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FCC Part 15, Subpart C, Section 15.247
Test Report

On

Blink Camera
FCC ID: 2AF77-BCM00100U

Customer Name:	Immedia Semiconductor
Customer P.O:	H109215-1A2
Date of Report Revision:	November 20, 2015
Test Report No:	R-6022N-3, Rev. A
Test Start Date:	October 2, 2015
Test Finish Date:	October 6, 2015
Test Technician:	M. Seamans
Revision Approved By:	S. Wentworth
Report Revision Prepared By:	J. Ramsey

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Technical Information

Report Number:	R-6022N-3, Rev. A
Customer:	Immedia Semiconductor
Address:	100 Burtt Road, Suite 100
	Andover, MA 01810
Manufacturer:	Immedia Semiconductor
Manufacturer Address:	100 Burtt Road, Suite 100
	Andover, MA 01810
Test Sample:	Blink Camera (Wifi Connected Home Security Camera)
Model Number:	BCM00100U
FCC ID:	2AF77-BCM00100U
Type:	Digital Transmission - Direct Sequence Spread Spectrum Transmitter
Power Requirements:	5VDC Via 120 VAC, 60 Hz AC/DC Power Adapter
Power Supply:	AC Adapter, Flypower, Model PS06B050K1000UU
Frequency of Operation:	2412.0 MHz to 2472.0 MHz
Equipment Class:	DTS
Equipment Use:	Used in a Home Monitoring System

Test Specification:
FCC Rules and Regulations Part 15, Subpart C, Section 15.247

Test Procedure:
ANSI C63.4:2009

Test Facility:
Retlif Testing Laboratories
101 New Boston Road
Goffstown, NH 03045

FCC Registered Test Site Number: 90899

Tests Performed

FCC Part 15, Subpart C	Test Method
15.247(a)(2)	Occupied Bandwidth (6dB Bandwidth)
15.247(b)(3)	Power Output
15.247(d)	Antenna Port, Conducted Emissions
15.247(e)	Antenna Port, Power Density
15.247(d)	Spurious Radiated Emissions, 30 MHz to 25 GHz
15.207(b)	Conducted Emissions, Power Leads, 150 kHz to 30 MHz

EUT Operation:
The Blink Camera operates using only 802.11n20 protocol. The EUT was evaluated in all possible data rates and the lowest data rate of 1Mbps was used for testing as this data rate resulted in the highest output power and worst case emissions.

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.

Scott Wentworth
Branch Manager
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.

Revision History

Revisions to this document are listed below; the latest revised document supersedes all previous issues of this document:

Revision	Date	Pages Affected
-	November 9, 2015	Original Release
A	November 20, 2015	Global Changes: • Revised document from R-6022N-3 to R-6022N-3, Rev. A • Removed all references and information regarding Industry Canada testing 3: • Added EUT operation description 10: • Added calculations 24: • Revised data sheet

Requirements and Test Results

Requirement:
FCC Section 15.247(a)(2)
Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz
Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz bands. The minimum 6 dB bandwidths shall be at least 500 kHz.

- **Results**:
  The minimum 6 dB bandwidth measured 9068 kHz which complies with the requirement that the Bandwidth be no less than 500 kHz.

Requirement:
FCC Sections 15.247(b)(3)
Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz
The maximum peak conducted output power of the intentional radiator shall not exceed the following:

For systems using digital modulation in the 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antenna and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antenna and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

- **Results**:
  The maximum measured peak conducted output power was 103.6 mW. The maximum antenna gain of the PCB antenna is 1.5 dBi. The device was found to meet the power output requirements of 15.247 (b)(3) including de facto EIRP.

Requirements and Test Results (con't)

Requirement:
FCC Section 15.247(d):
Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz
In any 100 kHz 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 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) must also comply with the radiated emissions limits specified in Section 15.209(a) (see Section 15.205(c)).

- **Results**:
  In any 100 kHz bandwidth outside the frequency band in which the Spread spectrum intentional radiator was operating, the radio frequency power that was produced by the intentional radiator was at least 20 dB below that in the 100 kHz bandwidth within the band that contained the highest level of the desired power. All emissions, which fell within the restricted bands specified in 15.205(a), were measured and found to be in compliance with the limits specified in 15.209(a).

Requirements and Test Results (con't)

Requirement:
FCC Section 15.247(e):
Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

- **Results**:
  The power spectral density conducted from the intentional radiator to the antenna was not greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density was determined in accordance with Section 15.247(b)(3), herein.

Requirement:
FCC Section 15.209(a) - Radiated Emission Limits, General Requirements
Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in Table 1.

Table 1 - Radiated Emission Limits

Frequency of Emission (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 to 88	100	3
88 to 216	150	3
216 to 960	200	3
Above 960	500	3

- **Results**:
  The field strength of spurious radiated emissions did not exceed the limits specified in Table 1.

Requirements and Test Results (con't)

Requirement:
FCC Section 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 2, 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 applies at the boundary between the frequency ranges.

Table 2 - 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 2.

Requirements and Test Results (con't)

Field Strength Calculation/Conversion:

The maximized field strength of the emission was obtained as follows:

$C_R = M_R + C_F$

Where:
C_R = Corrected Reading in dBµV/m
M_R = Uncorrected Meter Reading in dBµV
C_F = Correction Factor in dB (Antenna Factor, Pre-amp + Cable Loss)

Example:

M_R = 15.35 dBµV
C_F = 16.85 dB
C_R = 15.35 dBuV + 16.85 = 32.2 dBµV/m

dBµV/M is converted to uV/M for comparison to the specified limit using the formula:

invLog dBµV/M/20

32.2 dBuV/m = 40.74 uV/m

RF Power Conversion:

Power readings in dBm may be converted to mW using the formula:

InvLog dBm/10

Example: 20dBm = 100mW

Requirements and Test Results (con't)

FCC Section 15.247 (i)
RF Exposure Limits

Spread Spectrum Transmitters operating under 15.247 must be operated in a manner that ensures the public is not exposed to RF energy levels in access of the commission's guidelines. Based on the transmitter power and maximum antenna gain (see calculation below) the minimum separation distance was calculated to determine the distance for acceptable MPE power density levels to meet both the Occupational/Controlled Exposure and the General Population/Uncontrolled Exposure requirements of FCC Part 1.1310. The calculation below uses the more stringent General Population MPE Limits.

$$S = \frac{PG}{4\prod Dsq}$$

D = Minimum Separation Distance in cm

S = Max allowed Power Density in mW/cmsq

Per 1.1310 For the Frequency of 2400 MHz S = 1 mW/cmsq

Power = Max Power Input to Antenna = 103.6 mW

Gain = Max Power Gain of Antenna = 1.5 dBi = 1.41 numeric

$$1.0 \text{ mW/cmsq} = \frac{103.6x1.41}{4x(3.14)xD\text{^}2} = \frac{146.08}{12.56xD\text{^}2}$$

$$D\text{^}2 = \frac{146.08}{12.56x1.0}$$

$$D = \sqrt{11.63} = 3.4 \text{ cm}$$

The test sample has an internal antenna and the minimum separation distance will always be maintained.

Equipment List

FCC Section 15.247(a)(2)
Occupied Bandwidth (6 dB Bandwidth)

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
5070	ROHDE & SCHWARZ	RECEIVER, EMI	20 Hz - 40 GHz	ESIB40	10/29/2014	10/31/2016
5137	NARDA MICROWAVE	ATTENUATOR, COAXIAL	10 dB, DC - 11 GHz, 20 W	768-10	10/28/2014	10/31/2015

FCC Section 15.247(b)(3)
Power Output

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
5070	ROHDE & SCHWARZ	RECEIVER, EMI	20 Hz - 40 GHz	ESIB40	10/29/2014	10/31/2016
5137	NARDA MICROWAVE	ATTENUATOR, COAXIAL	10 dB, DC - 11 GHz, 20 W	768-10	10/28/2014	10/31/2015

FCC Section 15.247(d)
Antenna Port, Conducted Emissions

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
5070	ROHDE & SCHWARZ	RECEIVER, EMI	20 Hz - 40 GHz	ESIB40	10/29/2014	10/31/2016
5137	NARDA MICROWAVE	ATTENUATOR, COAXIAL	10 dB, DC - 11 GHz, 20 W	768-10	10/28/2014	10/31/2015

FCC Section 15.247(e)
Antenna Port, Power Density

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
5070	ROHDE & SCHWARZ	RECEIVER, EMI	20 Hz - 40 GHz	ESIB40	10/29/2014	10/31/2016
5137	NARDA MICROWAVE	ATTENUATOR, COAXIAL	10 dB, DC - 11 GHz, 20 W	768-10	10/28/2014	10/31/2015

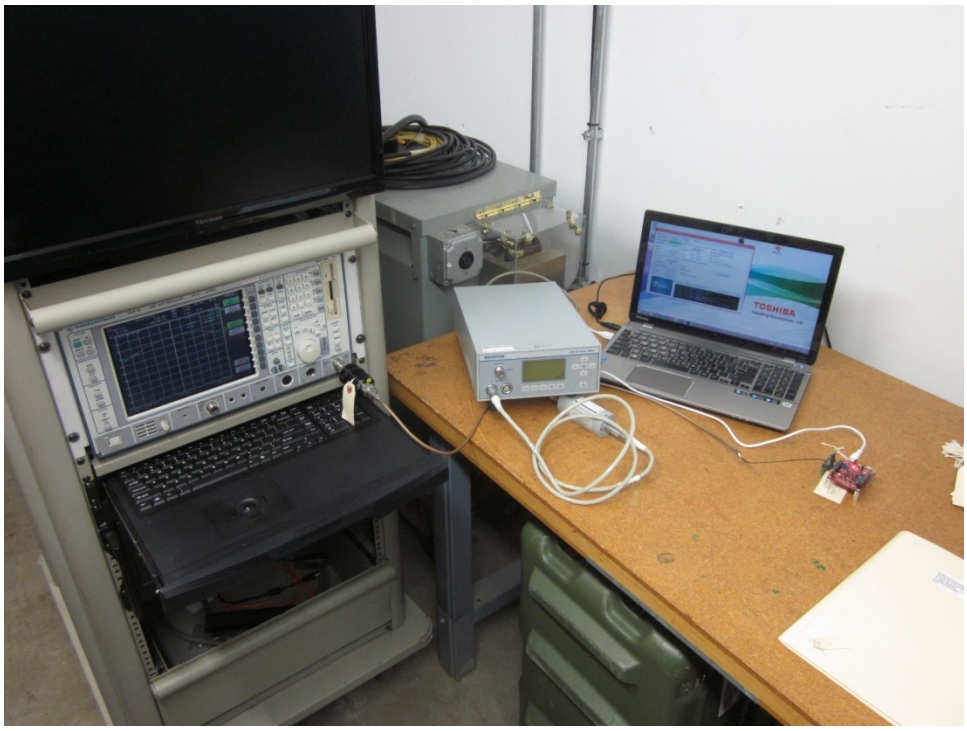
FCC Section 15.247(d)
Spurious Radiated Emissions, 30 MHz to 10 GHz

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
1232	AGILENT / HP	PRE-AMPLIFIER	1 - 26.5 GHz	8449B	6/17/2015	6/30/2016
3258	ETS / EMCO	ANTENNA, DOUBLE RIDGED GUIDE	1 - 18 GHz	3115	3/24/2015	9/30/2016
3430	MCS	ANTENNA, HORN	18 - 26.5 GHz	K-5039	No Calibration Required	
4029	RETLIF	OPEN AREA TEST SITE, FILING	3 / 10 Meters	RNH	5/15/2013	5/31/2016
5053	ETS / EMCO	ANTENNA, BICONILOG	26 MHz - 3 GHz	3142C	2/24/2015	8/31/2016
R462	AGILENT / HP	ANALYZER, SPECTRUM	9 kHz - 26.5 GHz	E7405A	1/8/2015	1/31/2016

FCC Section 15.207(b)
Conducted Emissions, Power Leads, 150 kHz to 30 MHz

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
4027	SOLAR ELECTRONICS	LISN	50 uH, 10 kHz - 50 MHz	9252-50-R-24-BNC	2/23/2015	2/29/2016
5070	ROHDE & SCHWARZ	RECEIVER, EMI	20 Hz - 40 GHz	ESIB40	10/29/2014	10/31/2016
5137	NARDA MICROWAVE	ATTENUATOR, COAXIAL	10 dB, DC - 11 GHz, 20 W	768-10	10/28/2014	10/31/2015
5188	Cybertron	COMPUTER, CONTROL	N/A	TSVQJA2221	No Calibration Required	

Test Photographs
Occupied Bandwidth (6dB Bandwidth)

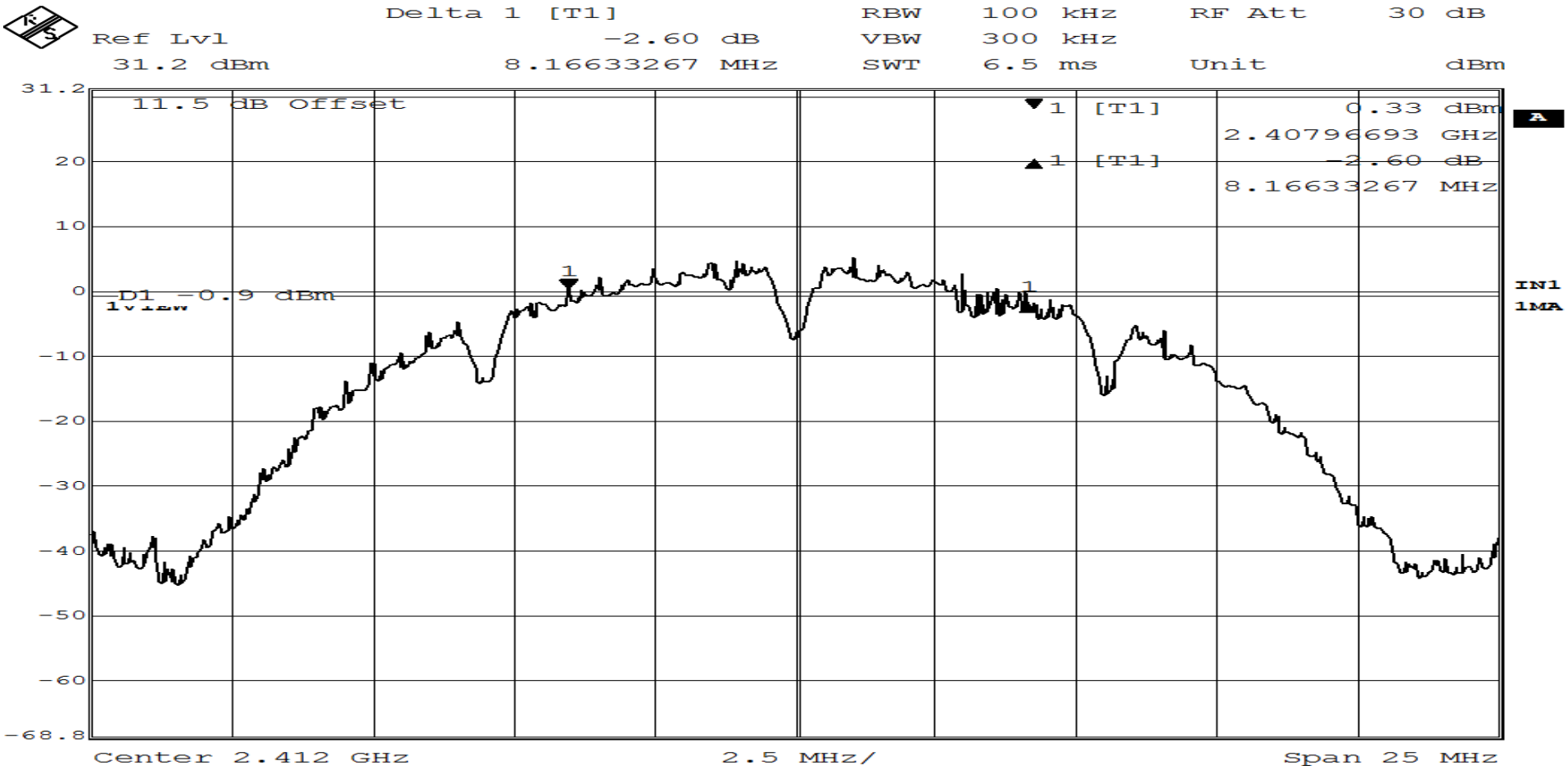


Test Setup

FCC Part 15, Subpart C, Section 15.247(a)(2)
Occupied Bandwidth (6 dB Bandwidth)
Test Data

RETLIF TESTING LABORATORIES

Test Method	6dB Channel Bandwidth		
Customer	Immedia Semiconducter	**Job No.**	R-6022N-3
Test Sample	WiFi Connected Home Security Camera		
Model Number	BCM00100U	**Serial No.**	100-006-159
Operating Mode	Transmitting modulated Data		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (a)(2)		
Technician	M. Seamans	**Date**	October 2nd, 2015
Climatic Conditions	Temp: 20.0 °C Relative Humidity: 42.0 %		
Notes	Transmit Frequency: 2412 MHz 6dB Bandwidth: 8.166 MHz		



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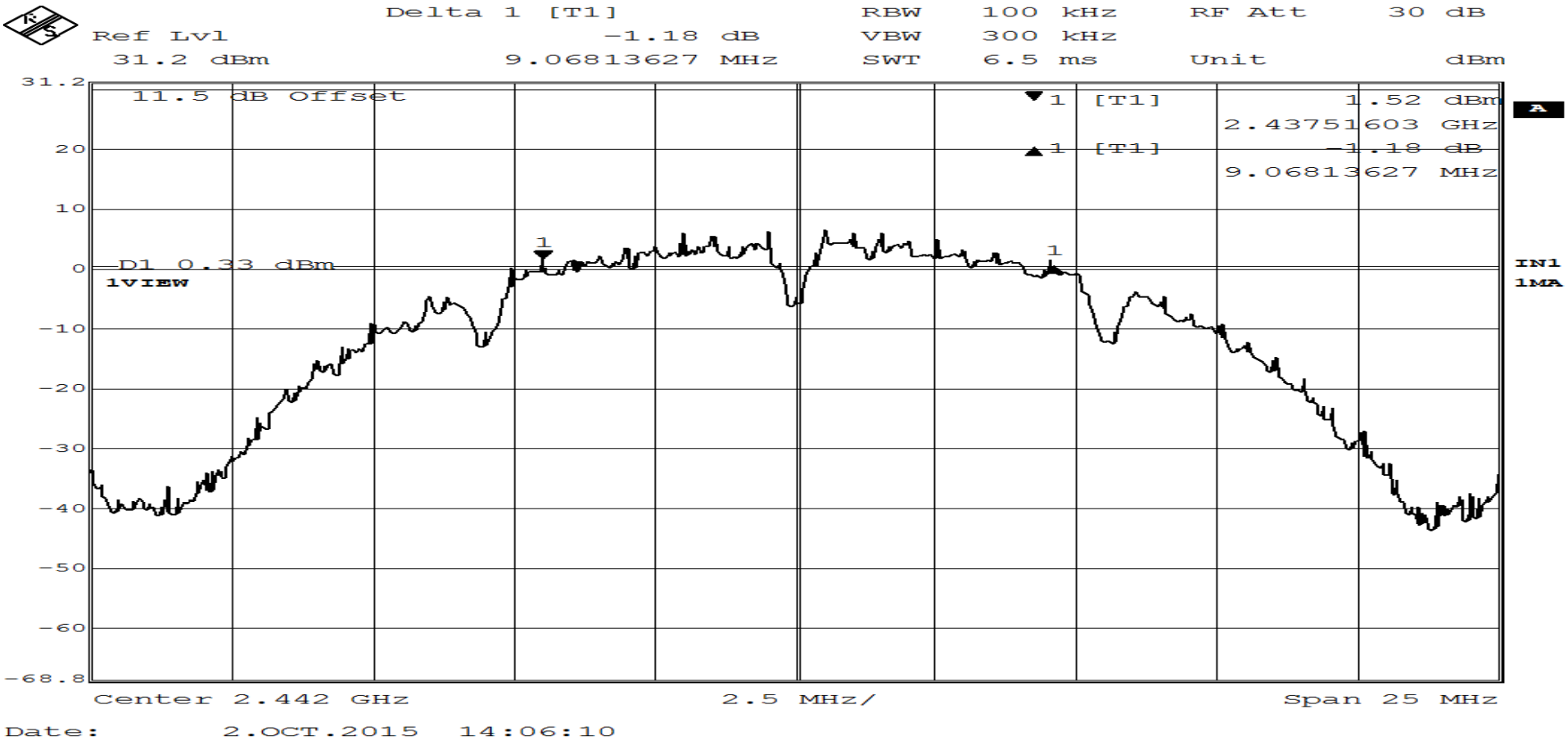
RETLIF TESTING LABORATORIES

Test Method	6dB Channel Bandwidth		
Customer	Immedia Semiconducter	**Job No.**	R-6022N-3
Test Sample	WiFi Connected Home Security Camera		
Model Number	BCM00100U	**Serial No.**	100-006-159
Operating Mode	Transmitting modulated Data		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (a)(2)		
Technician	M. Seamans	**Date**	October 2nd, 2015
Climatic Conditions	Temp: 20.0 °C Relative Humidity: 42.0 %		
Notes	Transmit Frequency: 2442 MHz 6dB Bandwidth: 9.068 MHz		



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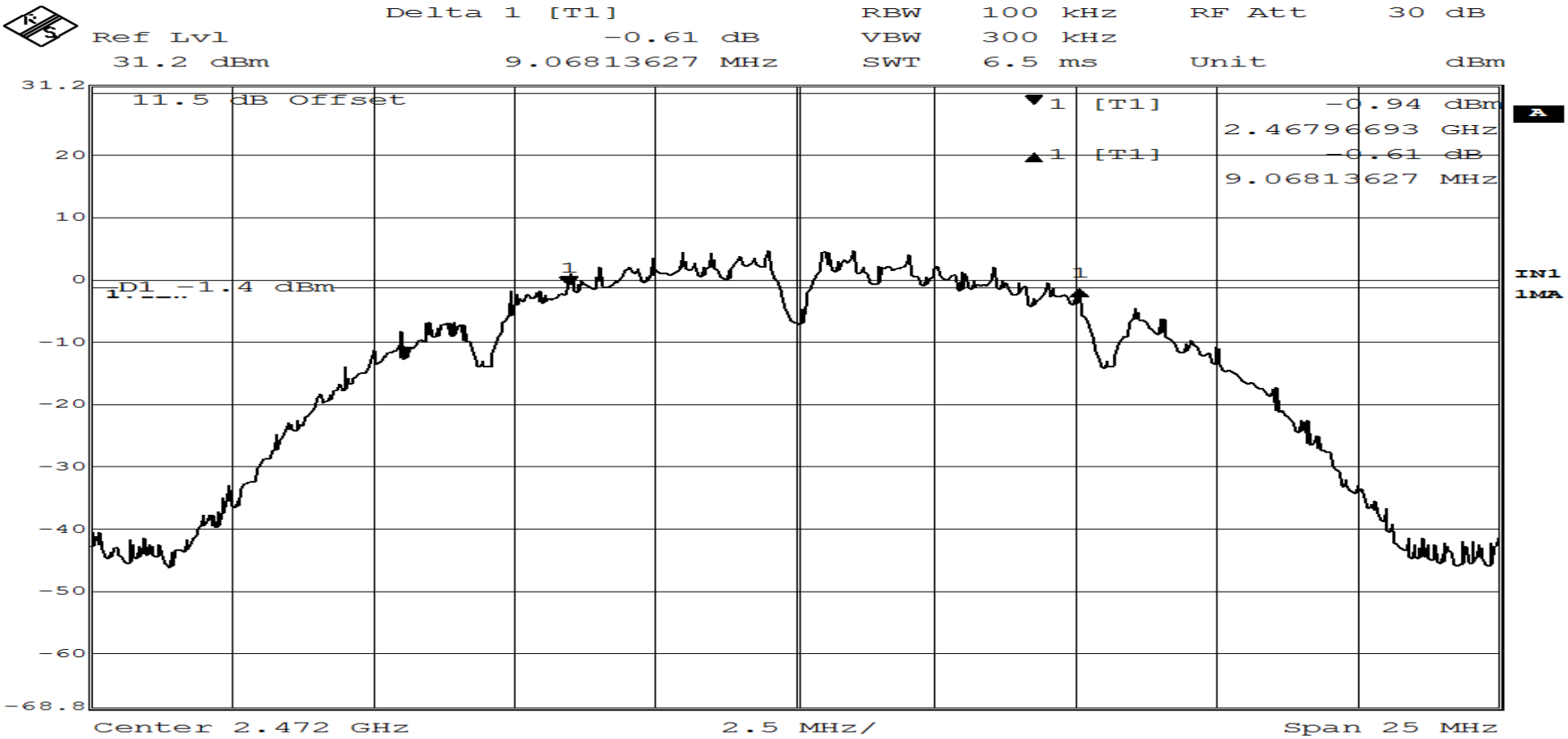
RETLIF TESTING LABORATORIES

Test Method	6dB Channel Bandwidth		
Customer	Immedia Semiconducter	**Job No.**	R-6022N-3
Test Sample	WiFi Connected Home Security Camera		
Model Number	BCM00100U	**Serial No.**	100-006-159
Operating Mode	Transmitting modulated Data		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (a)(2)		
Technician	M. Seamans	**Date**	October 2nd, 2015
Climatic Conditions	Temp: 20.0 °C Relative Humidity: 42.0 %		
Notes	Transmit Frequency: 2472 MHz 6dB Bandwidth: 9.068 MHz		



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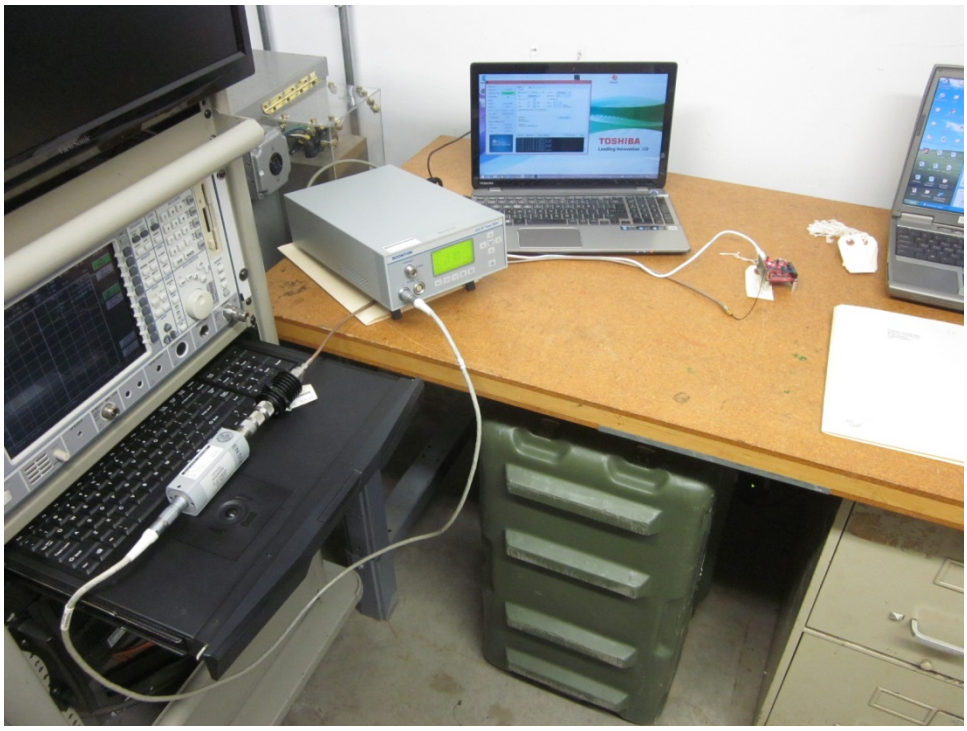
Test Photographs
Conducted Emissions, Power Output



Test Setup

FCC Part 15, Subpart C, Section 15.247(b)(3)
Conducted Emissions, Power Output
Test Data

RETLIF TESTING LABORATORIES

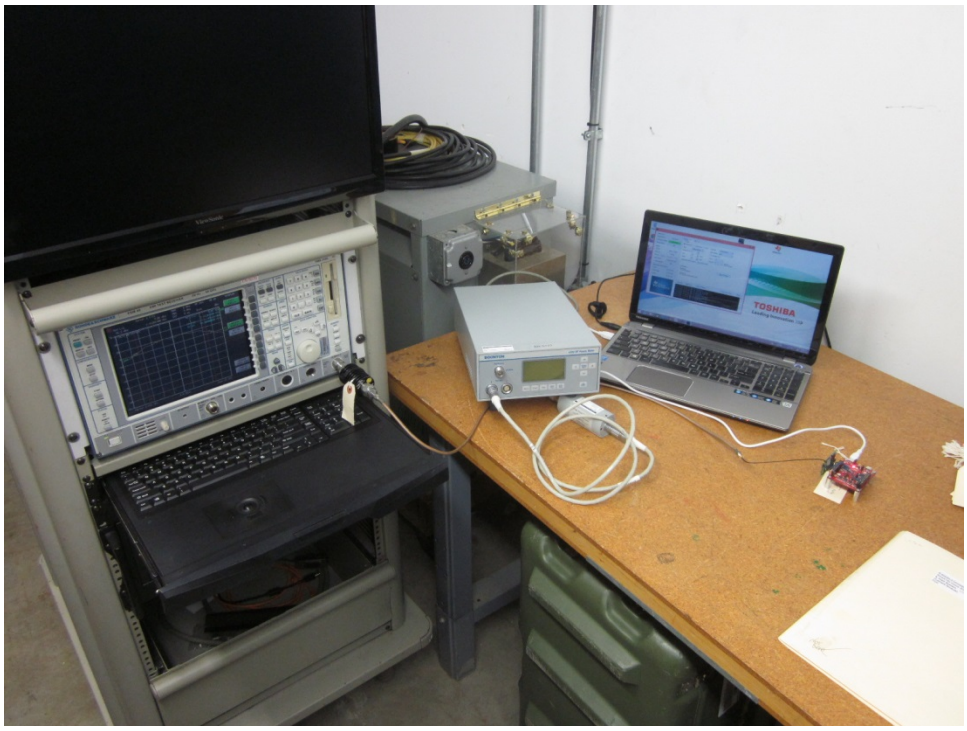
EMISSIONS TEST DATA SHEET

Test Method	**Peak Power Output**
Customer	Immedia Semiconducter
Job Number	R-6022N-3
Test Sample	WiFi Connected Home Security Camera
Model Number	BCM00100U
Serial Number	100-006-159
Test Specification	FCC Part 15, Subpart C Paragraph 15.247 (b)(3)
Operating Mode	Transmitting modulated signal
Technician	M. Seamans
Date	October 2nd, 2015

Notes: Measurement method: 9.1.2, PKPM1 Broadband RF Peak Power Meter

Transmit Frequency	Power Meter Reading	Cable Loss	Corrected Reading	Converted Reading	Limit
MHz	**dBm**	**dB**	**dBM**	**mW**	**mW**
2412.00	17.505	1.3	18.805	75.945	1000.00
2442.00	18.855	1.3	20.155	103.633	1000.00
2472.00	17.251	1.3	18.551	71.631	1000.00

Test Photographs
Antenna Port, Conducted Emissions

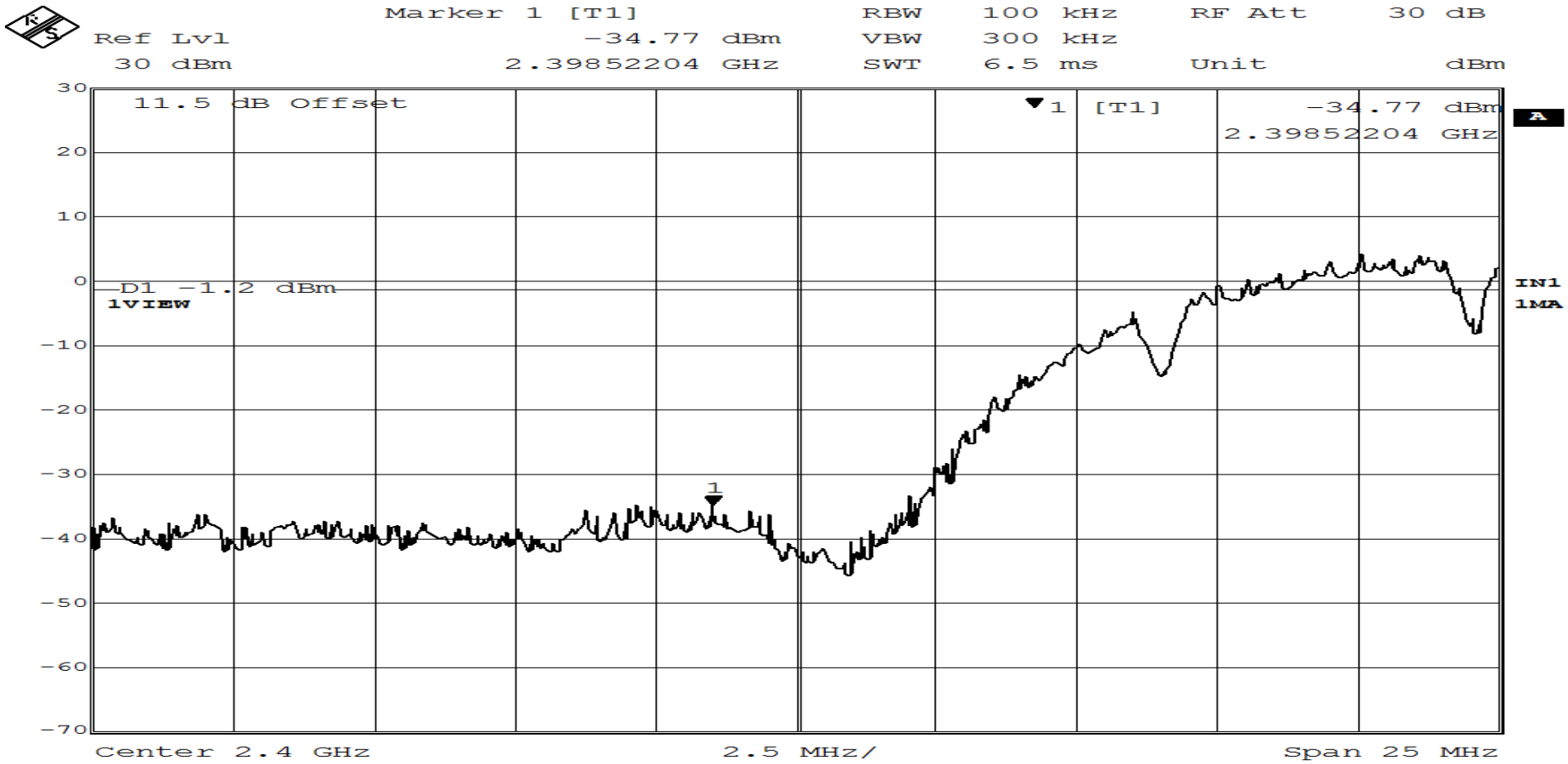


Test Setup

FCC Part 15, Subpart C, Section 15.247(d)
Antenna Port, Conducted Emissions
Band Edge Test Data

RETLIF TESTING LABORATORIES

Test Method	Band Edge Emissions Conducted		
Customer	Immedia Semiconductor	**Job No.**	R-6022N-3
Test Sample	WiFi Connected Home Security Camera		
Model Number	BCM00100U	**Serial No.**	100-006-159
Operating Mode	Transmitting modulated signal		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (d)		
Technician	M. Seamans	**Date**	October 2nd, 2015
Climatic Conditions	Temp: 20.0 °C Relative Humidity: 42.0 %		
Notes	Transmit Frequency: 2412 MHz		



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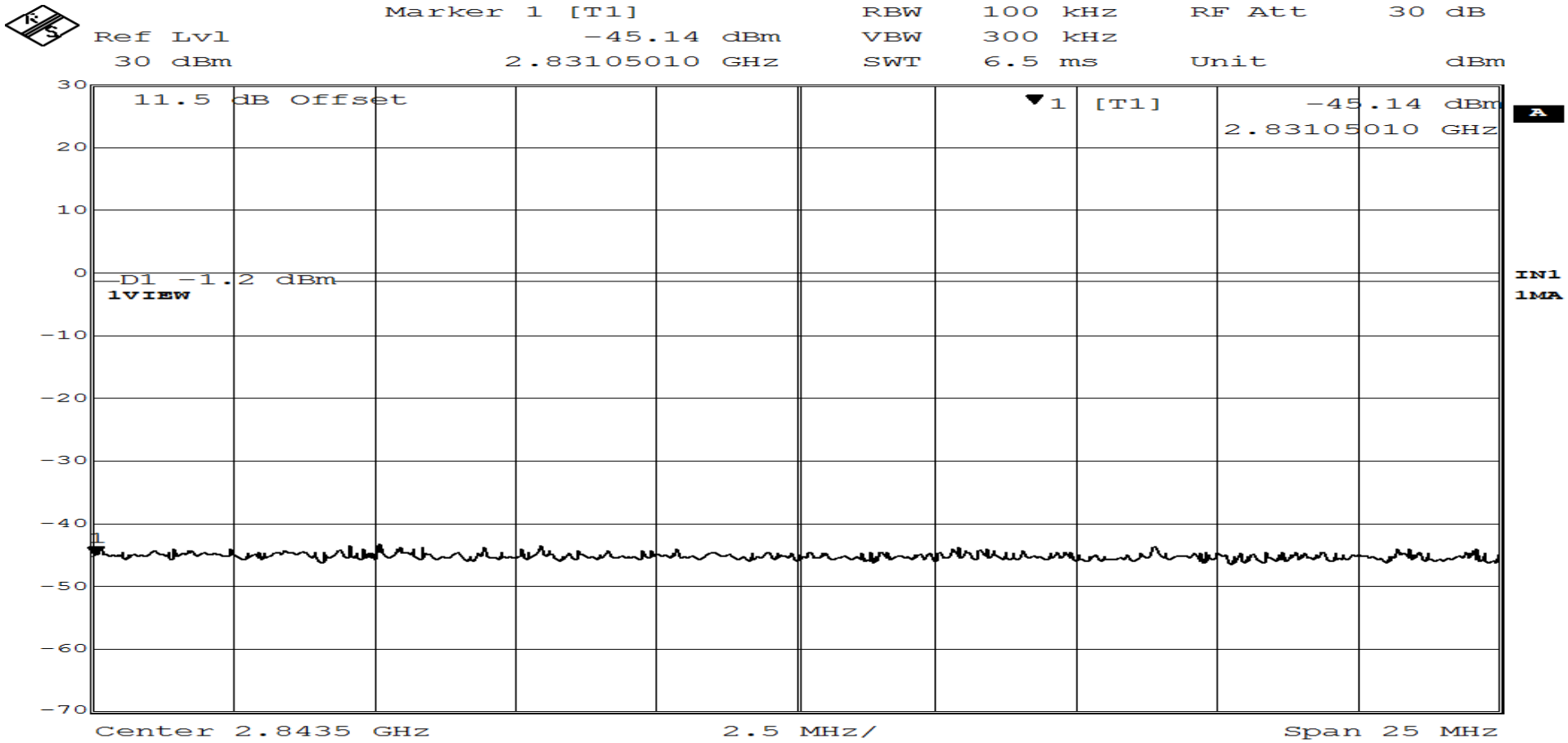
RETLIF TESTING LABORATORIES

Test Method	Band Edge Emissions Conducted		
Customer	Immedia Semiconductor	**Job No.**	R-6022N-3
Test Sample	WiFi Connected Home Security Camera		
Model Number	BCM00100U	**Serial No.**	100-006-159
Operating Mode	Transmitting modulated signal		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (d)		
Technician	M. Seamans	**Date**	October 2nd, 2015
Climatic Conditions	Temp: 20.0 °C Relative Humidity: 42.0 %		
Notes	Transmit Frequency: 2472.0 MHz		



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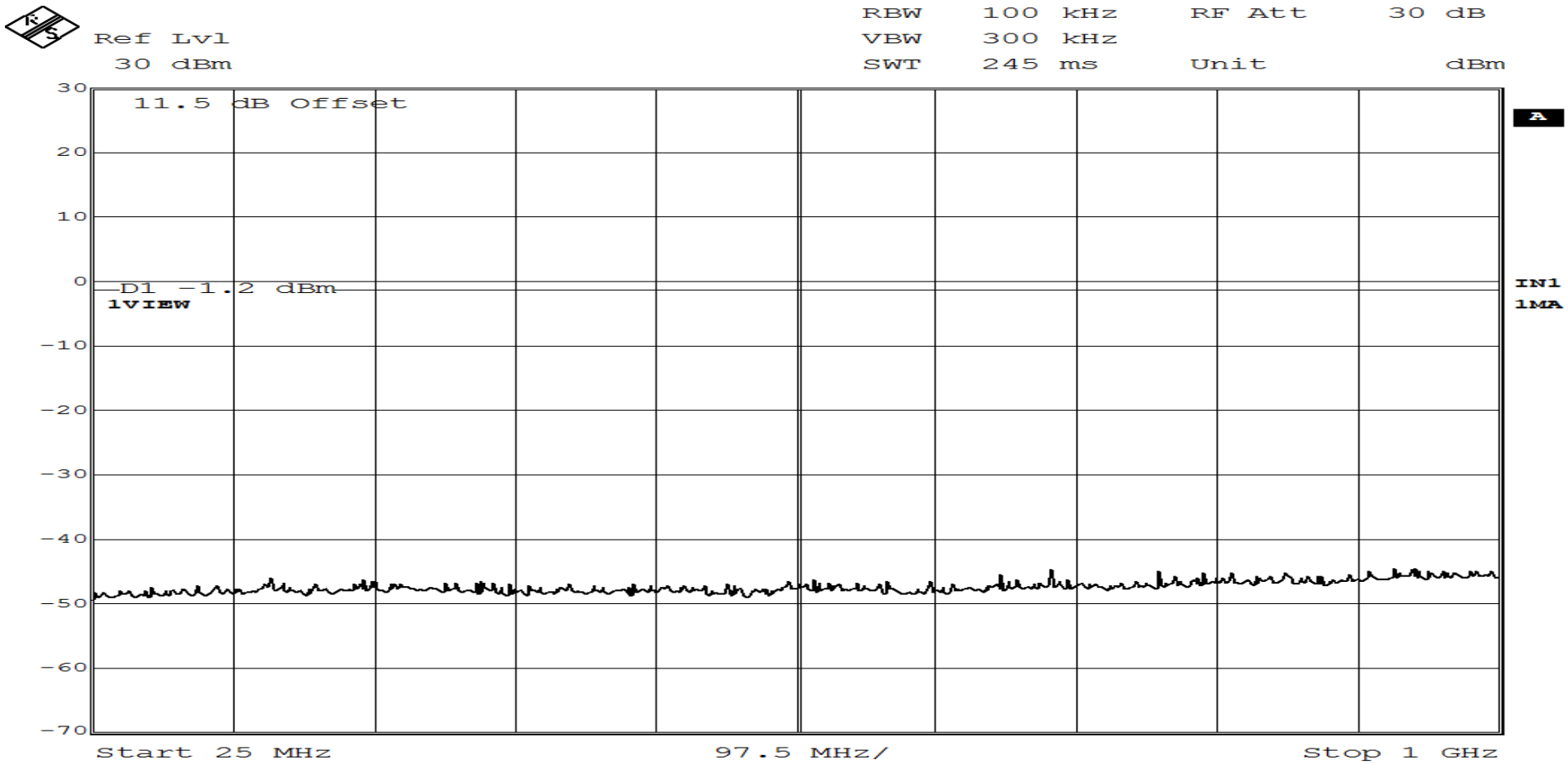
Unwanted Emissions into Non-Restricted Frequency Bands
25 MHz to 25 GHz
Test Data

RETLIF TESTING LABORATORIES

Test Method	Unwanted Emissions into Non-Restricted Frequency Bands		
Customer	Immedia Semiconductor	**Job No.**	R-6022N-3
Test Sample	WiFi Connected Home Security Camera		
Model Number	BCM00100U	**Serial No.**	100-006-159
Operating Mode	Transmitting modulated signal		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (d)		
Technician	M. Seamans	**Date**	October 2nd, 2015
Climatic Conditions	Temp: 20.0 °C Relative Humidity: 42.0 %		
Notes	Transmit Frequency: 2412 MHz **Limit is 20dB down from the Fundamental Frequency Peak Power Output**		



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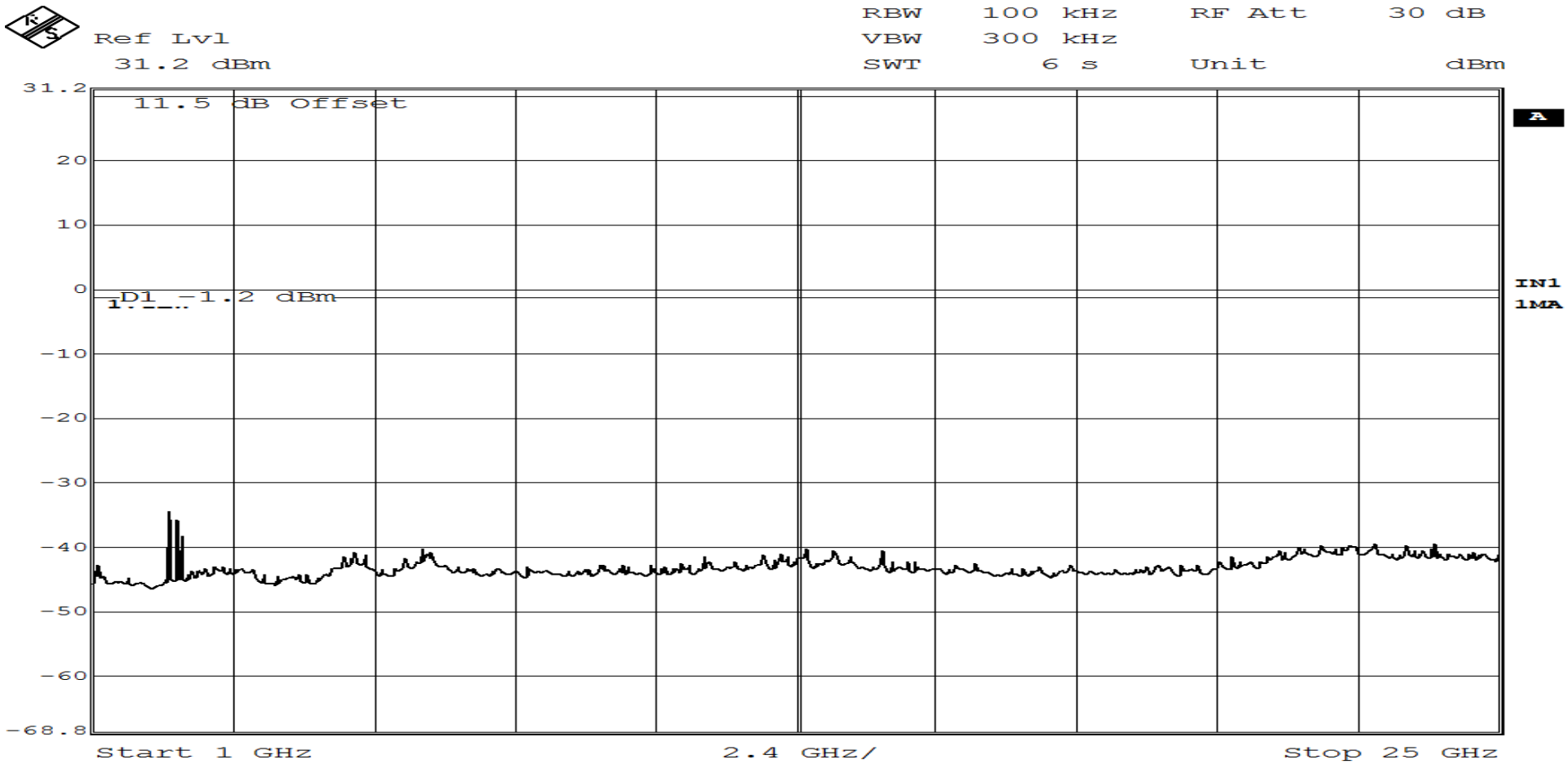
RETLIF TESTING LABORATORIES

Test Method	Unwanted Emissions into Non-Restricted Frequency Bands		
Customer	Immedia Semiconductor	**Job No.**	R-6022N-2
Test Sample	WiFi Connected Home Security Camera		
Model Number	BCM00100U	**Serial No.**	100-006-159
Operating Mode	Transmitting modulated signal		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (d)		
Technician	M. Seamans	**Date**	October 2nd, 2015
Climatic Conditions	Temp: 20.0 °C Relative Humidity: 42.0 %		
Notes	Transmit Frequency: 2412 MHz **Limit is 20dB down from the Fundamental Frequency Peak Power Output**		



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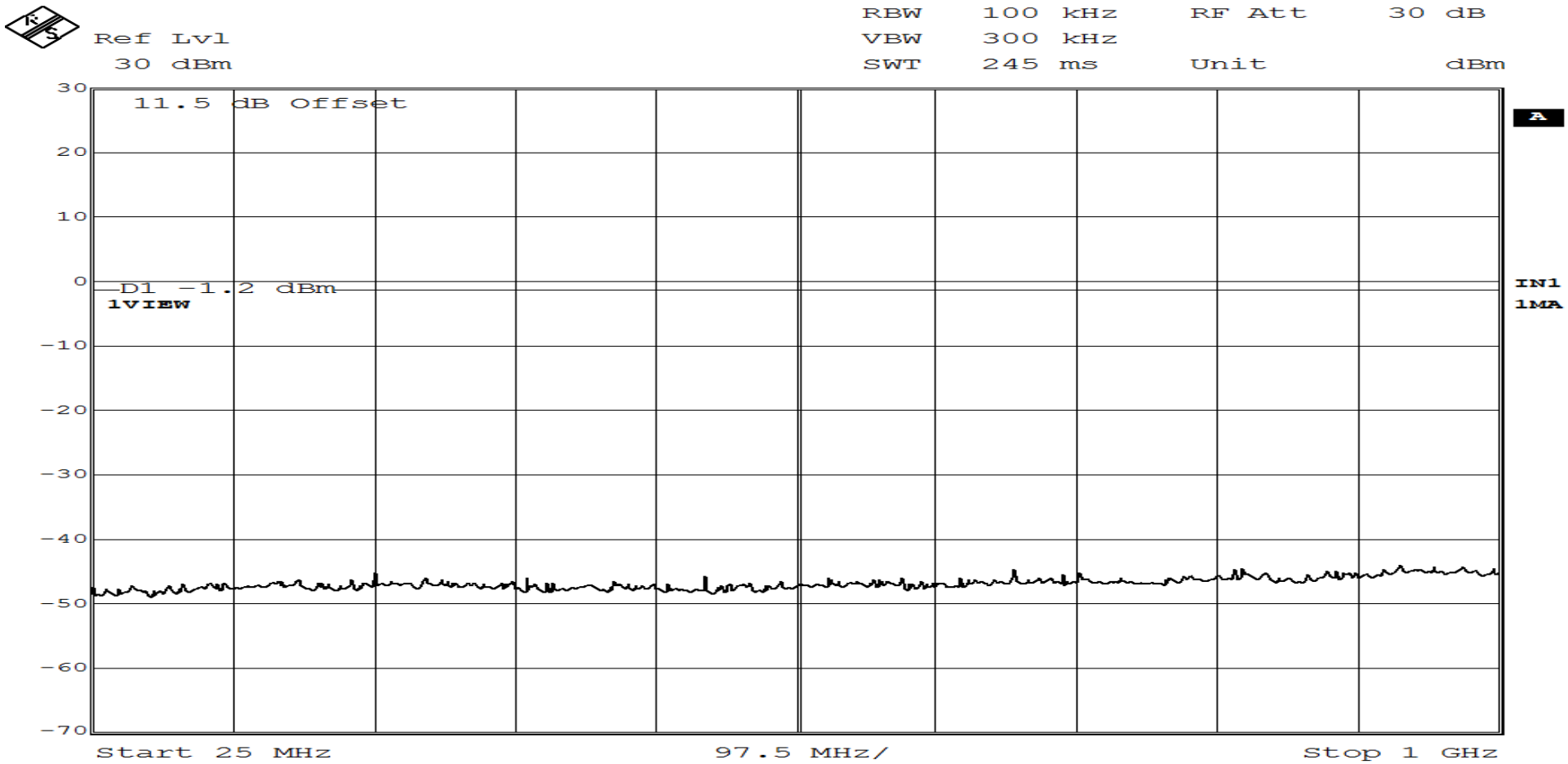
RETLIF TESTING LABORATORIES

Test Method	Unwanted Emissions into Non-Restricted Frequency Bands		
Customer	Immedia Semiconductor	**Job No.**	R-6022N-2
Test Sample	WiFi Connected Home Security Camera		
Model Number	BCM00100U	**Serial No.**	100-006-159
Operating Mode	Transmitting modulated signal		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (d)		
Technician	M. Seamans	**Date**	October 2nd, 2015
Climatic Conditions	Temp: 20.0 °C Relative Humidity: 42.0 %		
Notes	Transmit Frequency: 2442 MHz **Limit is 20dB down from the Fundamental Frequency Peak Power Output**		



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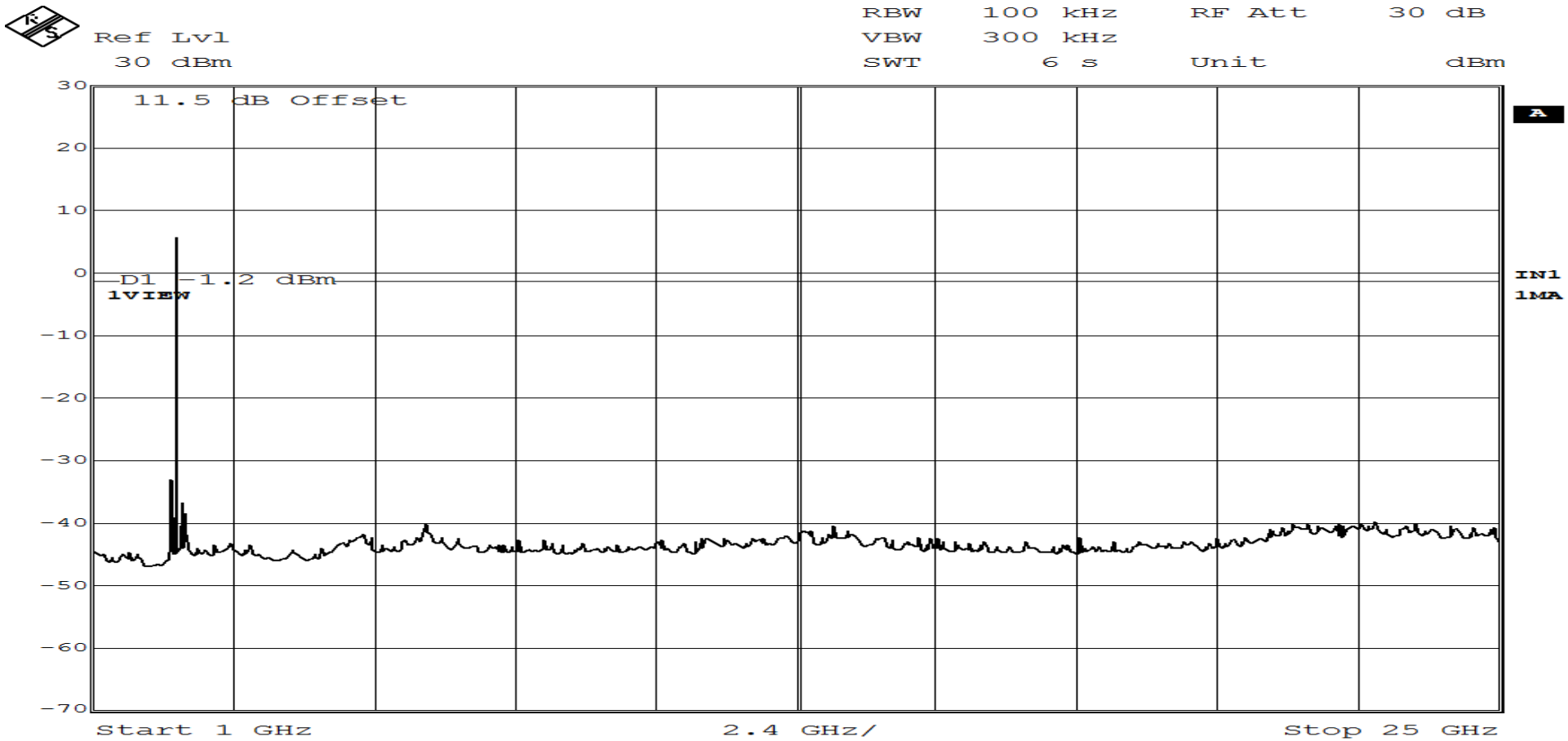
RETLIF TESTING LABORATORIES

Test Method	Unwanted Emissions into Non-Restricted Frequency Bands		
Customer	Immedia Semiconductor	**Job No.**	R-6022N-2
Test Sample	WiFi Connected Home Security Camera		
Model Number	BCM00100U	**Serial No.**	100-006-159
Operating Mode	Transmitting modulated signal		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (d)		
Technician	M. Seamans	**Date**	October 2nd, 2015
Climatic Conditions	Temp: 20.0 °C Relative Humidity: 42.0 %		
Notes	Transmit Frequency: 2442 MHz **Limit is 20dB down from the Fundamental Frequency Peak Power Output**		



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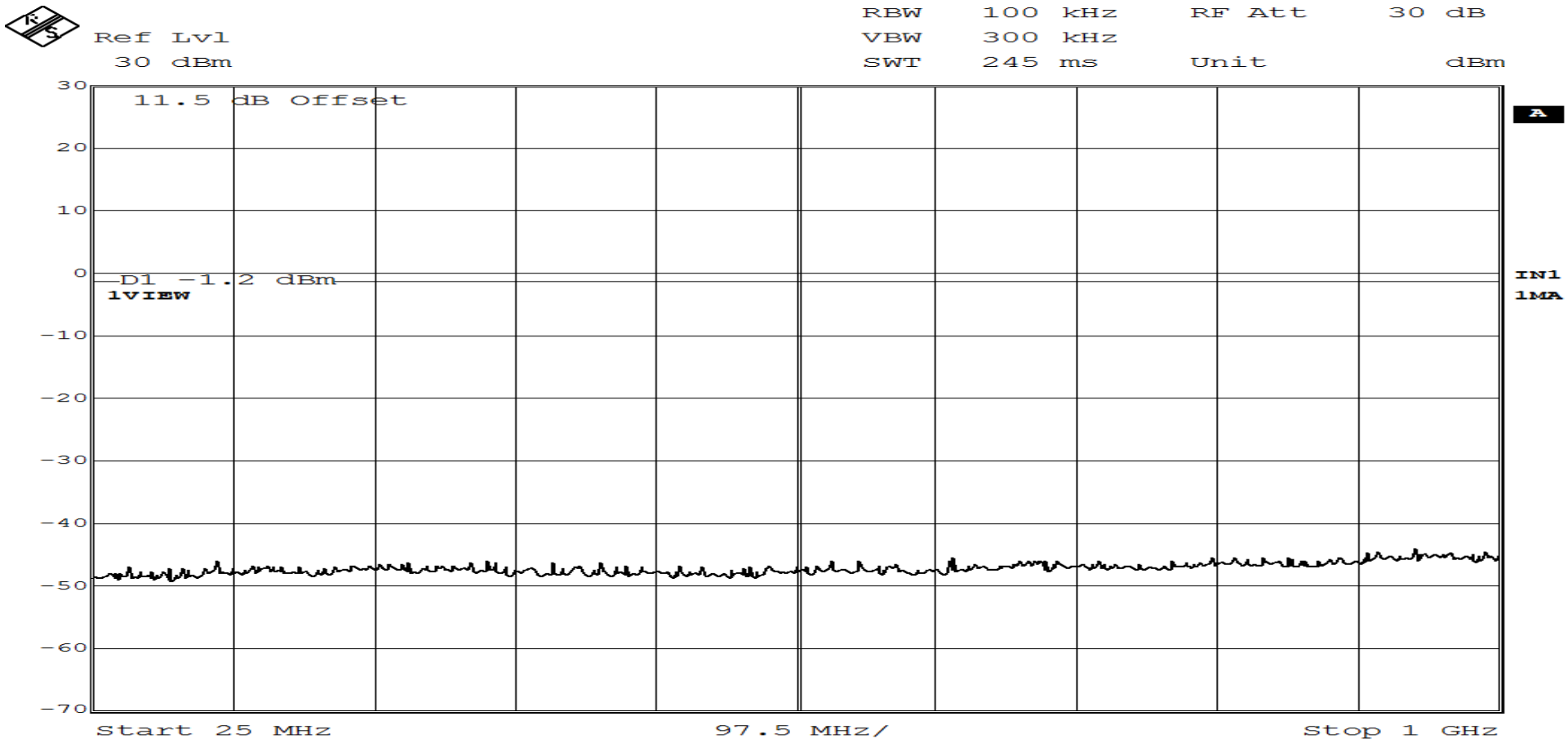
RETLIF TESTING LABORATORIES

Test Method	Unwanted Emissions into Non-Restricted Frequency Bands		
Customer	Immedia Semiconductor	**Job No.**	R-6022N-2
Test Sample	WiFi Connected Home Security Camera		
Model Number	BCM00100U	**Serial No.**	100-006-159
Operating Mode	Transmitting modulated signal		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (d)		
Technician	M. Seamans	**Date**	October 2nd, 2015
Climatic Conditions	Temp: 20.0 °C Relative Humidity: 42.0 %		
Notes	Transmit Frequency: 2472 MHz **Limit is 20dB down from the Fundamental Frequency Peak Power Output**		



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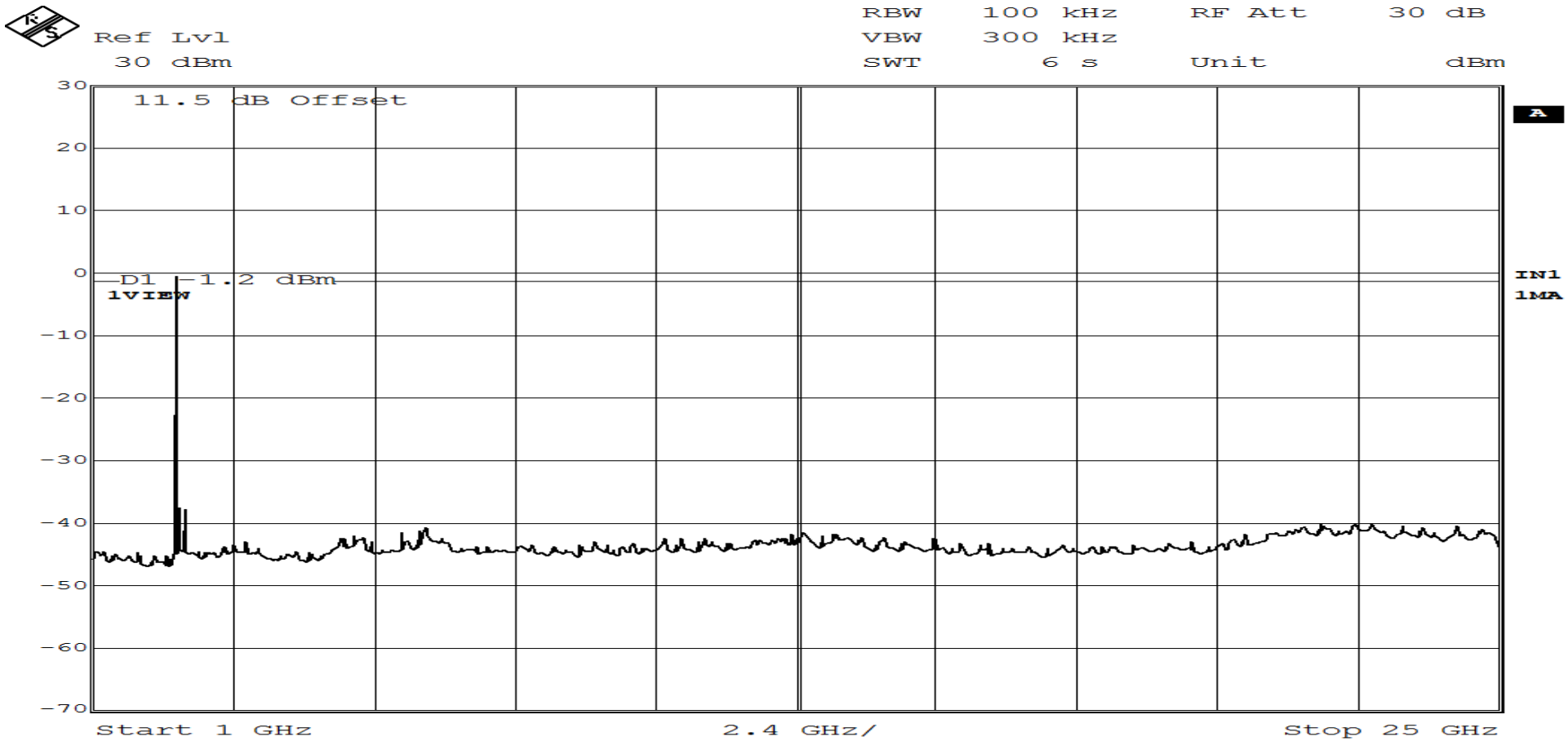
RETLIF TESTING LABORATORIES

Test Method	Unwanted Emissions into Non-Restricted Frequency Bands		
Customer	Immedia Semiconductor	**Job No.**	R-6022N-2
Test Sample	WiFi Connected Home Security Camera		
Model Number	BCM00100U	**Serial No.**	100-006-159
Operating Mode	Transmitting modulated signal		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (d)		
Technician	M. Seamans	**Date**	October 2nd, 2015
Climatic Conditions	Temp: 20.0 °C Relative Humidity: 42.0 %		
Notes	Transmit Frequency: 2472 MHz **Limit is 20dB down from the Fundamental Frequency Peak Power Output**		



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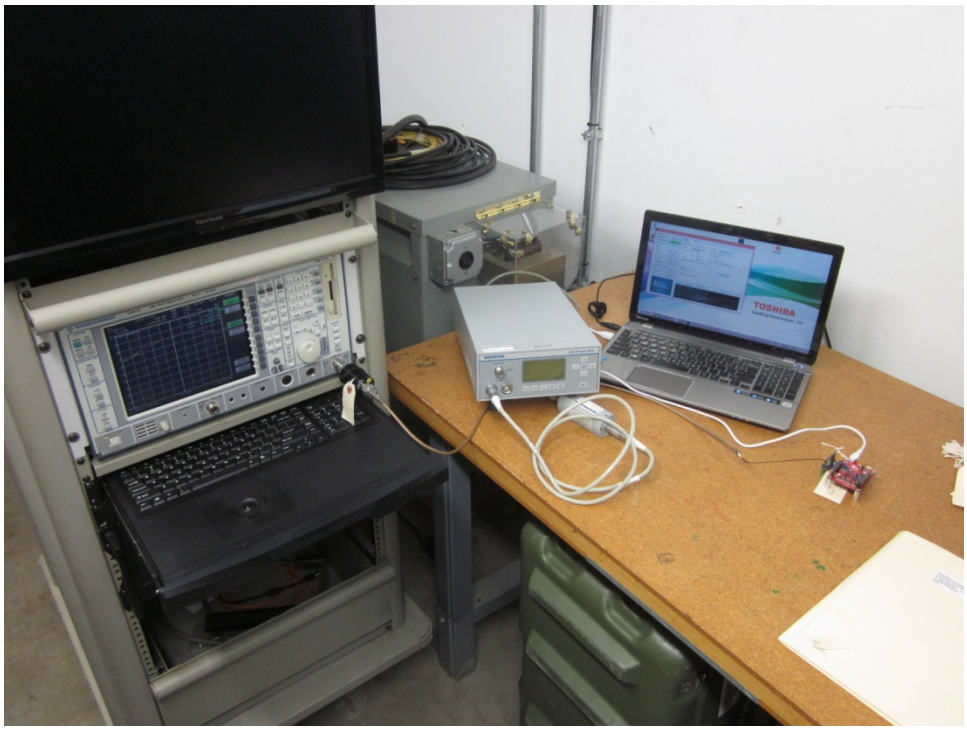
Test Photographs
Antenna Port, Power Density

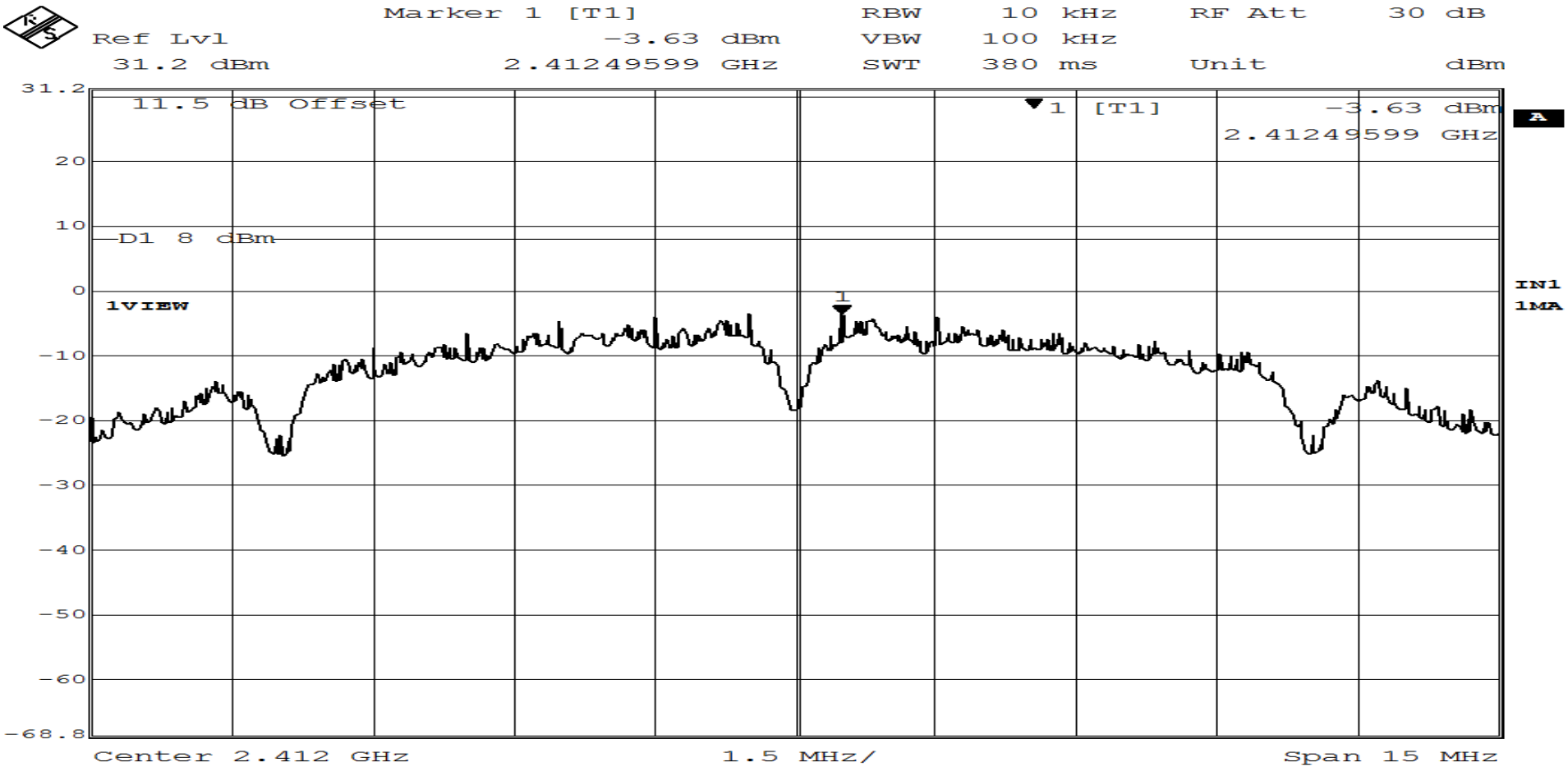


Test Setup

FCC Part 15, Subpart C, Section 15.247(e)
Antenna Port, Power Density
Test Data

RETLIF TESTING LABORATORIES

Test Method	Power Spectral Density		
Customer	Immedia Semiconducter	**Job No.**	R-6022N-3
Test Sample	WiFi Connected Home Security Camera		
Model Number	BCM00100U	**Serial No.**	100-006-159
Operating Mode	Transmitting modulated signal		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (b)(3)		
Technician	M. Seamans	**Date**	October 2nd, 2015
Climatic Conditions	Temp: 20.0 °C Relative Humidity: 42.0 %		
Notes	Transmit Frequency: 2412 MHz Limit: 8dBm **Power Spectral Density: -3.63 dBm**		



Date: 2.OCT.2015 14:40:36

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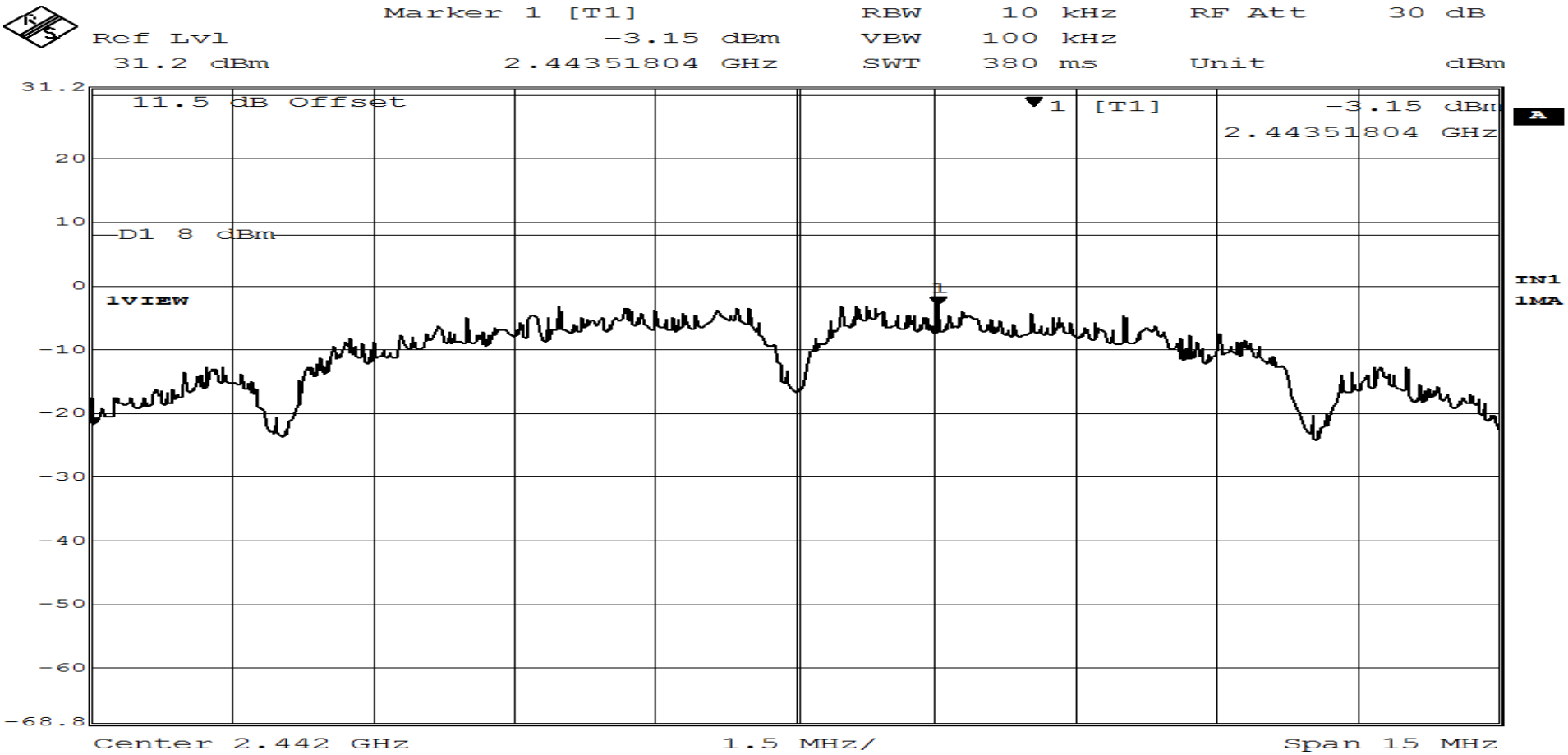
RETLIF TESTING LABORATORIES

Test Method	Power Spectral Density		
Customer	Immedia Semiconducter	**Job No.**	R-6022N-3
Test Sample	WiFi Connected Home Security Camera		
Model Number	BCM00100U	**Serial No.**	100-006-159
Operating Mode	Transmitting modulated signal		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (b)(3)		
Technician	M. Seamans	**Date**	October 2nd, 2015
Climatic Conditions	Temp: 20.0 °C Relative Humidity: 42.0 %		
Notes	Transmit Frequency: 2442 MHz Limit: 8dBm **Power Spectral Density: -3.15 dBm**		



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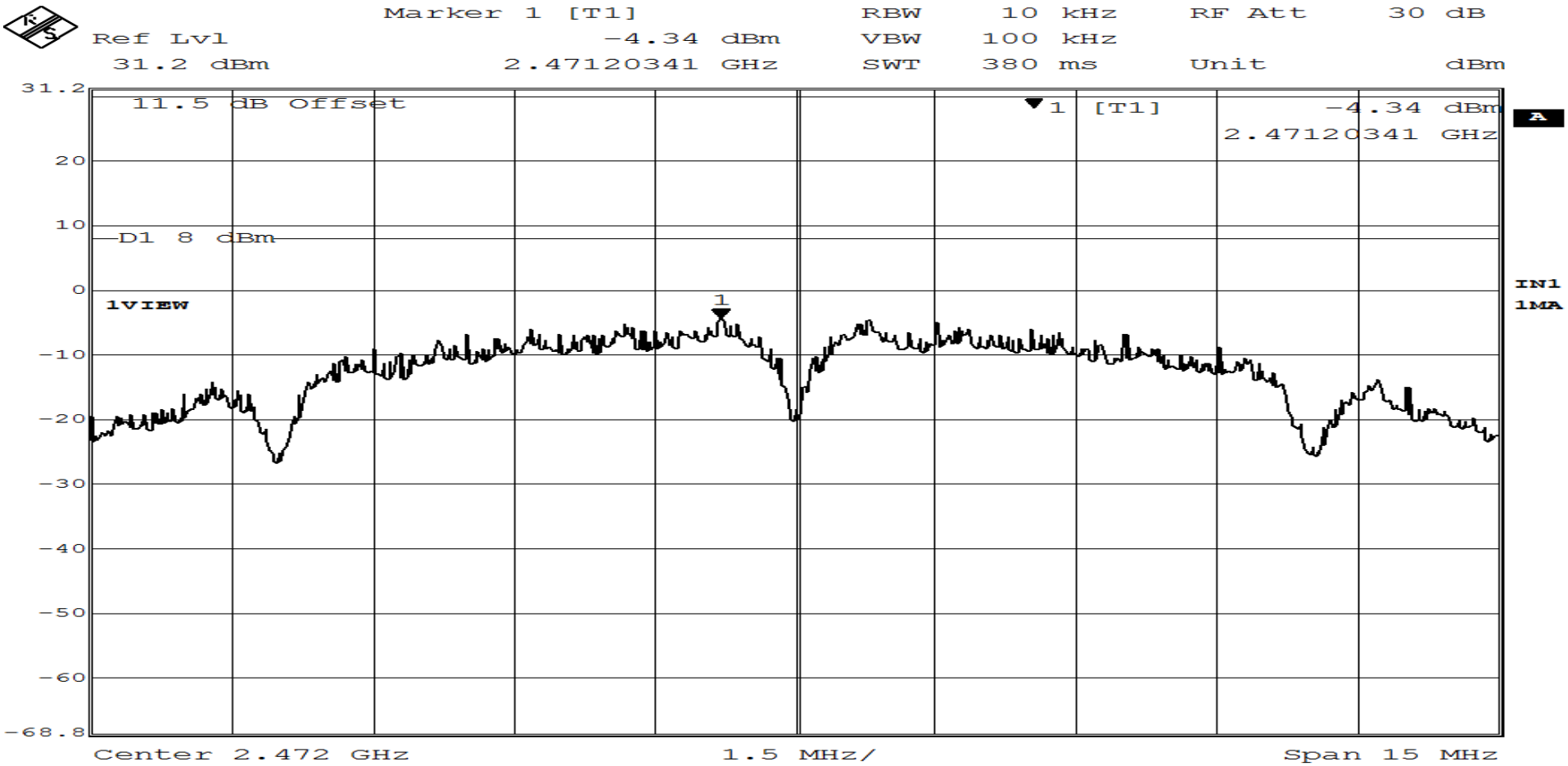
RETLIF TESTING LABORATORIES

Test Method	Power Spectral Density		
Customer	Immedia Semiconducter	**Job No.**	R-6022N-3
Test Sample	WiFi Connected Home Security Camera		
Model Number	BCM00100U	**Serial No.**	100-006-159
Operating Mode	Transmitting modulated signal		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (b)(3)		
Technician	M. Seamans	**Date**	October 2nd, 2015
Climatic Conditions	Temp: 20.0 °C Relative Humidity: 42.0 %		
Notes	Transmit Frequency: 2472 MHz Limit: 8dBm **Power Spectral Density: -4.34 dBm**		



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Test Photographs
Spurious Radiated Emissions, 30 MHz to 10 GHz

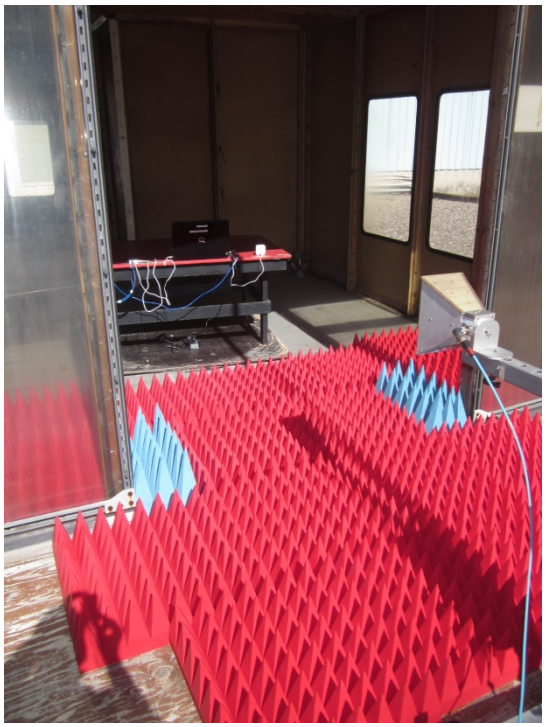
EUT Configuration

Test Photographs
Spurious Radiated Emissions, 30 MHz to 25 GHz

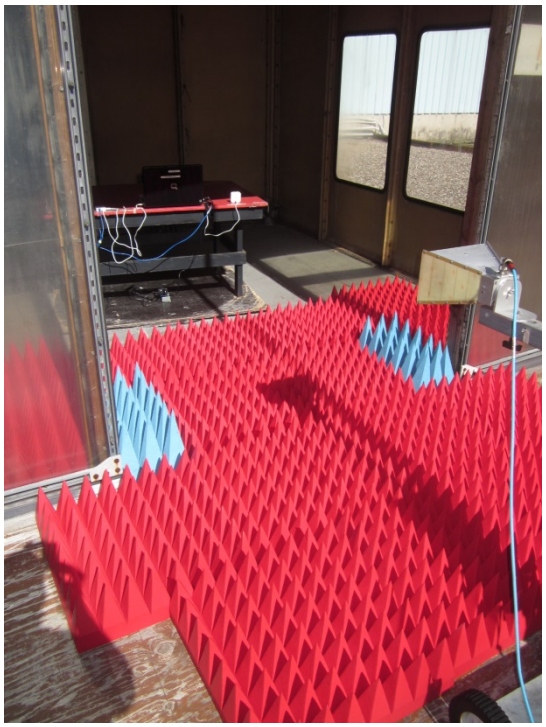
Horizontal Polarization, 25 MHz to 1 GHz

Vertical Polarization, 25 MHz to 1 GHz

Test Photographs
Spurious Radiated Emissions, 30 MHz to 25 GHz

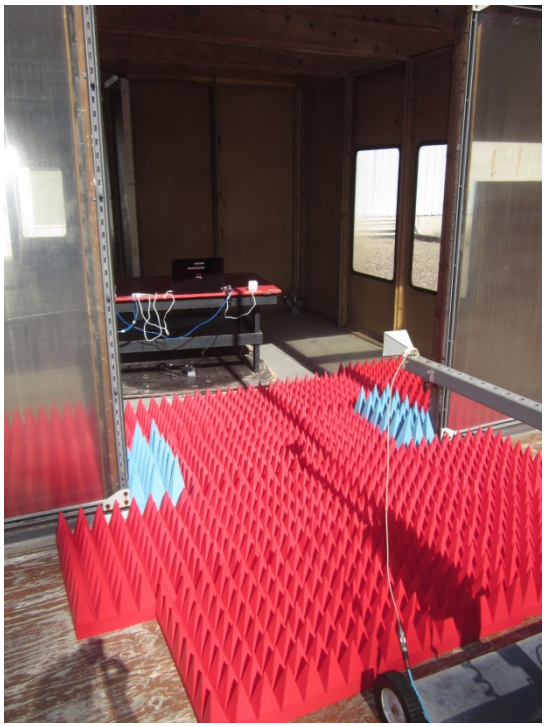


Horizontal Polarization, 1 to 18 GHz

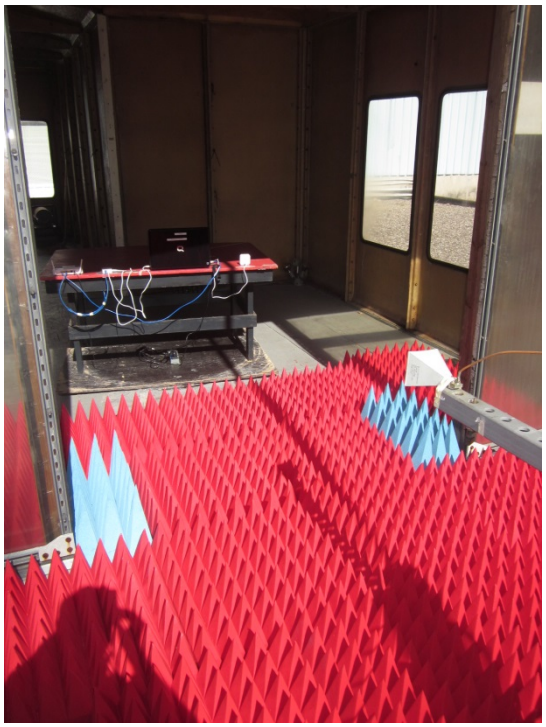


Vertical Polarization, 1 to 18 GHz

Test Photographs
Spurious Radiated Emissions, 30 MHz to 25 GHz



Horizontal Polarization, 18 to 25 GHz



Vertical Polarization, 18 to 25 GHz

FCC Part 15, Subpart B, Section 15.209(a)
Spurious Radiated Emissions, 30 MHz to 25 GHz
Test Data

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	Immedia Semiconductor	
Job Number	R-6022N-3	
Test Sample	WiFi Connected Home Security Camera	
Model Number	BCM00100U	
Serial Number	100-006-159	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting WiFi data	
Technician	M. Seamans	
Date	October 6th, 2015	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak <1GHz, Average >1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
37.50	-	-	-	-			-	100.00
|	38.00	21.99	14.20	36.19	*		64.49	|
38.25	-	-	-	-			-	100.00
73.00	-	-	-	-			-	100.00
|	74.00	17.88	8.36	26.24	*		20.51	|
74.60	-	-	-	-			-	100.00
74.80	-	-	-	-			-	100.00
|	75.00	17.14	8.36	25.50	*		18.84	|
75.20	-	-	-	-			-	100.00
108.00	-	-	-	-			-	150.00
|	111.60	18.65	10.02	28.67			27.13	|
|	114.20	24.29	9.86	34.15			50.99	|
121.94	-	-	-	-			-	150.00
123.00	-	-	-	-			-	150.00
|	123.30	13.29	9.44	22.73			13.69	|
|	125.60	19.34	9.40	28.74			27.35	|
138.00	-	-	-	-			-	150.00

EUT emissions observed throughout the given frequency spectrum were recorded and evaluated. Emission levels closest to the limit are listed on this data sheet. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 1 of 8

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	Immedia Semiconductor	
Job Number	R-6022N-3	
Test Sample	WiFi Connected Home Security Camera	
Model Number	BCM00100U	
Serial Number	100-006-159	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting WiFi data	
Technician	M. Seamans	
Date	October 6th, 2015	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak <1GHz, Average >1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
149.90	-	-	-	-			-	150.00
|	150.00	13.66	11.17	24.83	*		17.44	|
150.05	-	-	-	-			-	150.00
156.52	-	-	-	-			-	150.00
|	156.52	8.88	12.08	20.96	*		11.17	|
156.52	-	-	-	-			-	150.00
156.70	-	-	-	-			-	150.00
|	156.80	6.31	12.12	18.43	*		8.35	|
156.90	-	-	-	-			-	150.00
162.01	-	-	-	-			-	150.00
|	165.00	9.21	12.68	21.89	*		12.43	|
167.17	-	-	-	-			-	150.00
167.72	-	-	-	-			-	150.00
|	170.00	9.50	12.80	22.30	*		13.03	|
173.20	-	-	-	-			-	150.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 2 of 8

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	Immedia Semiconductor	
Job Number	R-6022N-3	
Test Sample	WiFi Connected Home Security Camera	
Model Number	BCM00100U	
Serial Number	100-006-159	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting WiFi data	
Technician	M. Seamans	
Date	October 6th, 2015	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak <1GHz, Average >1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
240.00	-	-	-	-			-	200.00
|	266.70	15.35	16.85	32.20			40.74	|
285.00	-	-	-	-			-	200.00
322.80	-	-	-	-			-	200.00
|	330.00	3.41	18.91	22.32	*		13.06	|
335.40	-	-	-	-			-	200.00
399.90	-	-	-	-			-	200.00
|	405.00	3.40	21.49	24.89	*		17.56	|
410.00	-	-	-	-			-	200.00
608.00	-	-	-	-			-	200.00
|	611.00	0.54	27.34	27.88	*		24.77	|
614.00	-	-	-	-			-	200.00
960.00	-	-	-	-			-	500.00
|	975.00	1.33	32.10	33.43	*		46.94	|
1240.00	-	-	-	-			-	500.00
1300.00	-	-	-	-			-	500.00
|	1350.00	32.8	-9.50	23.30	*		14.62	|
1427.00	-	-	-	-			-	500.00

EUT emissions observed throughout the given frequency spectrum were recorded and evaluated. Emission levels closest to the limit are listed on this data sheet. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 3 of 8

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	Immedia Semiconductor	
Job Number	R-6022N-3	
Test Sample	WiFi Connected Home Security Camera	
Model Number	BCM00100U	
Serial Number	100-006-159	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting WiFi data	
Technician	M. Seamans	
Date	October 6th, 2015	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak <1GHz, Average >1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
1435.00	-	-	-	-			-	500.00
|	1500.00	36.73	-9.4	27.33	*		23.25	|
1646.50	-	-	-	-			-	500.00
1660.00	-	-	-	-			-	500.00
|	1680.00	31.71	-9.04	22.67	*		13.59	|
1710.00	-	-	-	-			-	500.00
1718.80	-	-	-	-			-	500.00
|	1720.00	31.46	-8.64	22.82	*		13.83	|
1722.20	-	-	-	-			-	500.00
2200.00	-	-	-	-			-	500.00
|	2250.00	31.79	-6.76	25.03	*		17.84	|
2300.00	-	-	-	-			-	500.00
2310.00	-	-	-	-			-	500.00
|	2360.00	30.93	-6.51	24.42	*		16.63	|
2390.00	-	-	-	-			-	500.00
2483.50	-	-	-	-			-	500.00
|	2490.00	32.19	-6.11	26.08	*		20.13	|
2500.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 4 of 8

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	Immedia Semiconductor	
Job Number	R-6022N-3	
Test Sample	WiFi Connected Home Security Camera	
Model Number	BCM00100U	
Serial Number	100-006-159	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting WiFi data	
Technician	M. Seamans	
Date	October 6th, 2015	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak <1GHz, Average >1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
2690.00	-	-	-	-			-	500.00
|	2706.00	36.42	-5.4	31.02			35.56	|
|	2745.00	36.91	-5.4	31.51			37.62	|
|	2781.00	37.15	-5.4	31.51			38.68	|
2900.00	-	-	-	-			-	500.00
3260.00	-	-	-	-			-	500.00
|	3263.00	29.93	-3.4	26.53	*		21.20	|
3267.00	-	-	-	-			-	500.00
3332.00	-	-	-	-			-	500.00
|	3336.00	30.58	-3.1	27.48	*		23.65	|
3339.00	-	-	-	-			-	500.00
3345.00	-	-	-	-			-	500.00
|	3350.00	30.1	-3.1	27.00	*		22.38	|
3358.00	-	-	-	-			-	500.00
3600.00	-	-	-	-			-	500.00
|	3608.00	38.19	-2.4	35.79			61.58	|
|	3660.00	37.90	-2.4	35.50			59.56	|
|	3708.00	37.50	-2.4	35.10			56.88	|

EUT emissions observed throughout the given frequency spectrum were recorded and evaluated. Emission levels closest to the limit are listed on this data sheet. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 5 of 8

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	Immedia Semiconductor	
Job Number	R-6022N-3	
Test Sample	WiFi Connected Home Security Camera	
Model Number	BCM00100U	
Serial Number	100-006-159	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting WiFi data	
Technician	M. Seamans	
Date	October 6th, 2015	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak <1GHz, Average >1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
|	3800.00	29.29	-0.74	28.55	*		26.76	|
4400.00	-	-	-	-			-	500.00
4500.00	-	-	-	-			-	500.00
|	4824.00	36.10	-0.55	35.55			59.91	|
|	4884.00	36.91	-0.55	36.36			65.76	|
|	4944.00	36.17	-0.55	35.62			60.39	|
|	4900.00	29.47	-0.48	28.99	*		28.15	|
5150.00	-	-	-	-			-	500.00
5350.00	-	-	-	-			-	500.00
|	5400.00	28.45	0.89	29.34	*		29.32	|
5460.00	-	-	-	-			-	500.00
7250.00	-	-	-	-			-	500.00
|	7500.00	30.58	2.87	33.45	*		47.04	|
7750.00	-	-	-	-			-	500.00
8025.00	-	-	-	-			-	500.00
|	8118.00	30.89	3.20	34.09	*		50.64	|
|	8235.00	30.56	3.30	33.86	*		49.31	|
|	8250.00	30.35	3.50	33.90	*		49.54	|
|	8343.00	30.30	3.30	33.60	*		47.86	|
8500.00	-	-	-	-			-	500.00

EUT emissions observed throughout the given frequency spectrum were recorded and evaluated. Emission levels closest to the limit are listed on this data sheet. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 6 of 8

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	Immedia Semiconductor	
Job Number	R-6022N-3	
Test Sample	WiFi Connected Home Security Camera	
Model Number	BCM00100U	
Serial Number	100-006-159	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting WiFi data	
Technician	M. Seamans	
Date	October 6th, 2015	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak <1GHz, Average >1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
9000.00	-	-	-	-			-	500.00
|	9100.00	31.02	4.72	35.74	*		61.23	|
9200.00	-	-	-	-			-	500.00
9300.00	-	-	-	-			-	500.00
|	9400.00	31.21	4.56	35.77	*		61.44	|
9500.00	-	-	-	-			-	500.00
10600.00	-	-	-	-			-	500.00
|	12000.00	30.87	6.91	37.78	*		77.50	|
12700.00	-	-	-	-			-	500.00
13250.00	-	-	-	-			-	500.00
|	13300.00	30.04	9.86	39.90	*		98.87	|
13400.00	-	-	-	-			-	500.00
14470.00	-	-	-	-			-	500.00
|	14490.00	30.41	11.2	41.61	*		120.36	|
14500.00	-	-	-	-			-	500.00
15350.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 7 of 8

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	Immedia Semiconductor	
Job Number	R-6022N-3	
Test Sample	WiFi Connected Home Security Camera	
Model Number	BCM00100U	
Serial Number	100-006-159	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting WiFi data	
Technician	M. Seamans	
Date	October 6th, 2015	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak <1GHz, Average >1GHz

TEST PARAMETERS

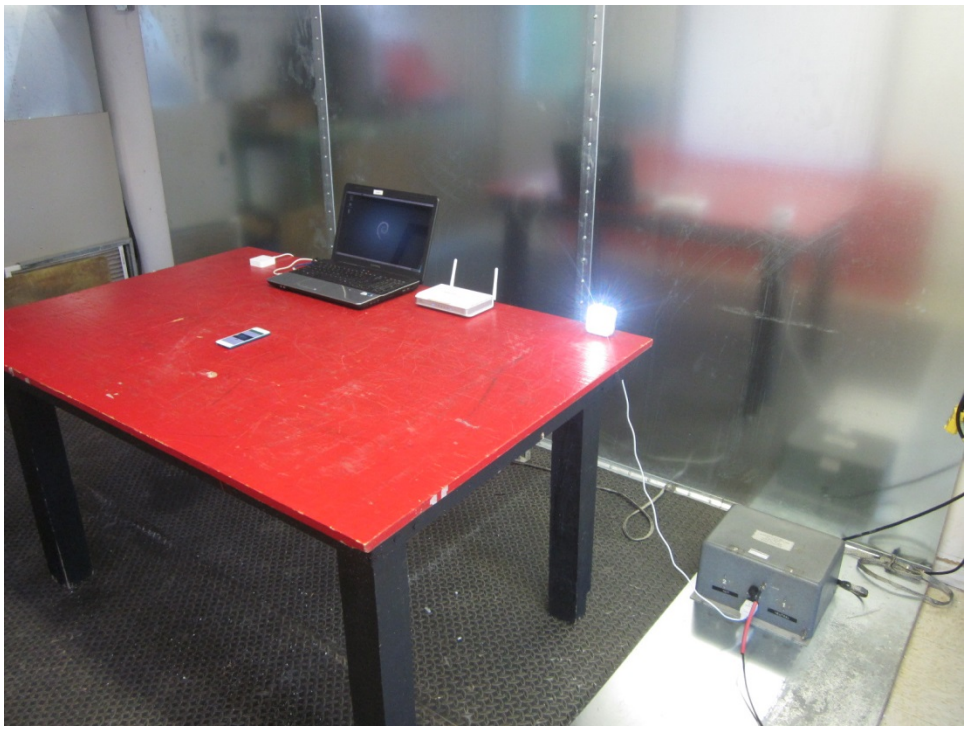
Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
|	15800.00	31.91	5.79	37.70	*		76.73	|
16200.00	-	-	-	-			-	500.00
17700.00	-	-	-	-			-	500.00
|	19000.00	31.41	-5.57	25.84	*		19.58	|
|	19296.00	31.19	-5.37	25.82	*		19.54	|
|	19536.00	32.05	-5.37	26.68	*		21.57	|
|	19776.00	32.45	-5.37	27.08	*		22.59	|
21400.00	-	-	-	-			-	500.00
22010.00	-	-	-	-			-	500.00
|	22500.00	32.60	-6.61	25.99	*		19.92	|
23120.00	-	-	-	-			-	500.00
23600.00	-	-	-	-			-	500.00
|	23800.00	35.03	-6.08	28.95	*		28.02	|
24000.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 8 of 8

Test Photographs
Conducted Emissions, Power Leads, 150 kHz to 30 MHz

EUT Configuration

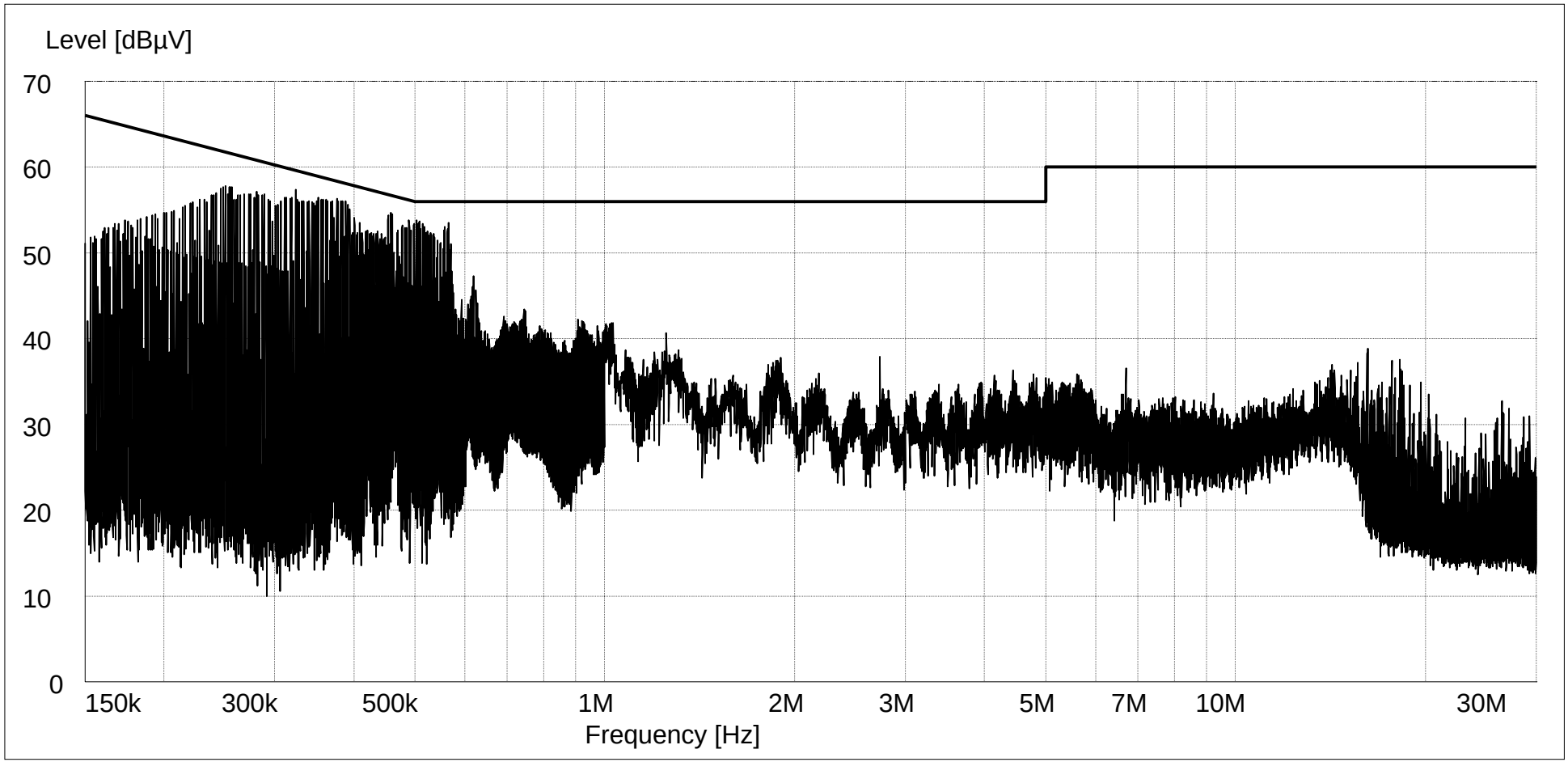


Test Setup

FCC Part 15, Subpart B, Section 15.207(a)
Conducted Emissions, Power Leads, 150 kHz to 30 MHz
Test Data

RETLIF TESTING LABORATORIES

Test Method	Conducted Emissions 150 kHz to 30 MHz		
Customer	Immedia Semiconductor	**Job No.**	R-6022N-3
Test Sample	WiFi Connected Home Security Camera		
Model No.	BCM00100U	**Serial No.**	100-006-159
Operating Mode	Live streaming video to iPod		
Test Specification	FCC Part 15. 207(a)		
Technician	M. Seamans	**Date**	October 6th, 2015
Climatic Conditions	Temp: 21.0 °C Relative Humidity: 40.0 %		
Lead Tested	120 VAC 60 Hz Hot Peak Readings to Quasi-Peak Limits.		



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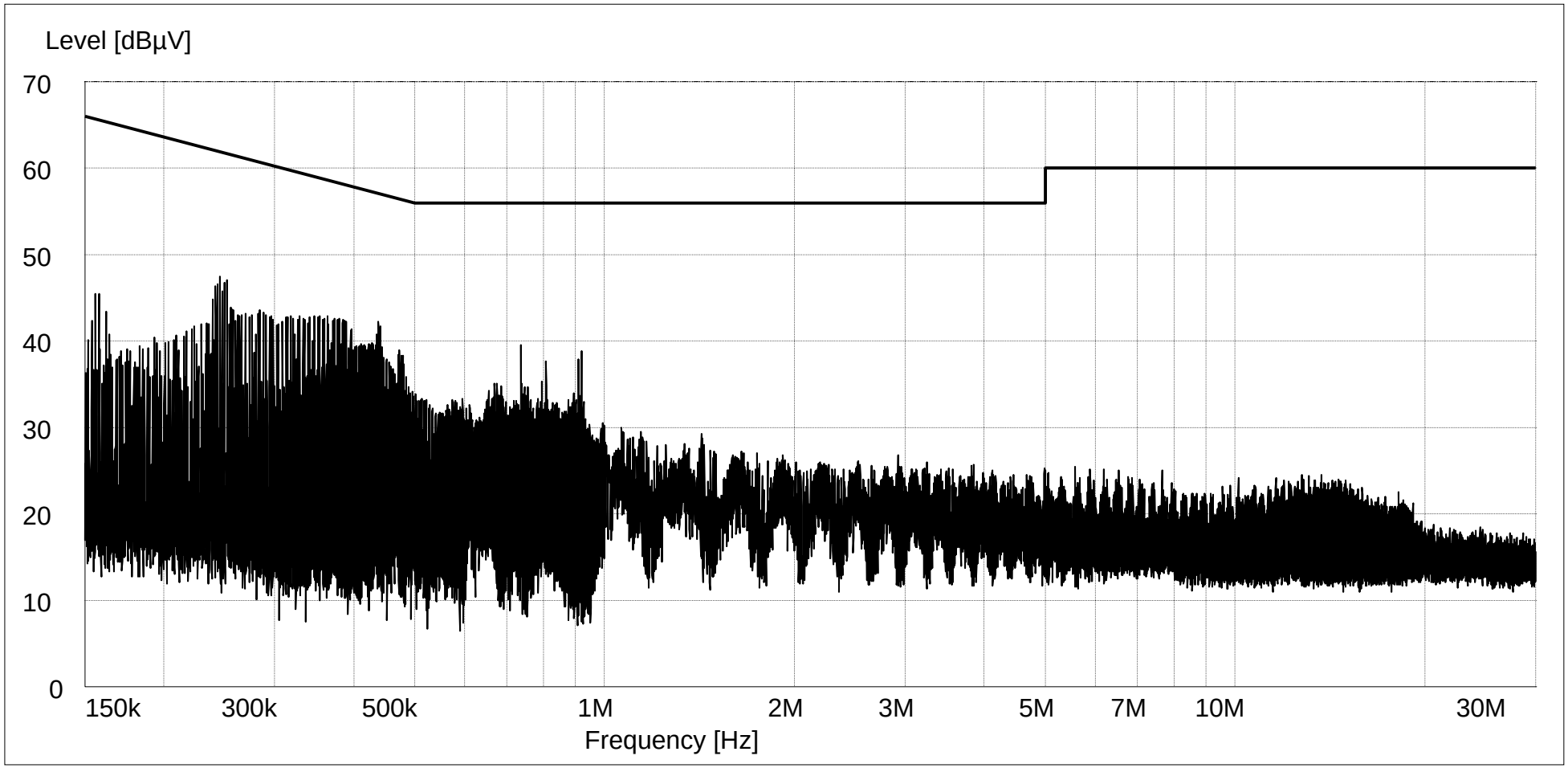
RETLIF TESTING LABORATORIES

Test Method	Conducted Emissions 150 kHz to 30 MHz		
Customer	Immedia Semiconductor	**Job No.**	R-6022N-3
Test Sample	WiFi Connected Home Security Camera		
Model No.	BCM00100U	**Serial No.**	100-006-159
Operating Mode	Live streaming video to iPod		
Test Specification	FCC Part 15. 207(a)		
Technician	M. Seamans	**Date**	October 6th, 2015
Climatic Conditions	Temp: 21.0 °C Relative Humidity: 40.0 %		
Lead Tested	120 VAC 60 Hz Neutral Peak Readings to Quasi-Peak Limits.		



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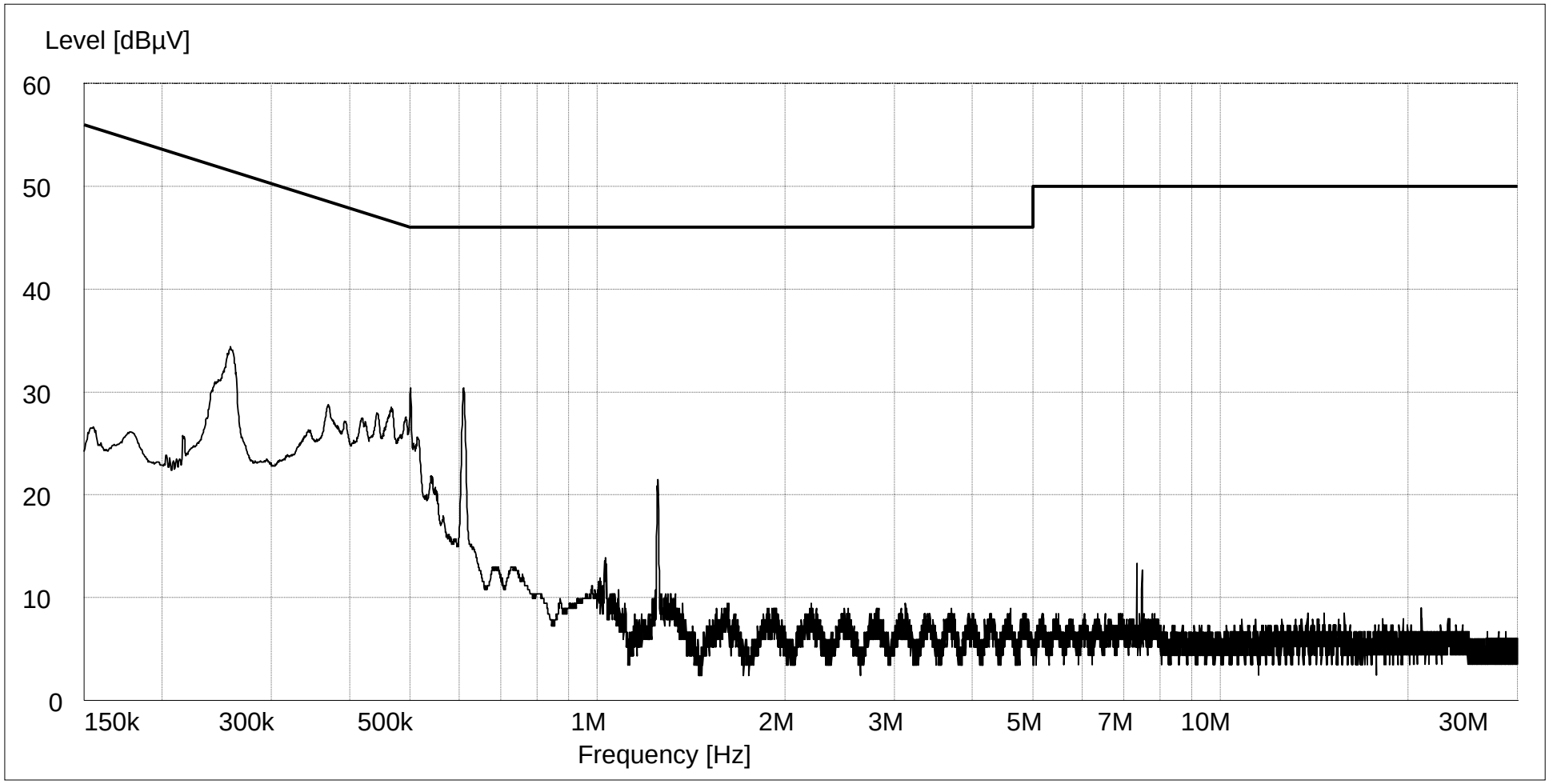
RETLIF TESTING LABORATORIES

Test Method	Conducted Emissions 150 kHz to 30 MHz		
Customer	Immedia Semiconductor	**Job No.**	R-6022N-3
Test Sample	WiFi Connected Home Security Camera		
Model No.	BCM00100U	**Serial No.**	100-006-159
Operating Mode	Live streaming video to iPod		
Test Specification	FCC Part 15. 207(a)		
Technician	M. Seamans	**Date**	October 6th, 2015
Climatic Conditions	Temp: 21.0 °C Relative Humidity: 40.0 %		
Lead Tested	120 VAC 60 Hz Hot Average Readings to Average Limits.		



RETLIF TESTING LABORATORIES

Test Method	Conducted Emissions 150 kHz to 30 MHz		
Customer	Immedia Semiconductor	**Job No.**	R-6022N-3
Test Sample	WiFi Connected Home Security Camera		
Model No.	BCM00100U	**Serial No.**	100-006-159
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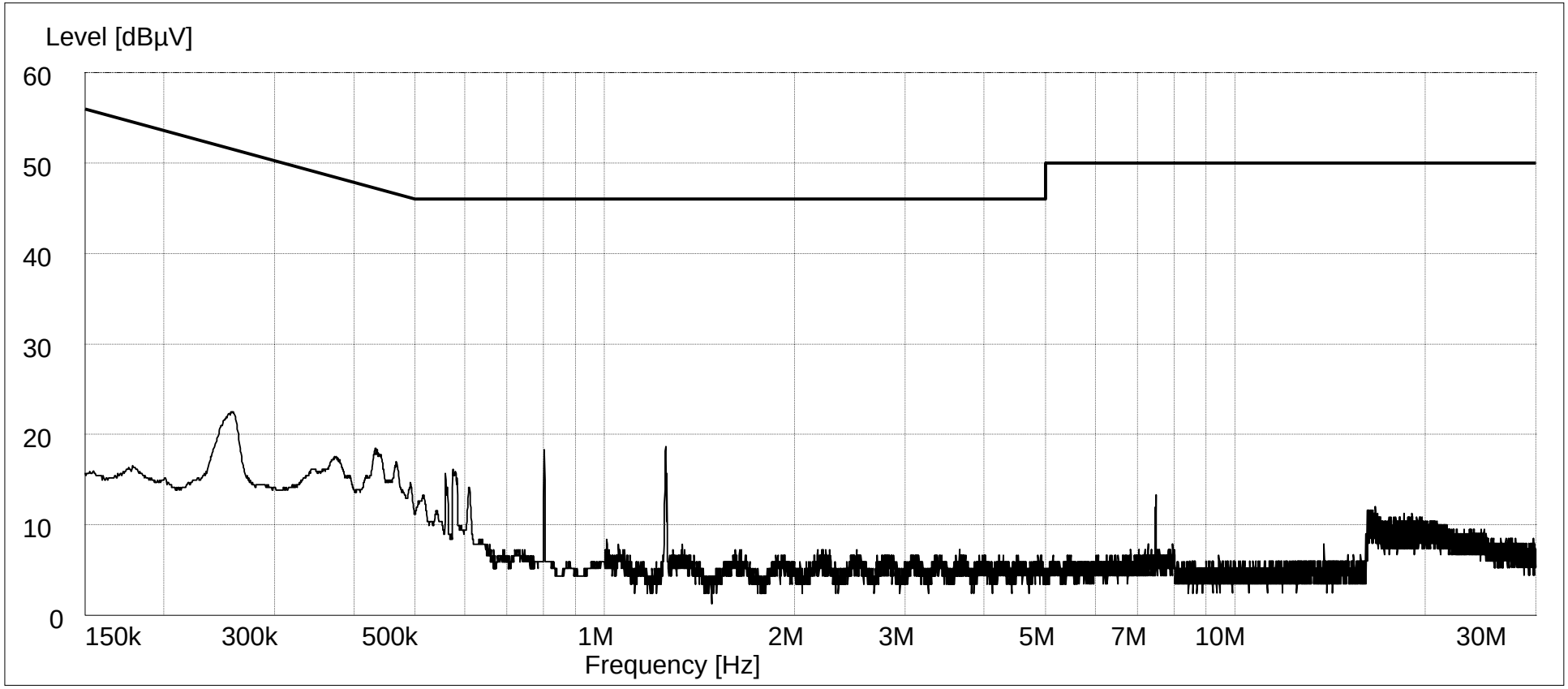
Technician	M. Seamans	**Date**	October 6th, 2015
Climatic Conditions	Temp: 21.0 °C Relative Humidity: 40.0 %		
Lead Tested	120 VAC 60 Hz Neutral Average Readings to Average Limits.		



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