Test Report

Curtis-Straus LLC, *a wholly owned subsidiary of BV CPS*

Report No	EM2037-1 Issue 1
Client	Trimble Navigation Limited
Address	One Cambridge Center Cambridge, MA 02142
Phone	617-299-2461
Items tested	M6E-MICRO
FCC ID	QV5MERCURY6E-M
IC	5407A-MERCURY6EM
FRN	0008403743
Equipment Type	Part 15.247 Frequency Hopper
Equipment Code	DSS
FCC/IC Rule Parts	47 CFR 15.247, RSS-210
Test Dates	August 8-9, September 18, 2012
Results	As detailed within this report
Prepared by	Christopher Reynolds – Test Engineer
Authorized by	Mairaj Hussain – EMC Supervisor
Issue Date	11-10-2012
Conditions of Issue	This Test Report is issued subject to the conditions stated in the '*Conditions of Testing*' section on page 39 of this report.

Contents

Form Final Report REV 7-20-07 (DW)

Summary

This test report supports an application for certification of a transmitter operating pursuant to 47 CFR 15.247. The product is the M6E-MICRO RFID Module. It is a frequency hopping transmitter that operates in the range 902-928MHz. Product was tested with a MT-242025 circular antenna with a gain of 5.1dBi and Laird Technologies linear antenna MN:FG9026 with a gain of 6dBi. Thing magic will like to qualify several other circular polarized antennas (as mentioned in the antenna list exhibits). All of the antennas have equal or lower gain compare to the one which was tested with the product.

We found that the product met the above requirements without modification. Khaled ElMahgoub from Trimble Navigation Limited was present during the testing. The test sample was received in good condition.

Test Methodology

Radiated emission and AC Line conducted testing was performed according to the procedures specified in ANSI C63.10 (2009) and C63.4 (2009). Radiated Emissions were maximized by rotating the device around its axes as well as varying the test antenna's height and polarity. The device antenna was maximized separately.

Conducted emission at the antenna port was performed, as required by rule section.

The EUT operating voltage is 5VDC
Low operating channel frequency = 902.75MHz
Mid operating channel frequency = 915.25MHz
High operating channel frequency = 927.25MHz

The following bandwidths were used during radiated spurious and line conducted emissions.

Frequency	RBW	VBW
0.15-30MHz	9kHz	30kHz
30-1000MHz	120kHz	300kHz
1-10GHz	1MHz	3MHz

Release Control Record

Issue No.	Reason for change	Date Issued
1	Original Release	November 10, 2012

Product Tested - Configuration Documentation

EUT Configuration

Work Order: M2037
Company: ThingMagic
Company Address: One Cambridge Center
Cambridge, MA 02142
Contact: Amit Danenburg
Person Present: Khaled ElMahgoub

	MN	PN	SN
EUT:	M6e-Micro Module		RKT-12247761

EUT Description: RFID Module
EUT TX Frequency: 902-928MHz(FCC)
865.7-867.5MHz(EU)

Support Equipment:	MN	SN
Dell Latitude Laptop	D610	--
GW Instek p/s	PST-3202	--
M6e Microboard	M6e Microboard	--

EUT Ports:

Port Label	Port Type	No. of ports	No. Populated	Cable Type	Shielded	Ferrites	Length	Max Length	In/Out NEBS Type	Unpopulated Reason
Port 1	MMCX(ixp connector at board)	1	1	Coaxial	Yes	None	1m	1m	Indoor	
Port 2	MMCX(ixp connector at board)	1	0							Not used in this configuration
J10	15 pin	1	0							Not used in this configuration
J1	12 pin	1	0							Not used in this configuration
J11	USB	1	1	USB	Yes	None	3m	5m	Indoor	

Software / Operating Mode Description:

Using a command prompt interface on the support laptop to control channel, power, hopping.

Statement of Conformity

The M6E-MICRO has been found to conform to the following parts of 47 CFR and as detailed below:

RSS-GEN	RSS 210	Part 15	Comments
5.3		15.15(b)	There are no controls accessible to the user that varies the output power above specified limits.
5.2		15.19	The label is shown in the label exhibit.
7.1.5		15.21	Information to the user is shown in the instruction manual exhibit.
		15.27	No special accessories are required for compliance.
		15.31	The EUT was tested in accordance with the measurement standards in this section.
		15.33	Frequency range was investigated according to this section, unless noted in specific rule section under which the equipment operates.
		15.35	The EUT emissions were measured using the measurement detector and bandwidth specified in this section, unless noted in specific rule section under which the equipment operates.
7.1.4		15.203	EUT employs a unique antenna connector.
	2.6	15.205 15.209	The fundamental is not in a Restricted band and the spurious and harmonic emissions in the Restricted bands comply with the general emission limits of 15.209.
7.2.2		15.207	EUT meets the AC Line conducted emissions requirements of 15.207.
	Annex 8	15.247	The unit complies with the requirements of 15.247
4.6.1			Occupied Bandwidth measurements were made.

Test Results

Bandwidth

LIMIT

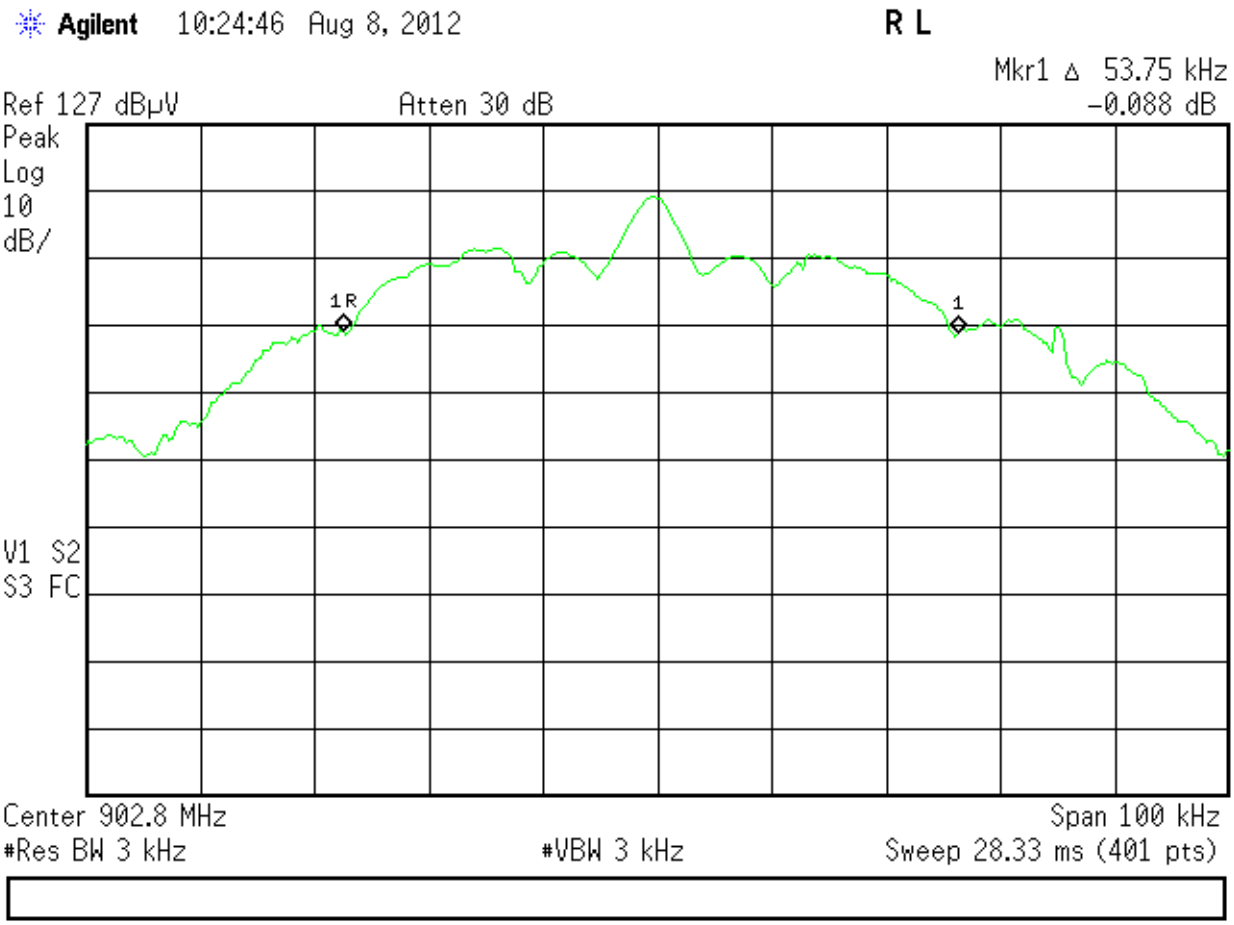
The 20dB bandwidth is used to determine channel frequency separation limits and required number of hopping frequencies.

Engineer	Christopher Reynolds
Date	8/9/12
Site	3M OATS

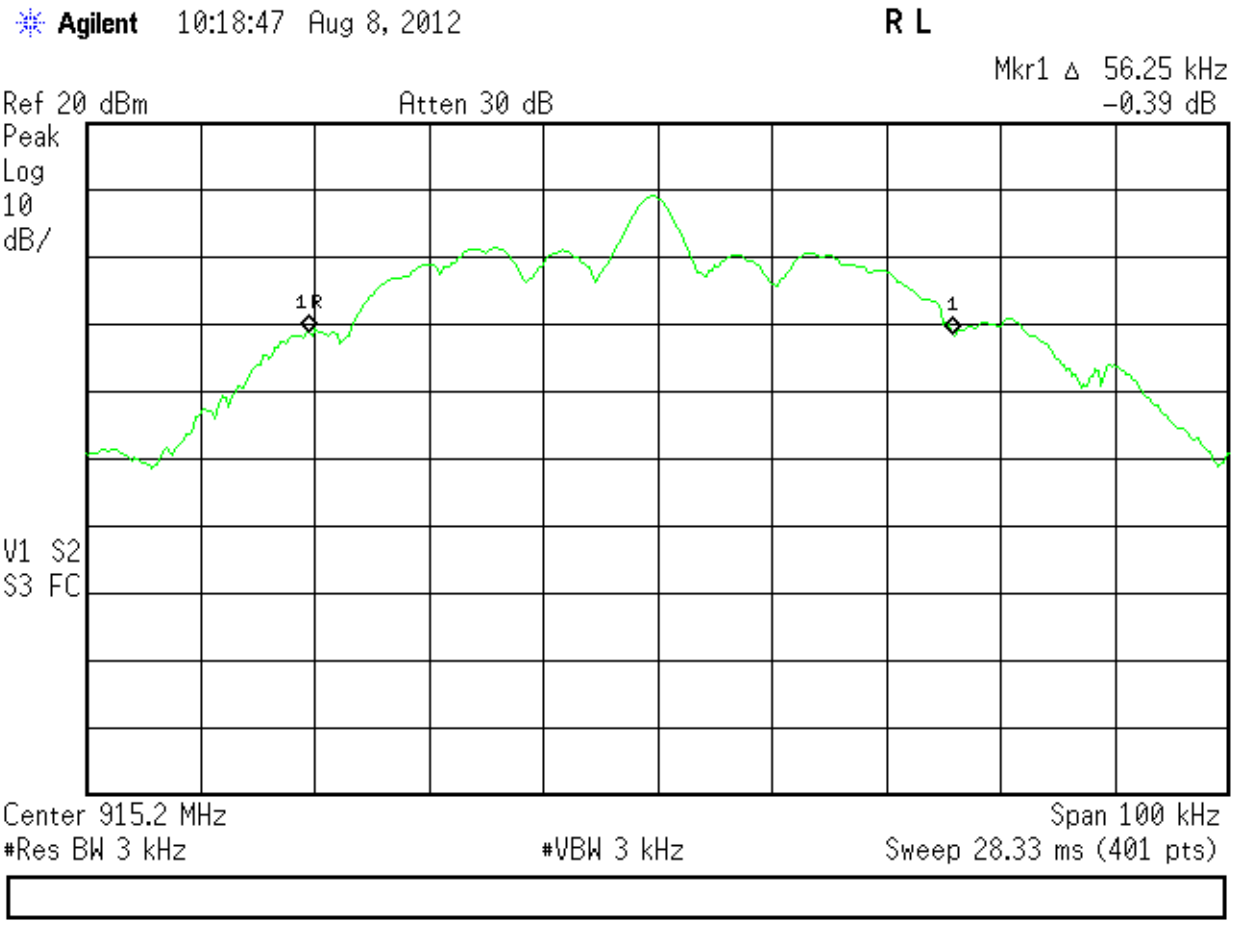
MEASUREMENTS / RESULTS

Channel	20dB BW (KHz)
Low	53.75
Mid	56.25
Hi	52.75

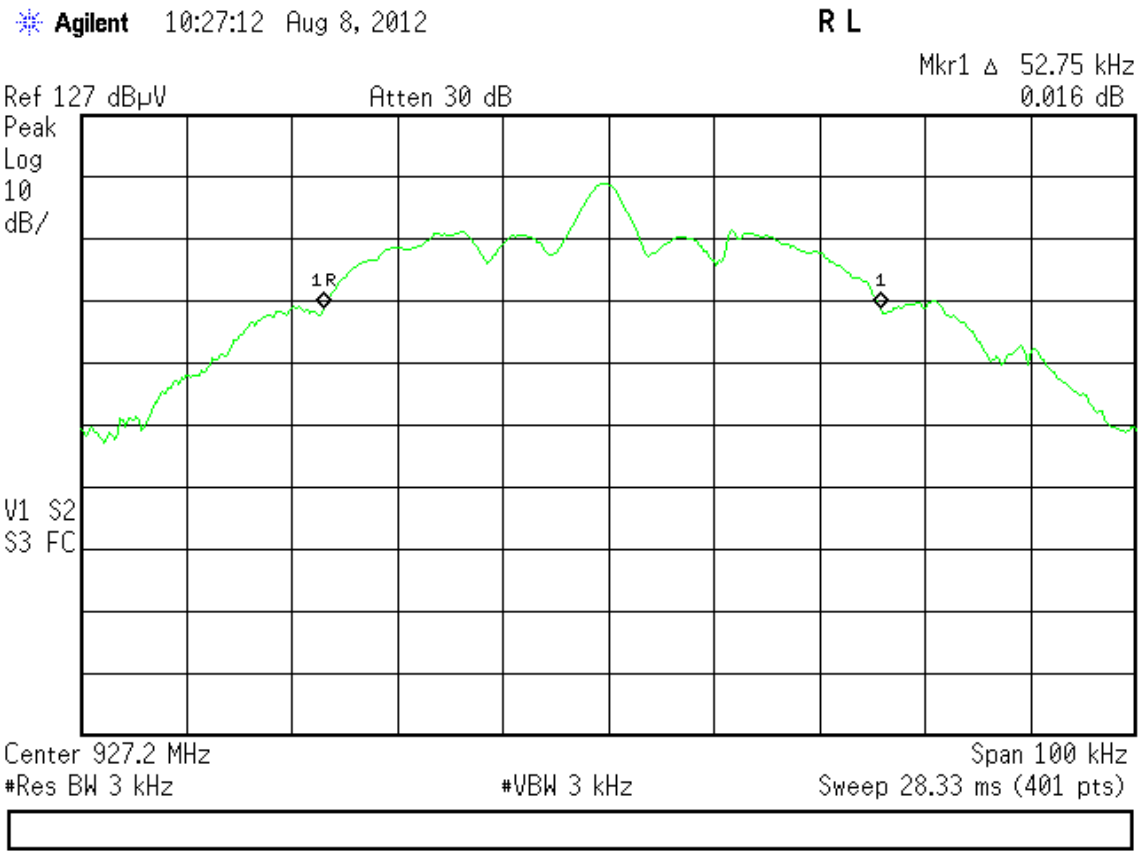
20dB Bandwidth Plot



Low Channel



Mid Channel



High Channel

Rev. 8/10/2012

Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due
SA EMI Chamber (1327)	9kHz-13.2 GHz	E4405B	Agilent	MY45103416	1327	I	5/30/2013
Radiated Emissions Sites	**FCC Code**	**IC Code**	**VCCI Code**			**Cat**	**Calibration Due**
1DCC-OATS-3M-I	719150	2762A-8	A-0015			II	9/7/2012
Antennas	**Range**	**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Red-Black Bilog	30-2000MHz	JB1	Sunol	A091604-2	1106	I	12/3/2012
Meteorological Meters		**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Temp./Humidity/Atm. Pressure Gauge		7400 Perception II	Davis	N/A	965	I	4/4/2013
1DCC-OATS-3M-I Thermohygrometer		35519-044	Control Company	72457635	1334	II	8/19/2013
Cables	**Range**		**Mfr**			**Cat**	**Calibration Due**
REMI-18	9kHz - 2GHz		C-S			II	1/27/2013

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

Channel Frequency Separation

LIMIT

"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." [15.247(a)(1)]

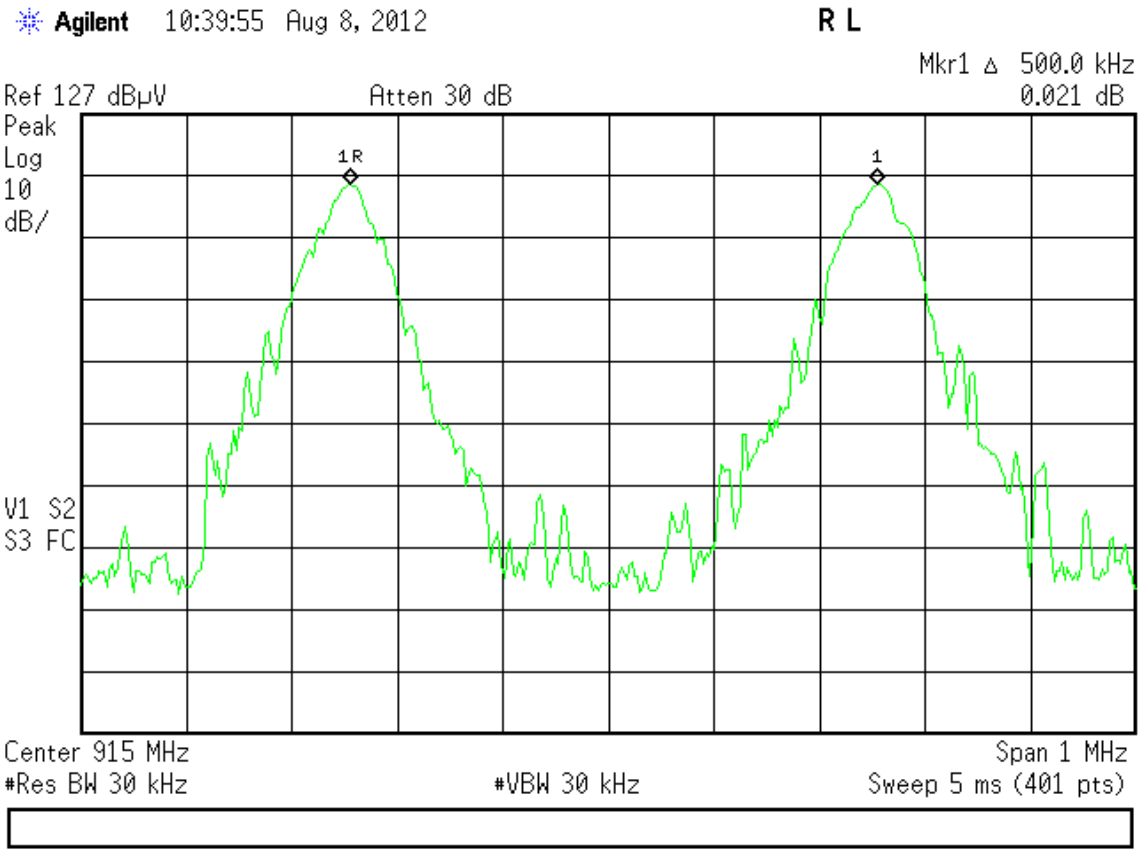
Limit = 20dB bandwidth = 53.75kHz. (max 20dB BW observed)

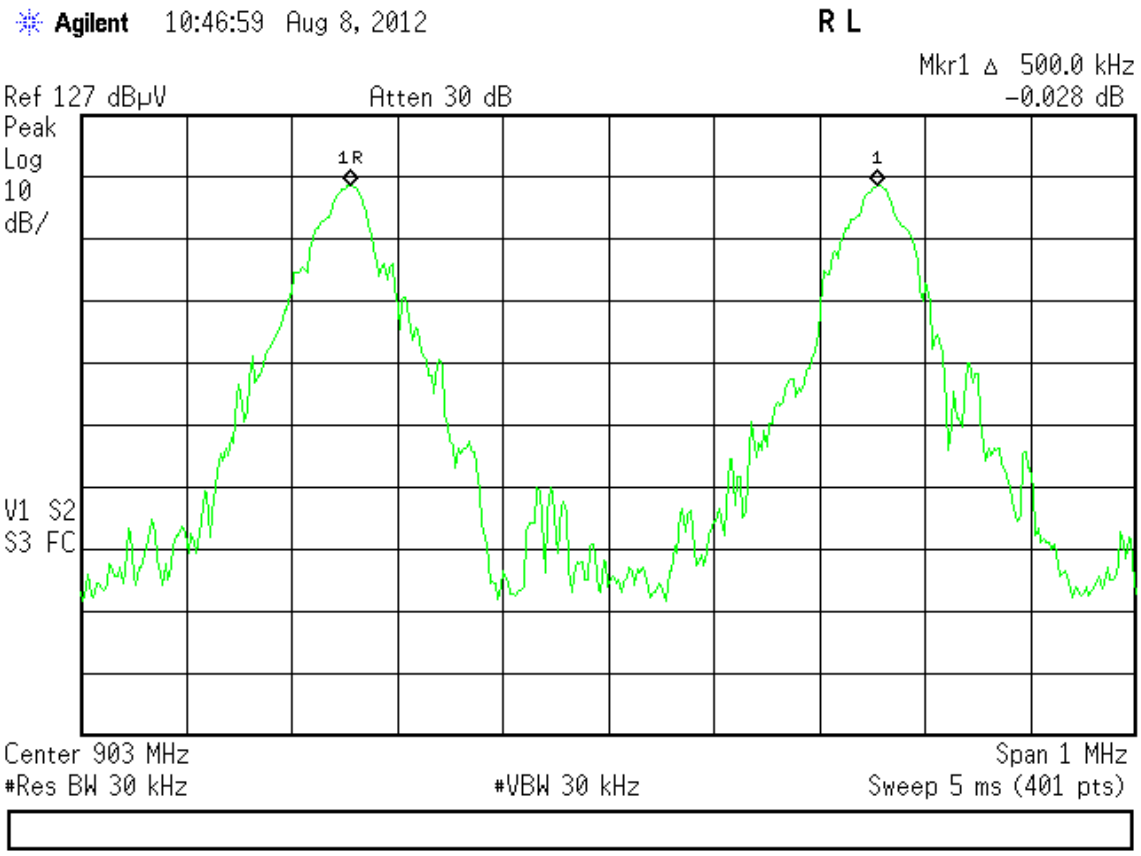
Engineer	Christopher Reynolds
Date	8/9/12
Site	3M OATS

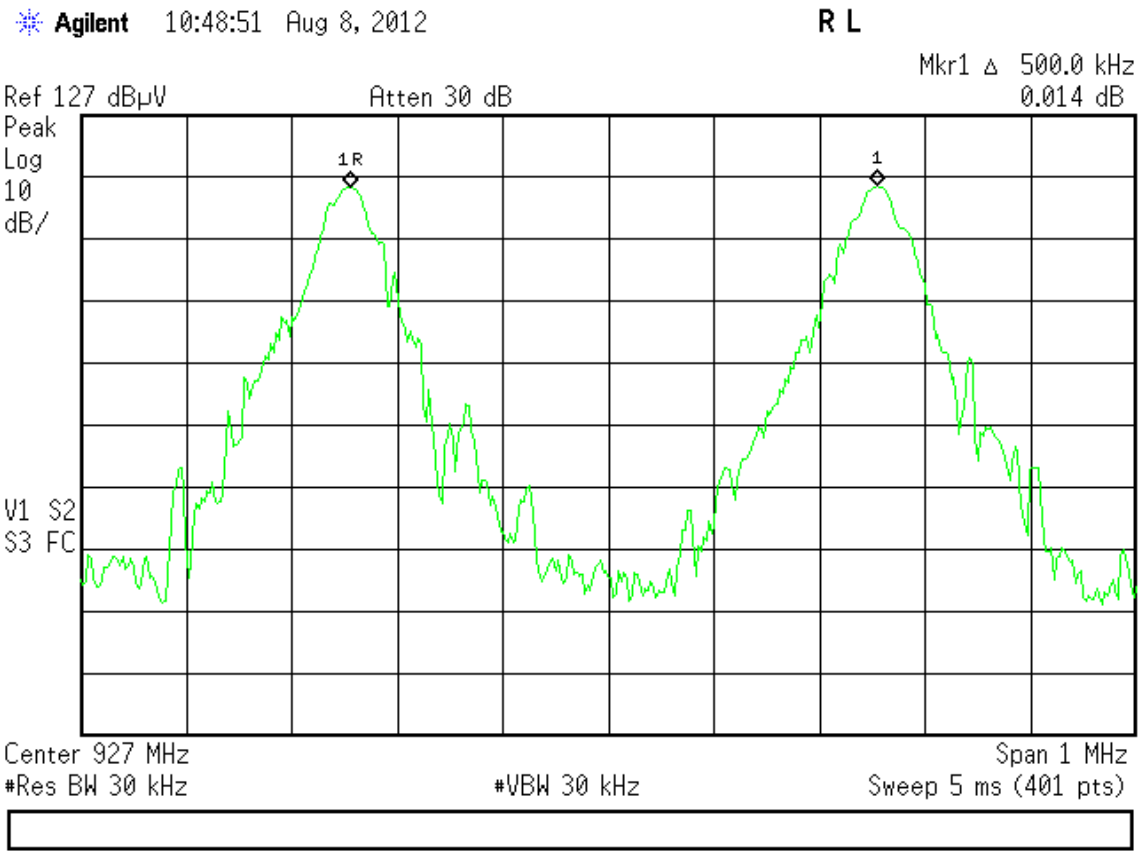
MEASUREMENTS / RESULTS

Channel Frequency Separation = 500kHz

Channel Separation Plot




Agilent 10:46:59 Aug 8, 2012
R L
Mkr1 Δ 500.0 kHz
-0.028 dB
Ref 127 dBµV
Atten 30 dB
Peak
Log
10
dB/
1R
1
V1 S2
S3 FC
Center 903 MHz
Span 1 MHz
#Res BW 30 kHz
#VBW 30 kHz
Sweep 5 ms (401 pts)



Rev. 8/10/2012

Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due
SA EMI Chamber (1327)	9kHz-13.2 GHz	E4405B	Agilent	MY45103416	1327	I	5/30/2013
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1DCC-OATS-3M-I	719150	2762A-8	A-0015			II	9/7/2012
Antennas	**Range**	**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Red-Black Bilog	30-2000MHz	JB1	Sunol	A091604-2	1106	I	12/3/2012
Meteorological Meters		**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Temp./Humidity/Atm. Pressure Gauge		7400 Perception II	Davis	N/A	965	I	4/4/2013
1DCC-OATS-3M-I Thermohygrometer		35519-044	Control Company	72457635	1334	II	8/19/2013
Cables	**Range**		**Mfr**			**Cat**	**Calibration Due**
REMI-18	9kHz - 2GHz		C-S			II	1/27/2013

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

Number of Hopping Frequencies

LIMIT

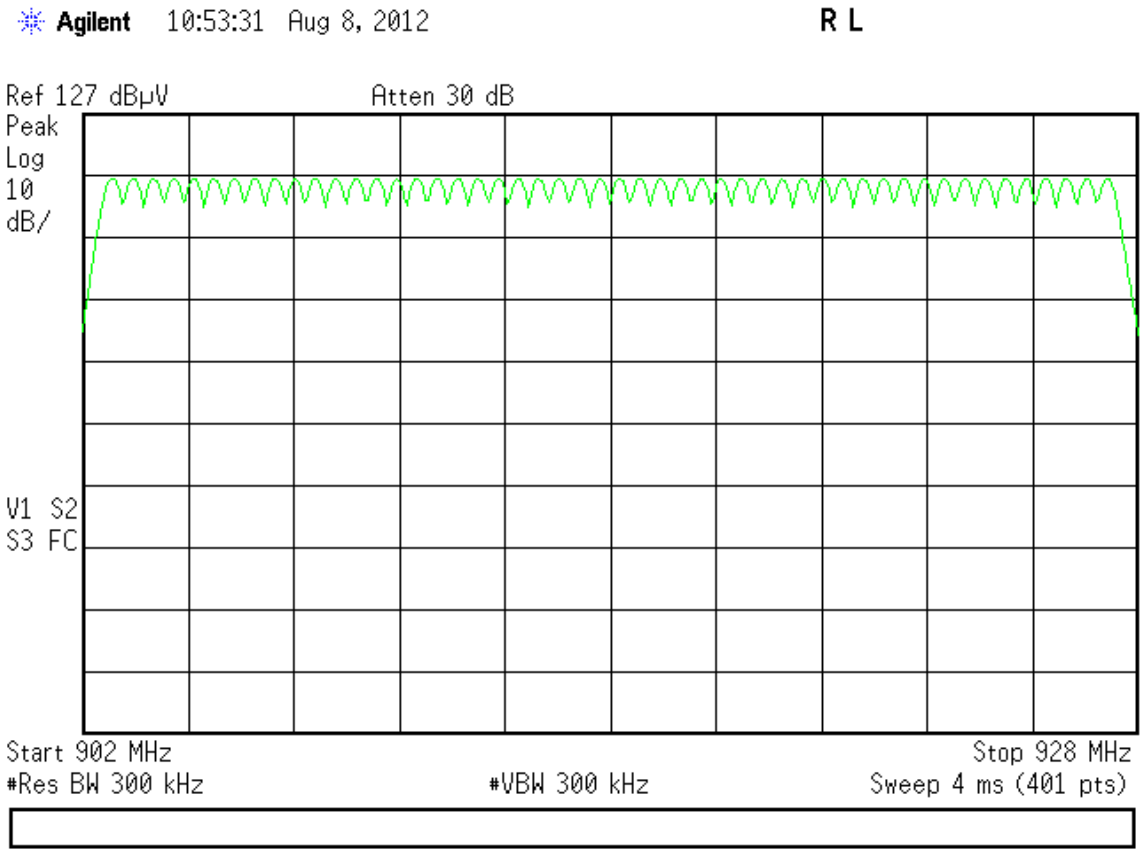
"…if the 20dB bandwidth of the hopping channel is less than 250kHz, the system shall use at least 50 hopping frequencies…
[15.247(a)(1)(i)]

Engineer	Christopher Reynolds
Date	8/9/12
Site	3M OATS

MEASUREMENTS / RESULTS

Number of hopping frequencies = 50

Number of Frequencies Plot



Rev. 8/10/2012

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SA EMI Chamber (1327)	9kHz-13.2 GHz	E4405B	Agilent	MY45103416	1327	I	5/30/2013
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REMI-18	9kHz - 2GHz		C-S			II	1/27/2013

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Time of Occupancy

LIMIT

"…if the 20dB bandwidth of the hopping channel is less than 250kHz…the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period" [15.247(a)(1)(i)]

Engineer	Christopher Reynolds
Date	8/9/12
Site	3M OATS

MEASUREMENTS / RESULTS

The average time of occupancy was measured for three different tag configurations: 0 tags, 10 tags, and 125 tags. In each case, the average individual dwell time was determined by averaging the duration of 10 dwells. Also, the average repetition rate was determined by averaging the rise-to-rise times of randomly captured consecutive dwells.

The average time of occupancy was then calculated with these values.
Example Calculation
Ave Time of Occ = (20s/ave rep rate)*ave ind dwell time
Ave Time of Occ = (20s/10.2s)*192.2ms = **377.3ms**

Sample #	0 Tags		10 Tags		125 Tags	
	Dwell Time (ms)	Rep Rate (s)	Dwell Time (ms)	Rep Rate (s)	Dwell Time (ms)	Rep Rate (s)
1	190.5	10.000	192.8	10.150	191.2	10.15
2	189.8	10.000	192.8	10.200	192.0	10.2
3	190.5	10.000	192.0	10.200	192.0	10.2
4	191.2	10.000	192.0	10.200	190.5	10.2
5	190.5	10.000	192.8	10.200	193.5	10.2
6	190.5	10.000	192.0	10.200	192.8	10.15
7	189.8	10.000	192.0	10.150	190.5	10.2
8	190.5	10.000	192.0	10.150	193.5	10.2
9	190.5	10.000	192.0	10.200	194.2	10.2
10	190.5	9.950	190.5	10.200	192.0	10.2
Average:	190.4	10.0	192.1	10.2	192.2	10.2
Average Time of Occupancy (ms)	**381.1**		**377.2**		**377.3**	

Rev. 8/10/2012

Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due
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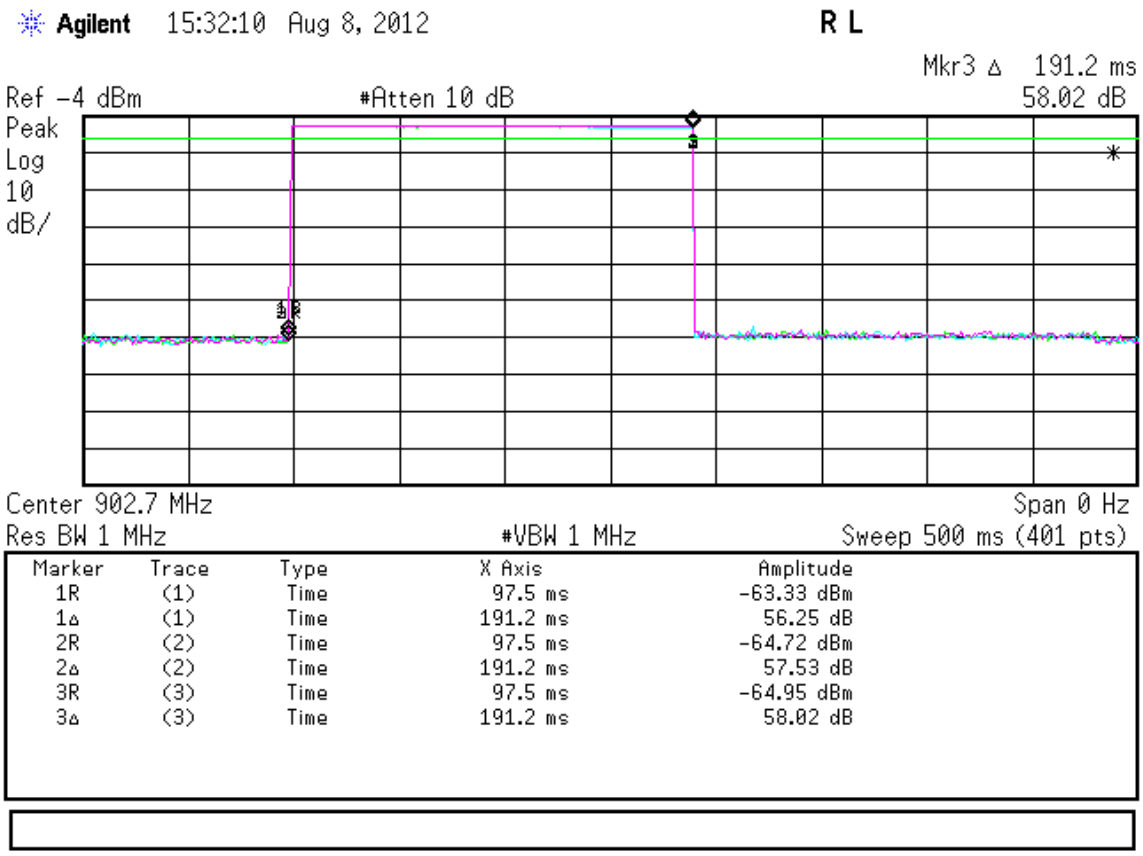
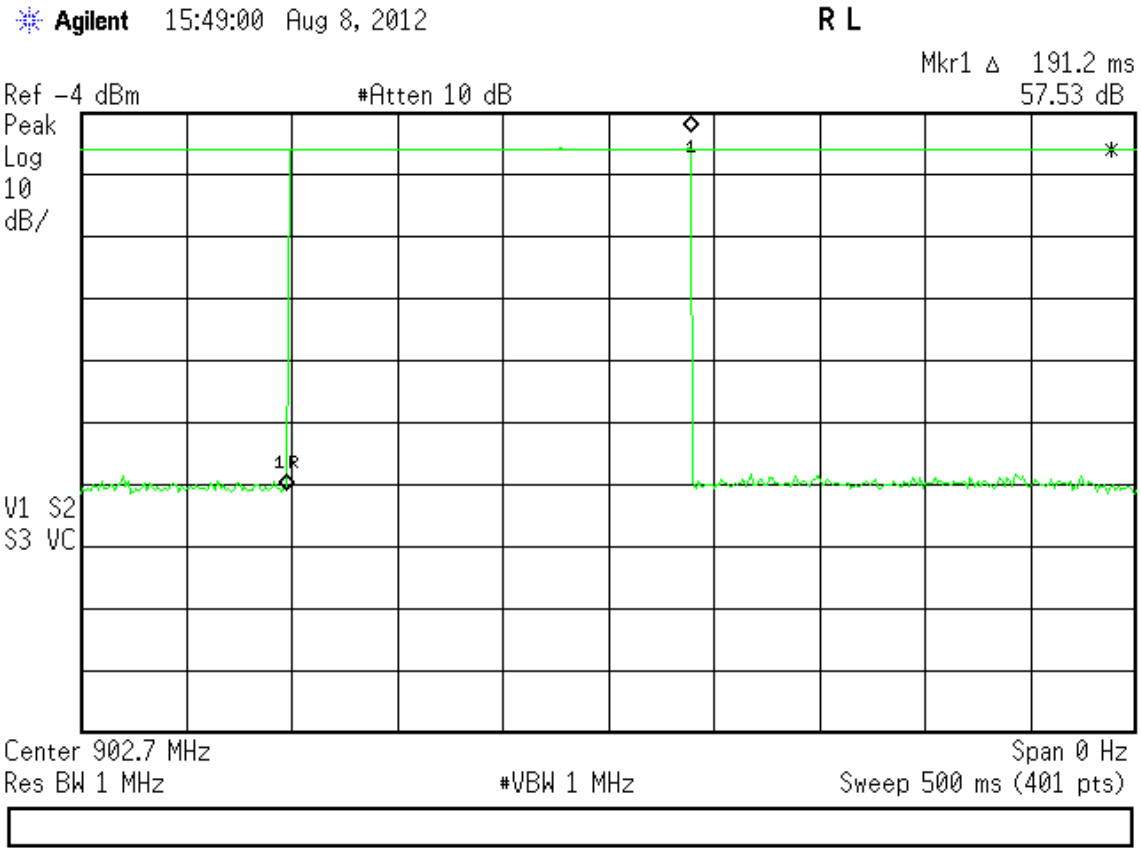
REMI-18	9kHz - 2GHz		C-S			II	1/27/2013

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

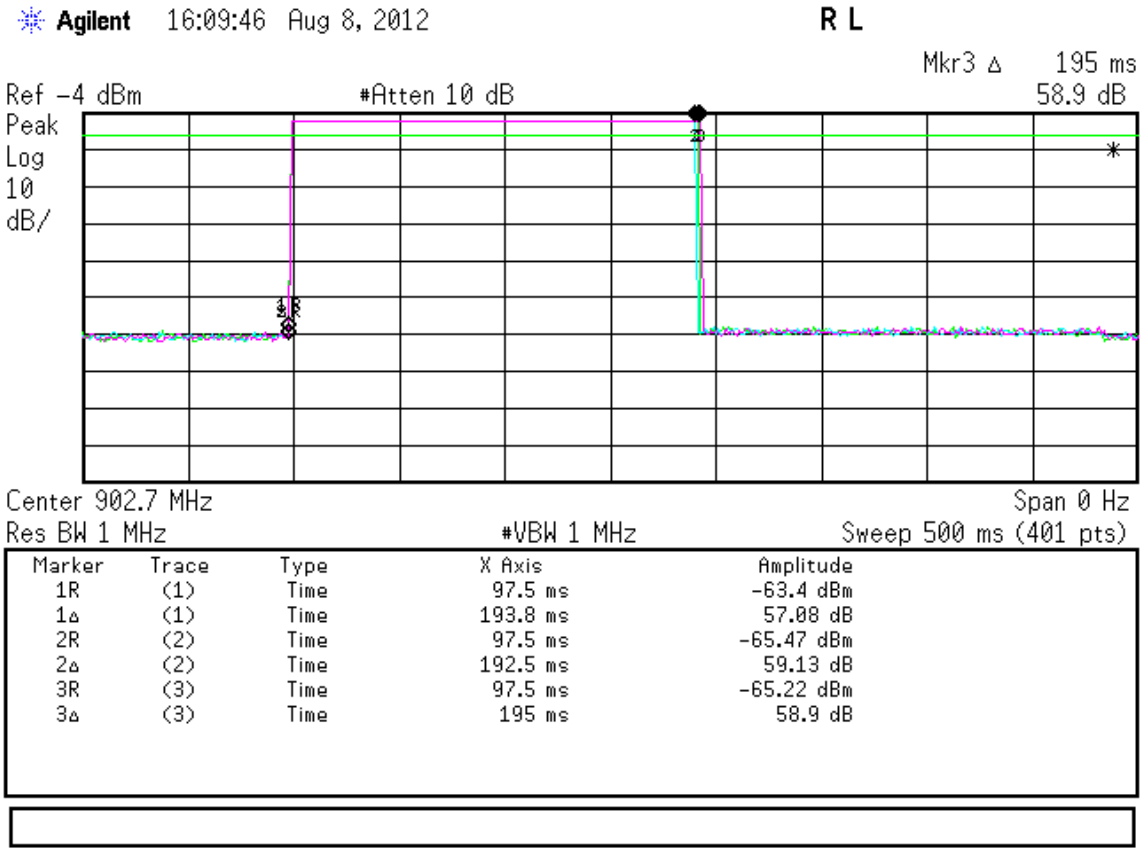
Sample Individual Dwells for 0 tags



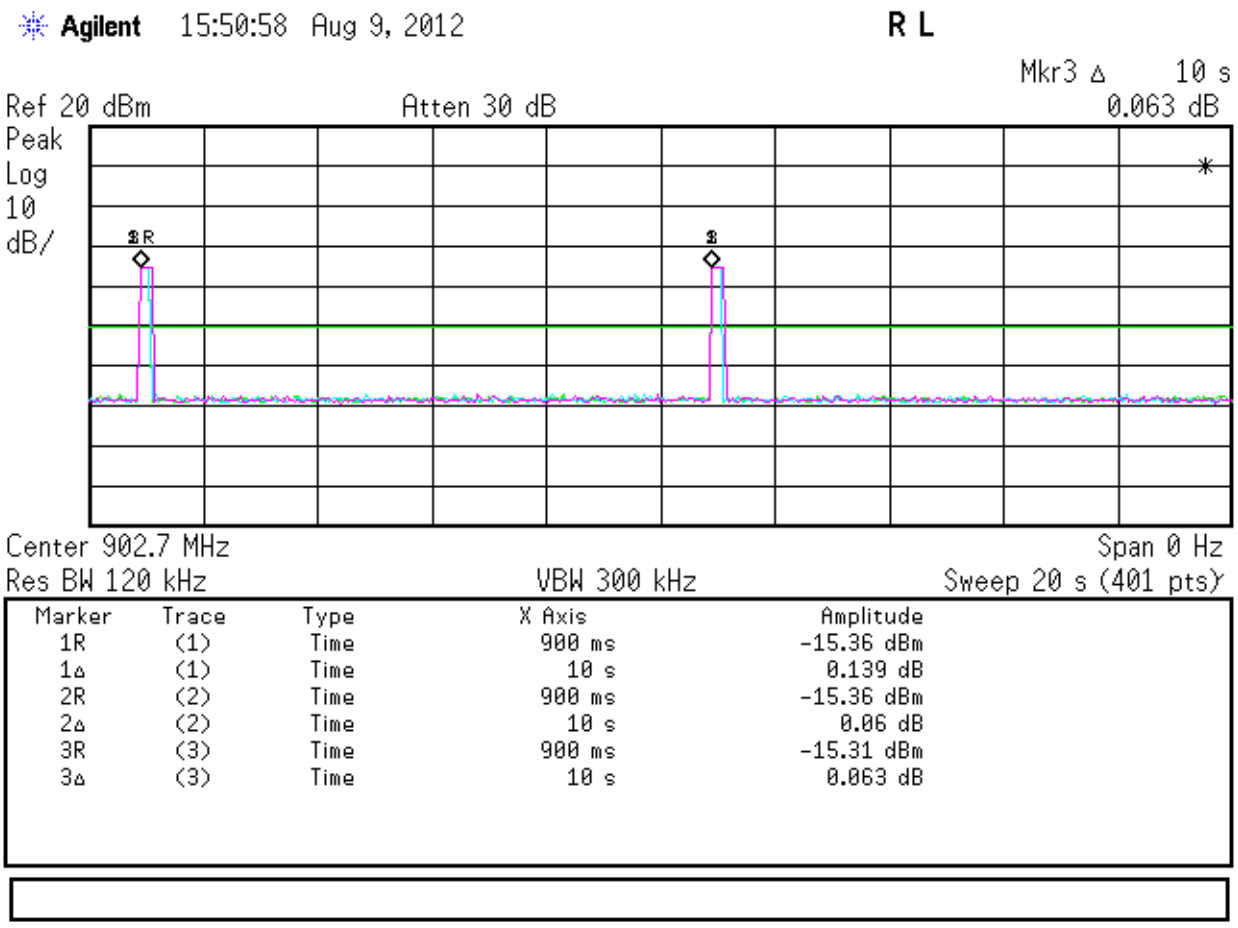
Sample Individual Dwells for 10 tags



Sample Individual Dwells for 125 tags

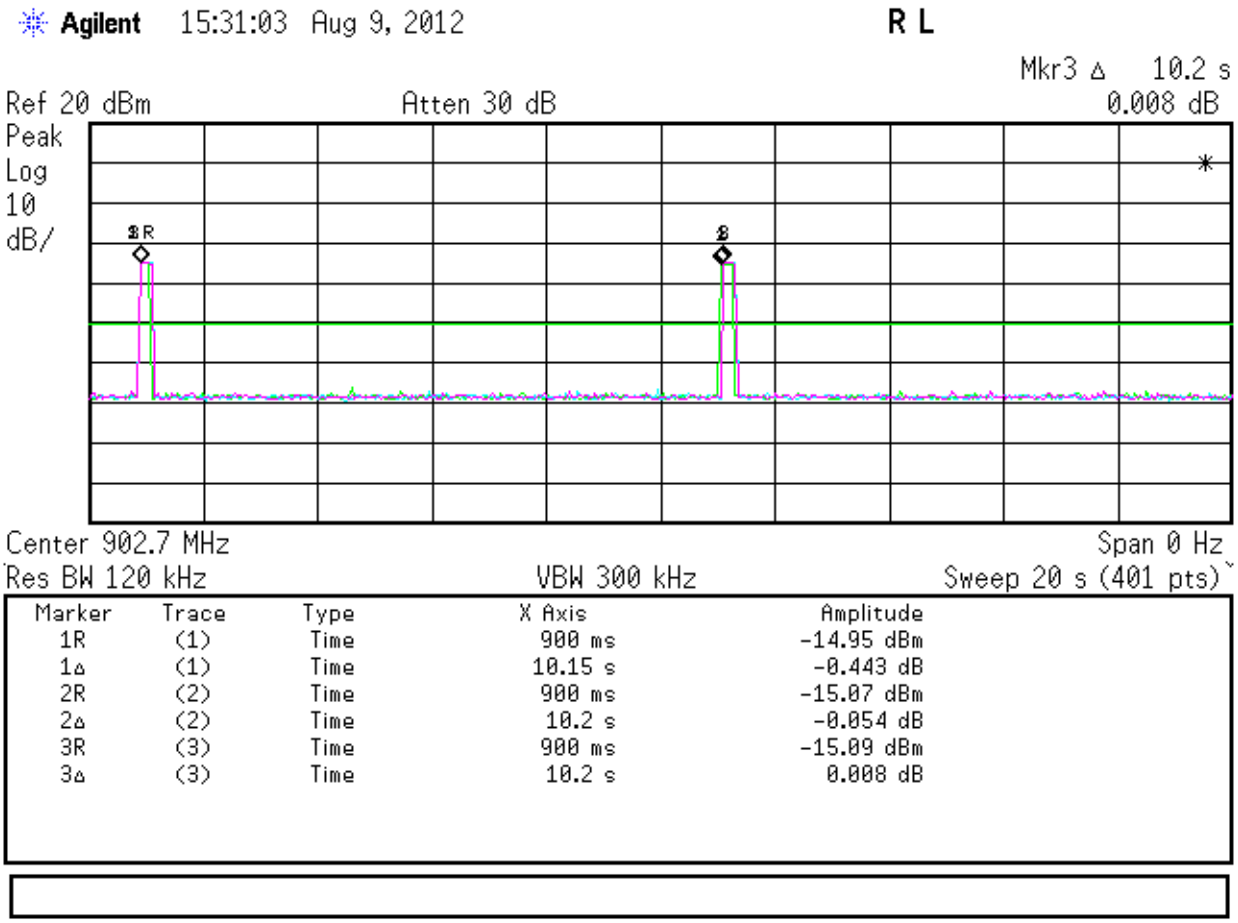


Sample Repetition Rates for 0 tags



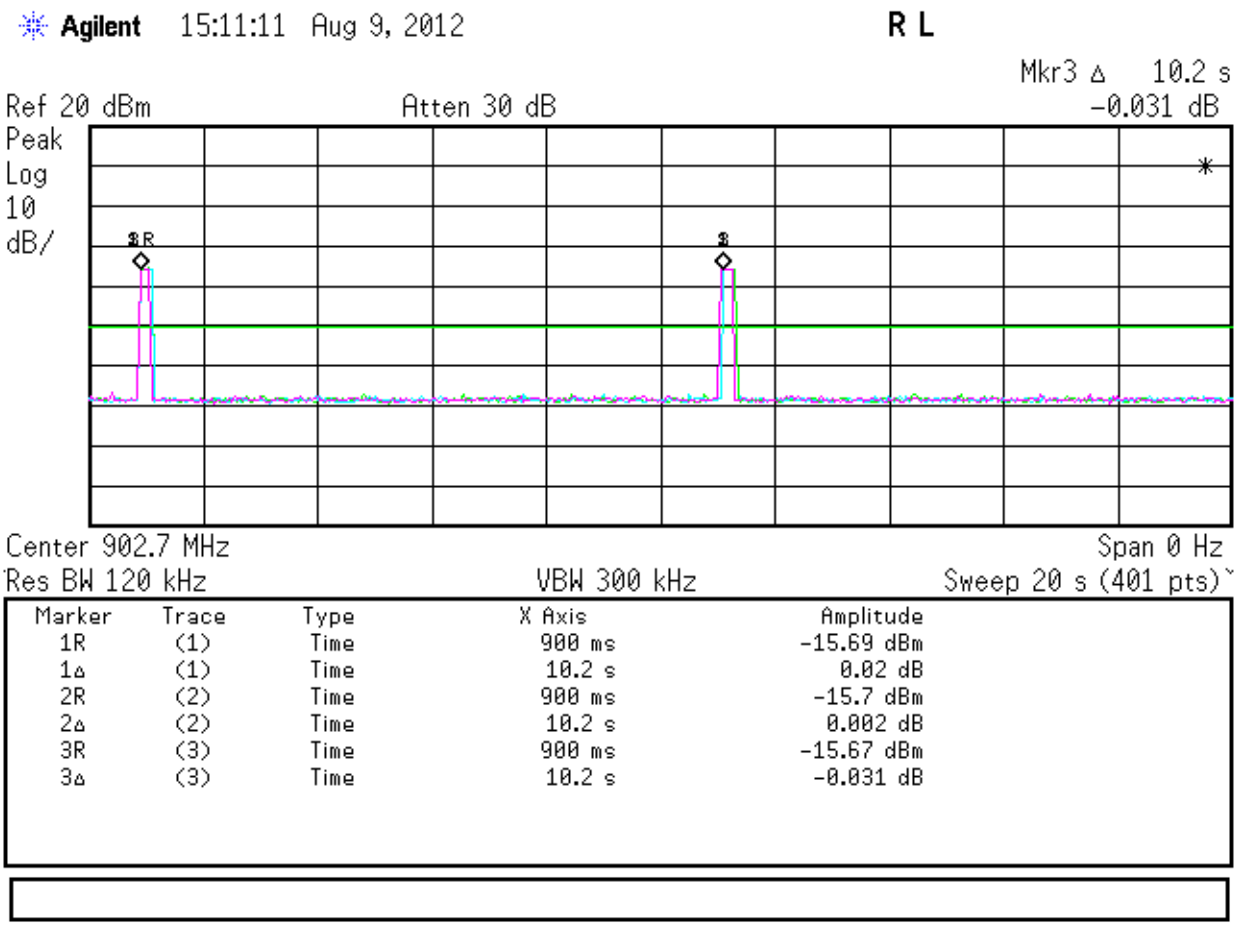
Marker	Trace	Type	X Axis	Amplitude
1R	(1)	Time	900 ms	-15.36 dBm
1Δ	(1)	Time	10 s	0.139 dB
2R	(2)	Time	900 ms	-15.36 dBm
2Δ	(2)	Time	10 s	0.06 dB
3R	(3)	Time	900 ms	-15.31 dBm
3Δ	(3)	Time	10 s	0.063 dB

Sample Repetition Rates for 10 tags



Marker	Trace	Type	X Axis	Amplitude
1R	(1)	Time	900 ms	-14.95 dBm
1Δ	(1)	Time	10.15 s	-0.443 dB
2R	(2)	Time	900 ms	-15.07 dBm
2Δ	(2)	Time	10.2 s	-0.054 dB
3R	(3)	Time	900 ms	-15.09 dBm
3Δ	(3)	Time	10.2 s	0.008 dB

Sample Repetition Rates for 125 tags


Agilent 15:11:11 Aug 9, 2012
R L
Mkr3 Δ 10.2 s
-0.031 dB
Ref 20 dBm
Atten 30 dB
Peak
Log
10
dB/
1R
3
Center 902.7 MHz
Span 0 Hz
Res BW 120 kHz
VBW 300 kHz
Sweep 20 s (401 pts)
Marker Trace Type X Axis Amplitude
1R (1) Time 900 ms -15.69 dBm
1Δ (1) Time 10.2 s 0.02 dB
2R (2) Time 900 ms -15.7 dBm
2Δ (2) Time 10.2 s 0.002 dB
3R (3) Time 900 ms -15.67 dBm
3Δ (3) Time 10.2 s -0.031 dB

Output Power

LIMIT

"The maximum peak conducted output power of the intentional radiator shall not exceed…For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels"
[15.247(b)(2)]

Limit = 30dBm

Engineer	Christopher Reynolds
Date	8/9/12
Site	3M OATS

Environmental Conditions:
26.1℃ 35%rh 1008mB

MEASUREMENTS / RESULTS

Note both antenna ports were measured:

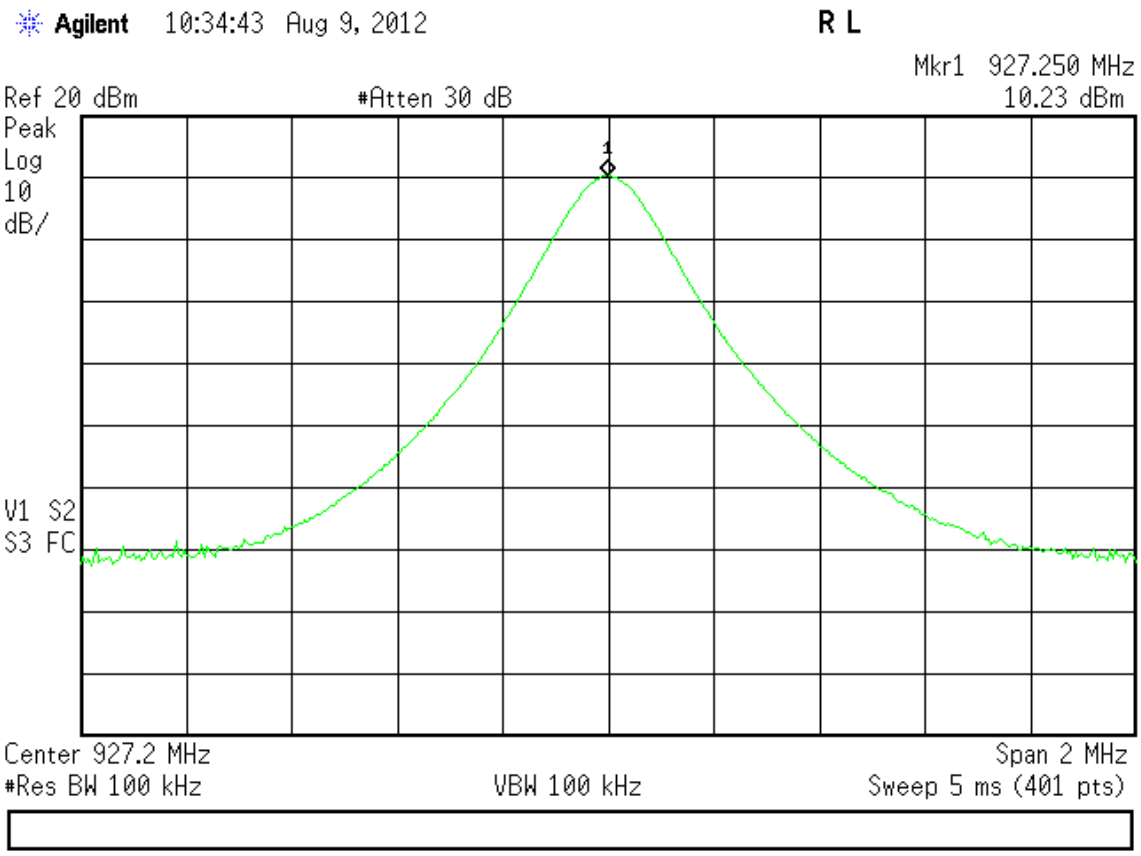
Port 1

Frequency	SA Reading	Connector Factor	Attenuator Factor	Adjusted Reading	Limit	Result
(MHz)	(dBm)	(dB)	(dB)	(dBm)	(dBm)	(Pass/Fail)
902.75	10.23	0.15	19.59	30.0	30	Pass
915.25	10.15	0.15	19.59	29.9	30	Pass
927.25	10.23	0.15	19.59	30.0	30	Pass

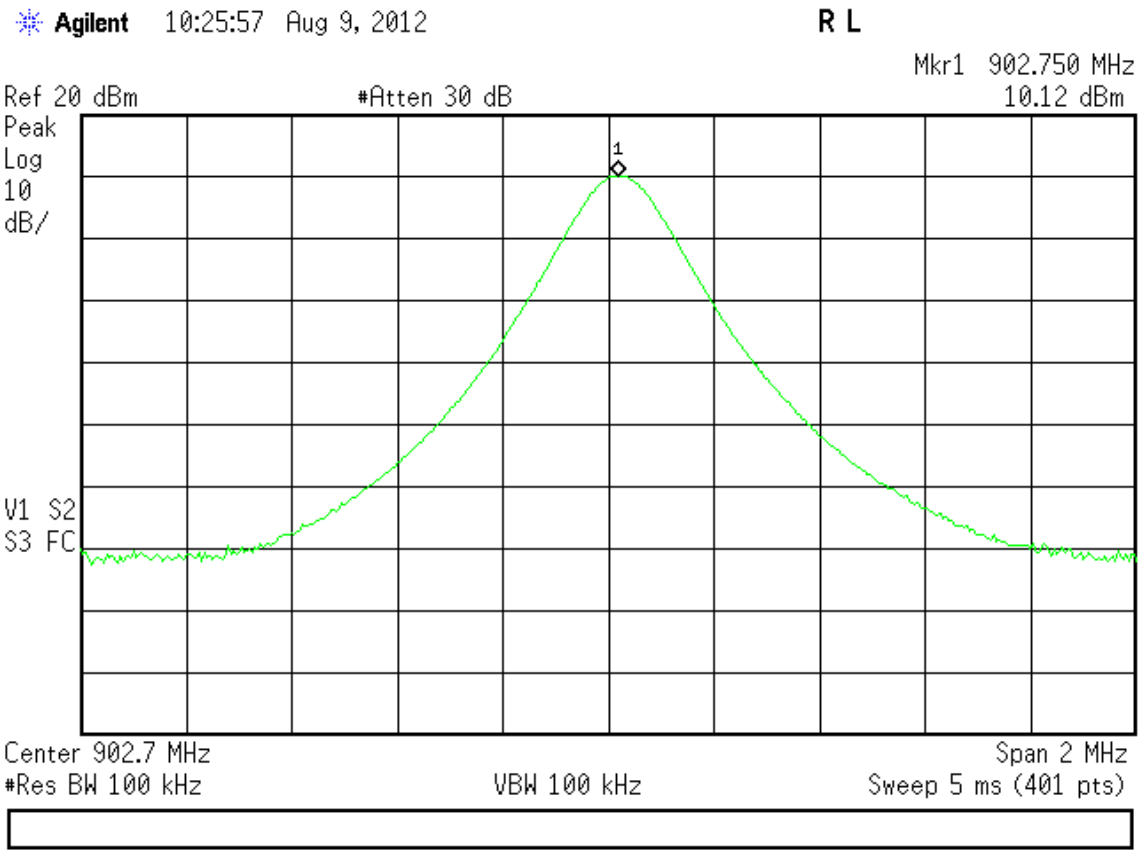
Port 2

Frequency	SA Reading	Connector Factor	Attenuator Factor	Adjusted Reading	Limit	Result
(MHz)	(dBm)	(dB)	(dB)	(dBm)	(dBm)	(Pass/Fail)
902.75	10.12	0.15	19.59	29.9	30	Pass
915.25	10.17	0.15	19.59	29.9	30	Pass
927.25	10.23	0.15	19.59	30.0	30	Pass

POP Sample Plot(s)
Port1



Port 2


Agilent 10:25:57 Aug 9, 2012
R L
Mkr1 902.750 MHz
10.12 dBm
Ref 20 dBm
#Atten 30 dB
Peak
Log
10
dB/
1
V1 S2
S3 FC
Center 902.7 MHz
Span 2 MHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 5 ms (401 pts)

Conducted Spurious Emissions

LIMITS

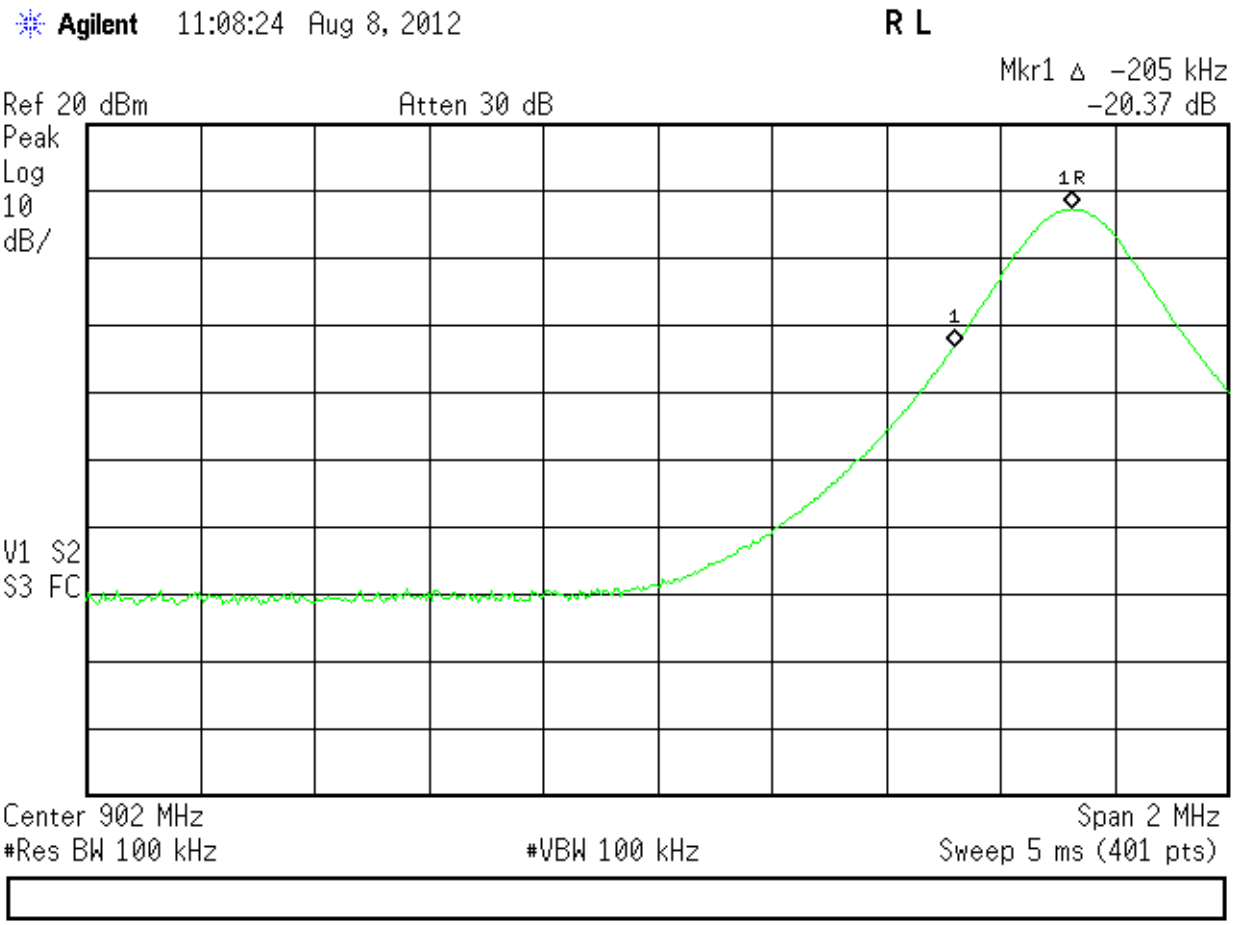
"In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power"
[15.247(d)]

MEASUREMENTS / RESULTS

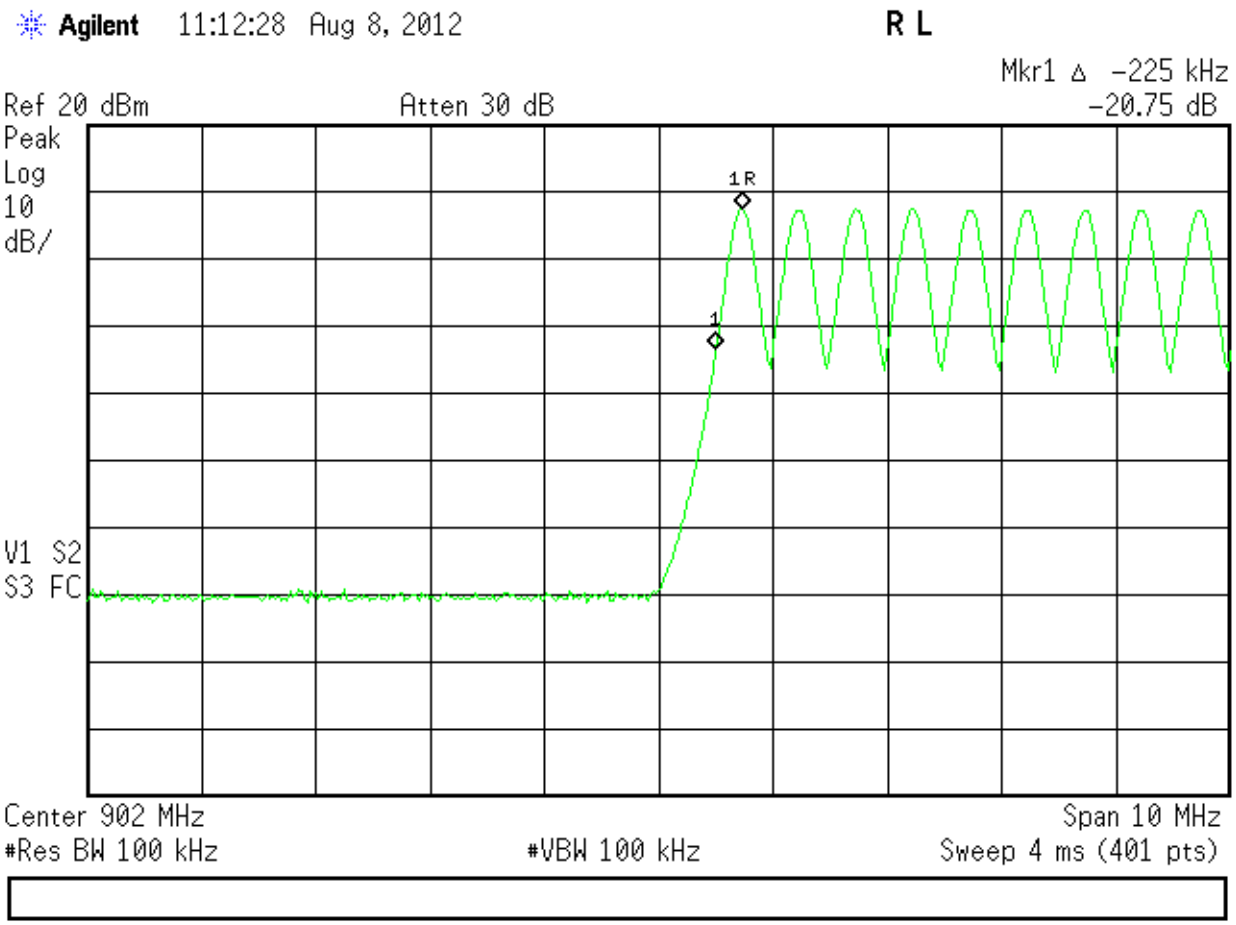
Engineer	Christopher Reynolds
Date	8/9/12
Site	3M OATS

PLOTS

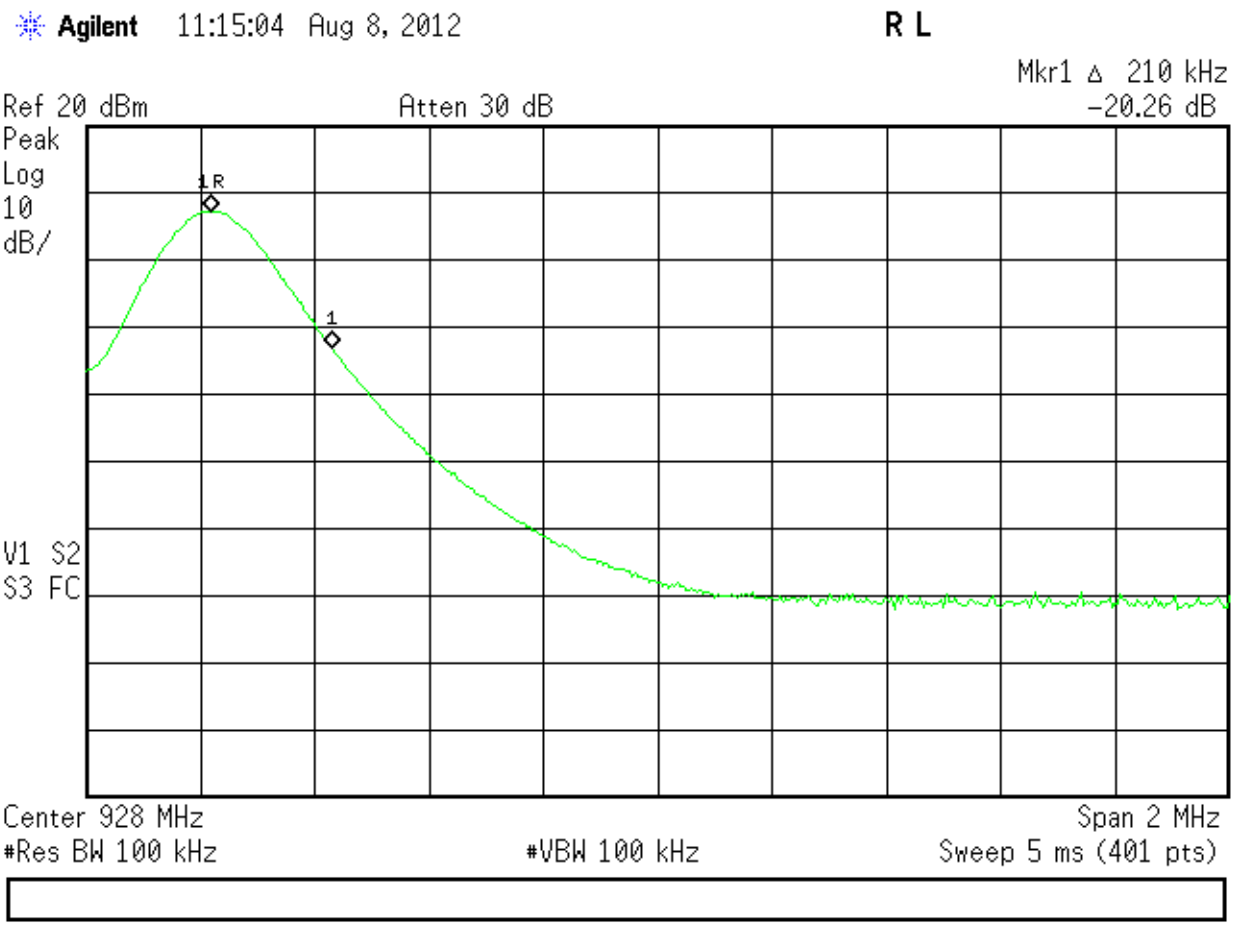
Low Band Edge



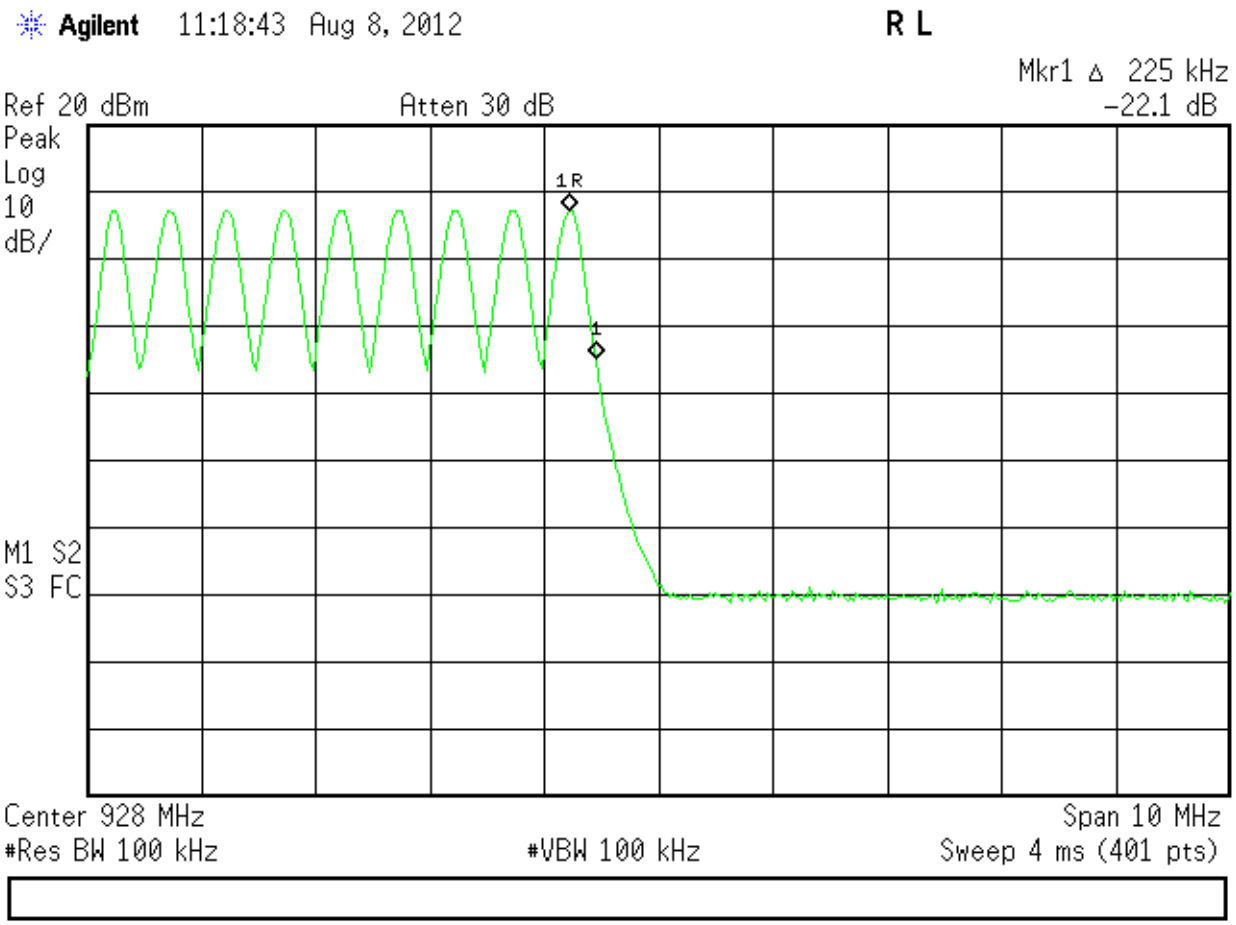
Low Band Edge – Hopping On



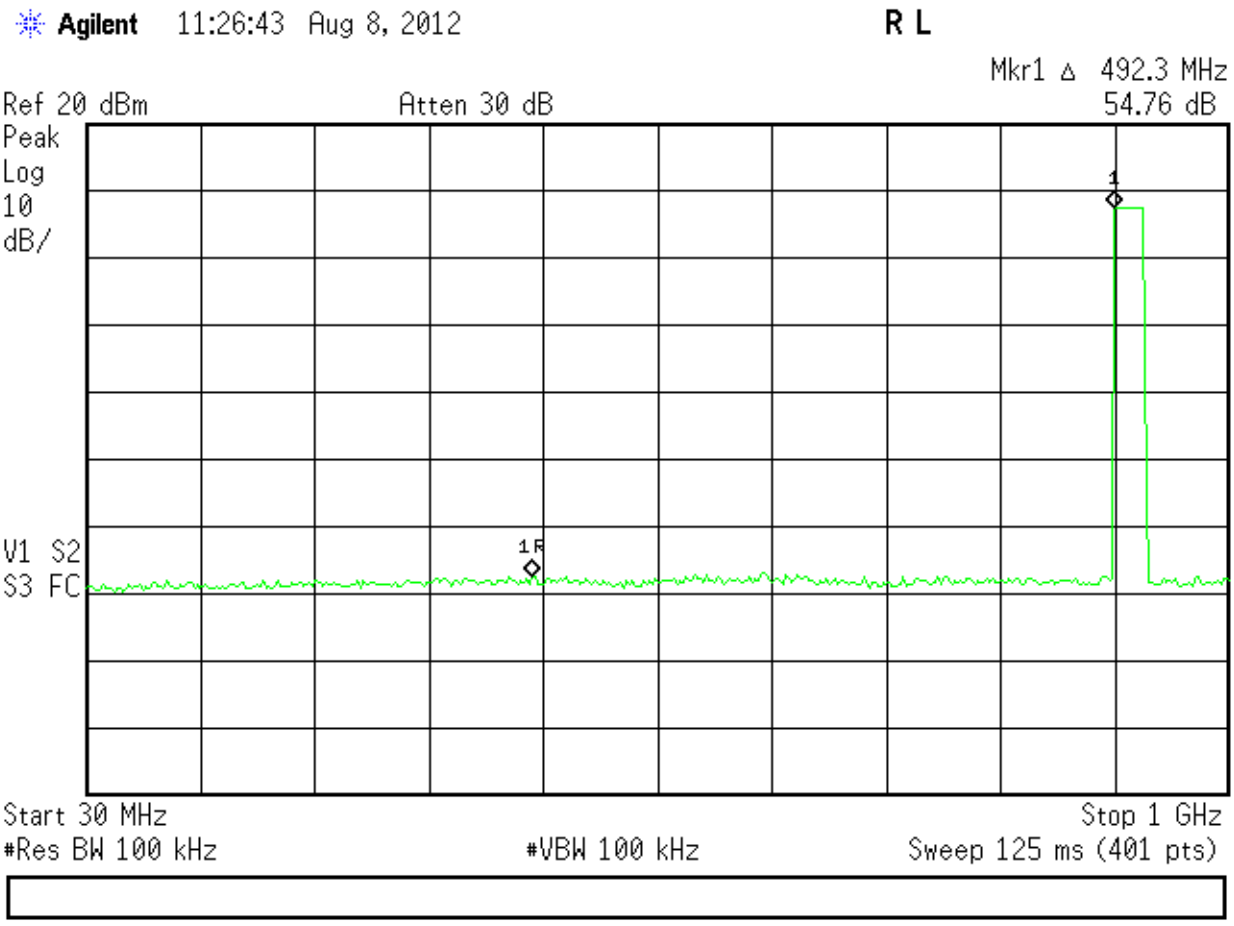
High Band Edge


Agilent 11:15:04 Aug 8, 2012
R L
Mkr1 Δ 210 kHz
-20.26 dB
Ref 20 dBm
Atten 30 dB
Peak
Log
10
dB/
1R
1
V1 S2
S3 FC
Center 928 MHz
Span 2 MHz
#Res BW 100 kHz
#VBW 100 kHz
Sweep 5 ms (401 pts)

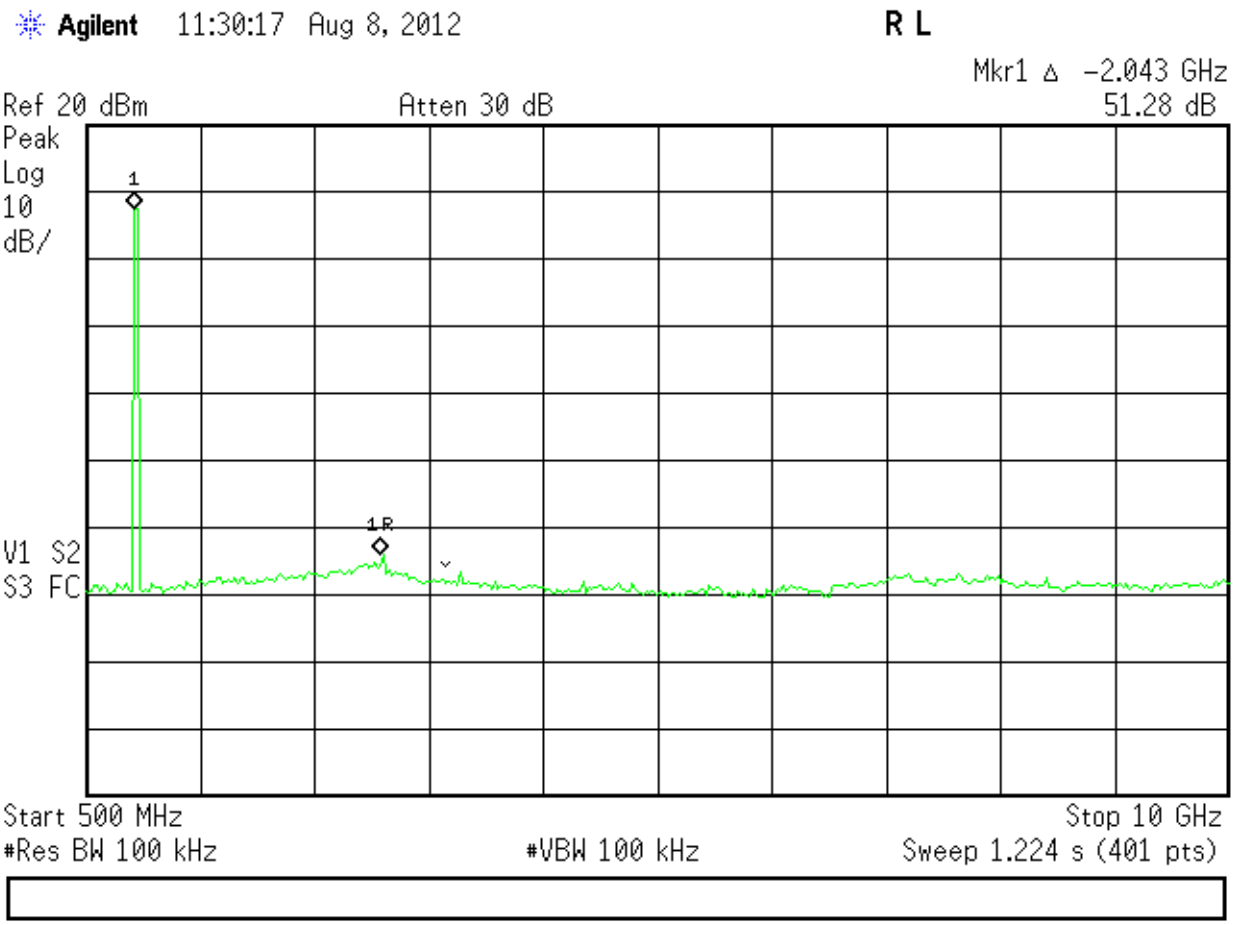
High Band Edge – Hopping On



30-1000MHz


Agilent 11:26:43 Aug 8, 2012
R L
Mkr1 Δ 492.3 MHz
54.76 dB
Ref 20 dBm
Atten 30 dB
Peak
Log
10
dB/
1
1R
V1 S2
S3 FC
Start 30 MHz
#Res BW 100 kHz
#VBW 100 kHz
Stop 1 GHz
Sweep 125 ms (401 pts)

500MHz – 10GHz



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Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due
SA EMI Chamber (1327)	9kHz-13.2 GHz	E4405B	Agilent	MY45103416	1327	I	5/30/2013
Radiated Emissions Sites	**FCC Code**	**IC Code**	**VCCI Code**			**Cat**	**Calibration Due**
1DCC-OATS-3M-I	719150	2762A-8	A-0015			II	9/7/2012
Preamps /Couplers Attenuators / Filters	**Range**	**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
HF 20dB 50W Attenuator	0.009-18 GHz	PE 7019-20	Pasternack	1	791	II	6/1/2013
Meteorological Meters		**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Temp./Humidity/Atm. Pressure Gauge		7400 Perception II	Davis	N/A	965	I	4/4/2013
1DCC-OATS-3M-I Thermohygrometer		35519-044	Control Company	72457635	1334	II	8/19/2013

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

Radiated Spurious Emissions

LIMITS

"…radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) "
[15.247(d)]

MEASUREMENTS / RESULTS

Circular Antenna – 5.1dBi (MN: MT-242025)

Radiated Emissions Table

Date: 07-Aug-12 **Company:** ThingMagic **Work Order:** M2037
Engineer: Chris Reynolds **EUT Desc:** M6e Micro Module **EUT Operating Voltage/Frequency:** 5Vdc
Temp: 24.9℃ **Humidity:** 32% **Pressure:** 1008mBar
Frequency Range: 30-1000MHz **Measurement Distance:** 3 m
Notes:

Antenna Polarization (H / V)	Frequency (MHz)	Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dBµV/m)	CISPR Class B Limit (dBµV/m)	CISPR Class B Margin (dB)	CISPR Class B Result (Pass/Fail)	FCC Class B Limit (dBµV/m)	FCC Class B Margin (dB)	FCC Class B Result (Pass/Fail)
v	36.0	38.6	20.0	17.2	0.4	36.2	40.5	-4.3	Pass	40.0	-3.8	Pass
v	48.0	40.8	20.0	9.2	0.4	30.4	40.5	-10.1	Pass	40.0	-9.6	Pass
v	72.0	41.3	20.0	8.2	0.5	30.0	40.5	-10.5	Pass	40.0	-10.0	Pass
h	366.45	45.1	19.4	14.9	1.2	41.8	47.5	-5.7	Pass	46.0	-4.2	Pass
h	983.0	34.4	18.8	22.8	2.0	40.4	47.5	-7.1	Pass	54.0	-13.6	Pass
h	566.2	35.5	19.1	18.5	1.4	36.3	47.5	-11.2	Pass	46.0	-9.7	Pass

Table Result: Pass by -3.8 dB ***Worst Freq:*** 36.0 MHz

Test Site: EMI Chamber 1 **Cable 1:** Asset #1505 **Cable 2:** Asset #1522 **Cable 3:** ---
Analyzer: Gold **Preamp:** Red **Antenna:** Red-White **Preselector:** ---

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Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due
Gold	100Hz-26.5 GHz	E4407B	Agilent	MY45113816	1284	I	2/3/2013
Radiated Emissions Sites	**FCC Code**	**IC Code**	**VCCI Code**			**Cat**	**Calibration Due**
EMI Chamber 1	719150	2762A-6	A-0015			II	2/16/2014
Preamps /Couplers Attenuators / Filters	**Range**	**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Red	0.009-2000MHz	ZFL-1000-LN	CS	N/A	798	II	4/13/2013
Antennas	**Range**	**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Red-White Bilog	30-2000MHz	JB1	Sunol	A091604-1	1105	I	1/28/2013
Cables	**Range**		**Mfr**			**Cat**	**Calibration Due**
Asset #1505	9kHz - 18GHz		Florida RF			II	2/9/2013
Asset #1522	9kHz - 26.5GHz		Florida RF			II	9/21/2012
Meteorological Meters		**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	3/28/2013
CHAMBER1 Thermohygrometer		35519-044	Control Company	72457642	1345	II	8/19/2013

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

Radiated Emissions Table

Date: 07-Aug-12 **Company:** ThingMagic **Work Order:** M2037
Engineer: Chris Reynolds **EUT Desc:** M6e Micro Module **EUT Operating Voltage/Frequency:** 5Vdc
Temp: 24.9°C **Humidity:** 32% **Pressure:** 1008mBar
Frequency Range: 1-3GHz **Measurement Distance:** 3 m
Notes:

Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBµV)	Average Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBµV/m)	Adjusted Avg Reading (dBµV/m)	FCC Class B High Frequency - Peak			FCC Class B High Frequency - Average		
									Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)
Filter 19				---	---	---	---	---	---	---	---	---	---	---
v	2745.8	44.71	44.7	39.2	29.3	6.3	41.1	41.1	74.0	-32.9	Pass	54.0	-12.9	Pass

Table Result: Pass by -12.9 dB ***Worst Freq:*** 2745.8 MHz

Test Site: EMI Chamber 1 **Cable 1:** Asset #1505 **Cable 2:** EMIR-HIGH-22 **Cable 3:** ---
Analyzer: Gold **Preamp:** Red-Blue **Antenna:** Black Horn **Preselector:** ---

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Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due
Gold	100Hz-26.5 GHz	E4407B	Agilent	MY45113816	1284	I	2/3/2013
Radiated Emissions Sites	**FCC Code**	**IC Code**	**VCCI Code**			**Cat**	**Calibration Due**
EMI Chamber 1	719150	2762A-6	A-0015			II	2/16/2014
Preamps /Couplers Attenuators / Filters	**Range**	**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Red-Blue	1-18GHz	PE2-38-218-4R5-17-15-SFF	CS	NA	1257	II	12/13/2012
High Pass Filter	0.03-8 GHz	VHP-19	Mini-Circuits	NA	1287	II	1/2/2013
Antennas	**Range**	**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Black Horn	1-18GHz	3115	EMCO	9703-5148	56	I	6/29/2013
Cables	**Range**		**Mfr**			**Cat**	**Calibration Due**
Asset #1505	9kHz - 18GHz		Florida RF			II	2/9/2013
REMI-High-22	9kHz - 15GHz		C-S			II	1/31/2013
Meteorological Meters		**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	3/28/2013
CHAMBER1 Thermohygrometer		35519-044	Control Company	72457642	1345	II	8/19/2013

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

Radiated Emissions Table

Date: 07-Aug-12 **Company:** ThingMagic **Work Order:** M2037
Engineer: Chris Reynolds **EUT Desc:** M6e Micro Module **EUT Operating Voltage/Frequency:** 5Vdc
Temp: 24.9°C **Humidity:** 32% **Pressure:** 1008mBar
Frequency Range: 3-10GHz **Measurement Distance:** 1 m
Notes:

Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBµV)	Average Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBµV/m)	Adjusted Avg Reading (dBµV/m)	FCC Class B High Frequency - Peak			FCC Class B High Frequency - Average		
									Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)	Limit (dBµV/m)	Margin (dB)	Result (Pass/Fail)
w- 1311 factored in already				---	---	---	---	---	---	---	---	---	---	---
v	5490.0	55.08	55.1	38.9	35.5	10.2	61.9	61.9	83.5	-21.6	Pass	63.5	-1.6	Pass
v	3661.0	48.1	48.1	38.6	32.7	7.9	50.1	50.1	83.5	-33.4	Pass	63.5	-13.4	Pass
v	7322.1	51.73	51.7	38.7	38.1	11.8	62.9	62.9	83.5	-20.6	Pass	63.5	-0.6	Pass

Table Result: Pass by -0.6 dB ***Worst Freq:*** 7322.1 MHz

Test Site: EMI Chamber 1 **Cable 1:** Asset #1505 **Cable 2:** EMIR-HIGH-22 **Cable 3:** ---
Analyzer: Gold **Preamp:** Red-Blue **Antenna:** Black Horn **Preselector:** ---

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Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due
Gold	100Hz-26.5 GHz	E4407B	Agilent	MY45113816	1284	I	2/3/2013
Radiated Emissions Sites	**FCC Code**	**IC Code**	**VCCI Code**			**Cat**	**Calibration Due**
EMI Chamber 1	719150	2762A-6	A-0015			II	2/16/2014
Preamps /Couplers Attenuators / Filters	**Range**	**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Red-Blue	1-18GHz	PE2-38-218-4R5-17-15-SFF	CS	NA	1257	II	12/13/2012
High Pass Filter	0.03-14.5 GHz	11SH10-3000/T9000-0/0	K&L	1	1311	II	1/2/2013
Antennas	**Range**	**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Black Horn	1-18GHz	3115	EMCO	9703-5148	56	I	6/29/2013
Cables	**Range**		**Mfr**			**Cat**	**Calibration Due**
Asset #1505	9kHz - 18GHz		Florida RF			II	2/9/2013
REMI-High-22	9kHz - 15GHz		C-S			II	1/31/2013
Meteorological Meters		**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	3/28/2013
CHAMBER1 Thermohygrometer		35519-044	Control Company	72457642	1345	II	8/19/2013

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

Linear Antenna – 6dBi (MN:FG9026)

Radiated Emissions Table

Date: 18-Sep-12 **Company:** ThingMagic **Work Order:** M2037
Engineer: Chris Reynolds **EUT Desc:** M6e-Micro Module **EUT Operating Voltage/Frequency:** 5VDC
Temp: 24.6℃ **Humidity:** 34% **Pressure:** 1004mBar
Frequency Range: 1-10GHz **Measurement Distance:** 3 m
Notes: Antenna Mounted Horizontally
Laird Linear 6dbd antenna MN: FG9026, SN:39967

Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBµV)	Average Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBµV/m)	Adjusted Avg Reading (dBµV/m)	FCC Class B High Frequency - Peak Limit (dBµV/m)	FCC Class B High Frequency - Peak Margin (dB)	FCC Class B High Frequency - Peak Result (Pass/Fail)	FCC Class B High Frequency - Average Limit (dBµV/m)	FCC Class B High Frequency - Average Margin (dB)	FCC Class B High Frequency - Average Result (Pass/Fail)
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h	1805.5	57.94	57.9	40.8	26.9	3.4	47.4	47.4	74.0	-26.6	Pass	54.0	-6.6	Pass
v	1805.5	58.74	58.7	40.8	26.9	3.4	48.2	48.2	74.0	-25.8	Pass	54.0	-5.8	Pass
v	2708.3	50.06	50.1	41.0	28.5	4.5	42.1	42.1	74.0	-31.9	Pass	54.0	-11.9	Pass
h	2708.3	50.59	50.6	41.0	28.5	4.5	42.6	42.6	74.0	-31.4	Pass	54.0	-11.4	Pass

Table Result: Pass by -5.8 dB ***Worst Freq:*** 1805.5 MHz

Test Site: EMI Chamber 2 **Cable 1:** Asset #1506 **Cable 2:** Asset #1507 **Cable 3:** ---
Analyzer: Asset #1327 **Preamp:** Red-Green **Antenna:** Yellow Horn **Preselector:** ---

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Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due
SA EMI Chamber (1327)	9kHz-13.2 GHz	E4405B	Agilent	MY45103416	1327	I	5/30/2013
Radiated Emissions Sites	**FCC Code**	**IC Code**	**VCCI Code**			**Cat**	**Calibration Due**
EMI Chamber 2	719150	2762A-7	A-0015			II	2/15/2014
Preamps /Couplers Attenuators / Filters	**Range**	**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Red-Green	1-20GHz	PM2-38-218-4R5-17-15-SFF	CS	N/A	1256	II	6/18/2013
Antennas	**Range**	**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Yellow Horn	1-18GHz	3115	EMCO	9608-4898	37	I	6/17/2013
Cables	**Range**		**Mfr**			**Cat**	**Calibration Due**
Asset #1506	9kHz - 18GHz		Florida RF			II	2/2/2013
Asset #1507	9kHz - 26.5GHz		Florida RF			II	1/31/2013
Meteorological Meters		**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	3/28/2013
CHAMBER2 Thermohygrometer		35519-044	Control Company	72457639	1347	II	8/19/2013

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

AC Line Conducted Emissions

LIMITS

Frequency of emission (MHz)	Quasi-peak limit (dBµV)	Average limit (dBµV)
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.
[47 CFR 15.207(a)]

MEASUREMENTS / RESULTS

AC Side of a DC Supply Conducted Emissions

Date: 09-Aug-12 **Company:** Thing Magic **Work Order:** M2037
Engineer: Chris Reynolds **EUT Desc:** M6e-Micro Module
Temp: 24.9 ºC **Humidity:** 32% **Pressure:** 1006 mBar
Notes:
Frequency Range: 0.15-30MHz **EUT Input Voltage/Frequency:** 5VDC(120VAC, 60Hz)

	Quasi-Peak Readings		Average Readings		LISN Factors				FCC/CISPR Class B			FCC/CISPR Class B		
Frequency (MHz)	QP1 (dBuV)	QP2 (dBuV)	AVG1 (dBuV)	AVG2 (dBuV)	L1 (dB)	L2 (dB)	Cable Factor (dB)	ATTN Factor (dB)	QP Limit (dB)	Margin (dB)	Result (Pass/Fail)	AVG Limit (dB)	Margin (dB)	Result (Pass/Fail)
11.33	7.3	9.0	6.8	6.4	-0.1	-0.2	-0.2	-20.8	60.0	-29.9	Pass	50.0	-22.1	Pass
12.00	21.9	21.7	20.9	20.8	-0.2	-0.2	-0.2	-20.8	60.0	-17.0	Pass	50.0	-8.0	Pass
16.00	14.5	14.4	11.2	10.9	-0.2	-0.3	-0.2	-20.8	60.0	-24.3	Pass	50.0	-17.6	Pass
20.00	19.5	19.4	18.9	18.3	-0.3	-0.4	-0.3	-20.8	60.0	-19.2	Pass	50.0	-9.8	Pass
24.00	18.2	19.3	17.4	17.6	-0.4	-0.5	-0.3	-20.8	60.0	-19.2	Pass	50.0	-10.9	Pass
28.00	18.4	18.5	16.9	16.8	-0.5	-0.6	-0.3	-20.8	60.0	-19.8	Pass	50.0	-11.5	Pass

Result: Pass ***Worst Margin:*** -8.0 dB ***Frequency:*** 12.00 MHz

Measurement Device: 230VAC LISN Asset 1495 **Cable:** CEMI-03 **Spectrum Analyzer:** Yellow
Attenuator: 20dB Atten-4 **Site:** CEMI 2

Rev.8/4/2012

Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due
Yellow	9kHz-2.9GHz	8594E	Agilent	3523A01958	100	I	4/13/2013
LISNs/Measurement Probes	**Range**	**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
230VAC LISN Asset 1495	10kHz-50MHz	9252-50-R-24-BNC	Solar	84716	1495	I	6/7/2013
Conducted Test Sites (Mains / Telco)	**FCC Code**		**VCCI Code**			**Cat**	**Calibration Due**
CEMI 2	719150		A-0015			III	NA
Cables	**Range**		**Mfr**			**Cat**	**Calibration Due**
CEMI-03	9kHz - 2GHz		C-S			II	9/16/2012
Attenuators	**Range**	**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
20dB Atten-4	9kHz-2GHz			N/A		II	12/6/2013
Meteorological Meters		**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	3/28/2013
CEMI2 Thermohygrometer		35519-044	Control Company	72436083	1336	II	8/19/2013

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

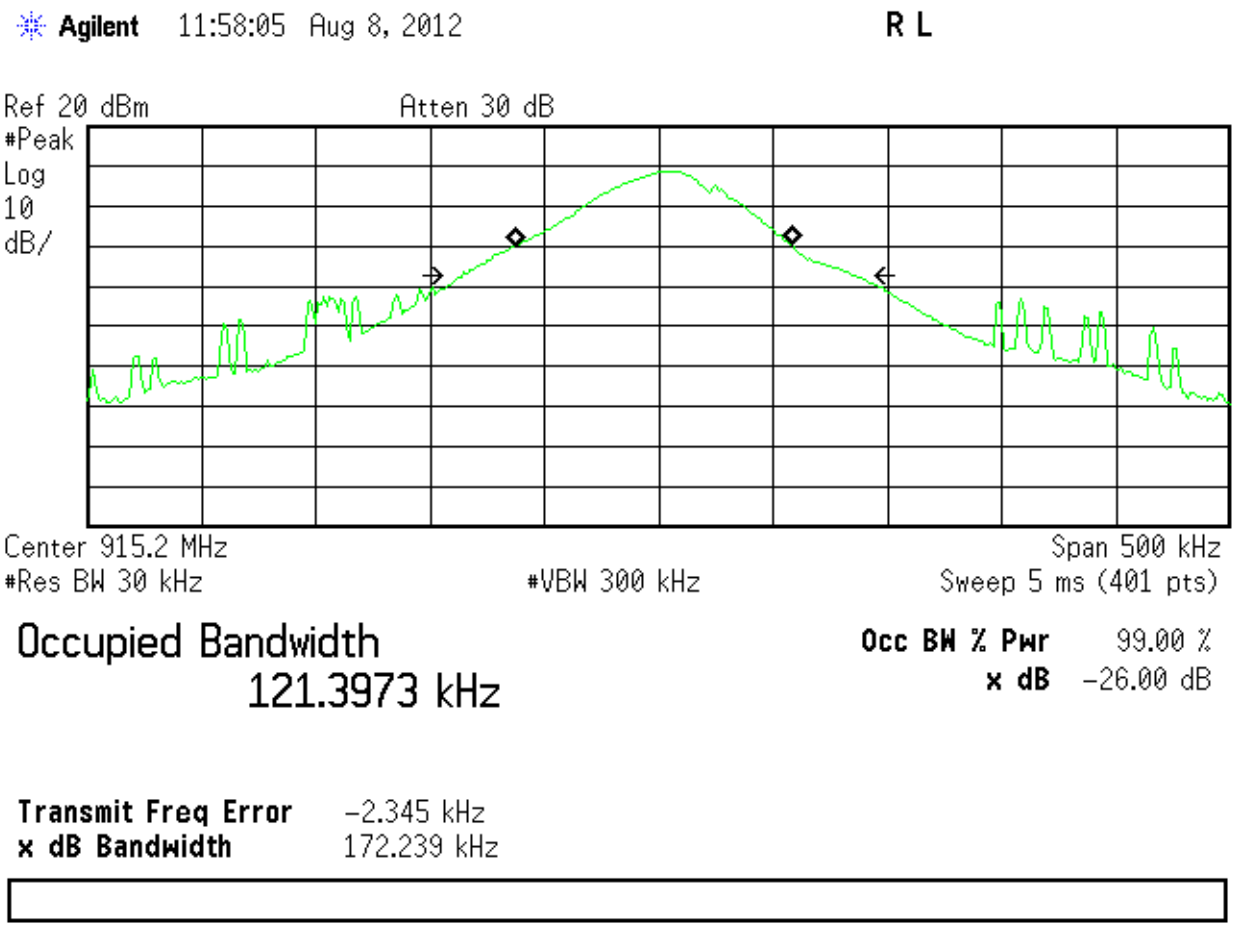
Occupied Bandwidth

REQUIREMENT

When an occupied bandwidth is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99% emission bandwidth, as calculated or measured. [RSS-GEN 4.6.1]

99% Occupied Bandwidth

Engineer	Christopher Reynolds
Date	8/9/12
Site	3M OATS



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Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due
SA EMI Chamber (1327)	9kHz-13.2 GHz	E4405B	Agilent	MY45103416	1327	I	5/30/2013
Radiated Emissions Sites	**FCC Code**	**IC Code**	**VCCI Code**			**Cat**	**Calibration Due**
1DCC-OATS-3M-I	719150	2762A-8	A-0015			II	9/7/2012
Antennas	**Range**	**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Red-Black Bilog	30-2000MHz	JB1	Sunol	A091604-2	1106	I	12/3/2012
Meteorological Meters		**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**
Temp./Humidity/Atm. Pressure Gauge		7400 Perception II	Davis	N/A	965	I	4/4/2013
1DCC-OATS-3M-I Thermohygrometer		35519-044	Control Company	72457635	1334	II	8/19/2013
Cables	**Range**		**Mfr**			**Cat**	**Calibration Due**
REMI-18	9kHz - 2GHz		C-S			II	1/27/2013

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

Measurement Uncertainty

The listed uncertainties are the worst case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

Measurement	Expanded Uncertainty k=2	Maximum allowable uncertainty
Radiated Emissions (30-1000MHz) NIST CISPR	 5.6dB 4.6dB	 N/A 5.2dB (Ucispr)
Radiated Emissions (1-26.5GHz)	4.6dB	N/A
Radiated Emissions (above 26.5GHz)	4.9dB	N/A
Magnetic Radiated Emissions	5.6dB	N/A
Conducted Emissions NIST CISPR	 3.9dB 3.6dB	 N/A 3.6dB (Ucispr)
Telco Conducted Emissions (Current)	2.9dB	N/A
Telco Conducted Emissions (Voltage)	4.4dB	N/A
Electrostatic Discharge	11.5%	N/A
Radiated RF Immunity (Uniform Field)	1.6dB	N/A
Electrical Fast Transients	23.1%	N/A
Surge	23.1%	N/A
Conducted RF Immunity	3dB	N/A
Magnetic Immunity	12.8%	N/A
Dips and Interrupts	2.3V	N/A
Harmonics	3.5%	N/A
Flicker	3.5%	N/A
Radio frequency (@ 2.4GHz)	3.23×10^{-8}	1×10^{-7}
RF power, conducted	0.40dB	0.75dB
Maximum frequency deviation: • Within 300Hz and 6kHz of audio frequency / Within 6kHz and 25kHz of audio frequency	 3.4% 0.3dB	 5% 3dB
Adjacent channel power	1.9dB	3dB
Conducted spurious emission of transmitter, valid up to 12.75GHz	2.39dB	3dB
Conducted emission of receivers	1.3dB	3dB
Radiated emission of transmitter, valid up to 26.5GHz	3.9dB	6dB
Radiated emission of transmitter, valid up to 80GHz	3.3dB	6dB
Radiated emission of receiver, valid up to 26.5GHz	3.9dB	6dB
Radiated emission of receiver, valid up to 80GHz	3.3dB	6dB
Humidity	2.37%	5%
Temperature	0.7°C	1.0°C
Time	4.1%	10%
RF Power Density, Conducted	0.4dB	3dB
DC and low frequency voltages	1.3%	3%
Voltage (AC, <10kHz)	1.3%	2%
Voltage (DC)	0.62%	1%
The above reflects a 95% confidence level		

Conditions Of Testing

[Bureau Veritas Consumer Products Services, Inc., a Massachusetts corporation], and/or its affiliates (collectively, the "Company") will conduct, at the request of the Submitter ("**Client**"), the tests specified on the submitted Test Request Form or equivalent in accordance with, and subject to, the following terms and conditions (collectively, "**Conditions**"):

1. All orders for tests are subject to acceptance by the Company, and no order will constitute a binding commitment of the Company unless and until such order is accepted by it, as evidenced by the issuance of a written report ("**Test Report**") by the Company. The Test Report is issued solely by the Company, is intended for the exclusive use of Client and shall not be published, used for advertising purposes, copied or replicated for distribution to any other person or entity or otherwise publicly disclosed without the prior written consent of the Company. By submitting a request for services to the Company, Client consents to the disclosure to accreditation bodies of those records of Client relevant to the accreditation body's assessment of the Company's competence and compliance with relevant accreditation criteria. The Company shall not be liable for any loss or damage whatsoever resulting from the failure of the Company to provide its services within any time period for completion estimated by the Company. If Client anticipates using the Test Report in any legal proceeding, arbitration, dispute resolution forum or other proceeding, it shall so notify the Company prior to submitting the Test Report in such proceeding. The Company has no obligation to provide a fact or expert witness at such proceeding unless the Company agrees in advance to do so for a separate and additional fee.
2. The Test Report will set forth the findings of the Company solely with respect to the test samples identified therein. Unless specifically and expressly indicated in the Test Report, the results set forth in such Test Report are not intended to be indicative or representative of the quality or characteristics of the lot from which a test sample is taken, and Client shall not rely upon the Test Report as being so indicative or representative of the lot or of the tested product in general. The Test Report will reflect the findings of the Company at the time of testing only, and the Company shall have no obligation to update the Test Report after its issuance. The Test Report will set forth the results of the tests performed by the Company based upon the written information provided to the Company. The Test Report will be based solely on the samples and written information submitted to the Company by Client, and the Company shall not be obligated to conduct any independent investigation or inquiry with respect thereto.
3. The Company may, in its sole discretion, destroy samples which have been furnished to the Company for testing and which have not been destroyed in the course of testing. The Company may delegate the performance of all or a portion of the services contemplated hereunder to an affiliate, agent or subcontractor of the Company, and Client consents to such delegation.
4. These Conditions and the Test Report represent the entire understanding of the parties hereto with respect to the subject matter hereof and of the Test Report, and no modification, variance or extrapolation with respect thereto shall be permitted without the prior written consent of the Company.
5. The names, service marks, trademarks and copyrights of the Company and its affiliates, including the names "**BUREAU VERITAS**," "**BUREAU VERITAS CONSUMER PRODUCTS SERVICES**," "**BVCPS**", "**MTL**", "**ACTS**", "**MTL-ACTS**" and **CURTIS-STRAUS** (collectively, the "**Marks**") are and shall remain the sole property of the Company or its affiliates and shall not be used by Client except solely to the extent that Client obtains the prior written approval of the Company and then only in the manner prescribed by the Company. Client shall not contest the validity of the Marks or take any action that might impair the value or goodwill associated with the Marks or the image or reputation of the Company or its affiliates.
6. Payment in full shall be due 30 days after the date of invoice. Interest shall be due on overdue amounts from the due date until paid at an interest rate of 1.5% per month or, if less, the maximum rate permitted by law. The Company reserves the right, at any time and from time to time, to revoke any credit extended to Client. Client shall reimburse the Company for any costs it incurs in collecting past due amounts, including court costs and fees and expenses of attorneys and collection agencies. The Test Report may not be used or relied upon by Client if and for so long as Client fails to pay when due any invoice issued by the Company or any affiliate of it to Client or any affiliate or subsidiary of Client together with interest and penalties, if any, accrued thereon.
7. The Company disclaims any and all responsibility or liability arising out of or in connection with e-mail transmissions of such information.
8. Client understands and agrees that the Company is neither an insurer nor a guarantor, that the Company does not take the place of Client or any designer, manufacturer, agent, buyer, distributor or transportation or shipping company, and that the Company disclaims all liability in such capacities. Client further understands that if it seeks assurance against loss or damage, it should obtain appropriate insurance.
9. Client agrees that the Company, by providing the services, does not take the place of Client nor any third party, nor does the Company release them from any of their obligations, nor does the Company otherwise assume, abridge, abrogate or undertake to discharge any duty of any third party to Client or any duty of Client or any third party to any other third party, and Client will not release any third party from its obligations and duties with respect to the tested goods.
10. Client shall, on a timely basis, (a) provide adequate instructions to the Company in order to enable the Company to perform properly its services, (b) provide, or cause Client's suppliers and contractors to provide, the Company with all documents necessary to enable the Company to perform its services, (c) furnish the Company with all relevant information regarding Client's intended use and purposes of the tested goods, (d) advise the Company of essential dates and deadlines relevant to the tested goods and (e) fully exercise all rights and remedies available to Client against third parties in respect of the tested goods.
11. The Company shall undertake due care and ordinary skill in the performance of its services to Client, and the Company shall accept responsibility only were such skill has not been exercised and, even in such event, only to the extent of the limitation of liability set forth herein.
12. If Client desires to assert a claim arising from or relating to (i) the performance, purported performance or non-performance of any services by the Company or (ii) the sale, resale, manufacture, distribution or use of any tested goods, it must submit that claim to the Company in a writing that sets forth with particularity the basis for such claim within 60 days from discovery of the potential claim and not more than six months after the date of issuance of the Test Report to Client. Client waives any and all such claims including, without limitation, claims that the Test Report is inaccurate, incomplete or misleading or that additional or different testing is required, unless and then only to the extent that Client submits a written claim to the Company within both such time periods.

13. CLIENT SHALL, EXCEPT TO THE EXTENT OF COMPANY'S LIABILITY TO CLIENT HEREUNDER (WHICH IN NO EVENT SHALL EXCEED THE LIMITATION OF LIABILITY HEREIN), HOLD HARMLESS AND INDEMNIFY THE COMPANY, ITS AFFILIATES AND THEIR RESPECTIVE DIRECTORS, OFFICERS, EMPLOYEES, AGENTS AND SUBCONTRACTORS AGAINST ALL ACTUAL OR ALLEGED THIRD PARTY CLAIMS FOR LOSS, DAMAGE OR EXPENSE OF WHATSOEVER NATURE AND HOWSOEVER ARISING FROM OR RELATING TO (i) THE PERFORMANCE, PURPORTED PERFORMANCE OR NON-PERFORMANCE OF ANY SERVICES BY THE COMPANY OR (ii) THE SALE, RESALE, MANUFACTURE, DISTRIBUTION OR USE OF ANY TESTED GOODS.
14. EXCEPT AS MAY OTHERWISE BE EXPRESSLY AGREED TO IN WRITING BY THE COMPANY AND NOTWITHSTANDING ANY PROVISION TO THE CONTRARY CONTAINED HEREIN OR IN ANY TEST REPORT, NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, IS MADE.
15. (A) IN NO EVENT WHATSOEVER SHALL THE COMPANY BE LIABLE FOR ANY CONSEQUENTIAL, SPECIAL, INCIDENTAL, EXEMPLARY OR PUNITIVE DAMAGES IN CONNECTION WITH, RELATING TO OR ARISING OUT OF THE TEST REPORT OR THE SERVICES PROVIDED BY THE COMPANY HEREUNDER, INCLUDING WITHOUT LIMITATION LOSS OF OR DAMAGE TO PROPERTY; LOSS OF INCOME, PROFIT OR USE; OR ANY CLAIMS OR DEMANDS MADE AGAINST CLIENT OR ANY OTHER PERSON BY ANY THIRD PARTY IN CONNECTION WITH, RELATING TO OR ARISING OUT OF THE SERVICES PROVIDED BY THE COMPANY HEREUNDER.

(B)NOTWITHSTANDING ANY PROVISION TO THE CONTRARY CONTAINED HEREIN, AND IN RECOGNITION OF THE RELATIVE RISKS AND BENEFITS TO CLIENT AND THE COMPANY ASSOCIATED WITH THE TESTING SERVICES CONTEMPLATED HEREBY, THE RISKS HAVE BEEN ALLOCATED SUCH THAT UNDER NO CIRCUMSTANCES WHATSOEVER SHALL THE LIABILITY OF THE COMPANY TO CLIENT OR ANY THIRD PARTY IN RESPECT OF ANY CLAIM FOR LOSS, DAMAGE OR EXPENSE, OF WHATSOEVER NATURE OR MAGNITUDE, AND HOWSOEVER ARISING, EXCEED AN AMOUNT EQUAL TO FIVE (5) TIMES THE AMOUNT OF THE FEES PAID TO THE COMPANY FOR THE SPECIFIC SERVICES WHICH GAVE RISE TO SUCH CLAIM OR U.S.$10,000, WHICHEVER IS THE LESSER AMOUNT.
16. The Company shall not be liable for any loss or damage resulting from any delay or failure in performance of its obligations hereunder resulting directly or indirectly from any event of force majeure or any event outside the control of the Company. If any such event occurs, the Company may immediately cancel or suspend its performance hereunder without incurring any liability whatsoever to Client.
17. Company's services, including these Conditions, shall be governed by, and construed in accordance with, the local laws of the country where the Company performs the tests or, in the case of tests performed in the United States of America, the laws of Massachusetts without regard to conflicts of laws principles. If any aspect(s) of these Conditions is found to be illegal or unenforceable, the validity, legality and enforceability of all remaining aspects of these Conditions shall not in any way be affected or impaired thereby. Any proceeding related to the subject matter hereof shall be brought, if at all, in the courts of the country where the Company performs the tests or, in the case of tests performed in the United States of America, in the courts of Massachusetts. Client waives the right to interpose any counterclaim or setoffs of any nature in any litigation arising hereunder.

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