of Emission
15.107 / 15.207(a)	N/A	7.2.2	Conducted Emissions
15.109(a)	N/A	7.2.3	Receiver Radiated Emissions

General Test Requirements

1. The measurement procedures of ANSI C63.4:2003 were utilized as specified in FCC Part 15, Subpart C, Section 15.31(a)(3) and IC RSS-GEN Section 4.1.
2. All radiated emissions measurements were performed on an Open Area Test Site (OATS), listed with the FCC and IC, in accordance with FCC Section 15.31(d) and IC Section 4.2.
3. The level of the fundamental field strength was recorded with a new battery installed in the EUT, in accordance with FCC Section 15.231(e) and IC Section 4.3(e).
4. All measurements were performed at the specified 3 meter test distance as required by FCC Section 15.31(f) and IC Section 7.25.
5. The EUT was rotated throughout 360 degrees for all radiated emissions measurements as specified in FCC Section 15.31(f)(5) and IC Section 4.3(h).
6. All readily accessible EUT controls were adjusted in such a manner as to maximize the level of emissions in accordance with FCC Section 15.31(g) and IC Section 4.3(h).
7. Appropriate accessories were attached to all EUT ports during the performance of radiated emissions measurements as required by FCC Section 15.31(i) and IC Section 4.3(d).
8. The EUT operated over the frequency range of 411 to 470 MHz, a total range of 59 MHz. Testing was performed with the device operating at 3 frequencies, 1 at the top, 1 in the middle and 1 at the bottom of the range of operation in accordance with FCC Section 15.31(m) and IC Section 4.3(f)(g).
9. The frequency spectrum was investigated from the lowest frequency generated in the device up to the 10^{th} harmonic of the highest fundamental frequency in accordance with FCC Section 15.33(a)(1) and IC Section 4.9.
10. All measurements were taken with a peak detector function as specified in FCC Section 15.35(a) and IC Section 4.4. The duty cycle, calculated in accordance with FCC Section 15.35(c) and IC Section 4.5, was applied to the peak readings in order to obtain the average value of emissions. The peak value of emissions was verified to meet the 20 dB requirement of FCC Section 15.35(b) and IC Section 7.2.1.

Certification and Signatures

We certify that this report is a true representation of the results obtained from the tests of the equipment stated. We further certify that the measurements shown in this report were made in accordance with the procedures indicated and vouch for the qualifications of all Retlif Testing Laboratories personnel taking them.

Dean F. Landers
EMC Test Engineer
NVLAP Approved Signatory

Richard C. Gaynor
Assistant Laboratory Supervisor
iNARTE Certified Engineer EMC-000214-NE
NVLAP Approved Signatory

Non-Warranty Provision
The testing services have been performed, findings obtained and reports prepared in accordance with generally accepted laboratory principles and practices. This warranty is in lieu of all others, either expressed or implied.

Non-Endorsement
This test report contains only findings and results arrived at after employing the specific test procedures and standards listed herein. It is not intended to constitute a recommendation, endorsement or certification of the product or material tested. This test report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

Requirements and Test Results

Requirement:
FCC Section 15.231(a) - Periodic operation in the band 40.66 - 40.7 MHz and above 70 MHz
The provisions of this Section are restricted to periodic operation within the band 40.66-40.7 MHz and above 70 MHz. Except as shown in Paragraph (e) of this Section, the intentional radiator is restricted to the transmissions of a control signal such as those used with alarm systems, door openers, remote switches, etc. Continuous transmissions, voice, video and the radio control of toys are not permitted. Data is permitted to be sent with a control signal.

IC RSS-210, A1.1 - Momentarily Operated Devices
The frequency bands and field strength limits in Tables 4 and 5 are only for the transmission of a control signal such as that used with alarm systems, door openers, remote switches, etc. Radio control of toys or model aircrafts, and continuous transmissions such as voice or video are not permitted except as provided in A1.1.5. Data is permitted to be sent with a control signal.

- Results:
  The device was operated over the frequency range of 411 to 470 MHz and is for the transmission of a control signal used with remote switches. Data is sent with the control signal.

Requirement:
FCC Sections 15.231(a)(1)-(5)
Periodic operation in the band 40.66 - 40.7 MHz and above 70 MHz
The following conditions were met in order to comply with the provisions for momentary operation:

IC RSS-210, A1.1.1(a)-(d) - Types of Momentary Signals
The following conditions were met in order to comply with the provisions for momentary operation:

FCC 15.231(a)(1): A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

IC A1.1.1(a): A manually operated transmitter shall employ a push-to-operate switch and be under manual control at all transmission times. When released, the transmitter shall cease transmission (holdover time of up to 5 seconds of operation).

- Results:
  The device is a manually operated, push to operate transmitter under manual control. The device ceased transmission within 5 seconds of deactivation.

FCC 15.231(a)(2): A transmitter activated automatically shall cease transmission within 5 seconds after activation.

IC A1.1.1(b): A transmitter activated automatically shall cease transmission with 5 seconds after activation, (i.e. maximum 5 seconds of operation).

- Results:
  Transmission is not automatically activated.

Requirements and Test Results (con't)

FCC 15.231(a)(3): Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed more than two seconds per hour for each transmitter. There is no limit on the number of individual transmissions, provided the total transmission time does not exceed two seconds per hour.

IC A1.1.1(c): Periodic transmissions at regular predetermined intervals are not permitted, except as provided in A1.1.5. However, polling or supervision transmissions, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed 2 seconds per hour for each transmitter.

- Results:
  The transmitter does not perform periodic transmissions.

FCC 15.231(a)(4): Intentional radiators which are employed for radio control purposes during emergencies involving fire, security and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm condition.

IC A1.1.1(d): Intentional radiators employed for radio control purposes during emergencies involving fire, security of goods (e.g. burglar alarms), and safety-of-life, when activated to signal an alarm, may operate during the interval of the alarm condition.

- Results:
  This device is not employed for radio control purposes during emergencies involving fire, security and safety for life.

FCC 15.231(a)(5): Transmission of set-up information for security systems may exceed the transmission duration limits in paragraphs (a)(1) and (a)(2) of this section, provided such transmission are under the control of a professional installer and do not exceed ten seconds after a manually operated switch is released or a transmitter is activated automatically. Such set-up information may include data.

- Results:
  The device is not employed for security systems.

Requirements and Test Results (con't)

Requirement:

FCC Section 15.231(b) - Field Strength of Emissions

In addition to the provisions of Section 15.205, the field strength of emissions from intentional radiators operated under this Section shall not exceed the limits specified in Table 1.

IC RSS-210, A1.1.2(1) - Field Strengths and Frequency Bands

The field strength of emissions from momentarily operated intentional radiators shall not exceed the limits specified in Table 1:

Table 1 - Test Limits, Field Strength of Emissions

Fundamental Frequency (MHz)	Field Strength of Fundamental microvolts/meter @3 meters (watts, e.i.r.p.) Quasi Peak or Average	Field Strength of Spurious Emissions microvolts/meter @3 meters Quasi Peak or Average
40.66 to 40.70	2,250	225
70 to 130	1,250 (470 nW)	125
130 to 174	1,250 to 3,750**	125 to 375**
174 to 260	3,750 (4.2 µW)	375
260 to 470	3,750 to 12,500**	375 to 1,250**
Above 470	12,500 (47 µW)	1,250

**Linear Interpolations
For 130-174 MHz: FS (microvolts/m) = (56.82 x F) - 6,136
For 260-470 MHz: FS (microvolts/m) = (41.67 x F) - 7,083
The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.

The Fundamental and Harmonic Emissions limits for a device operating at 411 MHz and 470 MHz are listed in Table 2.

Table 2 - Fundamental and Harmonic Limits

Frequency of Operation (MHz)	Fundamental (µV/m)		Harmonics (µV/m)	
	Average	Peak	Average	Peak
411.0	10,043	100,434	1,004	10,043
433.0	10,960	109,604	1,096	10,960
470.0	12,500	125,000	1,250	12,500

- Results:
  The Fundamental and Harmonics field strengths did not exceed the limits specified in Table 2 at a test distance of 3 meters, taken with an Average Detector. See Table 3 for the Fundamental and Harmonic emissions test results.

Table 3 - Fundamental and Harmonics Test Results

Fundamental Frequency MHz	Maximum Fundamental µV/m	Maximum Harmonics µV/m
411.0	24,012	636.06
433.0	20,633	374.0
470.0	10,151	206.0

Requirements and Test Results (con't)

Requirement:
FCC Section 15.231(b)(2) - Duty Cycle Determination-Pulsed Operation
Intentional radiators operating under the provisions of the Section shall demonstrate compliance with the limits on the field strength emissions, as shown in Table 1, based on the average value of the measured emissions. As an alternative, compliance with the limits in the Table 1 may be based on the use of measurement instrumentation with a CISPR quasi-peak detector. The specific method of measurement employed shall be specified int eh application for equipment authorization. If average emission measurements are employed, the provisions in Section 15.35 for averaging pulsed emissions and for limiting peak emissions apply. Further, compliance with the provisions of Section 15.205 shall be demonstrated using the measurement instrumentation specified in that Section.

IC RSS-GEN, Paragraph 4.5, Pulsed Operation
When the field strength (or envelope power) is not constant or when it is in pulses, and an average detector is specified to be used, the value of field strength or power shall be determined by averaging over one complete pulse train, including blanking intervals within the pulse train, as long as the pulse train does not exceed 0.1 seconds. In cases where the pulse train exceeds 0.1 seconds, the average value (of field strength or output power) shall be determined during a 0.1 second interval during which the field strength or power is at its maximum value.

The unit's RF output was directly coupled to the input of the spectrum analyzer. The analyzer was set for a frequency span of 0 Hz. The sweep time was then adjusted in order to display one full pulse train. The transmitter on time was then summed and compared to the time for one full cycle in order to obtain the duty cycle. (See plots for additional information).

- Results:
  The emissions did not exceed the limits specified in Table 1. See below for the exact method of calculating the average field strength.

Transmitter On Time = 105 milliseconds (maximum per cycle)
Transmitter Cycle Time = 39.75 milliseconds (100 ms maximum)
Transmitter Duty Cycle = 39.75 %

CALCULATION

1 Large Pulse = 39.75 milliseconds
Duty Cycle (39.75/100) = 0.40 %
Correction Factor =20 log (0.40) = -8.01 dB

Requirements and Test Results (con't)

Requirement:
FCC Section 15.231(b)(3) - Field Strength of Spurious Emissions
The limits on the field strength of the spurious emissions specified in Table 1 are based on the fundamental frequency of the intentional radiator. Spurious emissions shall be attenuated to the average (or, alternatively, CISPR quasi-peak) limits shown in Table 1 or to the general limits shown in Section 15.209, whichever limit permits a higher field strength.

IC RSS-210, A1.1.2(3) - Field Strength of Unwanted Emissions
The limits on the field strength of unwanted emissions in Table 4 of RSS-210 are based on the fundamental frequency of the intentional radiator. Unwanted emissions shall be attenuated to the limits shown in Table 2 of RSS-210 or to the limits shown in Table 4 of RSS-210, whichever is less stringent.

- Results:
  No spurious emissions were observed within 20 dB of the specified limit.

Requirement:
FCC Section 15.231(c) - Bandwidth of Emissions
The bandwidth of the emissions shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

IC RSS-210, A1.1.3 - Bandwidth of Momentary Signals
For the purpose of Section A1.1, the 99% bandwidth shall be no wider than 0.25% of the center frequency for devices operating between 70-900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency.

- Results:
  The bandwidth was measured and found to be 38.5 kHz, 0.0000889% of the center frequency.

Requirements and Test Results (con't)

Requirement:
FCC Section 15.107/15.207(a) - Conducted Limits
For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits shown in Table 4, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of the paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applied at the boundary between the frequency ranges.

IC RSS-GEN, Section 7.2.2 -
Transmitter and Receiver AC Power Lines Conducted Emissions Limits
The purpose of this test is to measure unwanted radio frequency currents induced in any AC conductor external to the equipment which could conduct interference to other equipment via the AC electrical network.

Except when the requirements applicable to a given device state otherwise, for any license-exempt radio communication device equipped to operate from the public utility AC power supply, either directly or indirectly, the radio frequency voltage that is conducted back onto the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in Table 4. The tighter limit applies at the frequency range boundaries.

The conducted emissions shall be measured with a 50 ohm/50 microhenry line impedance stabilization network.

Table 4 - Conducted Emission Limits

Frequency of Emission (MHz)	**Conducted Limit (dBµV)**	
	Quasi-Peak	Average
0.15 to 0.5	66 to 56*	56 to 46*
0.5 to 5	56	46
5 to 30	60	50
*Decreases due to logarithm of the frequency		

- Results:
  The conducted emissions observed did not exceed the limits specified in Table 4 when tested with the receiver on receiving a wanted signal.

Requirement:

FCC Section 15.109(a) - Receiver Radiated Emissions

Except for Class A digital devices, the field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the values shown in Table 5.

IC RSS-GEN, 7.2.3 - Receiver Spurious Emission Limits

Receiver spurious emissions at any discrete frequency shall not exceed 2 nanowatts in the band 30-1000 MHz, or 5 nanowatts above 1 GHz. All spurious emissions shall comply with the limits specified in Table 5.

Table 5 - Radiated Emission Limits

Frequency of Emission (MHz)	**Field Strength (microvolts/meter)**
30 to 88	100
88 to 216	150
216 to 960	200
Above 960	500

- Results:
  The spurious emissions observed did not exceed the limits specified in Table 5.

General Requirements FCC and IC

RF Exposure Limits

The following power measurement was calculated from field strength measurements as outlined in Paragraph 4.2 of RSS-102, Issue 4:

$$TP = \frac{(FS \times D)^2}{30 \times G}$$

FS = 0.018845 (Peak)
D = 3 M
G = 2.15
TP = 49.5 microwatts

In accordance with Paragraph 2.5.1 of RSS-102, Issue 4, this device is exempt from SAR evaluation since the TP is less than 200 milliwatts and the device is portable.

Spectrum Analyzer Desensitization Considerations

Due to the nature of the emissions being measured, care was taken to ensure that the resolution bandwidth of the spectrum analyzer was adequate to provide accurate measurements. The following formula was utilized:

minimum bandwidth = 1/{minimum pulse width (in seconds) x 1.5} = 7 Hz

Setting pulse desensitization equal to zero and utilizing the minimum observed pulse width of 100 µs yields a minimum required bandwidth of 7 Hz. FCC specified bandwidths of 100 kHz and 1 MHz were utilized below and above 1GHz, respectively.

Equipment Lists

FCC Section 15.231(b) - Field Strength of Emissions
IC RSS-210, A1.1.2(1) - Field Strength and Frequency Bands

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
8017	EMCO	DOUBLE RIDGE GUIDE	1 - 18 GHz	3115	2/27/2013	8/31/2014
8300	RETLIF	TEST SITE ATTENUATION	3/10 Meter OATS	RPA	8/27/2013	8/31/2014
8300C	UNKNOWN	3/10 METER CABLE	3/10 METER	3 METER CABLE	9/4/2013	9/30/2014
8317	AGILENT / HP	PRE-AMPLIFIER	1-26.5 GHz, 30 dB	8449B	6/27/2013	6/30/2014
8376	POWER DESIGNS	DC POWER SUPPLY	0 - 20 VDC, 1.5 Amps	2015R	Calibrate Before Use	
8411	SONOMA INSTRUMENT		PRE-AMPLIFIER	9 kHz - 1 GHz	310N	9/4/2013
9/30/2014						
8433	ETS LINDGREN	BICONILOG	20 - 6000 MHz	3142D	3/10/2014	9/30/2015
R603	AGILENT / HP	SPECTRUM ANALYZER	100 Hz - 26.5 GHz	E7405A;B	6/19/2013	6/30/2014

FCC Section 15.231(b)(2) - Duty Cycle Determination - Pulsed Operation
IC RSS-210, A1.1.2(2), RSS-GEN, 4.5 - Pulsed Operation

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
8376	POWER DESIGNS	DC POWER SUPPLY	0 - 20 VDC, 1.5 Amps	2015R	Calibrate Before Use	
8410B	EMCO	3CM MAGNETIC-FIELD LOOP	1.5GHz	7405-902	No Calibration Required	
R603	AGILENT / HP	SPECTRUM ANALYZER	100 Hz - 26.5 GHz	E7405A;B	6/19/2013	6/30/2014

FCC Section 15.231(b)(3) - Field Strength of Spurious Emissions
IC RSS-210, A1.1.2(3) - Field Strength of Unwanted Emissions

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
8016	EMCO	ANTENNA	3146	7/29/2013	1/31/2015	
8300	RETLIF	TEST SITE ATTENUATION	3/10 Meter OATS	RPA	8/27/2013	8/31/2014
8300C	UNKNOWN	3/10 METER CABLE	3/10 METER	3 METER CABLE	9/4/2013	9/30/2014
8376	POWER DESIGNS	DC POWER SUPPLY	0 - 20 VDC, 1.5 Amps	2015R	Calibrate Before Use	
8392	IFR / AEROFLEX	SIGNAL GENERATOR	9 kHz - 2.5 GHz	2025	1/27/2014	1/31/2015
8433	ETS LINDGREN	BICONILOG	20 - 6000 MHz	3142D	3/10/2014	9/30/2015
R603	AGILENT / HP	SPECTRUM ANALYZER	100 Hz - 26.5 GHz	E7405A;B	6/19/2013	6/30/2014

FCC Section 15.231(c) - Bandwidth of Emission
IC RSS-210, A1.1.3 - Bandwidth of Momentary Signals

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
8376	POWER DESIGNS	DC POWER SUPPLY	0 - 20 VDC, 1.5 Amps	2015R	Calibrate Before Use	
8410B	EMCO	3CM MAGNETIC-FIELD LOOP	1.5GHz	7405-902	No Calibration Required	
R603	AGILENT / HP	SPECTRUM ANALYZER	100 Hz - 26.5 GHz	E7405A;B	6/19/2013	6/30/2014

FCC Section 15.107/15.207(a) - Conducted Limits
IC RSS-GEN, 7.2.2 - Transmitter and Receiver AC Power Lines Conducted Emission Limits

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
8079	ROHDE & SCHWARZ	EMI TEST RECEIVER		ESH3	6/18/2013	6/30/2014
8100	NARDA	20DB ATTENUATOR	10 kHz-11 GHz	768-20	6/10/2013	6/30/2014
8194	SOLAR ELECTRONICS	LINE IMPEDANCE STABILIZATION NETWORK	10 kHz - 30 MHz	8028-50-TS-24-B	2/5/2014	2/28/2015
8195	SOLAR ELECTRONICS	LINE IMPEDANCE STABILIZATION NETWORK	10 kHz - 30 MHz	8028-50-TS-24-B	2/5/2014	2/28/2015
8575	RIGOL	Analyzer, Spectrum	9 kHz - 1.5 GHz	DSA815-TG	12/16/2013	12/31/2014

FCC Section 15.109(a) - Receiver Radiated Emissions
IC RSS-GEN, 7.2.3 - Receiver Spurious Emission Limits

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
8080	ROHDE & SCHWARZ	EMI TEST RECEIVER	20-1300 MHz	354-3000.56ESVP	12/16/2013	12/31/2014
8300	RETLIF	TEST SITE ATTENUATION	3/10 Meter OATS	RPA	8/27/2013	8/31/2014
8300C	UNKNOWN	3/10 METER CABLE	3/10 METER	3 METER CABLE	9/4/2013	9/30/2014
8376	POWER DESIGNS	DC POWER SUPPLY	0 - 20 VDC, 1.5 Amps	2015R	Calibrate Before Use	
8411	SONOMA INSTRUMENT		PRE-AMPLIFIER	9 kHz - 1 GHz	310N	9/4/2013
9/30/2014						
8433	ETS LINDGREN	BICONILOG	20 - 6000 MHz	3142D	3/10/2014	9/30/2015
R603	AGILENT / HP	SPECTRUM ANALYZER	100 Hz - 26.5 GHz	E7405A;B	6/19/2013	6/30/2014

FCC Section 15.231(b) - Field Strength of Emissions
IC RSS-210, A1.1.2(1) - Field Strength and Frequency Bands

Test Data - 411 MHz

Test Method:	FCC Part 15, Subpart C, Section 15.231(b), Radiated Emissions Fundamental and Harmonics IC RSS-210, A1.1.2(1), Field Strengths and Frequency Bands		
Customer:	Magnetek Inc.	**Job No.:**	R-2148P-1
Test Sample:	411 to 470 MHz Transceiver Module		
Part No.:	198-71000-A0418		
Operating Mode:	Continuously transmitting a CW signal at 411 MHz		
Technician:	D.Fiore	**Date:**	05/29/14
Notes:	Detector: Peak, Unless otherwise specified	Test Distance: 3 Meters	

Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)/Meters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
411.00	V / 1.31	X	68.11	19.50	87.61	24012.00	100434
|	V / 1.00	Y	63.00	19.50	82.50	13333.00	|
|	V / 1.00	Z	63.53	19.50	83.03	14174.25	|
|	H / 1.13	X	68.03	19.50	87.53	23795.00	|
|	H / 2.56	Y	64.30	19.50	83.80	15485.00	|
411.00	H / 2.56	Z	64.36	19.50	83.86	15595.53	100434
822.00	V / 1.31	X	24.25	27.99	52.24	409.26	10043
|	V / 1.00	Y	12.36	27.99	40.35	104.11	|
|	V / 1.00	Z	9.42	27.99	37.41	74.22	|
|	H / 2.28	X	26.32	27.99	54.31	519.39	|
|	H / 2.64	Y	14.42	27.99	42.41	131.98	|
822.00	H / 1.00	Z	16.19	27.99	44.18	161.81	10043
*1233.00	V / 1.00	X	8.35	35.51	43.86	155.96	10043
|	V / 1.00	Y	8.35	35.51	43.86	155.96	|
|	V / 1.00	Z	8.35	35.51	43.86	155.96	|
|	H / 1.00	X	8.35	35.51	43.86	155.96	|
|	H / 1.00	Y	8.35	35.51	43.86	155.96	|
*1233.00	H / 1.00	Z	8.35	35.51	43.86	155.96	10043
*1644.00	V / 1.00	X	11.46	38.01	49.47	297.51	5000
|	V / 1.00	Y	11.46	38.01	49.47	297.51	|
|	V / 1.00	Z	11.46	38.01	49.47	297.51	|
|	H / 1.00	X	11.46	38.01	49.47	297.51	|
|	H / 1.00	Y	11.46	38.01	49.47	297.51	|
*1644.00	H / 1.00	Z	11.46	38.01	49.47	297.51	5000
*2055.00	V / 1.00	X	10.40	38.56	48.96	280.54	10043
|	V / 1.00	Y	10.40	38.56	48.96	280.54	|
|	V / 1.00	Z	10.40	38.56	48.96	280.54	|
|	H / 1.00	X	10.40	38.56	48.96	280.54	|
|	H / 1.00	Y	10.40	38.56	48.96	280.54	|
*2055.00	H / 1.00	Z	10.40	38.56	48.96	280.54	10043

Test Method:	**FCC Part 15, Subpart C, Section 15.231(b), Radiated Emissions Fundamental and Harmonics** **IC RSS-210, A1.1.2(1), Field Strengths and Frequency Bands**		
Customer:	Magnetek Inc.	**Job No.:**	R-2148P-1
Test Sample:	411 to 470 MHz Transceiver Module		
Part No.:	198-71000-A0418		
Operating Mode:	Continuously transmitting a CW signal at 411 MHz		
Technician:	D.Fiore	**Date:**	05/29/14
Notes:	Detector: Peak, Unless otherwise specified	Test Distance: 3 Meters	

Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)-Meters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
*2466.00	V / 1.00	X	10.41	45.66	56.07	636.06	10043
|	V / 1.00	Y	10.41	45.66	56.07	636.06	|
|	V / 1.00	Z	10.41	45.66	56.07	636.06	|
|	H / 1.00	X	10.41	45.66	56.07	636.06	|
|	H / 1.00	Y	10.41	45.66	56.07	636.06	|
*2466.00	H / 1.00	Z	10.41	45.66	56.07	636.06	10043
*2877.00	V / 1.00	X	7.83	42.78	50.61	339.23	10043
|	V / 1.00	Y	7.83	42.78	50.61	339.23	|
|	V / 1.00	Z	7.83	42.78	50.61	339.23	|
|	H / 1.00	X	7.83	42.78	50.61	339.23	|
|	H / 1.00	Y	7.83	42.78	50.61	339.23	|
*2877.00	H / 1.00	Z	7.83	42.78	50.61	339.23	10043
*3288.00	V / 1.00	X	11.00	37.50	48.50	266.07	10043
|	V / 1.00	Y	11.00	37.50	48.50	266.07	|
|	V / 1.00	Z	11.00	37.50	48.50	266.07	|
|	H / 1.00	X	11.00	37.50	48.50	266.07	|
|	H / 1.00	Y	11.00	37.50	48.50	266.07	|
*3288.00	H / 1.00	Z	11.00	37.50	48.50	266.07	10043
*3699.00	V / 1.00	X	11.4	39.12	50.52	335.74	5000
|	V / 1.00	Y	11.4	39.12	50.52	335.74	|
|	V / 1.00	Z	11.4	39.12	50.52	335.74	|
|	H / 1.00	X	11.4	39.12	50.52	335.74	|
|	H / 1.00	Y	11.4	39.12	50.52	335.74	|
*3699.00	H / 1.00	Z	11.4	39.12	50.52	335.74	5000
*4110.00	V / 1.00	X	12.5	40.15	52.65	429.04	5000
|	V / 1.00	Y	12.5	40.15	52.65	429.04	|
|	V / 1.00	Z	12.5	40.15	52.65	429.04	|
|	H / 1.00	X	12.5	40.15	52.65	429.04	|
|	H / 1.00	Y	12.5	40.15	52.65	429.04	|
*4110.00	H / 1.00	Z	12.5	40.15	52.65	429.04	5000
	The frequency range was scanned from 30 MHz to 4.20 GHz. All emissions not recorded were more						
	than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.						
	* Noise floor measurements, minimum sensitivity of measurement system.						

Test Method:	**FCC Part 15, Subpart C, Section 15.231(b), Radiated Emissions Fundamental and Harmonics IC RSS-210, A1.1.2(1), Field Strengths and Frequency Bands**						
Customer:	Magnetek Inc.				**Job No.:**	R-2148P-1	
Test Sample:	411 to 470 MHz Transceiver Module						
Part No.:	198-71000-A0418						
Operating Mode:	Continuously transmitting a CW signal at 411 MHz						
Technician:	D.Fiore				**Date:**	05/29/14	
Notes:	Average values calculated from Peak readings			Duty Cycle: 39.75%		Correction: -8.01 dB	

Test Freq.	Antenna Pol./Height	EUT Orientation	Peak Reading	Duty Cycle Correction	Corrected Reading	Converted Reading	Avg. Limit
MHz	(V/H)-Meters	X / Y / Z	dBµV/m	dB	dBµV/m	uV/m	uV/m
411.00	V / 1.31	X	87.61	-8.01	79.60	9545.00	10043
|	V / 1.00	Y	82.50	-8.01	74.49	5300.00	|
|	V / 1.00	Z	83.03	-8.01	75.02	5636.38	|
|	H / 1.13	X	87.53	-8.01	79.52	9457.00	|
|	H / 2.56	Y	83.80	-8.01	75.79	6155.00	|
411.00	H / 2.56	Z	83.86	-8.01	75.85	6201.55	10043
822.00	V / 1.31	X	52.24	-8.01	44.23	162.74	1004
|	V / 1.00	Y	40.35	-8.01	32.34	41.40	|
|	V / 1.00	Z	37.41	-8.01	29.40	29.52	|
|	H / 2.28	X	54.31	-8.01	46.30	206.53	|
|	H / 2.64	Y	42.41	-8.01	34.40	52.48	|
822.00	H / 1.00	Z	44.18	-8.01	36.17	64.34	1004
*1233.00	V / 1.00	X	43.86	-8.01	35.85	62.02	1004
|	V / 1.00	Y	43.86	-8.01	35.85	62.02	|
|	V / 1.00	Z	43.86	-8.01	35.85	62.02	|
|	H / 1.00	X	43.86	-8.01	35.85	62.02	|
|	H / 1.00	Y	43.86	-8.01	35.85	62.02	|
*1233.00	H / 1.00	Z	43.86	-8.01	35.85	62.02	1004
*1644.00	V / 1.00	X	49.47	-8.01	41.46	118.30	500
|	V / 1.00	Y	49.47	-8.01	41.46	118.30	|
|	V / 1.00	Z	49.47	-8.01	41.46	118.30	|
|	H / 1.00	X	49.47	-8.01	41.46	118.30	|
|	H / 1.00	Y	49.47	-8.01	41.46	118.30	|
*1644.00	H / 1.00	Z	49.47	-8.01	41.46	118.30	500
*2055.00	V / 1.00	X	48.96	-8.01	40.95	111.56	1004
|	V / 1.00	Y	48.96	-8.01	40.95	111.56	|
|	V / 1.00	Z	48.96	-8.01	40.95	111.56	|
|	H / 1.00	X	48.96	-8.01	40.95	111.56	|
|	H / 1.00	Y	48.96	-8.01	40.95	111.56	|
*2055.00	H / 1.00	Z	48.96	-8.01	40.95	111.56	1004

Test Method:	**FCC Part 15, Subpart C, Section 15.231(b), Radiated Emissions Fundamental and Harmonics** **IC RSS-210, A1.1.2(1), Field Strengths and Frequency Bands**						
Customer:	Magnetek Inc.			**Job No.:**	R-2148P-1		
Test Sample:	411 to 470 MHz Transceiver Module						
Part No.:	198-71000-A0418						
Operating Mode:	Continuously transmitting a CW signal at 411 MHz						
Technician:	D.Fiore			**Date:**	05/29/14		
Notes:	Average values calculated from Peak readings		Duty Cycle: 39.75%		Correction: -8.01 dB		
Test Freq.	Antenna Pol./Height	EUT Orientation	Peak Reading	Duty Cycle Correction	Corrected Reading	Converted Reading	Avg. Limit
MHz	(V/H)-Meters	X / Y / Z	dBµV/m	dB	dBµV/m	uV/m	uV/m
*2466.00	V / 1.00	X	56.07	-8.01	48.06	252.93	1004
|	V / 1.00	Y	56.07	-8.01	48.06	252.93	|
|	V / 1.00	Z	56.07	-8.01	48.06	252.93	|
|	H / 1.00	X	56.07	-8.01	48.06	252.93	|
|	H / 1.00	Y	56.07	-8.01	48.06	252.93	|
*2466.00	H / 1.00	Z	56.07	-8.01	48.06	252.93	1004
*2877.00	V / 1.00	X	50.61	-8.01	42.60	134.90	1004
|	V / 1.00	Y	50.61	-8.01	42.60	134.90	|
|	V / 1.00	Z	50.61	-8.01	42.60	134.90	|
|	H / 1.00	X	50.61	-8.01	42.60	134.90	|
|	H / 1.00	Y	50.61	-8.01	42.60	134.90	|
*2877.00	H / 1.00	Z	50.61	-8.01	42.60	134.90	1004
*3288.00	V / 1.00	X	48.50	-8.01	40.49	105.80	1004
|	V / 1.00	Y	48.50	-8.01	40.49	105.80	|
|	V / 1.00	Z	48.50	-8.01	40.49	105.80	|
|	H / 1.00	X	48.50	-8.01	40.49	105.80	|
|	H / 1.00	Y	48.50	-8.01	40.49	105.80	|
*3288.00	H / 1.00	Z	48.50	-8.01	40.49	105.80	1004
*3699.00	V / 1.00	X	50.52	-8.01	42.51	133.51	500
|	V / 1.00	Y	50.52	-8.01	42.51	133.51	|
|	V / 1.00	Z	50.52	-8.01	42.51	133.51	|
|	H / 1.00	X	50.52	-8.01	42.51	133.51	|
|	H / 1.00	Y	50.52	-8.01	42.51	133.51	|
*3699.00	H / 1.00	Z	50.52	-8.01	42.51	133.51	500
				-8.01			
*4110.00	V / 1.00	X	52.65	-8.01	44.64	170.61	500
|	V / 1.00	Y	52.65	-8.01	44.64	170.61	|
|	V / 1.00	Z	52.65	-8.01	44.64	170.61	|
|	H / 1.00	X	52.65	-8.01	44.64	170.61	|
|	H / 1.00	Y	52.65	-8.01	44.64	170.61	|
*4110.00	H / 1.00	Z	52.65	-8.01	44.64	170.61	500
	* Noise floor measurements, minimum sensitivity of measurement system.						

FCC Section 15.231(b) - Field Strength of Emissions
IC RSS-210, A1.1.2(1) - Field Strength and Frequency Bands

Test Data - 433.05 MHz

Test Method:	**FCC Part 15, Subpart C, Section 15.231(b), Radiated Emissions Fundamental and Harmonics** **IC RSS-210, A1.1.2(1), Field Strengths and Frequency Bands**						
Customer:	Magnetek				**Job No.:**	R-2148P-1	
Test Sample:	411 to 470 MHz Transceiver Module						
Part No.:	198-71000-A0433						
Operating Mode:	Continuously transmitting a CW signal at 433.05 MHz						
Technician:	B. Willauer				**Date:**	05/01/14	
Notes:	Detector: Peak, Unless otherwise specified				Test Distance: 3 Meters		
Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)/Meters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
433.05	V / 1.967	X / 171.5	65.30	20.20	85.50	18845	109604
|	V / 2.068	Y / 178.9	66.10	20.20	86.30	20663	|
|	V / 1.000	Z / 70.5	61.45	20.20	81.65	12097	|
|	H / 2.549	X / 320.1	55.07	20.20	75.27	5803	|
|	H / 1.894	Y / 142.1	64.64	20.20	84.84	17466	|
433.05	H / 1.861	Z / 139.5	64.18	20.20	84.38	16565	109604
866.10	V / 1.000	X / 180.0	2.06	28.68	30.74	34.43	10960
|	V / 1.000	Y / 180.0	2.06	28.68	30.74	34.43	|
|	V / 1.000	Z / 180.0	2.06	28.68	30.74	34.43	|
|	H / 1.000	X / 180.0	2.78	28.68	31.46	37.41	|
|	H / 1.000	Y/ 180.0	2.78	28.68	31.46	37.41	|
866.10	H / 1.000	Z / 180.0	2.78	28.68	31.46	37.41	10960
1299.15	V / 1.000	X / 180.0	9.53	33.08	42.61	135.05	10960
|	V / 1.000	Y / 180.0	9.53	33.08	42.61	135.05	|
|	V / 1.000	Z / 180.0	9.53	33.08	42.61	135.05	|
|	H / 1.000	X / 180.0	10.32	33.08	43.40	147.91	|
|	H / 1.000	Y/ 180.0	10.32	33.08	43.40	147.91	|
1299.15	H / 1.000	Z / 180.0	10.32	33.08	43.40	147.91	10960
1732.20	V / 1.000	X / 180.0	9.68	34.68	44.36	165.20	10960
|	V / 1.000	Y / 180.0	9.68	34.68	44.36	165.20	|
|	V / 1.000	Z / 180.0	9.68	34.68	44.36	165.20	|
|	H / 1.000	X / 180.0	9.11	34.68	43.79	154.70	|
|	H / 1.000	Y/ 180.0	9.11	34.68	43.79	154.70	|
1732.20	H / 1.000	Z / 180.0	9.11	34.68	43.79	154.70	10960
2165.25	V / 1.000	X / 180.0	10.03	35.32	45.35	185	10960
|	V / 1.000	Y / 180.0	10.03	35.32	45.35	185	|
|	V / 1.000	Z / 180.0	10.03	35.32	45.35	185	|
|	H / 1.000	X / 180.0	9.57	35.32	44.89	176	|
|	H / 1.000	Y/ 180.0	9.57	35.32	44.89	176	|
2165.25	H / 1.000	Z / 180.0	9.57	35.32	44.89	176	10960

Test Method:	**FCC Part 15, Subpart C, Section 15.231(b), Radiated Emissions Fundamental and Harmonics** **IC RSS-210, A1.1.2(1), Field Strengths and Frequency Bands**		
Customer:	Magnetek	**Job No.:**	R-2148P-1
Test Sample:	411 to 470 MHz Transceiver Module		
Part No.:	198-71000-A0433		
Operating Mode:	Continuously transmitting a CW signal at 433.05 MHz		
Technician:	B. Willauer	**Date:**	05/01/14
Notes:	Detector: Peak, Unless otherwise specified	Test Distance: 3 Meters	

Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)-Meters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
2598.30	V / 1.000	X / 180.0	10.15	37.24	47.39	234	10960
|	V / 1.000	Y / 180.0	10.15	37.24	47.39	234	|
|	V / 1.000	Z / 180.0	10.15	37.24	47.39	234	|
|	H / 1.000	X / 180.0	10.61	37.24	47.85	247	|
|	H / 1.000	Y/ 180.0	10.61	37.24	47.85	247	|
2598.30	H / 1.000	Z / 180.0	10.61	37.24	47.85	247	10960
3031.35	V / 1.000	X / 180.0	9.68	37.78	47.46	236	10960
|	V / 1.000	Y / 180.0	9.68	37.78	47.46	236	|
|	V / 1.000	Z / 180.0	9.68	37.78	47.46	236	|
|	H / 1.000	X / 180.0	9.66	37.78	47.44	236	|
|	H / 1.000	Y/ 180.0	9.66	37.78	47.44	236	|
3031.35	H / 1.000	Z / 180.0	9.66	37.78	47.44	236	10960
3464.40	V / 1.000	X / 180.0	10.13	39.33	49.46	297	10960
|	V / 1.000	Y / 180.0	10.13	39.33	49.46	297	|
|	V / 1.000	Z / 180.0	10.13	39.33	49.46	297	|
|	H / 1.000	X / 180.0	10.27	39.33	49.60	302	|
|	H / 1.000	Y/ 180.0	10.27	39.33	49.60	302	|
3464.40	H / 1.000	Z / 180.0	10.27	39.33	49.60	302	10960
3897.45	V / 1.000	X / 180.0	10.50	40.96	51.46	374	5000
|	V / 1.000	Y / 180.0	10.50	40.96	51.46	374	|
|	V / 1.000	Z / 180.0	10.50	40.96	51.46	374	|
|	H / 1.000	X / 180.0	9.89	40.96	50.85	349	|
|	H / 1.000	Y/ 180.0	9.89	40.96	50.85	349	|
3897.45	H / 1.000	Z / 180.0	9.89	40.96	50.85	349	5000
4330.50	V / 1.000	X / 180.0	10.01	40.80	50.81	347	5000
|	V / 1.000	Y / 180.0	10.01	40.80	50.81	347	|
|	V / 1.000	Z / 180.0	10.01	40.80	50.81	347	|
|	H / 1.000	X / 180.0	9.93	40.80	50.73	344	|
|	H / 1.000	Y/ 180.0	9.93	40.80	50.73	344	|
4330.50	H / 1.000	Z / 180.0	9.93	40.80	50.73	344	5000
	The frequency range was scanned from 30 MHz to 4.33 GHz. All emissions not recorded were more						
	than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.						
	* Noise floor measurements, minimum sensitivity of measurement system.						

Test Method:	FCC Part 15, Subpart C, Section 15.231(b), Radiated Emissions Fundamental and Harmonics IC RSS-210, A1.1.2(1), Field Strengths and Frequency Bands		
Customer:	Magnetek	**Job No.:**	R-2148P-1
Test Sample:	411 to 470 MHz Transceiver Module		
Part No.:	198-71000-A0433		
Operating Mode:	Continuously transmitting a CW signal at 433.05 MHz		
Technician:	B. Willauer	**Date:**	05/01/14
Notes:	Average values calculated from Peak readings Duty Cycle: 40.73% Correction: -7.80 dB		

Test Freq.	Antenna Pol./Height	EUT Orientation	Peak Reading	Duty Cycle Correction	Corrected Reading	Converted Reading	Avg. Limit
MHz	(V/H)-Meters	X / Y / Z	dBµV/m	dB	dBµV/m	uV/m	uV/m
433.05	V / 1.967	X / 171.5	85.50	-7.80	77.70	7675	10960
|	V / 2.068	Y / 178.9	86.30	-7.80	78.50	8416	|
|	V / 1.000	Z / 70.5	81.65	-7.80	73.85	4927	|
|	H / 2.549	X / 320.1	75.27	-7.80	67.47	2364	|
|	H / 1.894	Y / 142.1	84.84	-7.80	77.04	7114	|
433.05	H / 1.861	Z / 139.5	84.38	-7.80	76.58	6747	10960
866.10	V / 1.000	X / 180.0	30.74	-7.80	22.94	14.03	1096
|	V / 1.000	Y / 180.0	30.74	-7.80	22.94	14.03	|
|	V / 1.000	Z / 180.0	30.74	-7.80	22.94	14.03	|
|	H / 1.000	X / 180.0	31.46	-7.80	23.66	15.24	|
|	H / 1.000	Y/ 180.0	31.46	-7.80	23.66	15.24	|
866.10	H / 1.000	Z / 180.0	31.46	-7.80	23.66	15.24	1096
1299.15	V / 1.000	X / 180.0	42.61	-7.80	34.81	55	1096
|	V / 1.000	Y / 180.0	42.61	-7.80	34.81	55	|
|	V / 1.000	Z / 180.0	42.61	-7.80	34.81	55	|
|	H / 1.000	X / 180.0	43.40	-7.80	35.60	60	|
|	H / 1.000	Y/ 180.0	43.40	-7.80	35.60	60	|
1299.15	H / 1.000	Z / 180.0	43.40	-7.80	35.60	60	1096
1732.20	V / 1.000	X / 180.0	44.36	-7.80	36.56	67	1096
|	V / 1.000	Y / 180.0	44.36	-7.80	36.56	67	|
|	V / 1.000	Z / 180.0	44.36	-7.80	36.56	67	|
|	H / 1.000	X / 180.0	43.79	-7.80	35.99	63	|
|	H / 1.000	Y/ 180.0	43.79	-7.80	35.99	63	|
1732.20	H / 1.000	Z / 180.0	43.79	-7.80	35.99	63	1096
2165.25	V / 1.000	X / 180.0	45.35	-7.80	37.55	75	1096
|	V / 1.000	Y / 180.0	45.35	-7.80	37.55	75	|
|	V / 1.000	Z / 180.0	45.35	-7.80	37.55	75	|
|	H / 1.000	X / 180.0	44.89	-7.80	37.09	72	|
|	H / 1.000	Y/ 180.0	44.89	-7.80	37.09	72	|
2165.25	H / 1.000	Z / 180.0	44.89	-7.80	37.09	72	1096

Test Method:	**FCC Part 15, Subpart C, Section 15.231(b), Radiated Emissions Fundamental and Harmonics IC RSS-210, A1.1.2(1), Field Strengths and Frequency Bands**						
Customer:	Magnetek				**Job No.:**	R-2148P-1	
Test Sample:	411 to 470 MHz Transceiver Module						
Part No.:	198-71000-A0433						
Operating Mode:	Continuously transmitting a CW signal at 433 MHz						
Technician:	B. Willauer				**Date:**	05/01/14	
Notes:	Average values calculated from Peak readings Duty Cycle: 40.73% Correction: -7.80 dB						
Test Freq.	Antenna Pol./Height	EUT Orientation	Peak Reading	Duty Cycle Correction	Corrected Reading	Converted Reading	Avg. Limit
MHz	(V/H)-Meters	X / Y / Z	dBµV/m	dB	dBµV/m	uV/m	uV/m
2598.30	V / 1.000	X / 180.0	47.39	-7.80	39.59	95	1096
|	V / 1.000	Y / 180.0	47.39	-7.80	39.59	95	|
|	V / 1.000	Z / 180.0	47.39	-7.80	39.59	95	|
|	H / 1.000	X / 180.0	47.85	-7.80	40.05	101	|
|	H / 1.000	Y/ 180.0	47.85	-7.80	40.05	101	|
2598.30	H / 1.000	Z / 180.0	47.85	-7.80	40.05	101	1096
3031.35	V / 1.000	X / 180.0	47.46	-7.80	39.66	96	1096
|	V / 1.000	Y / 180.0	47.46	-7.80	39.66	96	|
|	V / 1.000	Z / 180.0	47.46	-7.80	39.66	96	|
|	H / 1.000	X / 180.0	47.44	-7.80	39.64	96	|
|	H / 1.000	Y/ 180.0	47.44	-7.80	39.64	96	|
3031.35	H / 1.000	Z / 180.0	47.44	-7.80	39.64	96	1096
3464.40	V / 1.000	X / 180.0	49.46	-7.80	41.66	121	1096
|	V / 1.000	Y / 180.0	49.46	-7.80	41.66	121	|
|	V / 1.000	Z / 180.0	49.46	-7.80	41.66	121	|
|	H / 1.000	X / 180.0	49.60	-7.80	41.80	123	|
|	H / 1.000	Y/ 180.0	49.60	-7.80	41.80	123	|
3464.40	H / 1.000	Z / 180.0	49.60	-7.80	41.80	123	1096
3897.45	V / 1.000	X / 180.0	51.46	-7.80	43.66	152	500
|	V / 1.000	Y / 180.0	51.46	-7.80	43.66	152	|
|	V / 1.000	Z / 180.0	51.46	-7.80	43.66	152	|
|	H / 1.000	X / 180.0	50.85	-7.80	43.05	142	|
|	H / 1.000	Y/ 180.0	50.85	-7.80	43.05	142	|
3897.45	H / 1.000	Z / 180.0	50.85	-7.80	43.05	142	500
4330.50	V / 1.000	X / 180.0	50.81	-7.80	43.01	141	500
|	V / 1.000	Y / 180.0	50.81	-7.80	43.01	141	|
|	V / 1.000	Z / 180.0	50.81	-7.80	43.01	141	|
|	H / 1.000	X / 180.0	50.73	-7.80	42.93	140	|
|	H / 1.000	Y/ 180.0	50.73	-7.80	42.93	140	|
4330.50	H / 1.000	Z / 180.0	50.73	-7.80	42.93	140	500
	* Noise floor measurements, minimum sensitivity of measurement system.						

FCC Section 15.231(b) - Field Strength of Emissions
IC RSS-210, A1.1.2(1) - Field Strength and Frequency Bands

Test Data - 470 MHz

Test Method:	**FCC Part 15, Subpart C, Section 15.231(b), Radiated Emissions Fundamental and Harmonics IC RSS-210, A1.1.2(1), Field Strengths and Frequency Bands**		
Customer:	Magnetek Inc.	**Job No.:**	R-2148P-1
Test Sample:	411 to 470 MHz Transceiver Module		
Part No.:	198-71000-A0460		
Operating Mode:	Continuously transmitting a CW signal at 470 MHz		
Technician:	B. Willauer	**Date:**	05/09/14
Notes:	Detector: Peak, Unless otherwise specified	Test Distance: 3 Meters	

Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)/Meters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
470.00	V / 1.000	X / 231.9	56.17	21.48	77.65	7630	125000
|	V / 1.000	Y / 151.4	56.07	21.48	77.55	7542	|
|	V / 1.000	Z / 152.5	58.65	21.48	80.13	10151	|
|	H / 1.737	X / 50.4	54.46	21.48	75.94	6266	|
|	H / 1.710	Y / 141.4	55.16	21.48	76.64	6792	|
470.00	H / 1.750	Z / 140.7	57.10	21.48	78.58	8492	125000
*940.00	V / 1.000	X / 180.0	4.30	29.65	33.95	50	12500
|	V / 1.000	Y / 180.0	4.30	29.65	33.95	50	|
|	V / 1.000	Z / 180.0	4.30	29.65	33.95	50	|
|	H / 1.000	X / 180.0	3.69	29.65	33.34	46	|
|	H / 1.000	Y / 180.0	3.69	29.65	33.34	46	|
*940.00	H / 1.000	Z / 180.0	3.69	29.65	33.34	46	12500
*1410.00	V / 1.000	X / 180.0	4.02	32.34	36.36	66	5000
|	V / 1.000	Y / 180.0	4.02	32.34	36.36	66	|
|	V / 1.000	Z / 180.0	4.02	32.34	36.36	66	|
|	H / 1.000	X / 180.0	4.24	32.34	36.58	67	|
|	H / 1.000	Y / 180.0	4.24	32.34	36.58	67	|
*1410.00	H / 1.000	Z / 180.0	4.24	32.34	36.58	67	5000
*1880.00	V / 1.000	X / 180.0	3.66	35.40	39.06	90	12500
|	V / 1.000	Y / 180.0	3.66	35.40	39.06	90	|
|	V / 1.000	Z / 180.0	3.66	35.40	39.06	90	|
|	H / 1.000	X / 180.0	2.89	35.40	38.29	82	|
|	H / 1.000	Y / 180.0	2.89	35.40	38.29	82	|
*1880.00	H / 1.000	Z / 180.0	2.89	35.40	38.29	82	12500
*2350.00	V / 1.000	X / 180.0	4.58	35.85	40.43	105	5000
|	V / 1.000	Y / 180.0	4.58	35.85	40.43	105	|
|	V / 1.000	Z / 180.0	4.58	35.85	40.43	105	|
|	H / 1.000	X / 180.0	4.18	35.85	40.03	100	|
|	H / 1.000	Y / 180.0	4.18	35.85	40.03	100	|
*2350.00	H / 1.000	Z / 180.0	4.18	35.85	40.03	100	5000

Test Method:	FCC Part 15, Subpart C, Section 15.231(b), Radiated Emissions Fundamental and Harmonics IC RSS-210, A1.1.2(1), Field Strengths and Frequency Bands		
Customer:	Magnetek Inc.	**Job No.:**	R-2148P-1
Test Sample:	411 to 470 MHz Transceiver Module		
Part No.:	198-71000-A0460		
Operating Mode:	Continuously transmitting a CW signal at 470 MHz		
Technician:	B. Willauer	**Date:**	05/09/14
Notes:	Detector: Peak, Unless otherwise specified	Test Distance: 3 Meters	

Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)-Meters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
*2820.00	V / 1.000	X / 180.0	4.19	37.40	41.59	120	5000
|	V / 1.000	Y / 180.0	4.19	37.40	41.59	120	|
|	V / 1.000	Z / 180.0	4.19	37.40	41.59	120	|
|	H / 1.000	X / 180.0	4.38	37.40	41.78	123	|
|	H / 1.000	Y / 180.0	4.38	37.40	41.78	123	|
*2820.00	H / 1.000	Z / 180.0	4.38	37.40	41.78	123	5000
*3290.00	V / 1.000	X / 180.0	4.33	38.99	43.32	147	12500
|	V / 1.000	Y / 180.0	4.33	38.99	43.32	147	|
|	V / 1.000	Z / 180.0	4.33	38.99	43.32	147	|
|	H / 1.000	X / 180.0	4.07	38.99	43.06	142	|
|	H / 1.000	Y / 180.0	4.07	38.99	43.06	142	|
*3290.00	H / 1.000	Z / 180.0	4.07	38.99	43.06	142	12500
*3760.00	V / 1.000	X / 180.0	2.50	40.44	42.94	140	5000
|	V / 1.000	Y / 180.0	2.50	40.44	42.94	140	|
|	V / 1.000	Z / 180.0	2.50	40.44	42.94	140	|
|	H / 1.000	X / 180.0	3.06	40.44	43.5	150	|
|	H / 1.000	Y / 180.0	3.06	40.44	43.5	150	|
*3760.00	H / 1.000	Z / 180.0	3.06	40.44	43.5	150	5000
*4230.00	V / 1.000	X / 180.0	2.93	40.62	43.55	150	5000
|	V / 1.000	Y / 180.0	2.93	40.62	43.55	150	|
|	V / 1.000	Z / 180.0	2.93	40.62	43.55	150	|
|	H / 1.000	X / 180.0	3.45	40.62	44.07	160	|
|	H / 1.000	Y / 180.0	3.45	40.62	44.07	160	|
*4230.00	H / 1.000	Z / 180.0	3.45	40.62	44.07	160	5000
*4700.00	V / 1.000	X / 180.0	2.05	42.09	44.14	161	5000
|	V / 1.000	Y / 180.0	2.05	42.09	44.14	161	|
|	V / 1.000	Z / 180.0	2.05	42.09	44.14	161	|
|	H / 1.000	X / 180.0	4.18	42.09	46.27	206	|
|	H / 1.000	Y / 180.0	4.18	42.09	46.27	206	|
*4700.00	H / 1.000	Z / 180.0	4.18	42.09	46.27	206	5000
	The frequency range was scanned from 30 MHz to 4.70 GHz. All emissions not recorded were more						
	than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.						
	* Noise floor measurements, minimum sensitivity of measurement system.						

Test Method:	FCC Part 15, Subpart C, Section 15.231(b), Radiated Emissions Fundamental and Harmonics IC RSS-210, A1.1.2(1), Field Strengths and Frequency Bands		
Customer:	Magnetek Inc.	**Job No.:**	R-2148P-1
Test Sample:	411 to 470 MHz Transceiver Module		
Part No.:	198-71000-A0460		
Operating Mode:	Continuously transmitting a CW signal at 470 MHz		
Technician:	B. Willauer	**Date:**	05/09/14

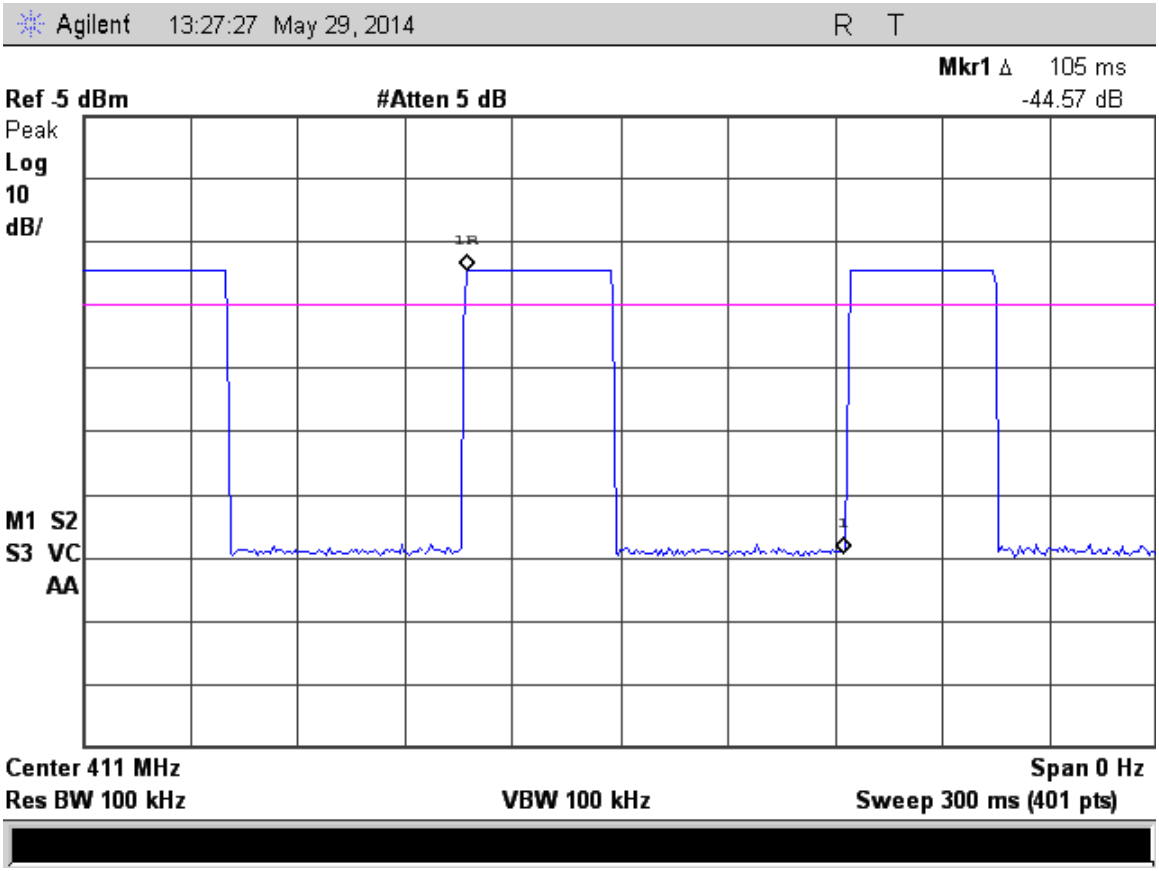
Notes: Average values calculated from Peak readings Duty Cycle: 40.35% Correction: -7.88 dB

Test Freq.	Antenna Pol./Height	EUT Orientation	Peak Reading	Duty Cycle Correction	Corrected Reading	Converted Reading	Avg. Limit
MHz	(V/H)-Meters	X / Y / Z	dBµV/m	dB	dBµV/m	uV/m	uV/m
470.00	V / 1.000	X / 231.9	77.65	-7.88	69.77	3080	12500
|	V / 1.000	Y / 151.4	77.55	-7.88	69.67	3044	|
|	V / 1.000	Z / 152.5	80.13	-7.88	72.25	4097	|
|	H / 1.737	X / 50.4	75.94	-7.88	68.06	2529	|
|	H / 1.710	Y / 141.4	76.64	-7.88	68.76	2742	|
470.00	H / 1.750	Z / 140.7	78.58	-7.88	70.70	3428	12500
*940.00	V / 1.000	X / 180.0	33.95	-7.88	26.07	20	1250
|	V / 1.000	Y / 180.0	33.95	-7.88	26.07	20	|
|	V / 1.000	Z / 180.0	33.95	-7.88	26.07	20	|
|	H / 1.000	X / 180.0	33.34	-7.88	25.46	19	|
|	H / 1.000	Y / 180.0	33.34	-7.88	25.46	19	|
*940.00	H / 1.000	Z / 180.0	33.34	-7.88	25.46	19	1250
*1410.00	V / 1.000	X / 180.0	36.36	-7.88	28.48	27	500
|	V / 1.000	Y / 180.0	36.36	-7.88	28.48	27	|
|	V / 1.000	Z / 180.0	36.36	-7.88	28.48	27	|
|	H / 1.000	X / 180.0	36.58	-7.88	28.70	27	|
|	H / 1.000	Y / 180.0	36.58	-7.88	28.70	27	|
*1410.00	H / 1.000	Z / 180.0	36.58	-7.88	28.70	27	500
*1880.00	V / 1.000	X / 180.0	39.06	-7.88	31.18	36	1250
|	V / 1.000	Y / 180.0	39.06	-7.88	31.18	36	|
|	V / 1.000	Z / 180.0	39.06	-7.88	31.18	36	|
|	H / 1.000	X / 180.0	38.29	-7.88	30.41	33	|
|	H / 1.000	Y / 180.0	38.29	-7.88	30.41	33	|
*1880.00	H / 1.000	Z / 180.0	38.29	-7.88	30.41	33	1250
*2350.00	V / 1.000	X / 180.0	40.43	-7.88	32.55	42	500
|	V / 1.000	Y / 180.0	40.43	-7.88	32.55	42	|
|	V / 1.000	Z / 180.0	40.43	-7.88	32.55	42	|
|	H / 1.000	X / 180.0	40.03	-7.88	32.15	41	|
|	H / 1.000	Y / 180.0	40.03	-7.88	32.15	41	|
*2350.00	H / 1.000	Z / 180.0	40.03	-7.88	32.15	41	500

Test Method:	**FCC Part 15, Subpart C, Section 15.231(b), Radiated Emissions Fundamental and Harmonics** **IC RSS-210, A1.1.2(1), Field Strengths and Frequency Bands**						
Customer:	Magnetek Inc.				**Job No.:**	R-2148P-1	
Test Sample:	411 to 470 MHz Transceiver Module						
Part No.:	198-71000-A0460						
Operating Mode:	Continuously transmitting a CW signal at 470 MHz						
Technician:	B. Willauer				**Date:**	05/09/14	
Notes:	Average values calculated from Peak readings Duty Cycle: 40.35% Correction: -7.88 dB						
Test Freq.	Antenna Pol./Height	EUT Orientation	Peak Reading	Duty Cycle Correction	Corrected Reading	Converted Reading	Avg. Limit
MHz	(V/H)-Meters	X / Y / Z	dBµV/m	dB	dBµV/m	uV/m	uV/m
*2820.00	V / 1.000	X / 180.0	41.59	-7.88	33.71	48	500
|	V / 1.000	Y / 180.0	41.59	-7.88	33.71	48	|
|	V / 1.000	Z / 180.0	41.59	-7.88	33.71	48	|
|	H / 1.000	X / 180.0	41.78	-7.88	33.90	50	|
|	H / 1.000	Y / 180.0	41.78	-7.88	33.90	50	|
*2820.00	H / 1.000	Z / 180.0	41.78	-7.88	33.90	50	500
*3290.00	V / 1.000	X / 180.0	43.32	-7.88	35.44	59	1250
|	V / 1.000	Y / 180.0	43.32	-7.88	35.44	59	|
|	V / 1.000	Z / 180.0	43.32	-7.88	35.44	59	|
|	H / 1.000	X / 180.0	43.06	-7.88	35.18	57	|
|	H / 1.000	Y / 180.0	43.06	-7.88	35.18	57	|
*3290.00	H / 1.000	Z / 180.0	43.06	-7.88	35.18	57	1250
*3760.00	V / 1.000	X / 180.0	42.94	-7.88	35.06	57	500
|	V / 1.000	Y / 180.0	42.94	-7.88	35.06	57	|
|	V / 1.000	Z / 180.0	42.94	-7.88	35.06	57	|
|	H / 1.000	X / 180.0	43.50	-7.88	35.62	60	|
|	H / 1.000	Y / 180.0	43.50	-7.88	35.62	60	|
*3760.00	H / 1.000	Z / 180.0	43.50	-7.88	35.62	60	500
*4230.00	V / 1.000	X / 180.0	43.55	-7.88	35.67	61	500
|	V / 1.000	Y / 180.0	43.55	-7.88	35.67	61	|
|	V / 1.000	Z / 180.0	43.55	-7.88	35.67	61	|
|	H / 1.000	X / 180.0	44.07	-7.88	36.19	64	|
|	H / 1.000	Y / 180.0	44.07	-7.88	36.19	64	|
*4230.00	H / 1.000	Z / 180.0	44.07	-7.88	36.19	64	500
*4700.00	V / 1.000	X / 180.0	44.14	-7.88	36.26	65	500
|	V / 1.000	Y / 180.0	44.14	-7.88	36.26	65	|
|	V / 1.000	Z / 180.0	44.14	-7.88	36.26	65	|
|	H / 1.000	X / 180.0	46.27	-7.88	38.39	83	|
|	H / 1.000	Y / 180.0	46.27	-7.88	38.39	83	|
*4700.00	H / 1.000	Z / 180.0	46.27	-7.88	38.39	83	500
	* Noise floor measurements, minimum sensitivity of measurement system.						

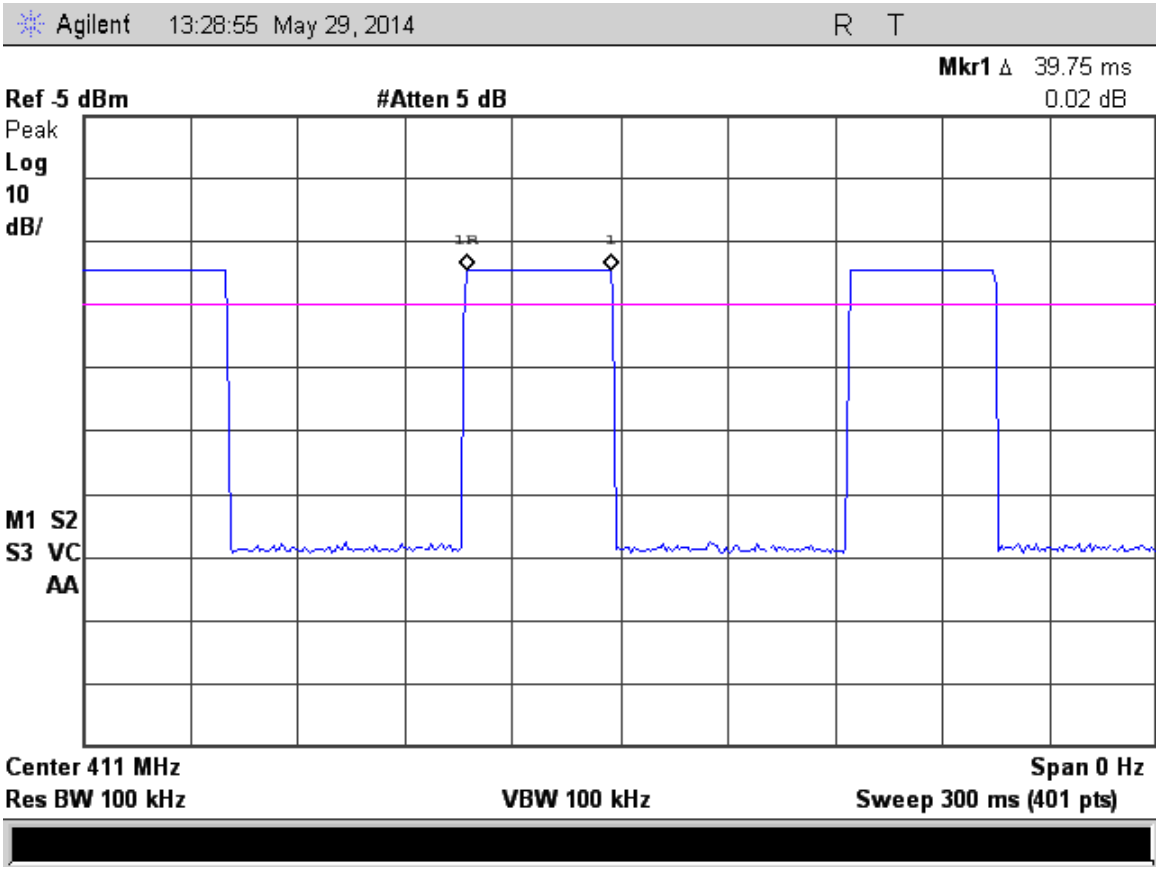
FCC Section 15.231(b)(2) - Duty Cycle Determination - Pulsed Operation
IC RSS-210, A1.1.2(2), RSS-GEN, 4.5 - Pulsed Operation

Test Data



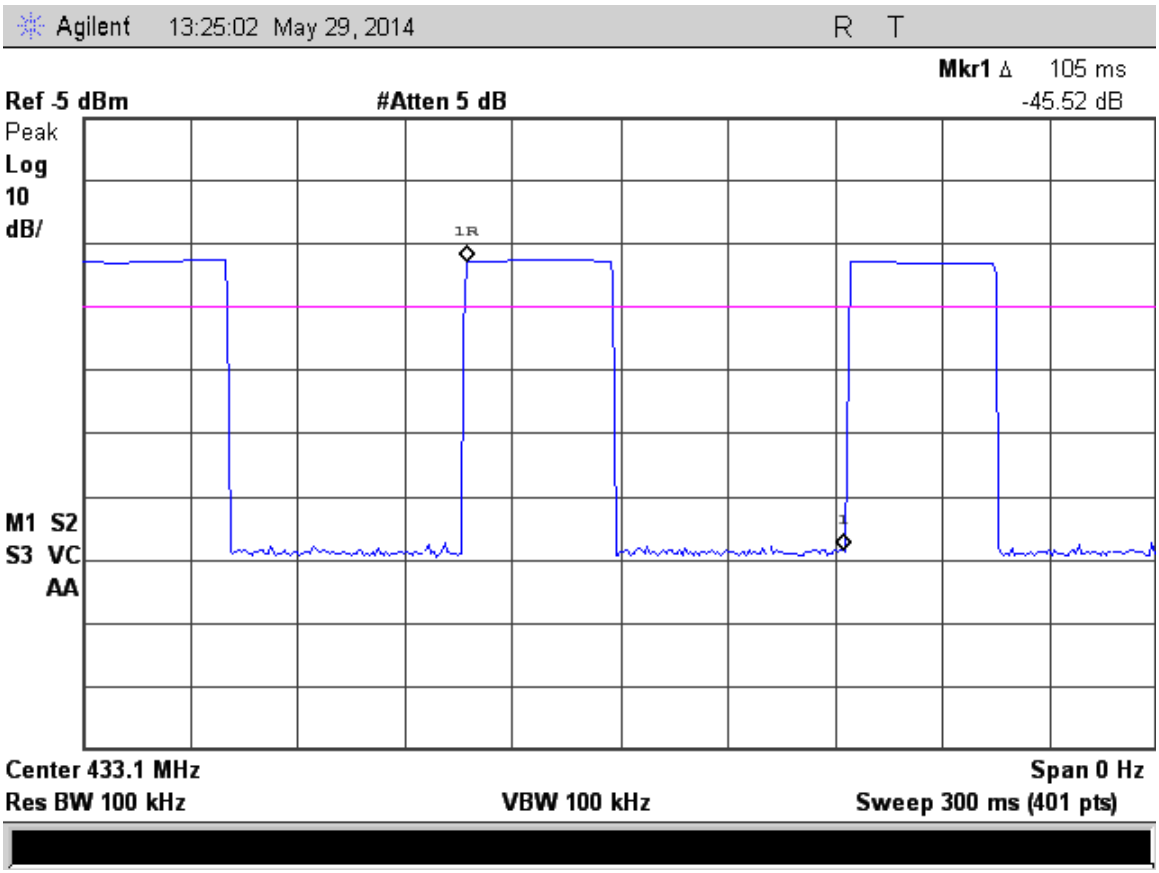
Test Method: **FCC Part 15.231(b), Duty Cycle Determination**
IC RSS-210 A1.1.2(2), Pulsed Operation

Notes: Measurement of cycle time = 105.0 mS



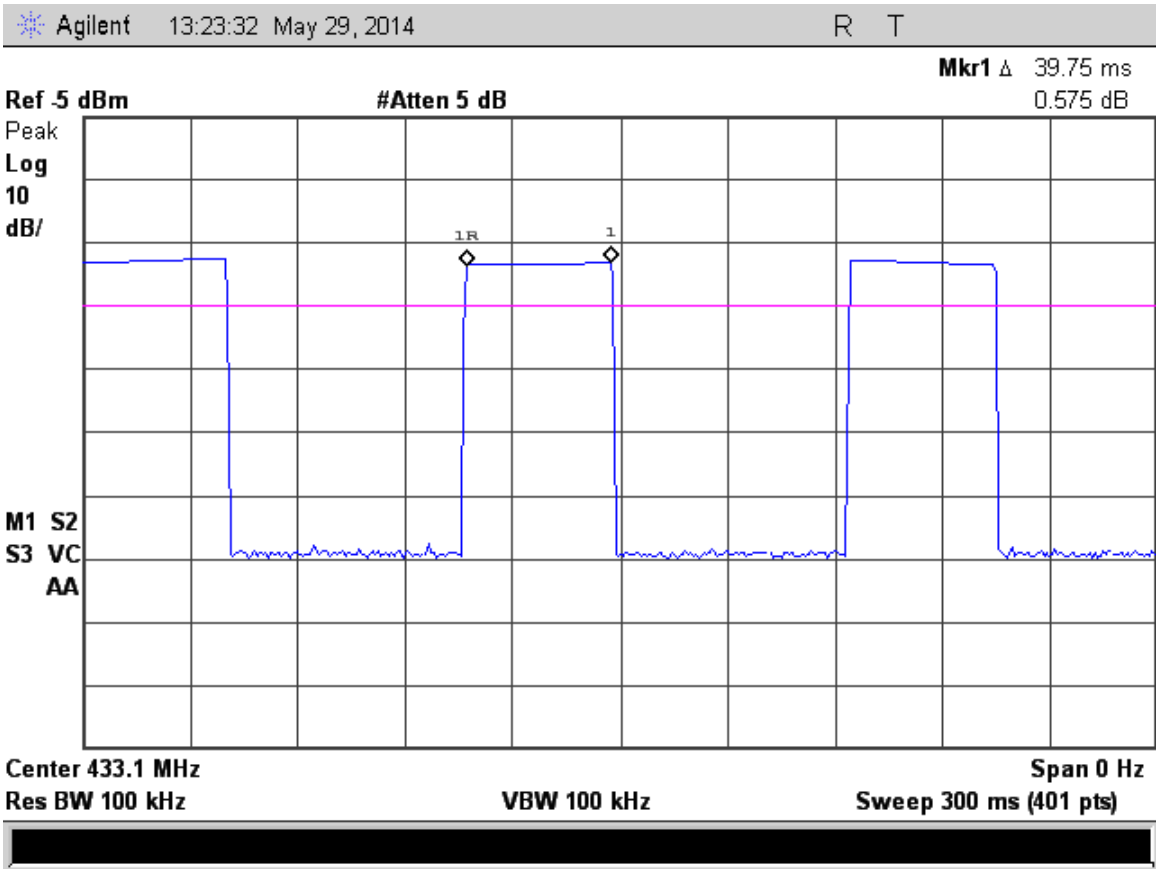
Test Method: **FCC Part 15.231(b), Duty Cycle Determination**
IC RSS-210 A1.1.2(2), Pulsed Operation

Notes: Pulse width 1 = 39.75 mS



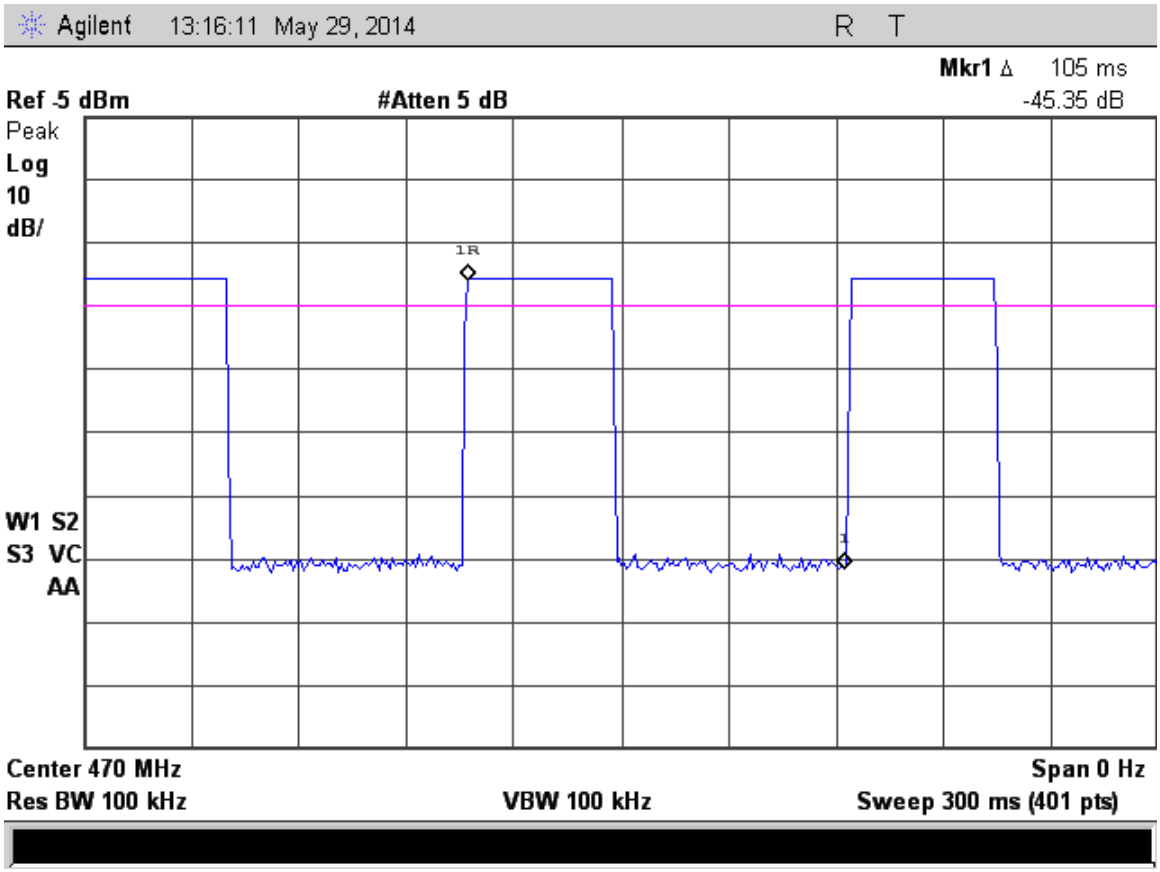
Test Method: **FCC Part 15.231(b), Duty Cycle Determination**
IC RSS-210 A1.1.2(2), Pulsed Operation

Notes: Measurement of cycle time = 105.0 mS



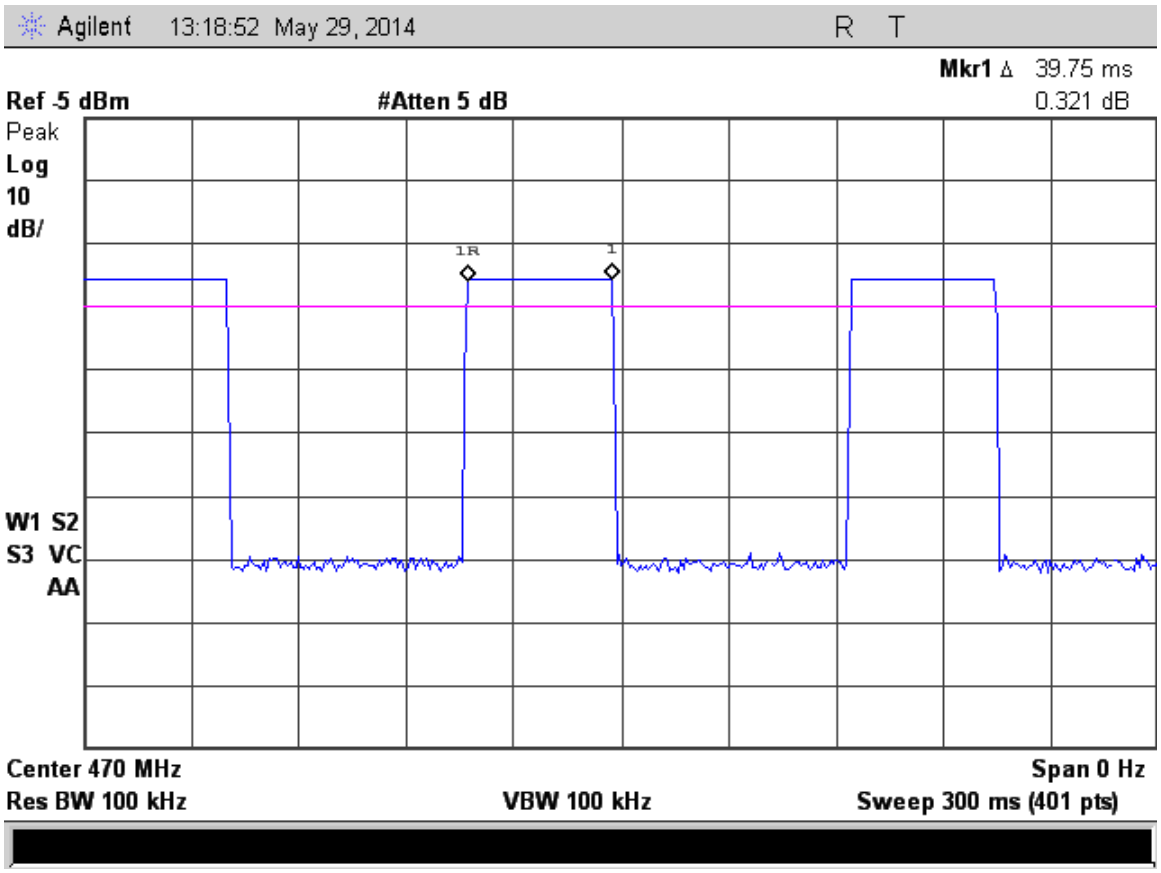
Test Method: **FCC Part 15.231(b), Duty Cycle Determination**
IC RSS-210 A1.1.2(2), Pulsed Operation

Notes: Pulse width 1 = 39.75 mS



Test Method: **FCC Part 15.231(b), Duty Cycle Determination**
IC RSS-210 A1.1.2(2), Pulsed Operation

Notes: Measurement of cycle time = 105.0 mS



Test Method: **FCC Part 15.231(b), Duty Cycle Determination**
IC RSS-210 A1.1.2(2), Pulsed Operation

Notes: Pulse width 1 = 39.75 mS

FCC Section 15.231(b)(3) - Field Strength of Spurious Emissions
IC RSS-210, A1.1.2(3) - Field Strength of Unwanted Emissions

Test Data

Test Method:	**FCC Part 15, Section 15.231(b) Radiated Emissions, Harmonics & Spurious IC RSS-210, Issue 8, Transmitter Spurious Emission Limits, 30 MHz to 1.5 GHz**		
Customer:	Magnetek Inc.	**Job No.:**	R-2148P-1
Test Sample:	411 to 470 MHz Transceiver Module		
Part No.:	198-71000-A0418	**Serial No.:**	0003
Operating Mode:	Continuously Transmitting at 411 MHz		
Technician:	D.Fiore	**Date:**	5/27/14

Notes: Test Distance: 3 Meters Temp: 25°C RH: 54%
Detector: Quasi-Peak Below 1 GHz, Peak above 1 GHz **External Antenna**

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(V/H) /	Degrees	dBuV	dB	dBuV/m	uV/m	uV/m
30.00							100
*35.00	H/1.00	180.00	0.3	15.59	15.89	6.23	
88.00							100
88.00							150
*110.00	H/1.00	180.00	3.6	8.92	12.52	4.23	
*195.00	H/1.00	180.00	1.1	11.33	12.43	4.18	
*205.00	H/1.00	180.00	1.5	12.25	13.75	4.87	
216							150
216							200
*600.00	H/1.00	180.00	2.3	23.69	25.99	19.93	
960.00							200
960.00							500
*995.00	H/1.00	180.00	3.6	30.37	33.97	49.95	
*1050.00	H/1.00	180.00	9.8	30.98	40.78	109.40	
*1500.00	H/1.00	180.00	10.2	39.49	49.69	305.14	
*1950.00	H/1.00	180.00	3.5	48.50	52.00	398.10	
2000.00							500

The frequency range was scanned from 30 MHz to 2 GHz.
The emissions observed from the EUT do not exceed the specified limits.
Emissions not recorded were more than 20dB under the specified limit.
*This Represents the minimum sensitivity of measurement system.

Test Method:	**FCC Part 15, Section 15.231(b) Radiated Emissions, Harmonics & Spurious IC RSS-210, Issue 8, Transmitter Spurious Emission Limits, 30 MHz to 1.5 GHz**		
Customer:	Magnetek Inc.	**Job No.:**	R-2148P-1
Test Sample:	411 to 470 MHz Transceiver Module		
Part No.:	198-71000-A0418	**Serial No.:**	0003
Operating Mode:	Continuously Transmitting at 433 MHz		
Technician:	D.Fiore	**Date:**	5/27/14

Notes: Test Distance: 3 Meters Temp: 25°C RH: 54%

Detector: Quasi-Peak Below 1 GHz, Peak above 1 GHz **External Antenna**

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(V/H) /	Degrees	dBuV	dB	dBuV/m	uV/m	uV/m
30.00							100
*35.00	H/1.00	180.00	0.3	15.59	15.89	6.23	
88.00							100
88.00							150
*110.00	H/1.00	180.00	3.6	8.92	12.52	4.23	
*195.00	H/1.00	180.00	1.1	11.33	12.43	4.18	
*205.00	H/1.00	180.00	1.5	12.25	13.75	4.87	
216							150
216							200
*600.00	H/1.00	180.00	2.3	23.69	25.99	19.93	
960.00							200
960.00							500
*995.00	H/1.00	180.00	3.6	30.37	33.97	49.95	
*1050.00	H/1.00	180.00	9.8	30.98	40.78	109.40	
*1500.00	H/1.00	180.00	10.2	39.49	49.69	305.14	
*1950.00	H/1.00	180.00	3.5	48.50	52.00	398.10	
2000.00							500

The frequency range was scanned from 30 MHz to 2 GHz.

The emissions observed from the EUT do not exceed the specified limits.

Emissions not recorded were more than 20dB under the specified limit.

*This Represents the minimum sensitivity of measurement system.

Test Method:	**FCC Part 15, Section 15.231(b) Radiated Emissions, Harmonics & Spurious IC RSS-210, Issue 8, Transmitter Spurious Emission Limits, 30 MHz to 1.5 GHz**		
Customer:	Magnetek Inc.	**Job No.:**	R-2148P-1
Test Sample:	411 to 470 MHz Transceiver Module		
Part No.:	198-71000-A0418	**Serial No.:**	0003
Operating Mode:	Continuously Transmitting at 470 MHz		
Technician:	D.Fiore	**Date:**	5/27/14

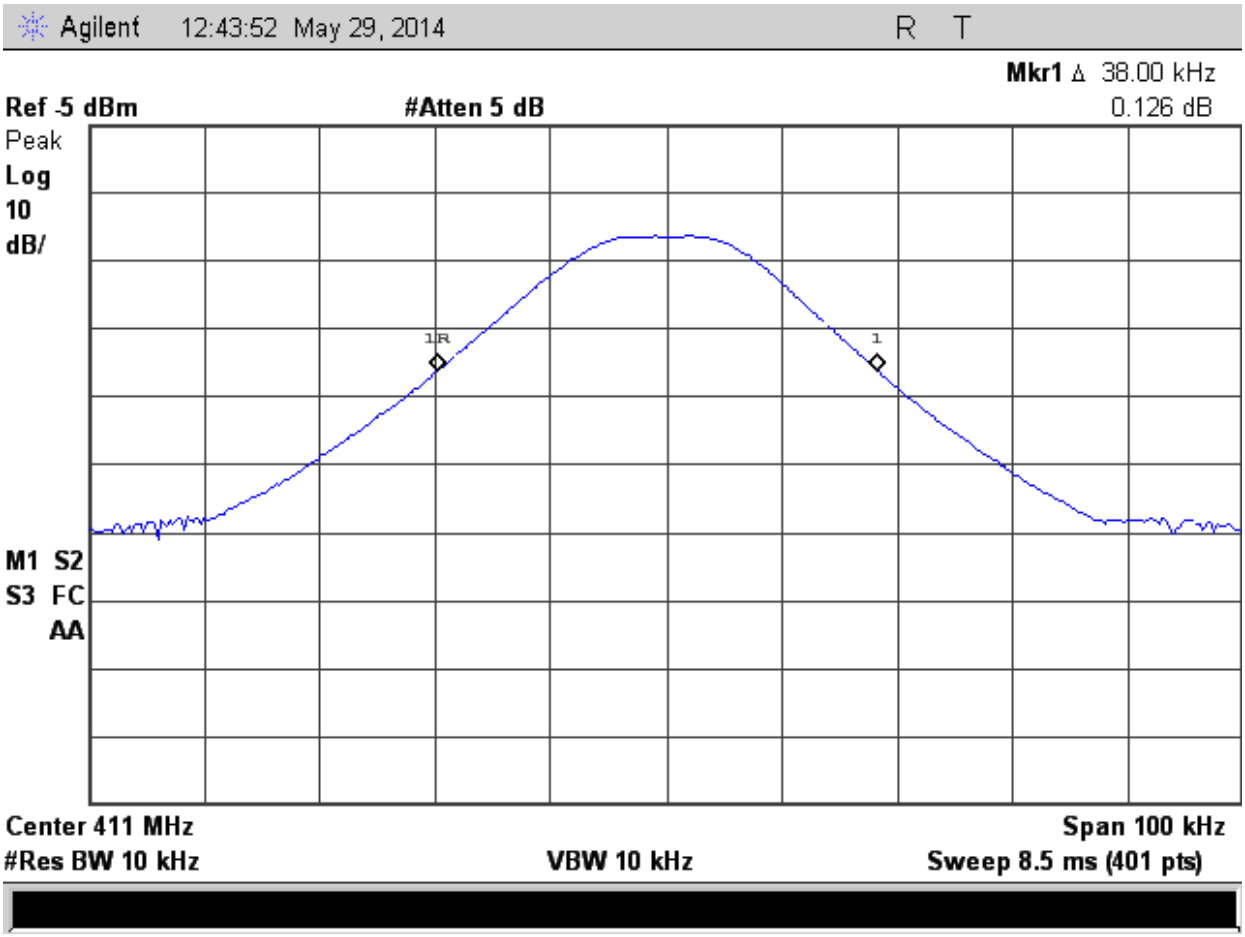
Notes: Test Distance: 3 Meters Temp: 25°C RH: 54%
Detector: Quasi-Peak Below 1 GHz, Peak above 1 GHz **External Antenna**

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(V/H) /	Degrees	dBuV	dB	dBuV/m	uV/m	uV/m
30.00							100
*35.00	H/1.00	180.00	0.3	15.59	15.89	6.23	
88.00							100
88.00							150
*110.00	H/1.00	180.00	3.6	8.92	12.52	4.23	
*195.00	H/1.00	180.00	1.1	11.33	12.43	4.18	
*205.00	H/1.00	180.00	1.5	12.25	13.75	4.87	
216							150
216							200
*600.00	H/1.00	180.00	2.3	23.69	25.99	19.93	
960.00							200
960.00							500
*995.00	H/1.00	180.00	3.6	30.37	33.97	49.95	
*1050.00	H/1.00	180.00	9.8	30.98	40.78	109.40	
*1500.00	H/1.00	180.00	10.2	39.49	49.69	305.14	
*1950.00	H/1.00	180.00	3.5	48.50	52.00	398.10	
2000.00							500

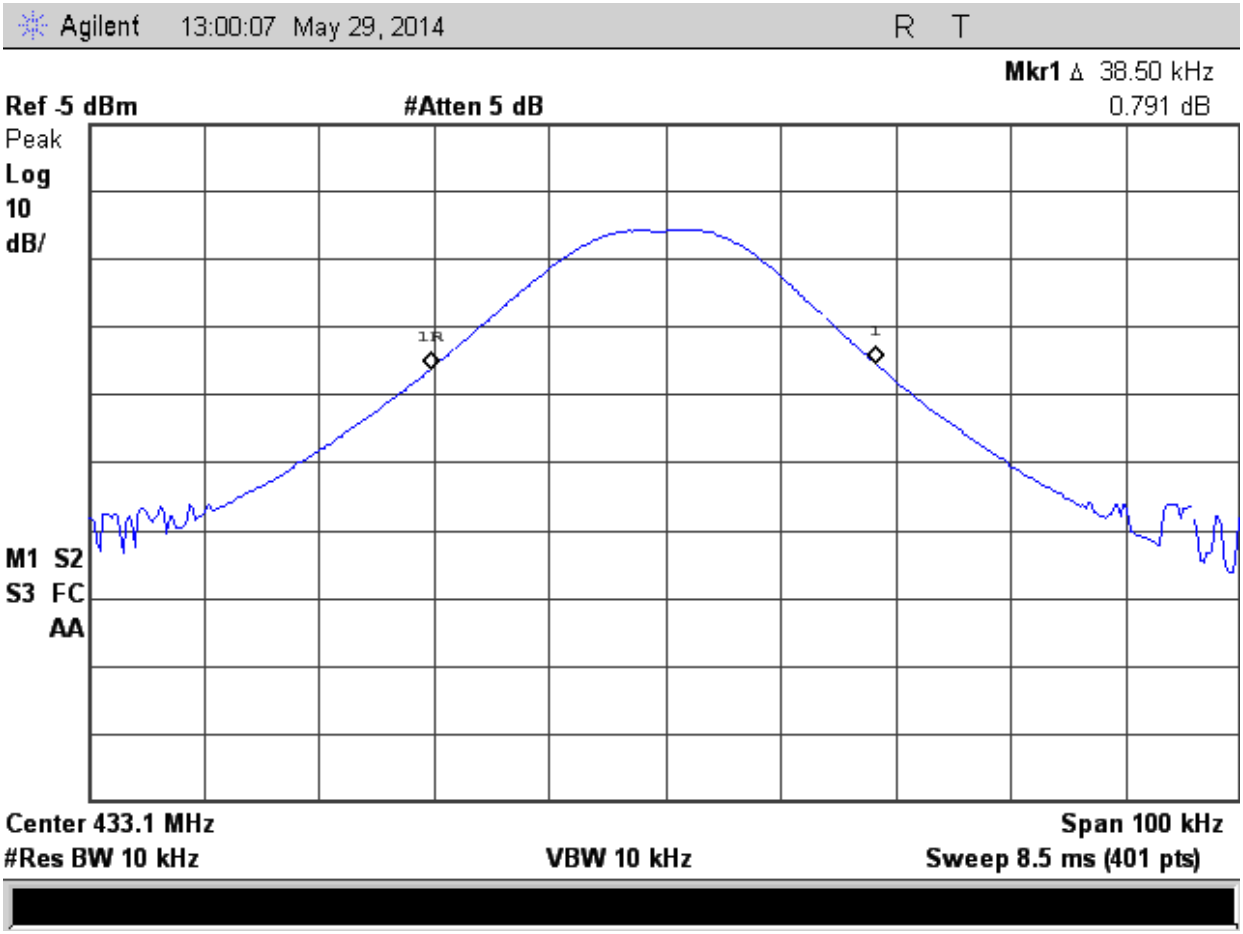
The frequency range was scanned from 30 MHz to 2 GHz.
The emissions observed from the EUT do not exceed the specified limits.
Emissions not recorded were more than 20dB under the specified limit.
*This Represents the minimum sensitivity of measurement system.

FCC Section 15.231(c) - Bandwidth of Emission
IC RSS-210, A1.1.3 - Bandwidth of Momentary Signals

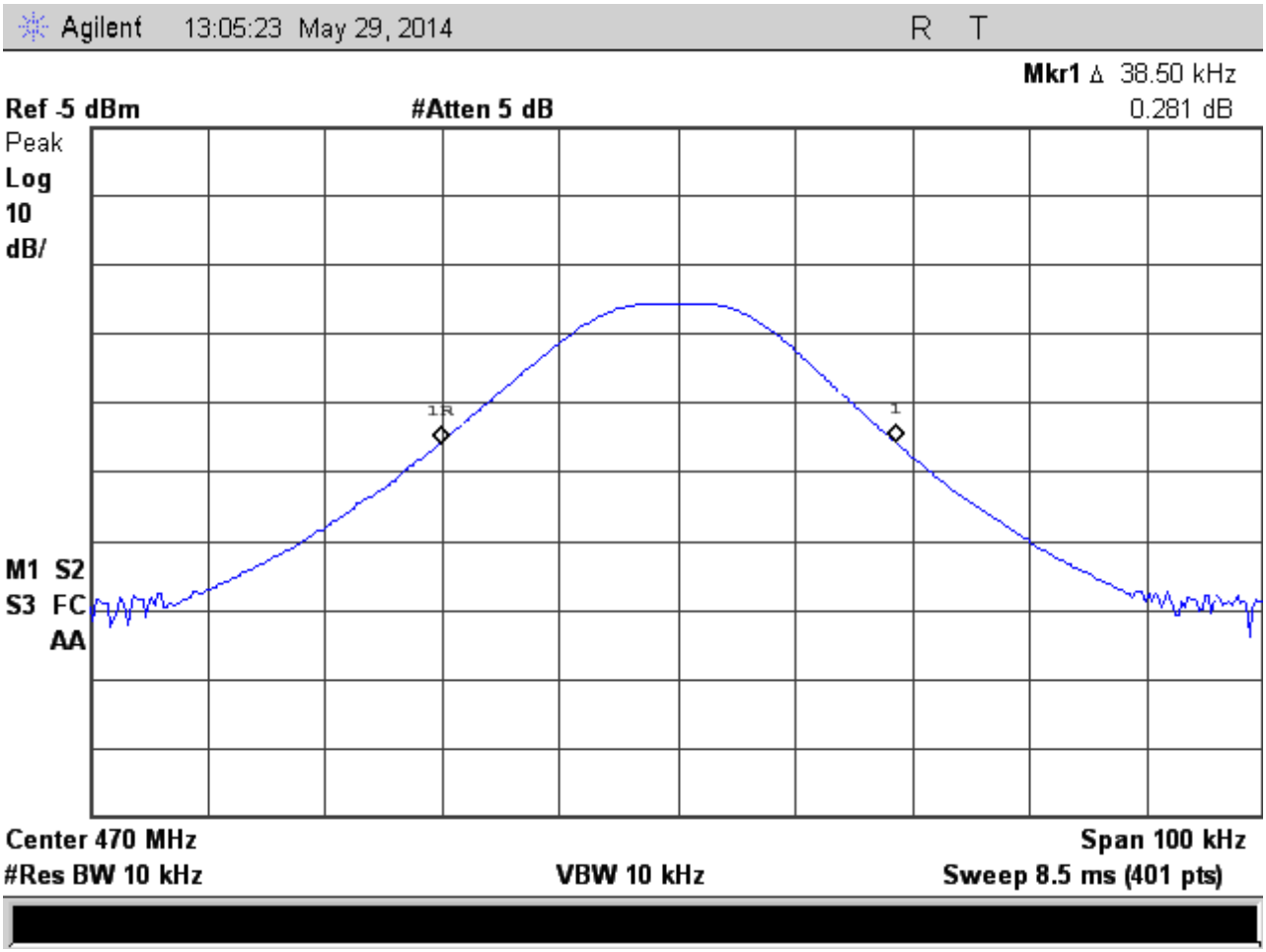
Test Data



Test Method: **FCC Part 15, Subpart C, 15.231(c), Occupied Bandwidth**.
IC RSS-210 A1.1.3, Bandwidth of Momentary Signals (99%)
Notes: Bandwidth does not exceed 0.25% of center frequency at the 20 dBc points



Test Method: **FCC Part 15, Subpart C, 15.231(c), Occupied Bandwidth**.
IC RSS-210 A1.1.3, Bandwidth of Momentary Signals (99%)
Notes: Bandwidth does not exceed 0.25% of center frequency at the 20 dBc points



Test Method: **FCC Part 15, Subpart C, 15.231(c), Occupied Bandwidth**.
IC RSS-210 A1.1.3, Bandwidth of Momentary Signals (99%)
Notes: Bandwidth does not exceed 0.25% of center frequency at the 20 dBc points

Conducted Emissions, Power Leads, 150 kHz to 30 MHz
FCC Part 15, Subpart C, Section 15.107/15.207(a)
RSS GEN, Section 7.2.2
Test Data

Test Method:	**FCC Part 15, Section 15.107 (a) Conducted Emissions, 0.15 to 30 MHz**		
Customer:	Magnetek, Inc.	**Job No.**	R-2148P-2
Test Sample:	411 to 470 MHz Transceiver Module		
Model No.:	198-71000-A0418	**Serial No.**	0008
Operating Mode:	RX Normal		
Test Specification:	FCC Part 15, Subpart C, Section 15.107(b), Conducted Emissions, Power Leads		
Port Tested:	115 VAC, 60 Hz, Power Input		
Technician:	S. Macdonald	**Date:**	5/27/14
Notes:	Temp: 22ºC RH: 32%		

Frequency	Lead Tested	Peak Meter Reading	Quasi-Peak Meter Reading	Average Meter Reading		Quasi-Peak Limit	Average Limit
MHz		dBuV	dBuv	dBuV		dBuV	dBuV
0.15	Hot	87.5	22.1	7.7		66	56
0.152	Neutral	70.8	23.2	6.6		65.89	55.89
0.22	Hot	56.6	5.8	-3.8		62.82	52.82
0.219	Neutral	66.8	7.5	-3.8		62.86	52.86
0.805	Hot	79.4	37.4	38.0		56	46
0.805	Neutral	80.7	38.2	38.2		56	46
1.60	Hot	64.0	22.4	22.4		56	46
1.61	Neutral	70.2	23.8	22.2		56	46
7.21	Hot	50.2	1.4	-2.0		56.82	46.82
7.23	Neutral	48.4	2.3	-0.4		56.82	46.82
25.7	Hot	77.6	31.4	22.0		59.65	49.65
25.7	Neutral	77.2	32.1	24.7		59.65	49.65

The EUT was scanned from 0.15 MHz to 30 MHz.
The six highest emissions relative to the limit are presented.
The emissions observed from the EUT do exceed the specified limits.

FCC Section 15.109(a) - Receiver Radiated Emissions
IC RSS-GEN, 7.2.3 - Receiver Spurious Emission Limits

Test Data

Test Method:	**FCC Part 15, Section 15.109 (a) Radiated Emissions, 30 MHz to 2 GHz IC RSS-210, Issue 8, Paragraph 6, Receiver Spurious Emission Limits, 30 MHz to 1.5 GHz**		
Customer:	Magnetek Inc.	**Job No.:**	R-2148P-1
Test Sample:	411 to 470 MHz Transceiver Module		
Part No.:	198-71000-A0418	**Serial No.:**	0003
Operating Mode:	RX Normal		
Technician:	D.Fiore	**Date:**	5/27/14

Notes: Test Distance: 3 Meters Temp: 25°C RH: 54%
Detector: Quasi-Peak Below 1 GHz, Peak above 1 GHz **Internal Antenna**

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(V/H) / Meters	Degrees	dBuV	dB	dBuV/m	uV/m	uV/m
30.00							100
*35.00	H/1.00	180.00	0.3	15.59	15.89	6.23	
88.00							100
88.00							150
*110.00	H/1.00	180.00	3.6	8.92	12.52	4.23	
*195.00	H/1.00	180.00	1.1	11.33	12.43	4.18	
*205.00	H/1.00	180.00	1.5	12.25	13.75	4.87	
216							150
216							200
*600.00	H/1.00	180.00	2.3	23.69	25.99	19.93	
960.00							200
960.00							500
*995.00	H/1.00	180.00	3.6	30.37	33.97	49.95	
*1050.00	H/1.00	180.00	9.8	30.98	40.78	109.40	
*1500.00	H/1.00	180.00	10.2	39.49	49.69	305.14	
*1950.00	H/1.00	180.00	3.5	48.50	52.00	398.10	
2000.00							500

The frequency range was scanned from 30 MHz to 2 GHz.
The emissions observed from the EUT do not exceed the specified limits.
Emissions not recorded were more than 20dB under the specified limit.
*This Represents the minimum sensitivity of measurement system.

Test Method:	**FCC Part 15, Section 15.109 (a) Radiated Emissions, 30 MHz to 2 GHz** **IC RSS-210, Issue 8, Paragraph 6, Receiver Spurious Emission Limits, 30 MHz to 1.5 GHz**		
Customer:	Magnetek Inc.	**Job No.:**	R-2148P-1
Test Sample:	411 to 470 MHz Transceiver Module		
Part No.:	198-71000-A0418	**Serial No.:**	0003
Operating Mode:	RX Normal		
Technician:	D.Fiore	**Date:**	5/27/14
Notes:	Test Distance: 3 Meters	Temp: 25°C	RH: 54%
	Detector: Quasi-Peak Below 1 GHz, Peak above 1 GHz		**External Antenna**

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(V/H) / Meters	Degrees	dBuV	dB	dBuV/m	uV/m	uV/m
30.00							100
|							|
*35.00	H/1.00	180.00	0.3	15.59	15.89	6.23	|
|							|
88.00							100
88.00							150
|							|
*110.00	H/1.00	180.00	3.6	8.92	12.52	4.23	|
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|							|
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|							|
*600.00	H/1.00	180.00	2.3	23.69	25.99	19.93	|
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|							|
|							|
|							|
2000.00							500
	The frequency range was scanned from 30 MHz to 2 GHz.						
	The emissions observed from the EUT do not exceed the specified limits.						
	Emissions not recorded were more than 20dB under the specified limit.						
	*This Represents the minimum sensitivity of measurement system.						