Test of: Digi International

2.4 GHz XBee Series S2C TH RF Module

To: Japanese ARIB STD-T66

Test Report Serial No.: DIGI55-J4 Rev A

TEST REPORT

FROM

MiCOM Labs

Test of: Digi International 2.4 GHz XBee Series S2C TH RF Module

to

To Japanese ARIB STD-T66

Test Report Serial No.: DIGI55-J4 Rev A

This report supersedes: DIGI49-J2 Rev A

Manufacturer: Digi International
355 South 520 West, Suite 180
Lindon, Utah 84042
USA

Product Function: 802.15.4 / ZigBee - 2.4 GHz RF Module

Copy No: pdf **Issue Date:** 29th March 2017

This Test Report is Issued Under the Authority of;

MiCOM Labs, Inc.
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Phone: +1 (925) 462-0304
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A2LA ACCREDITED
TESTING CERT #2381.01

MiCOM Labs is an ISO 17025 Accredited Testing Laboratory

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ACCREDITATION, LISTINGS & RECOGNITION

ACCREDITATION - TESTING

MiCOM Labs, Inc. is an accredited Electrical testing laboratory per the international standard EN ISO/IEC 17025. The company is accredited by the American Association for Laboratory Accreditation (A2LA) www.a2la.org test laboratory number 2381.01. MiCOM Labs test schedule is available at the following URL; http://www.a2la.org/scopepdf/2381-01.pdf

Accredited Laboratory

A2LA has accredited

MICOM LABS

Pleasanton, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 4th day of February 2016.

Senior Director of Quality & Communications
For the Accreditation Council
Certificate Number 2381.01
Valid to November 30, 2017

For the tests or types of tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

RECOGNITION

MiCOM Labs, Inc has widely recognized Electrical testing capabilities. Our international recognition includes Conformity Assessment Body designation by APEC MRA** countries. Our test reports are widely accepted for global type approvals.

Country	Recognition Body	Status	Phase	Identification No.
USA	Federal Communications Commission (FCC)	TCB	-	US0159 Listing #: 102167
Canada	Industry Canada (IC)	FCB	APEC MRA 2	US0159 Listing #: 4143A-2 4143A-3
Japan	MIC (Ministry of Internal Affairs and Communication)	CAB	APEC MRA 2	RCB 210
	VCCI	--	--	A-0012
Europe	European Commission	NB	EU MRA	NB 2280
Australia	Australian Communications and Media Authority (ACMA)	CAB	APEC MRA 1	US0159
Hong Kong	Office of the Telecommunication Authority (OFTA)	CAB	APEC MRA 1	
Korea	Ministry of Information and Communication Radio Research Laboratory (RRL)	CAB	APEC MRA 1	
Singapore	Infocomm Development Authority (IDA)	CAB	APEC MRA 1	
Taiwan	National Communications Commission (NCC) Bureau of Standards, Metrology and Inspection (BSMI)	CAB	APEC MRA 1	
Vietnam	Ministry of Communication (MIC)	CAB	APEC MRA 1	

**APEC MRA – Asia Pacific Economic Community Mutual Recognition Agreement.
Is a recognition agreement under which test lab is accredited to regulatory standards of the APEC member countries.
Phase I - recognition for product testing
Phase II – recognition for both product testing and certification
N/A – Not Applicable

**EU MRA – European Union Mutual Recognition Agreement.
Is a recognition agreement under which test lab is accredited to regulatory standards of the EU member countries.
**NB – Notified Body

PRODUCT CERTIFICATION

MiCOM Labs, Inc. is an accredited Product Certification Body per the international standard ISO/IEC 17065. The company is accredited by the American Association for Laboratory Accreditation (A2LA) www.a2la.org test laboratory number 2381.02. MiCOM Labs test schedule is available at the following URL; http://www.a2la.org/scopepdf/2381-02.pdf

Accredited Product Certification Body

A2LA has accredited

MICOM LABS

Pleasanton, CA

This product certification body is accredited in accordance with the recognized International Standard ISO/IEC 17065:2012 *Requirements for bodies certifying products, processes and services*. This accreditation demonstrates technical competence for a defined scope and the operation of a management system.

Presented this 4th day of February 2016.

Senior Director of Quality & Communications
For the Accreditation Council
Certificate Number 2381.02
Valid to November 30, 2017

For the product certification schemes to which this accreditation applies, please refer to the organization's Product Certification Scope of Accreditation.

United States of America – Telecommunication Certification Body (TCB)
TCB Identifier – US0159

Industry Canada – Certification Body
CAB Identifier – US0159

Europe – Notified Body
Notified Body Identifier - 2280

Japan – Recognized Certification Body (RCB)
RCB Identifier - 210

DOCUMENT HISTORY

Document History		
Revision	Date	Comments
Draft	27th March, 2017	Spot Check Verification – firmware update From : XB24CDMSIT-001 Firmware (9000) To: 802.15.4 is 2001 DigiMesh is 9000 ZigBee is now 405F
Rev A	29th March 2017	Initial Release
This report was originally issued as DIGI49-J2 Rev A, 12th November 2015		
Rev A	12th November 2015	Initial Release

1. TEST RESULT CERTIFICATE

Manufacturer:	Digi International 355 South 520 West, Suite 180 Lindon, Utah 84042, USA	Tested By:	MiCOM Labs, Inc. 575 Boulder Court, Pleasanton California, 94566, USA
EUT:	802.15.4 / ZigBee - 2.4 GHz RF Module	Telephone:	+1 925 462 0304
Model No.:	S2CTH	Fax:	+1 925 462 0306
S/N'(s):	30012602-02		
Test Date(s):	5th - 6th November 2015	Website:	www.micomlabs.com

STANDARD(S)	TEST RESULTS
Japanese ARIB STD-T66	EQUIPMENT COMPLIES

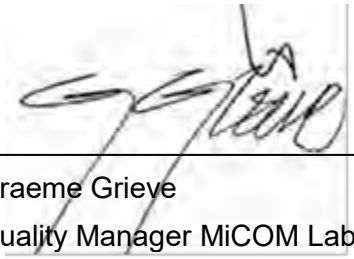
MiCOM Labs, Inc. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.

Notes:

1. This document reports conditions under which testing was conducted and the results of testing performed.
2. Details of test methods used have been recorded and kept on file by the laboratory.
3. Test results apply only to the item(s) tested.

Approved & Released for MiCOM Labs, Inc. by:

A2LA ACCREDITED
TESTING CERT #2381.01



Graeme Grieve
Quality Manager MiCOM Labs,

Gordon Hurst
President & CEO MiCOM Labs, Inc.

2. REFERENCES AND MEASUREMENT UNCERTAINTY

2.1. Normative References

Ref.	Publication	Year	Title
(i)	ARIB STD-T66	2006	Radio Equipment for Second-generation Low-power Data Communication Systems Radio Stations and Wireless Lan Systems' Equipment
(ii)	ANSI C63.4	2009	American National Standards for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
(iii)	CISPR 22/ EN 55022	2008 2010	Limits and Methods of Measurements of Radio Disturbance Characteristics of Information Technology Equipment
(iv)	M 3003	Edition 2 Jan. 2007	Expression of Uncertainty and Confidence in Measurements
(v)	LAB34	Edition 1 Aug 2002	The expression of uncertainty in EMC Testing
(vi)	ETSI TR 100 028	2001	Parts 1 and 2 Electromagnetic compatibility and Radio Spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics
(vii)	A2LA	July 2012	Reference to A2LA Accreditation Status – A2LA Advertising Policy

2.2. Test and Uncertainty Procedures

Conducted and radiated emission measurements were conducted in accordance with American National Standards Institute ANSI C63.4, listed in the Normative References section of this report.

Measurement uncertainty figures are calculated in accordance with ETSI TR 100 028 Parts 1 and 2.

Measurement uncertainties stated are based on a standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95 % in accordance with UKAS document M 3003 listed in the Normative References section of this report.

3. PRODUCT DETAILS AND TEST CONFIGURATIONS

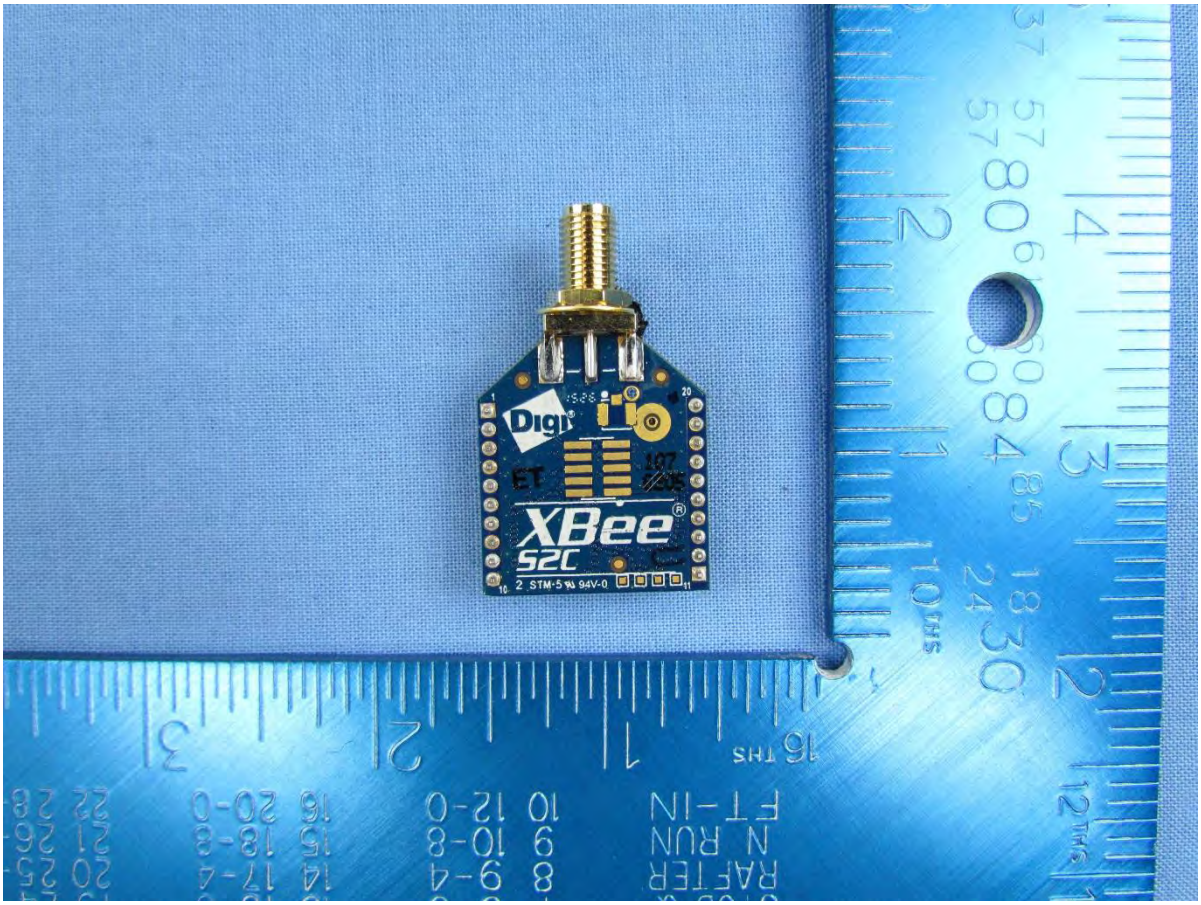
3.1. Technical Details

Details	Description
Purpose:	Test of Digi International 2.4 GHz XBee Series S2C TH RF Module to Japan's ARIB STD-T66 regulations
Applicant:	As Manufacturer
Manufacturer:	Digi International 355 South 520 West, Suite 180 Lindon, Utah 84042, USA
Laboratory performing the tests:	MiCOM Labs, Inc. 575 Boulder Court Pleasanton, California 94566 USA
Test report reference number:	DIGI55-J4 Rev A
Date EUT received:	29th October 2015
Standard(s) applied:	Japanese ARIB STD-T66
Dates of test (from - to):	5th - 6th November 2015
No of Units Tested:	1
Type of Equipment:	2.4 GHz RF 802.15.4 /ZigBee Module, single RF port
Manufacturers Trade Name:	XBee Series 2C
Model:	S2CTH
Location for use:	Indoor and Outdoor
Declared Frequency Range(s):	Transmit: 2405 - 2480 MHz: Receive: 2405 - 2480 MHz
Type of Modulation:	O-QPSK (Offset Quadrature Phase Shift Keying)
Declared Nominal Output Power:	Fixed +8 dBm (Average)
Antenna Gain:	Integral antenna -0.5 dBi
Transmit/Receive Operation:	Time Division Duplex
Number of Channels:	16
Channel Separation:	5 MHz
Rated Input Voltage and Current:	Nominal: 3.3 Vdc Minimum: 2.2 Vdc Maximum: 3.6 Vdc
Operating Temperature Range:	Manufacturers declared range -40 to +85ºC
Rated Power	4.80 mW/MHz
Serial Number	802.15.4 is 2001 DigiMesh is 9000 ZigBee is now 405F
Hardware version	2E43
Equipment Dimensions:	0.960" x 1.087" (2.438 cm X 2.761 cm)
Weight:	3 grams
ITU Designator:	2M61G1D
Primary function of equipment:	Control and monitoring

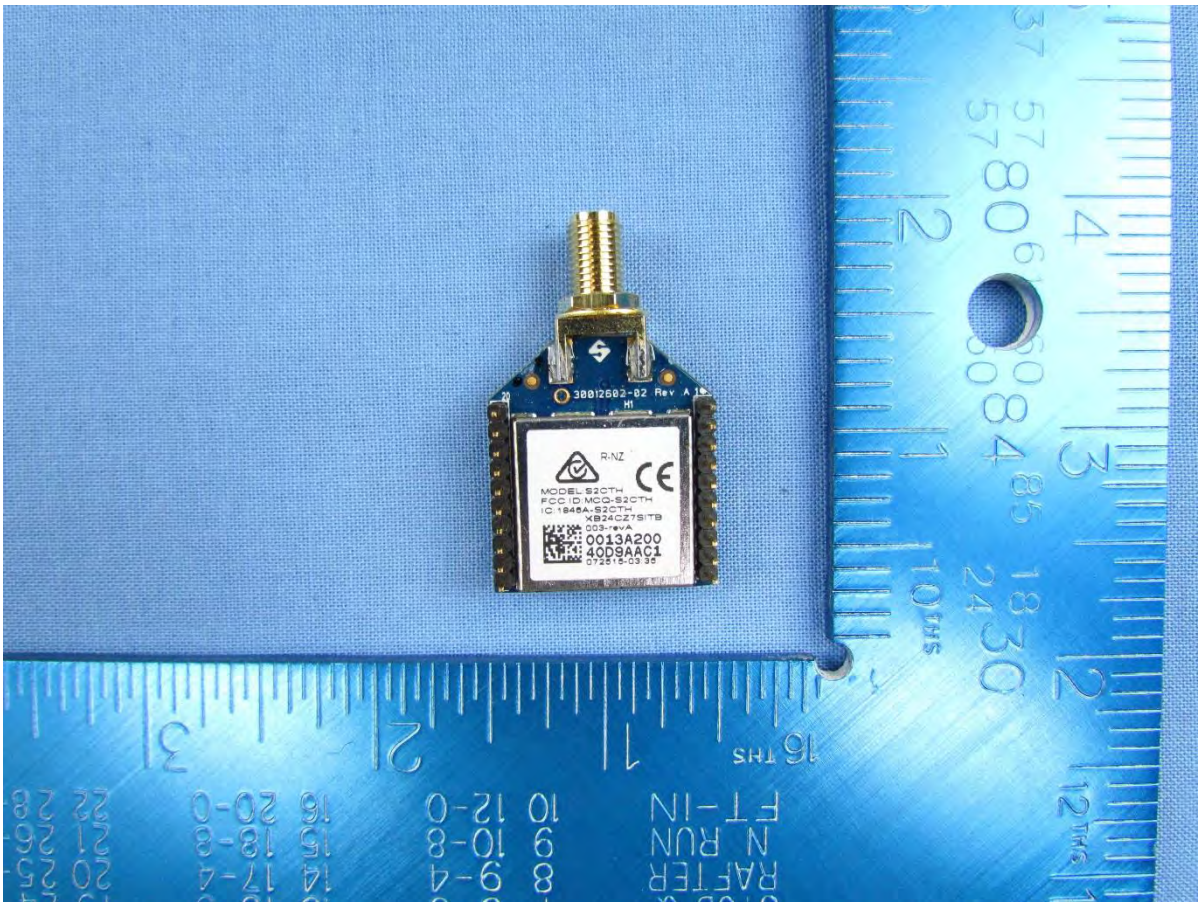
3.2. Scope of Test Program

The scope of the test program was to test the Digi International 2.4 GHz XBee Series S2C TH RF Module device in the frequency range 2400 - 2483.5 MHz for compliance against Japan's ARIB STD-T66 regulation.

Digi International
2.4 GHz XBee Series S2C TH RF Module



Digi International
2.4 GHz XBee Series S2C TH RF Module



3.3. Equipment Model(s) and Serial Number(s)

Type (EUT/ Support)	Equipment Description (Including Brand Name)	Mfr	Model No.	Serial No.
EUT	2.4 GHz wireless module with reverse polarized SMA RF connector	Digi International	S2CTH	30012602-02
Support	Cable assembly with dc input	Digi International	N/A	N/A

3.4. Antenna Details

1. Integral Antenna, wire whip 1.5 dBi

3.5. Cabling and I/O Ports

Number and type of I/O ports

1. RP-SMA RF connector – U.FL

3.6. Test Configurations

Three individual frequencies were tested covering the entire 2.4 GHz band. These frequencies represent low, mid and high channels (2405, 2440 and 2480 MHz) in the band of operation. Each test performed was completed at three voltage levels;

Nominal Voltage: +3.3 Vdc
Minimum Voltage: +2.2 Vdc
Maximum Voltage: +3.6 Vdc

3.7. Equipment Modifications

The following modifications were required to bring the equipment into compliance:

1. NONE

3.8. Deviations from the Test Standard

The following deviations from the test standard were required in order to complete the test program:

1. NONE

4. TEST SUMMARY

List of Measurements

The following table represents the list of measurements required under the **ARIB STD-T66**. All tests were conducted. The integral antenna was replaced by a 6" coaxial cable terminated in an SMA connector.

Test Items	Description	Test Condition	Result	Test Report Section
Antenna Power	Output power of device	Conducted	Complies	5.1.1
Frequency Error	Nominal frequency drift	Conducted	Complies	5.1.2
Occupied and Spreading Bandwidths	99% and 90% Occupied BW g mode occupied BW only	Conducted	Complies	5.1.3
Transmitter Spurious Emissions	Emissions above and below 1 GHz	Conducted	Complies	5.1.4
Receiver Spurious Emissions	Emissions above and below 1 GHz	Conducted	Complies	5.1.5
Hopping Frequency Dwell Time	Channel Dwell Time DH1, DH3, DH5	Conducted	N/A	N/A
Interference Protection	Identification code verification	Conducted	Complies	5.1.6
RF Accessibility	Inspection of RF Assembly	N/A (Inspection)	Complies	5.1.7

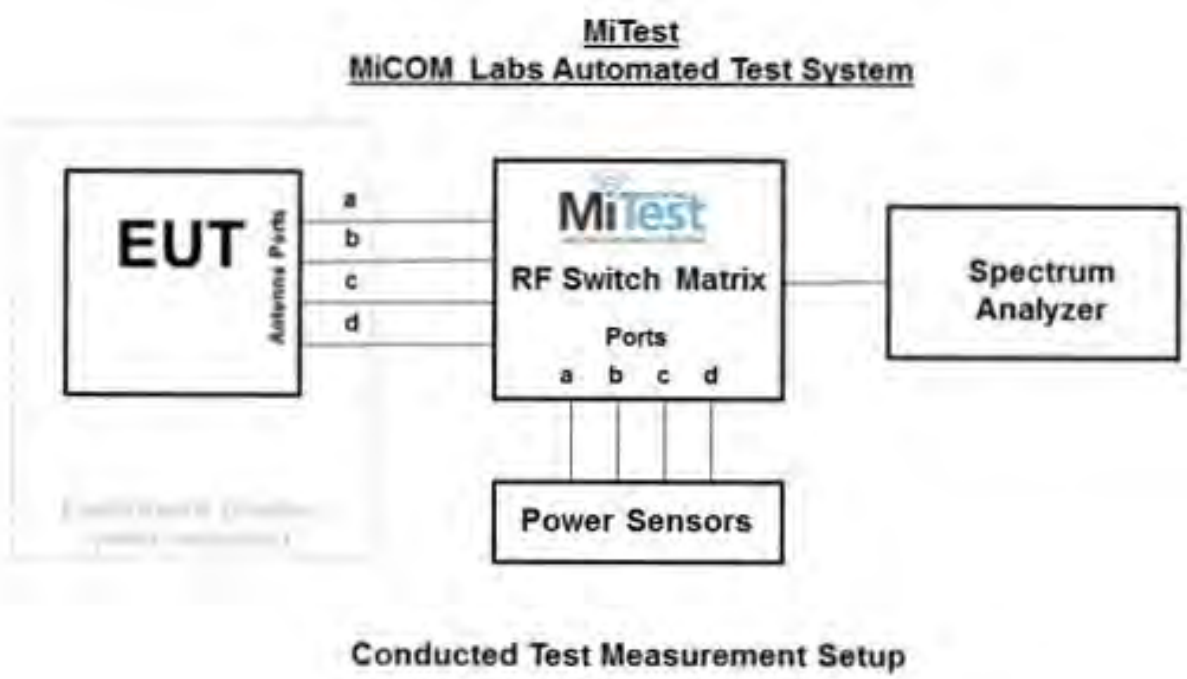
Note 1: *Test results reported in this document relate only to the item(s) tested*
Note 2: *The required tests demonstrated compliance as per client declaration of test configuration, monitoring methodology and associated pass/fail criteria*
Note 3: *Section 3.7 'Equipment Modifications' highlight the equipment modifications that were required to bring the product into compliance with the above matrix*

5. TEST EQUIPMENT CONFIGURATION(S)

5.1. Conducted

Conducted RF Emission Test Set-up(s).

The following tests were performed using the conducted test set-up shown in the diagram below.
1. Antenna Power Deviation
2. Frequency Error
3. Occupied and Spreading Bandwidth
4. Transmitter Spurious Emissions
5. Receiver Spurious Emissions



Conducted Test Measurement Setup

A full system calibration was performed on the test station and any resulting system losses (or gains) were taken into account in the production of all final measurement data.

Asset#	Description	Manufacturer	Model#	Serial#	Calibration Due Date
158	Barometer/Thermometer	Control Company	4196	E2846	04 Dec 2015
461	Agilent 5 Hz-26.5 GHz Spectrum Analyzer	Agilent	E4440A	MY46185537	13 Aug 2017
381	4x4 RF Switch Box	MiCOM Labs	MiTest RF Switch Box	MIC002	20 Dec 2015
390	Agilent USB Average Power Sensor	Agilent	U2002A	MY50000103	17 Oct 2016
419	Laptop with Labview Software	Lenova	W520	TS02	Not Required
420	USB to GPIB Interface	National Instruments	GPIB-USB HS	1346738	Not Required
435	USB Wideband Power Sensor	Boonton	55006	8730	31 Jul 2016
RF#2 GPIB#1	GPIB cable to Power Supply	HP	GPIB	None	Not Required
RF#2 SMA#1	EUT to Mitest box port 1	Flexco	SMA Cable port1	None	20 Dec 2015
RF#2 SMA#SA	Mitest box to SA	Flexco	SMA Cable SA	None	20 Dec 2015
RF#2 USB#1	USB Cable to Mitest Box	Dynex	USB Cable	None	Not Required
405	DC Variable Voltage Supply	Agilent	6654A	MY40001826	Not Required

6. MEASUREMENT AND PRESENTATION OF TEST DATA

The measurement and graphical data presented in this test report was generated automatically using state-of-the-art technology creating an easy to read report structure. Numerical measurement data is separated from supporting graphical data (plots) through hyperlinks. Numerical measurement data can be reviewed without scrolling through numerous graphical pages to arrive at the next data matrix.

Plots have been relegated into the Appendix 'Graphical Data'.

Test and report automation was performed by MiTest. MiTest is an automated test system developed by MiCOM Labs. MiTest is the first cloud based modular test system enabling end-to-end automation of regulatory compliance testing for conducted RF testing.

The MiCOM Labs "MiTest" Automated Test System" (Patent Pending)

7. TEST RESULTS

Ambient Test Conditions.

Temperature: 17 to 23 °C Relative humidity: 31 to 57 % Pressure: 999 to 1012 mbar

7.1. Device Characteristics

7.1.1. Antenna Power

Test Procedure

Antenna power measurements were measured using a spectrum analyzer. The EUT was connected to the antenna terminal which was terminated in an SMA connector and operating at the appropriate center frequency.

The Spectrum Analyzer was set to make an initial scan of the transmitter mask to identify the frequency where the peak power was present. The Analyzer was then set to measure the peak power density levels utilizing an average detector in a 3 MHz bandwidth.

RBW = 1 MHz; VBW = 1 MHz

Radio Operational Condition

Output Mode: Modulated

Output Power: Maximum

Duty Cycle: 100%

Equipment Configuration for Antenna Power Deviation			
Variant:	802.15.4	**Duty Cycle (%):**	99
Data Rate:	250 kBit/s	**Antenna Gain (dBi):**	-0.50
Modulation:	O-QPSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Output Power (mW/MHz) Port(s)				Total Power Σ Port(s)	Limit	Margin	EUT Power Setting
MHz	a	b	c	d	mW/MHz	mW/MHz	dB	
Nominal: 3.30 Vdc								
2405.0	4.74	--	--	--	4.74	10.00	-3.24	Max
2440.0	4.23	--	--	--	4.23	10.00	-3.74	Max
2480.0	4.28	--	--	--	4.28	10.00	-3.69	Max
Low: 2.20 Vdc								
2405.0	4.82	--	--	--	4.82	10.00	-3.17	Max
2440.0	4.27	--	--	--	4.27	10.00	-3.70	Max
2480.0	4.33	--	--	--	4.33	10.00	-3.64	Max
High: 3.60 Vdc								
2405.0	4.75	--	--	--	4.75	10.00	-3.23	Max
2440.0	4.22	--	--	--	4.22	10.00	-3.75	Max
2480.0	4.28	--	--	--	4.28	10.00	-3.69	Max

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF OUTPUT POWER
Measurement Uncertainty:	±1.33 dB

Note: click the links in the above matrix to view the graphical image (plot).

Rated Power

Rated Power = 4.80 mW/MHz

Comparison of measured results to the Rated Power

2.4 GHz (WW)Technology	Center Frequency (MHz)	Measured Power (mW/MHz)	Calculated Range (+20% / -80%) (mW/MHz)	Measured Deviation (%)
802.15.4	2,405	4.74	0.96 – 5.76	-1.25
	2,440	4.82	0.96 – 5.76	+0.42
	2,480	4.75	0.96 – 5.76	-1.04

Antenna Validation for 802.15.4 mode

maximum power = 4.82 mW/MHz (+ 6.83 dBm/MHz)

Antenna	Type	Antenna Gain	Max^{m} Pwr (dBm/MHz)	EIRP (dBm/ MHz)	EIRP LIMIT (dBm/ MHz)	½ Power Angle	Half Power Beam-width Limit	Antenna Valid
Integral	Omni	1.5	6.83	8.33	12.14	--	360	Yes

7.1.2. Frequency Error

Test Procedure

The Frequency Error was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency. Low point of modulated signal at the center frequency was used to determine Frequency Error. Sample plot provided.

Radio Operational Condition

Output Mode: Modulated

Duty Cycle: 100%

Equipment Configuration for Frequency Deviation			
Variant:	802.15.4	**Duty Cycle (%):**	99
Data Rate:	250 kbit/s	**Antenna Gain (dBi):**	-0.50
Modulation:	O-QPSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results

Voltage	Limit ppm	Channel Frequency: 2405.0 MHz				Channel Frequency: 2440.0 MHz			
		Measured Frequency MHz	Δ KHz	Δ ppm	Margin ppm	Measured Frequency MHz	Δ KHz	Δ ppm	Margin ppm
3.30 Vdc	-50 to 50	2405.002798	2.798	1.163	-48.84	2440.006845	6.845	2.805	-47.19
2.20 Vdc	-50 to 50	2405.003032	3.032	1.261	-48.74	2440.007096	7.096	2.908	-47.09
3.60 Vdc	-50 to 50	2405.002807	2.807	1.167	-48.83	2440.006871	6.871	2.816	-47.18
		Channel Frequency: 2480.0 MHz							
3.30 Vdc	-50 to 50	2480.004528	4.528	1.826	-48.17				
2.20 Vdc	-50 to 50	2480.004729	4.729	1.907	-48.09				
3.60 Vdc	-50 to 50	2480.004554	4.554	1.836	-48.16				

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-02 MEASURING FREQUENCY
Measurement Uncertainty:	±0.86 ppm

Note: click the links in the above matrix to view the graphical image (plot).

7.1.3. Occupied and Spreading Bandwidths

Test Procedure

The Occupied and Spreading Bandwidth was measured with a spectrum analyzer connected to the antenna terminal which was terminated in an SMA connector. The EUT was operating in the operation mode specified in Section 3.6 'Test Configurations' at the appropriate center frequency. The voltage was varied at the input to the device on the separate channels and measurements were recorded.

Spreading Factor for an 802.15.4 is: 0.062

Radio Operational Condition

Output Mode: Modulated

Output Power: Maximum

Operational Mode: Low, middle and high frequencies

Measurement Results for Occupied Bandwidth (99%) and Spreading Bandwidth (90%)

Equipment Configuration for Occupied Bandwidth			
Variant:	802.15.4	**Duty Cycle (%):**	99
Data Rate:	250 kBit/s	**Antenna Gain (dBi):**	-0.50
Modulation:	O-QPSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results							
99% Bandwidth (MHz)							
Voltage	**Limit (MHz)**	**Channel Frequency: 2405.0 MHz**		**Channel Frequency: 2440.0 MHz**		**Channel Frequency: 2480.0 MHz**	
		99% Bandwidth	**Margin**	**99% Bandwidth**	**Margin**	**99% Bandwidth**	**Margin**
3.30 Vdc	26.0	2.612	-23.39	2.612	-23.39	2.596	-23.40
2.20 Vdc	26.0	2.586	-23.41	2.615	-23.39	2.587	-23.41
3.60 Vdc	26.0	2.586	-23.41	2.620	-23.38	2.590	-23.41

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Spreading Factor			
Variant:	802.15.4	**Duty Cycle (%):**	99
Data Rate:	250 kBit/s	**Antenna Gain (dBi):**	-0.50
Modulation:	O-QPSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results

Spreading Factor (MHz)

Voltage	Limit	Channel Frequency: 2405.0 MHz			Channel Frequency: 2440.0 MHz			Channel Frequency: 2480.0 MHz		
		Spreading		Margin	Spreading		Margin	Spreading		Margin
		Bandwidth	Factor		Bandwidth	Factor		Bandwidth	Factor	
3.30 Vdc	5.0	1.592	25.68	-20.68	1.600	25.81	-20.80	1.584	25.56	-20.55
2.20 Vdc	5.0	1.584	25.55	-20.55	1.595	25.72	-20.72	1.582	25.51	-20.51
3.60 Vdc	5.0	1.589	25.62	-20.62	1.614	26.03	-21.03	1.597	25.76	-20.76

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

7.1.4. Transmitter Spurious Emissions

Test Procedure

Transmitter Spurious Emissions were measured conductively per the test set up below. The EUT was set on the channel of interest and the spectrum was investigated from 10 – 16,000 MHz.

Radio Operational Condition

Output Mode: Modulated

Output Power: Maximum

Duty Cycle: 100%

Equipment Configuration for Transmitter Spurious Emissions

Variant:	802.15.4	**Duty Cycle (%):**	99
Data Rate:	250 kBit/s	**Antenna Gain (dBi):**	-0.50
Modulation:	O-QPSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results

Frequency Range MHz	Limit µW/MHz	Channel Frequency: 2405.0MHz			Channel Frequency: 2440.0MHz			Channel Frequency: 2480.0MHz		
		Marker		Margin dB	Marker		Margin dB	Marker		Margin dB
		Amp µW/MHz	Freq MHz		Amp µW/MHz	Freq MHz		Amp µW/MHz	Freq MHz	
Nominal Voltage: 3.30 Vdc										
10.0-1000.0	2.5	0.001	600.700	-33.98	0.000	600.700	-43.98	0.000	216.250	-43.98
1000.0-2387.0	2.5	0.007	2387.000	-25.53	0.003	1309.800	-29.21	0.003	2382.400	-29.21
2387.0-2400.0	25.0	0.539	2400.000	-16.66	0.004	2397.508	-37.96	0.004	2396.512	-37.96
2483.5-2496.5	25.0	0.003	2489.372	-39.21	0.004	2483.933	-37.96	5.072	2483.522	-6.93
2496.5-16000.0	2.5	0.025	7223.000	-20.00	0.030	7313.000	-19.21	0.733	2496.000	-5.33
Low Voltage: 2.20 Vdc										
10.0-1000.0	2.5	0.001	600.700	-33.98	0.001	600.700	-33.98	0.000	711.250	-43.98
1000.0-2387.0	2.5	0.012	2387.000	-23.19	0.004	2363.900	-27.96	0.003	1952.400	-29.21
2387.0-2400.0	25.0	1.000	2400.000	-13.98	0.004	2394.453	-37.96	0.003	2395.103	-39.21
2483.5-2496.5	25.0	0.004	2495.330	-37.96	0.004	2490.498	-37.96	5.369	2483.543	-6.68
2496.5-16000.0	2.5	0.027	7223.000	-19.67	0.028	7313.000	-19.51	0.760	2496.000	-5.17
High Voltage: 3.60 Vdc										
10.0-1000.0	2.5	0.001	600.700	-33.98	0.000	983.500	-43.98	0.001	216.250	-33.98
1000.0-2387.0	2.5	0.011	2387.000	-23.57	0.003	1076.300	-29.21	0.003	2384.700	-29.21
2387.0-2400.0	25.0	0.987	2400.000	-14.04	0.004	2396.100	-37.96	0.003	2397.227	-39.21
2483.5-2496.5	25.0	0.004	2488.895	-37.96	0.004	2487.530	-37.96	5.113	2483.522	-6.89
2496.5-16000.0	2.5	0.026	7223.000	-19.83	0.031	7313.000	-19.07	0.734	2496.000	-5.32

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Emissions found within < 6 dB of the limit line and ≥ to the limit line are evaluated in more detail in order to prove compliance. The following Evaluation Table identifies emissions that fall within this criteria.

Channel Frequency MHz	Frequency Range MHz	Temp °C	Voltage Vdc	Chain	Marker		Limit µW/MHz	Margin dB
					Amp µW/MHz	Frequency MHz		
2405.00	1000.0 - 2387.0	20.0	3.60	Chain a	0.002	1693.50	2.50	-31.01
2440.00	2496.5 - 16000.0	20.0	3.30	Chain a	0.004	9248.30	2.50	-28.09
2480.00	2483.5 - 2496.5	20.0	2.20	Chain a	0.100	2490.00	25.00	-23.98
2480.00	2496.5 - 16000.0	20.0	2.20	Chain a	0.020	2496.00	2.50	-20.97
2480.00	2496.5 - 16000.0	20.0	3.30	Chain a	0.004	9248.30	2.50	-27.68
2480.00	2496.5 - 16000.0	20.0	3.60	Chain a	0.020	2496.00	2.50	-20.97

After further investigation the above emissions were found to be compliant with the limits declared in the standard.

7.1.5. Receiver Spurious Emissions

Test Procedure

Receiver Spurious Emissions were measured conductively per the test set up below. The EUT was set on the channel of interest and the spectrum was investigated from 10 – 16,000 MHz. As the receiver operates in a continuous receive mode covering all channels only one set of results were taken for all channels.

Radio Operational Condition

Operational Mode: Receive mode only

Operational Mode: Low, mid and high channels

Equipment Configuration for Receiver Spurious Emissions

Variant:	802.15.4	**Duty Cycle (%):**	Not Applicable
Data Rate:	All	**Antenna Gain (dBi):**	-0.50
Modulation:	O-QPSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results

Frequency Range MHz	Limit nW/MHz	Channel Frequency: 2405.0MHz			Channel Frequency: 2440.0MHz			Channel Frequency: 2480.0MHz		
		Marker		Margin dB	Marker		Margin dB	Marker		Margin dB
		Amp nW/MHz	Freq MHz		Amp nW/MHz	Freq MHz		Amp nW/MHz	Freq MHz	
Nominal Voltage: 3.30 Vdc										
10-1000	4.0	1.136	600.700	-5.47	0.465	600.700	-9.35	0.360	191.500	-10.46
1000-16000	20.0	0.942	1000.000	-13.27	0.755	13825.000	-14.23	0.675	1050.000	-14.72
Low Voltage: 2.20 Vdc										
10-1000	4.0	1.045	600.700	-5.83	0.460	600.700	-9.39	0.369	191.500	-10.35
1000-16000	20.0	1.141	1000.000	-12.44	0.694	14925.000	-14.60	0.729	13575.000	-14.38
High Voltage: 3.60 Vdc										
10-1000	4.0	1.126	600.700	-5.51	0.520	600.700	-8.86	0.377	191.500	-10.26
1000-16000	20.0	1.055	1000.000	-12.78	0.737	13625.000	-14.34	0.742	15450.000	-14.31

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Emissions found within < 6 dB of the limit line and ≥ to the limit line are evaluated in more detail in order to prove compliance. The following Evaluation Table identifies emissions that fall within this criteria.

Channel Frequency MHz	Frequency Range MHz	Temp °C	Voltage Vdc	Chain	Marker		Limit µW/MHz	Margin dB
					Amp µW/MHz	Frequency MHz		
2405.00	10.0 - 1000.0	20.0	2.20	Chain a	0.0001	600.70	4.00	-57.01
2405.00	10.0 - 1000.0	20.0	3.30	Chain a	0.0001	600.70	4.00	-57.06
2405.00	10.0 - 1000.0	20.0	3.60	Chain a	0.0001	600.70	4.00	-56.70
2440.00	10.0 - 1000.0	20.0	3.30	Chain a	0.0001	600.70	4.00	-56.81
2480.00	10.0 - 1000.0	20.0	3.30	Chain a	0.0001	600.70	4.00	-57.14
2480.00	1000.0 - 16000.0	20.0	2.20	Chain a	0.0001	8500.00	20.00	-59.27

After further investigation the above emissions were found to be compliant with the limits declared in the standard.

7.1.6. Interference Protection Function

Test Procedure

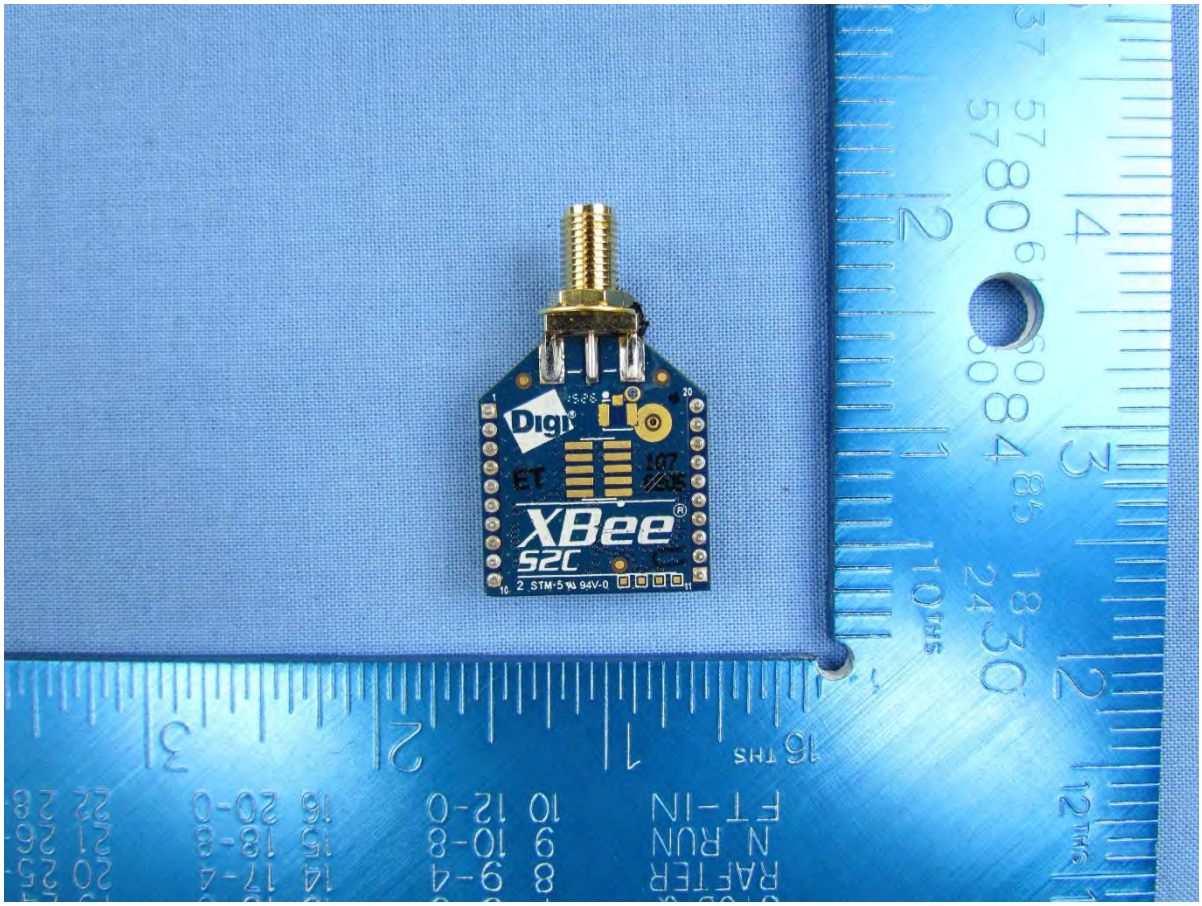
The received signal should be demodulated and the data investigated to verify the receipt of the transmitted identification code.

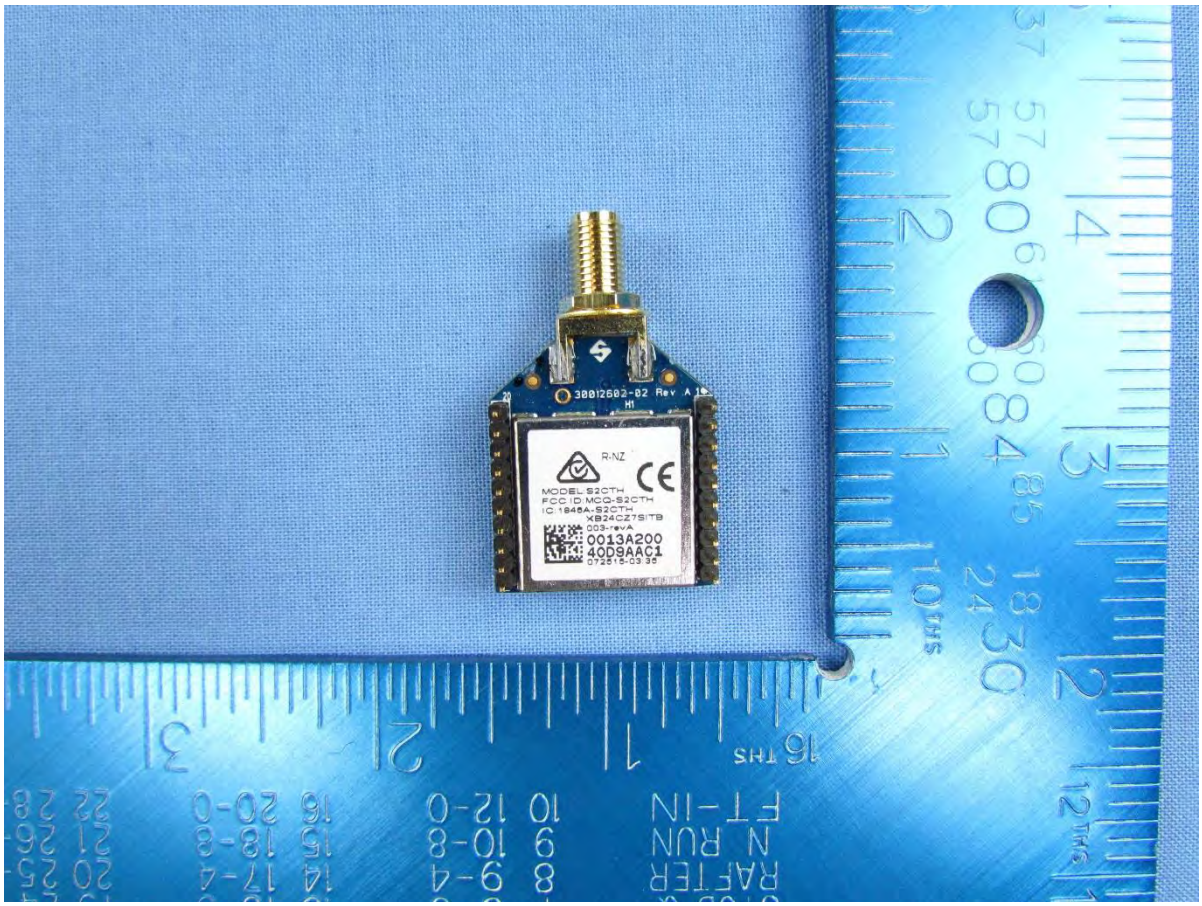
Result

Identification code was verified to be correctly received

7.1.7. RF Accessibility

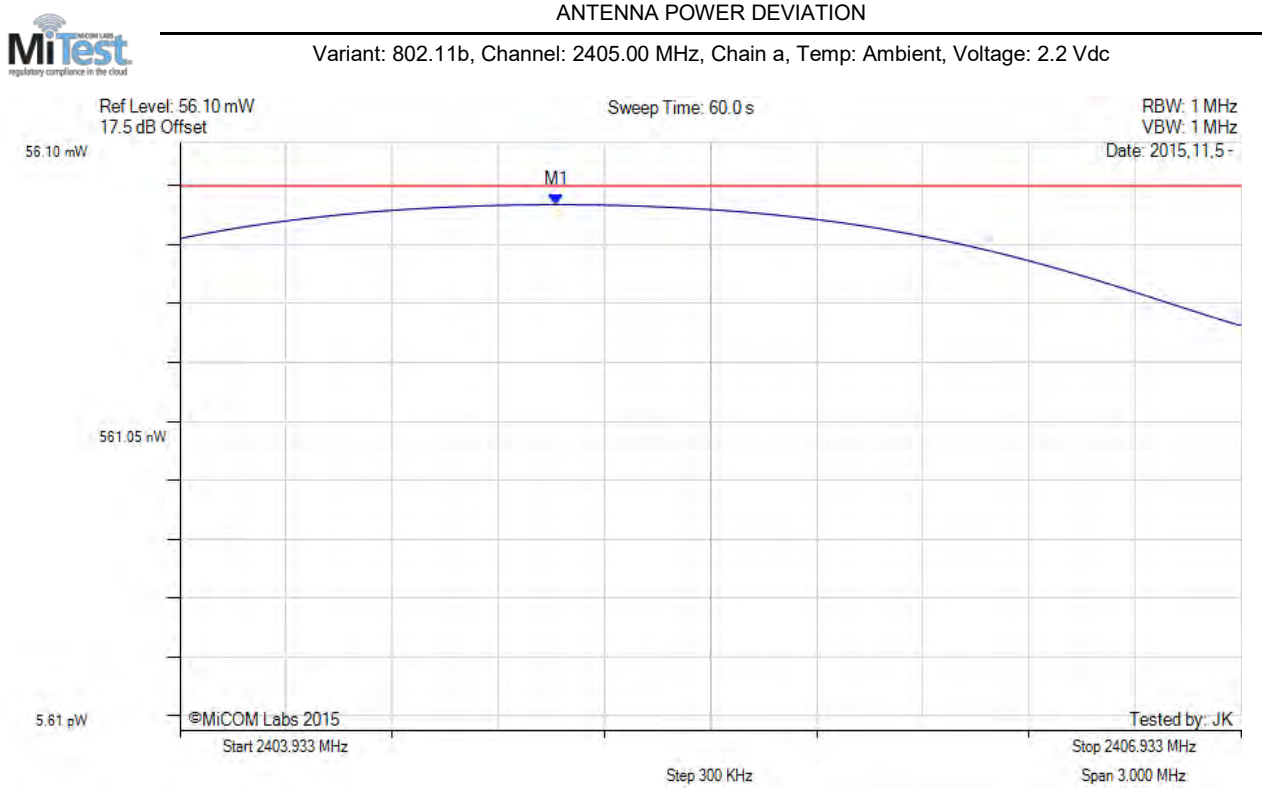
The RF module enclosure for the XBee device has no exposed RF components as they are contained within the metal enclosure as seen in the images below:




30012602-02 Rev A
MODEL:S2CTH
FCC ID:MCQ-S2CTH
IC:1846A-S2CTH
XB24CZ7SITB
0013A200
40D9AAC1

A. APPENDIX – GRAPHICAL IMAGES

A.1. Antenna Power Deviation

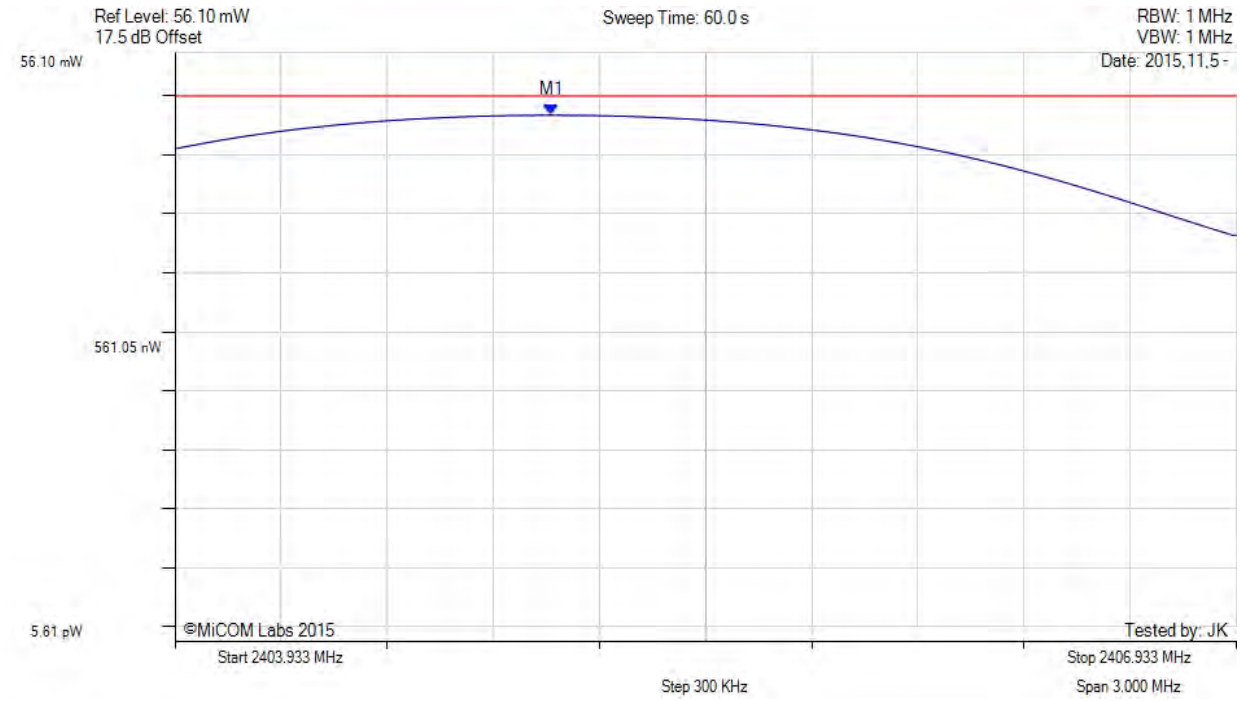


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 4.82 mW/MHz M1 Marker Frequency: 2405.00 MHz	Antenna Power: 4.82 mW/MHz

back to matrix

ANTENNA POWER DEVIATION

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

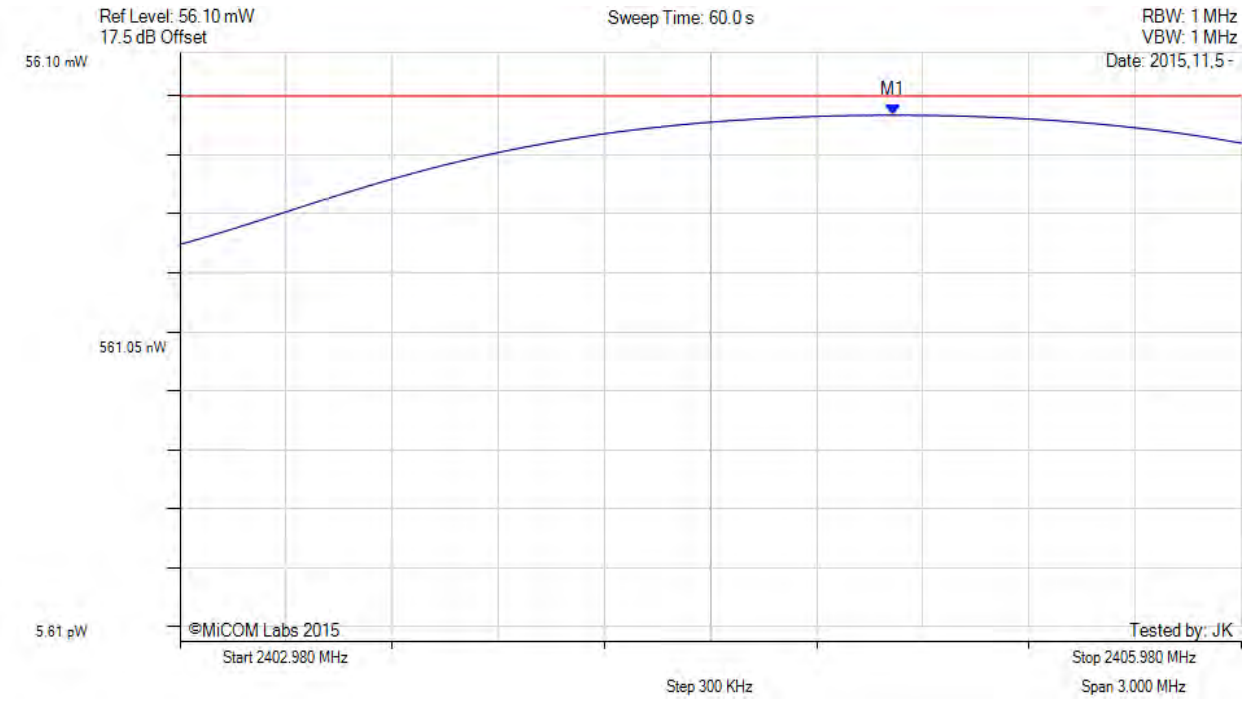


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 4.74 mW/MHz M1 Marker Frequency: 2405.00 MHz	Antenna Power: 4.74 mW/MHz

back to matrix

ANTENNA POWER DEVIATION

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

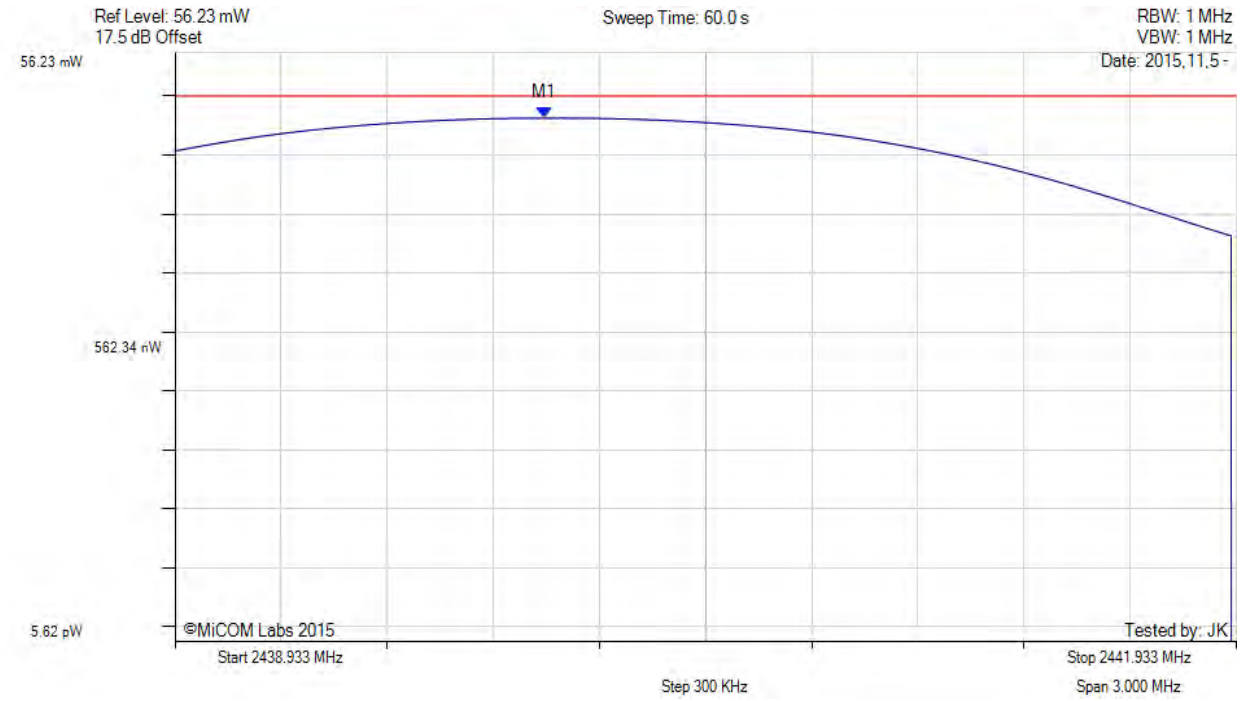


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 4.75 mW/MHz M1 Marker Frequency: 2405.00 MHz	Antenna Power: 4.75 mW/MHz

back to matrix

ANTENNA POWER DEVIATION

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

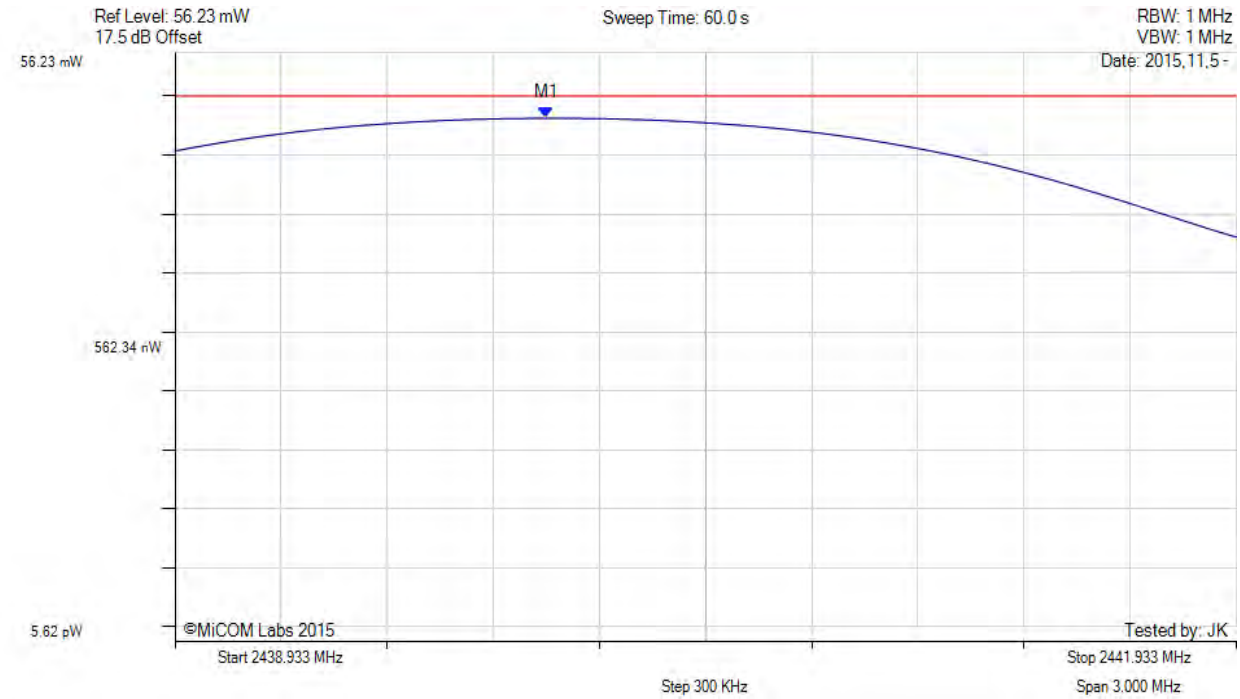


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 4.27 mW/MHz M1 Marker Frequency: 2440.00 MHz	Antenna Power: 4.27 mW/MHz

back to matrix

ANTENNA POWER DEVIATION

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

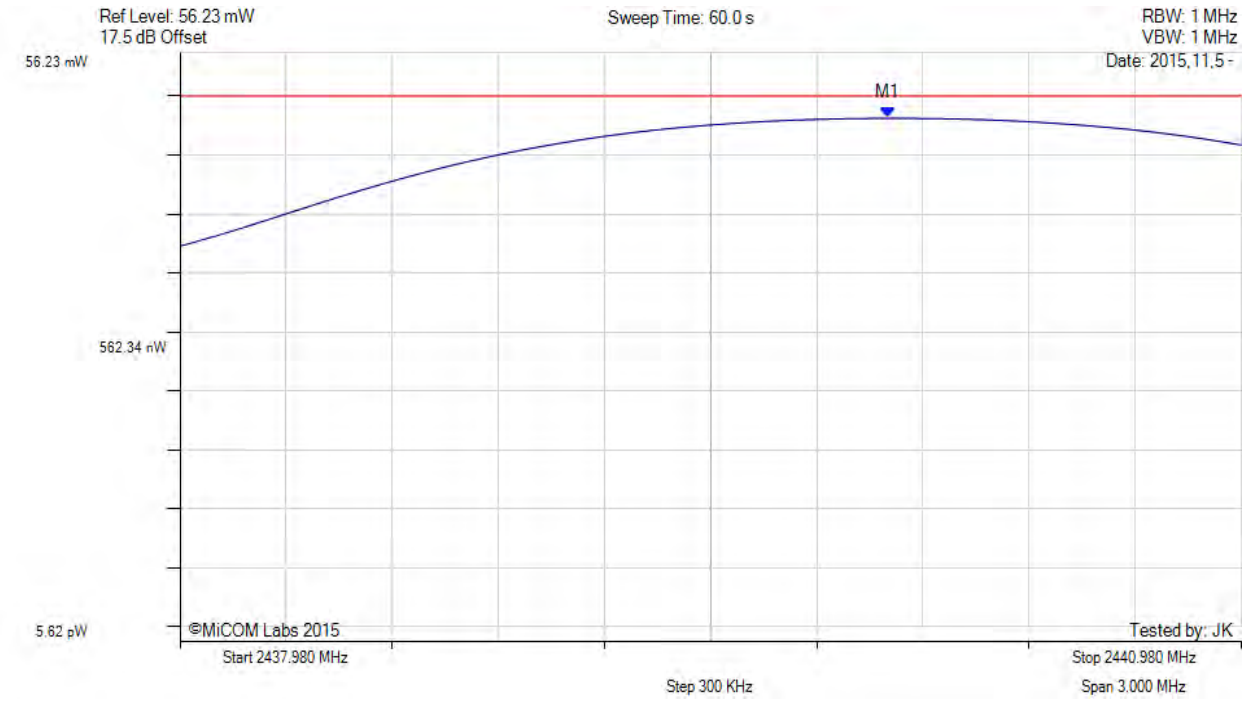


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 4.23 mW/MHz M1 Marker Frequency: 2440.00 MHz	Antenna Power: 4.23 mW/MHz

back to matrix

ANTENNA POWER DEVIATION

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

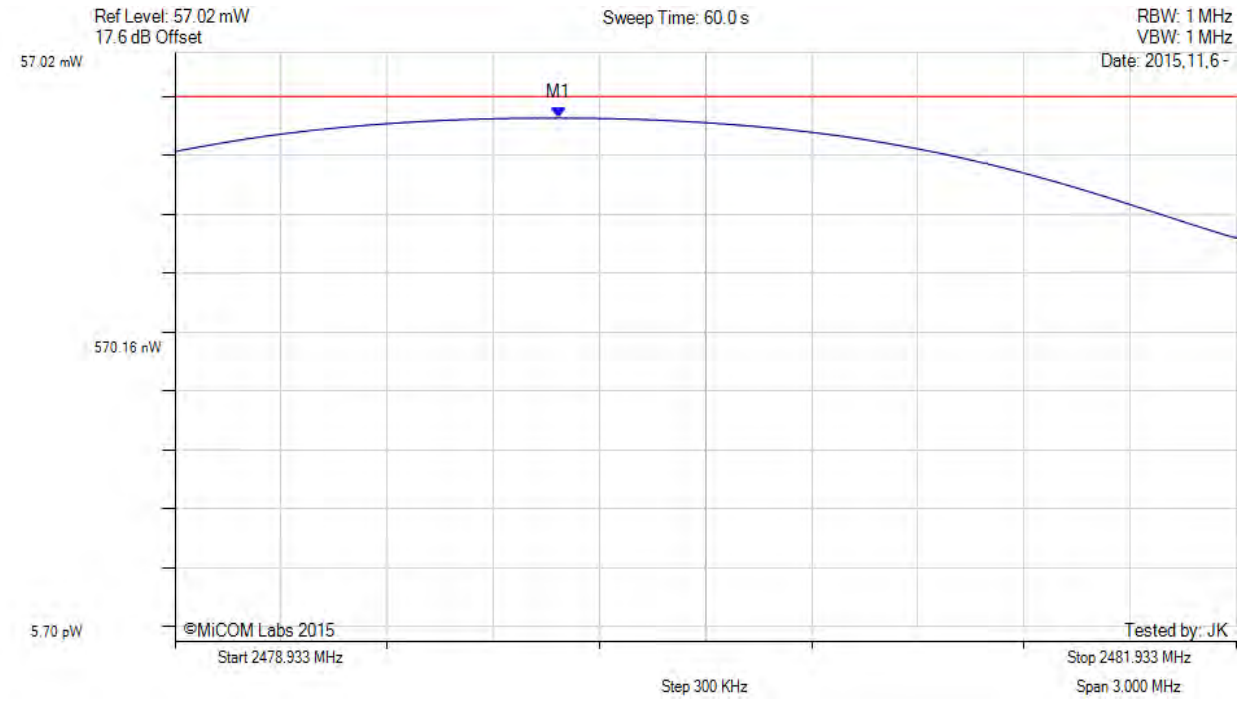


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 4.22 mW/MHz M1 Marker Frequency: 2440.00 MHz	Antenna Power: 4.22 mW/MHz

back to matrix

ANTENNA POWER DEVIATION

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

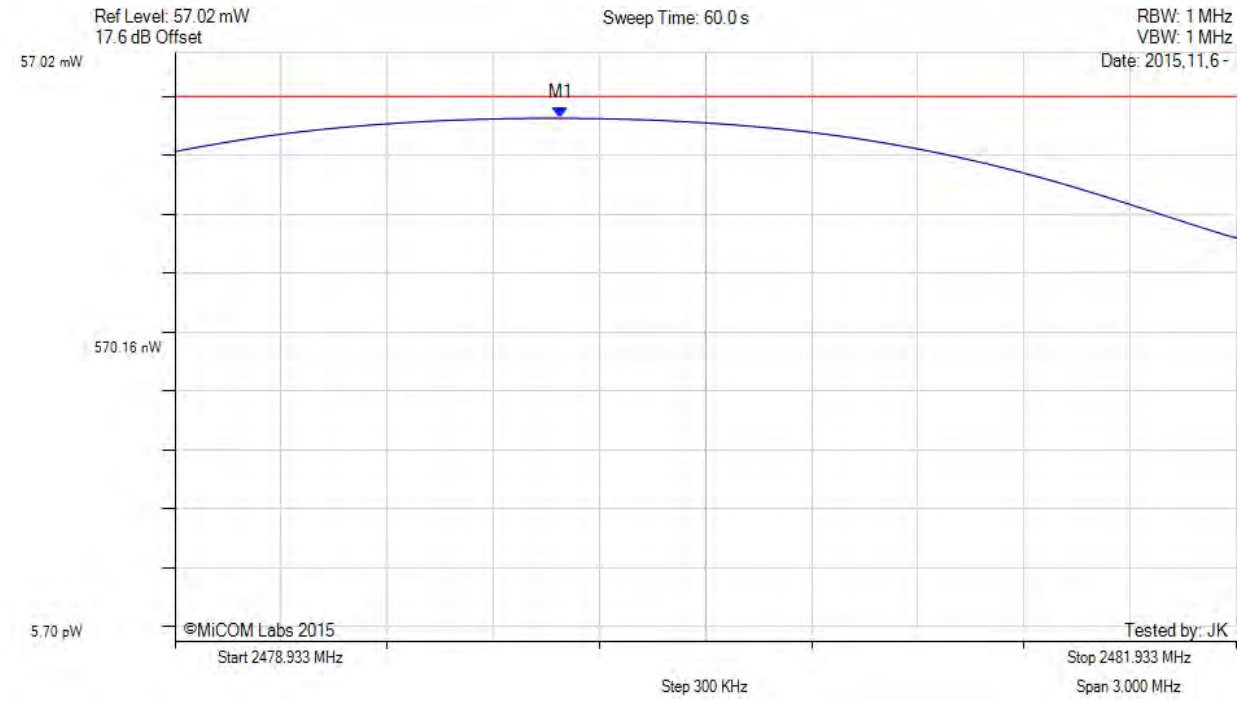


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 4.33 mW/MHz M1 Marker Frequency: 2480.00 MHz	Antenna Power: 4.33 mW/MHz

back to matrix

ANTENNA POWER DEVIATION

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

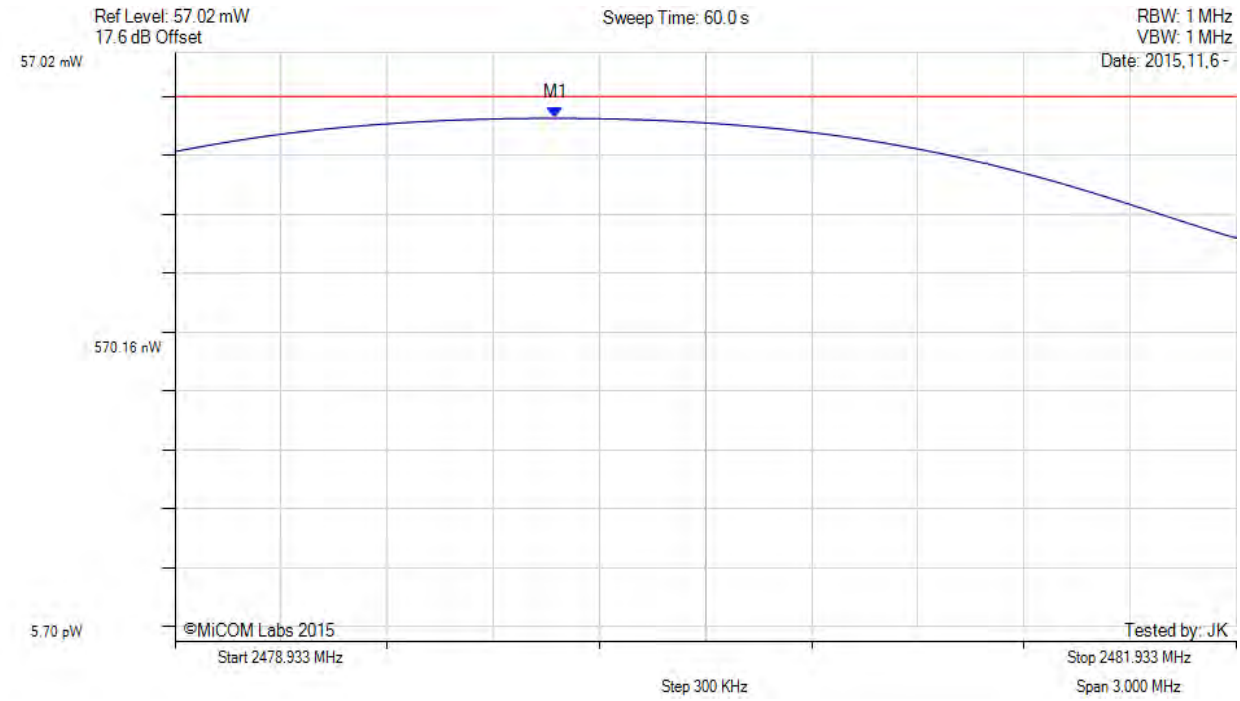


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 4.28 mW/MHz M1 Marker Frequency: 2480.00 MHz	Antenna Power: 4.28 mW/MHz

back to matrix

ANTENNA POWER DEVIATION

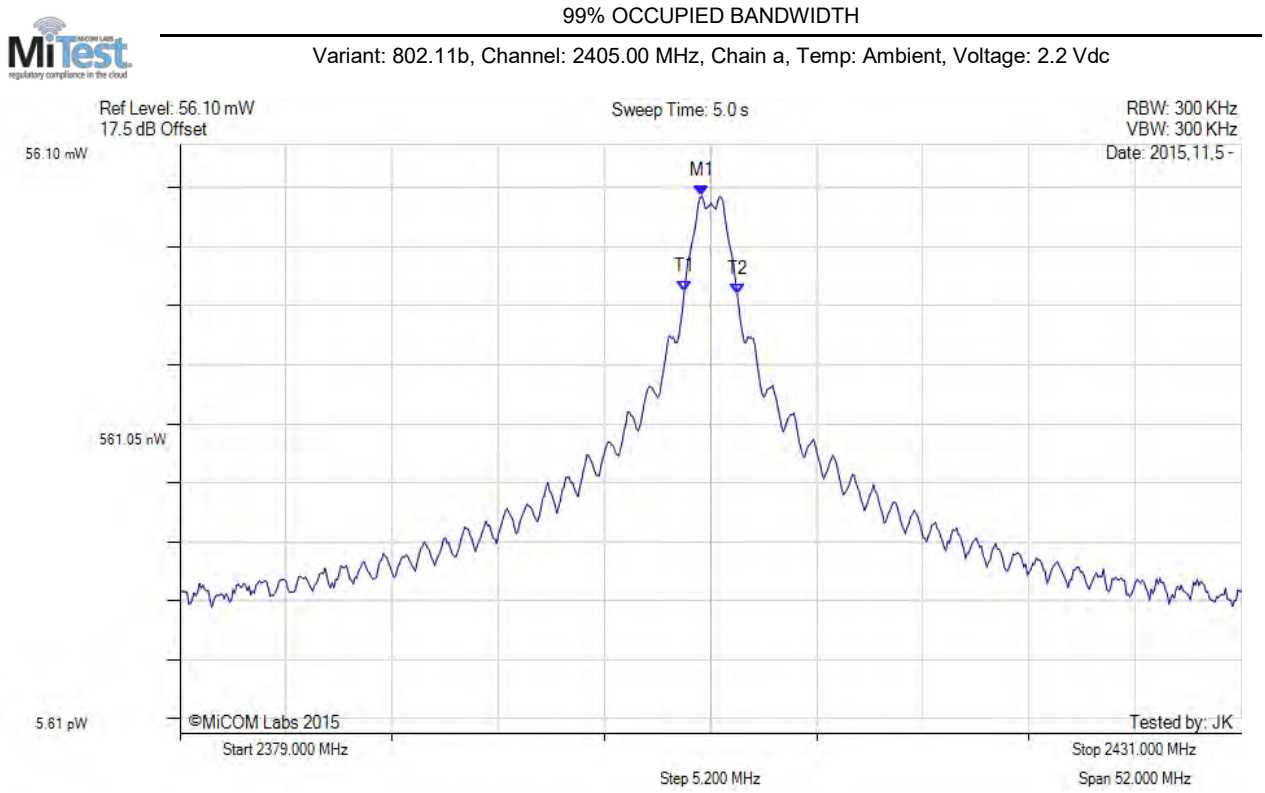
Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 4.28 mW/MHz M1 Marker Frequency: 2480.00 MHz	Antenna Power: 4.28 mW/MHz

back to matrix

A.2. Occupied Bandwidth

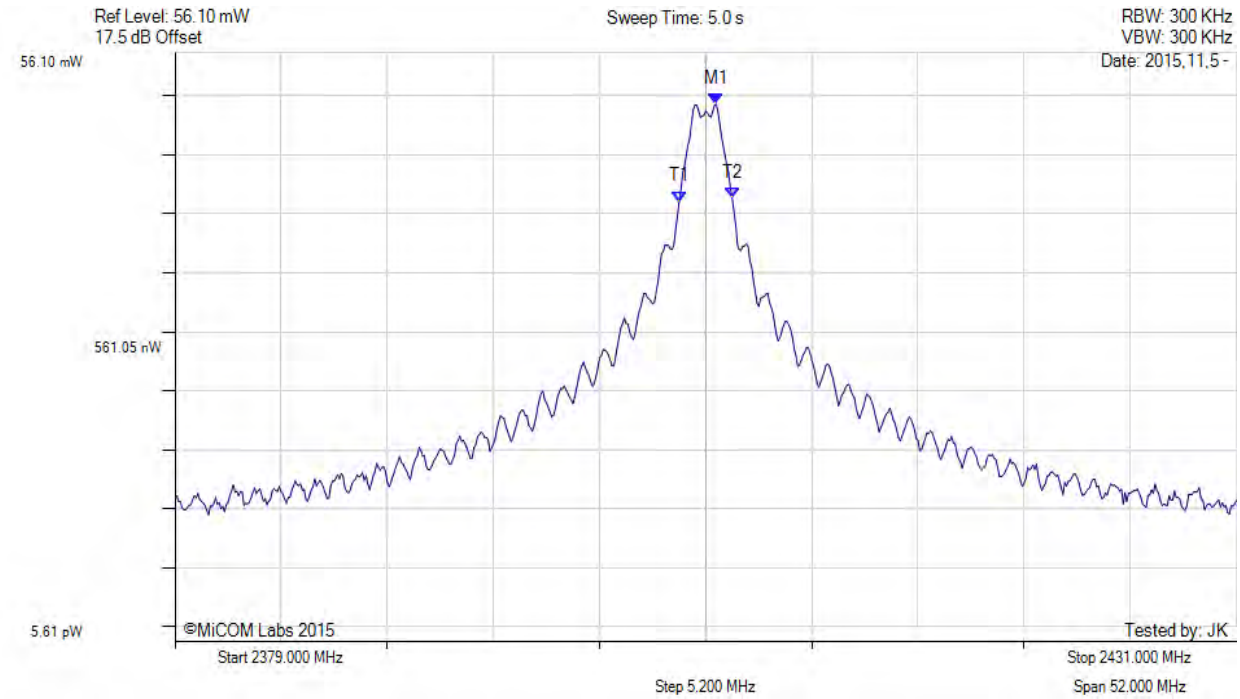


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAXH	Marker Frequency: 2404.60 MHz Marker Amplitude: 7.35 mW	Channel Frequency: 2405.0 MHz 99% Bandwidth: 2.586 MHz Limit: 26.0 MHz Margin:-23.41 MHz

back to matrix

99% OCCUPIED BANDWIDTH

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

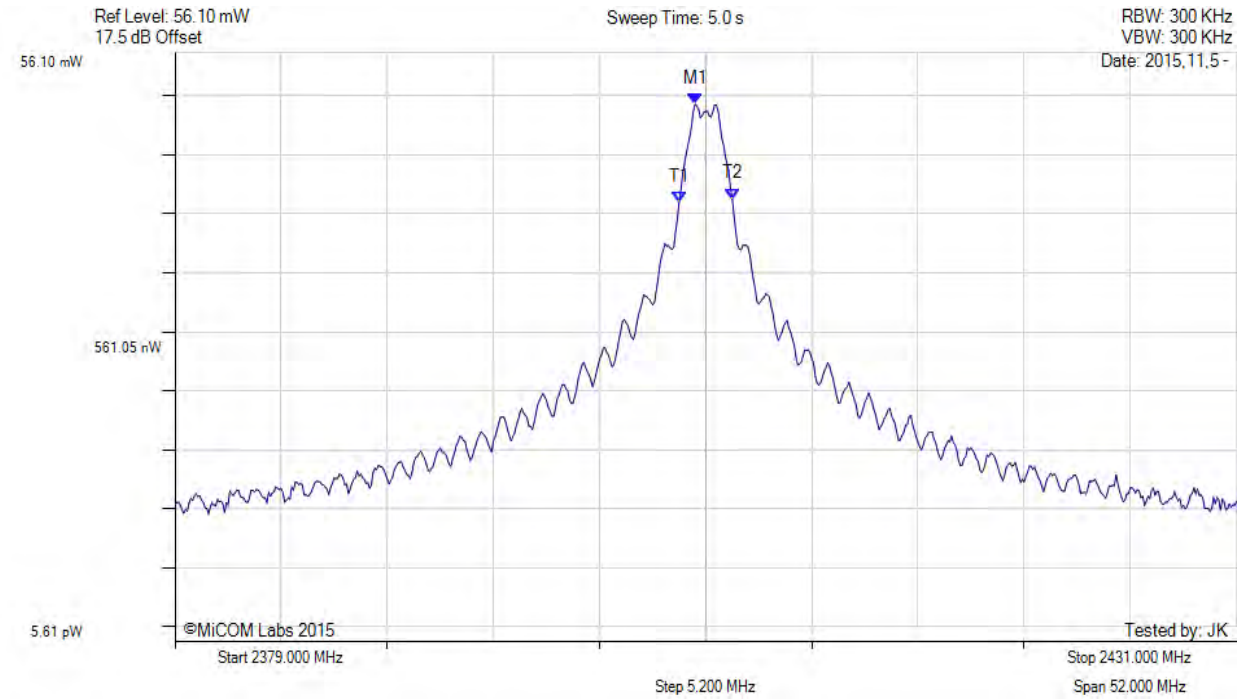


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAXH	Marker Frequency: 2405.50 MHz Marker Amplitude: 7.29 mW	Channel Frequency: 2405.0 MHz 99% Bandwidth: 2.612 MHz Limit: 26.0 MHz Margin:-23.39 MHz

back to matrix

99% OCCUPIED BANDWIDTH

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

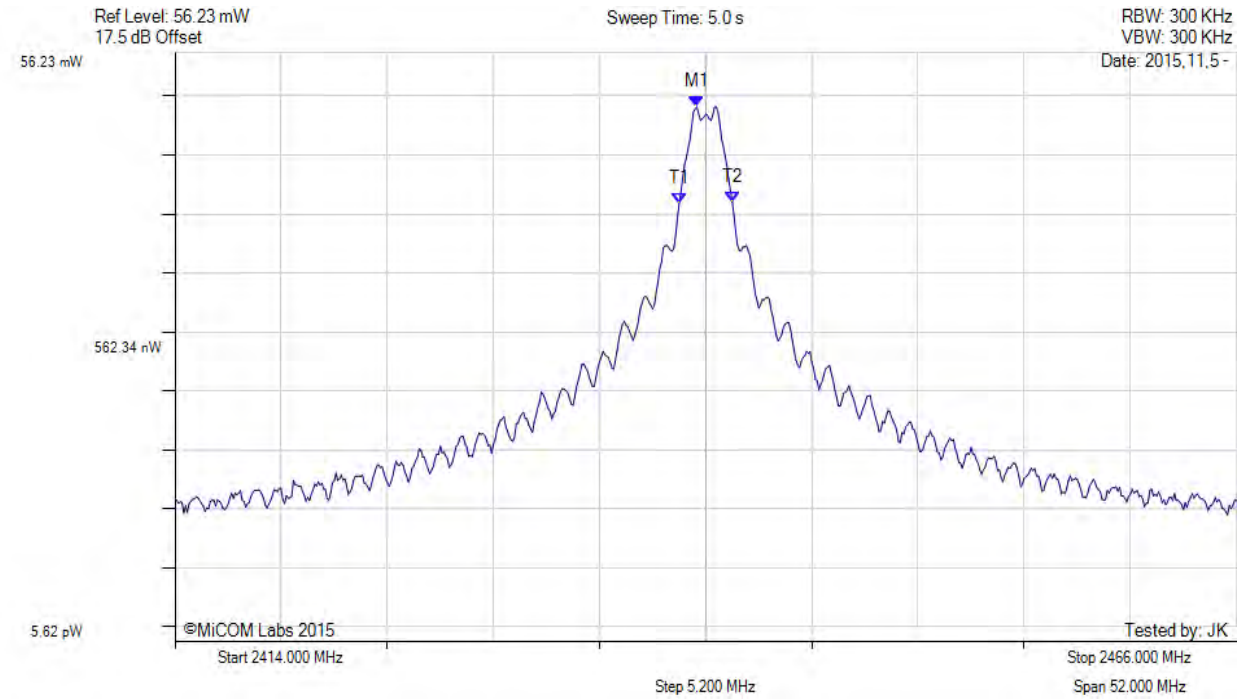


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAXH	Marker Frequency: 2404.50 MHz Marker Amplitude: 7.28 mW	Channel Frequency: 2405.0 MHz 99% Bandwidth: 2.586 MHz Limit: 26.0 MHz Margin:-23.41 MHz

back to matrix

99% OCCUPIED BANDWIDTH

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

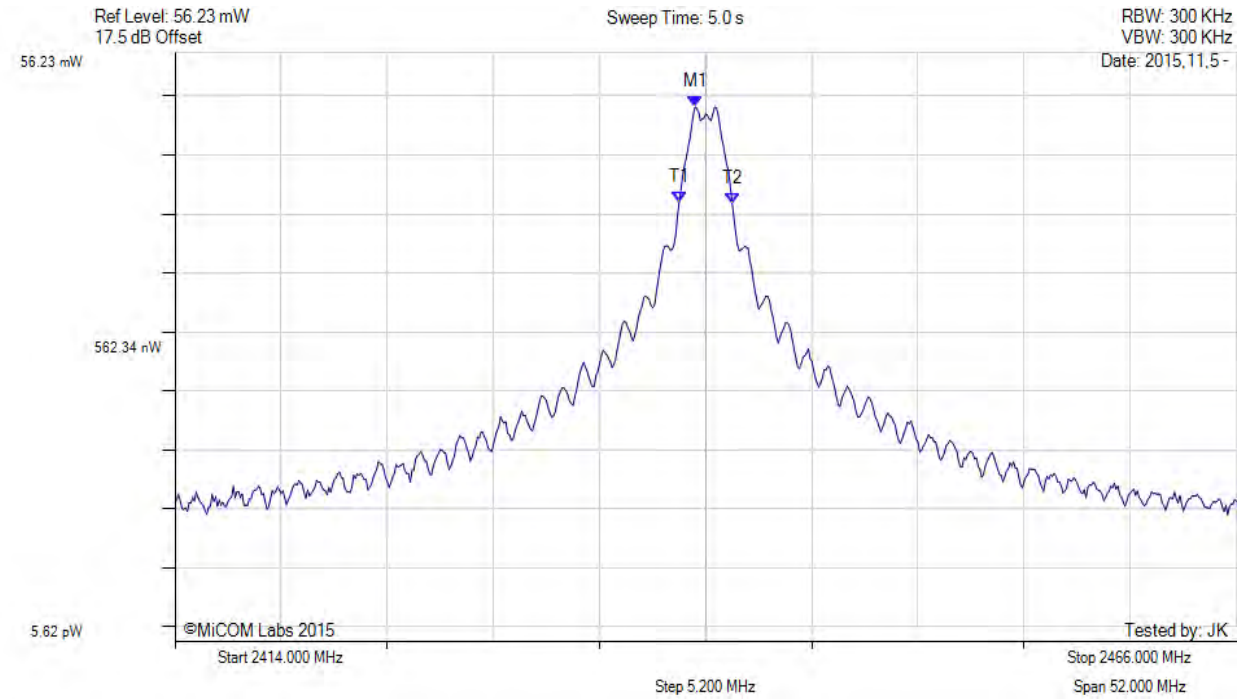


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAXH	Marker Frequency: 2439.60 MHz Marker Amplitude: 6.61 mW	Channel Frequency: 2440.0 MHz 99% Bandwidth: 2.615 MHz Limit: 26.0 MHz Margin:-23.39 MHz

back to matrix

99% OCCUPIED BANDWIDTH

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

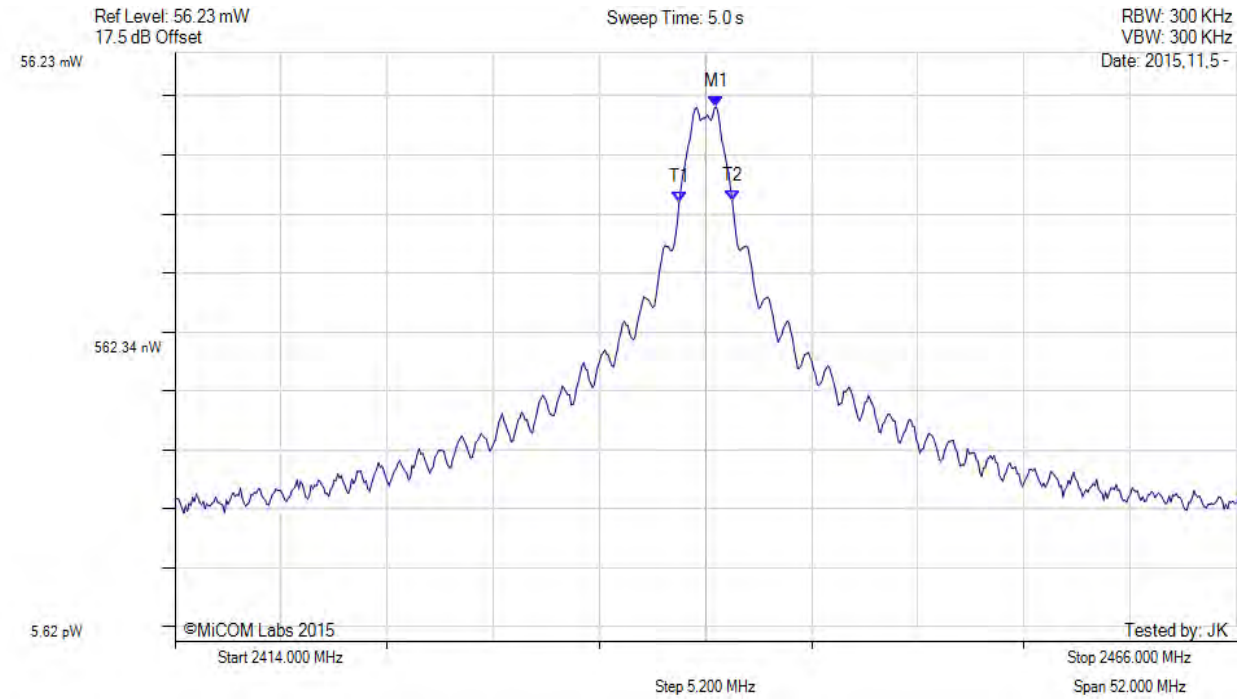


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAXH	Marker Frequency: 2439.50 MHz Marker Amplitude: 6.58 mW	Channel Frequency: 2440.0 MHz 99% Bandwidth: 2.612 MHz Limit: 26.0 MHz Margin:-23.39 MHz

back to matrix

99% OCCUPIED BANDWIDTH

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

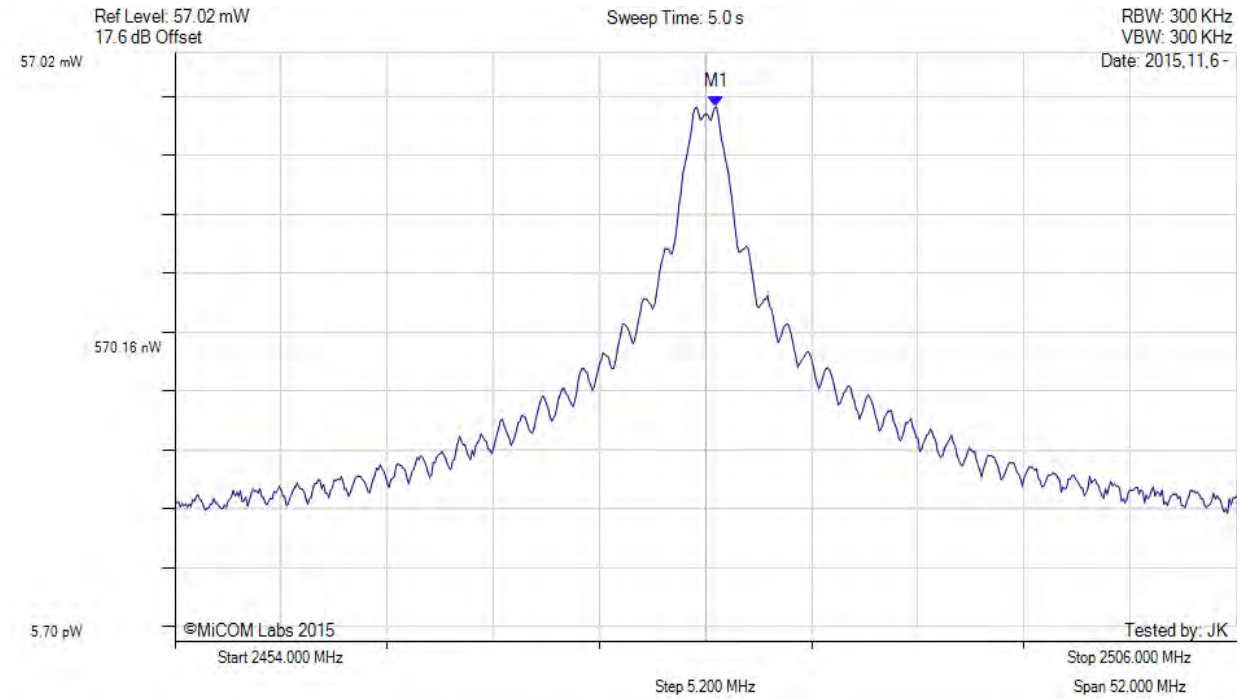


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAXH	Marker Frequency: 2440.50 MHz Marker Amplitude: 6.55 mW	Channel Frequency: 2440.0 MHz 99% Bandwidth: 2.620 MHz Limit: 26.0 MHz Margin:-23.38 MHz

back to matrix

99% OCCUPIED BANDWIDTH

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

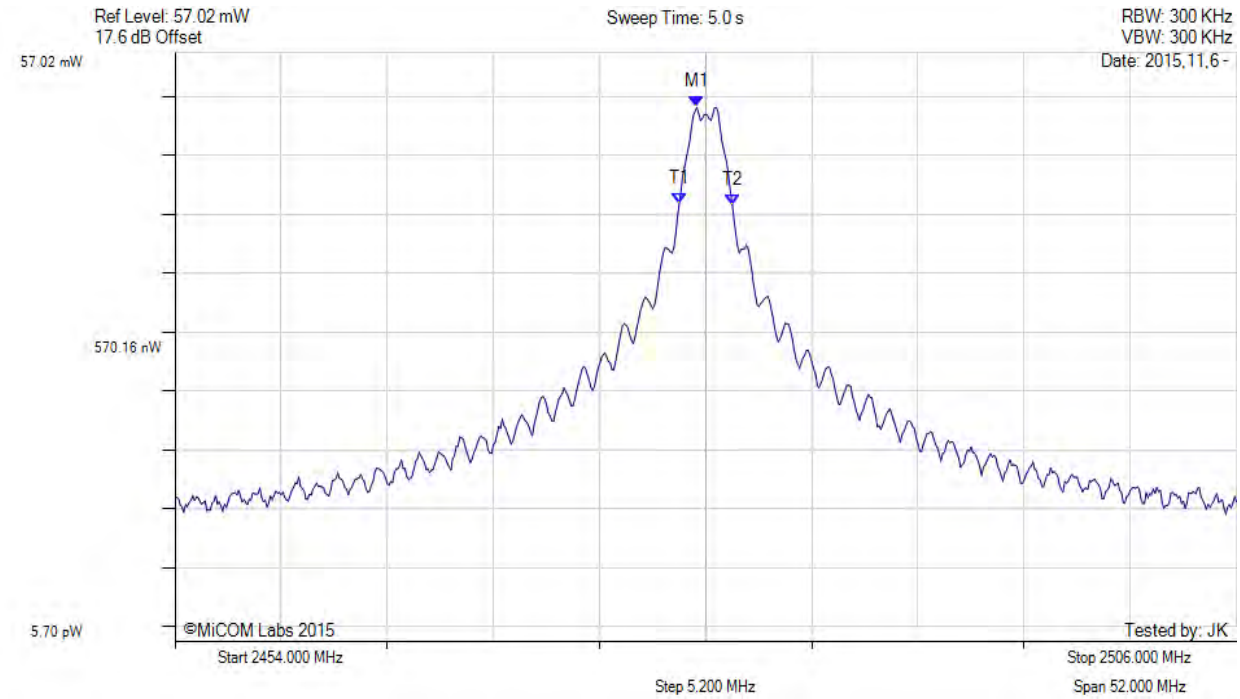


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAXH	Marker Frequency: 2480.50 MHz Marker Amplitude: 6.64 mW	Channel Frequency: 2480.0 MHz 99% Bandwidth: 2.587 MHz Limit: 26.0 MHz Margin:-23.41 MHz

back to matrix

99% OCCUPIED BANDWIDTH

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

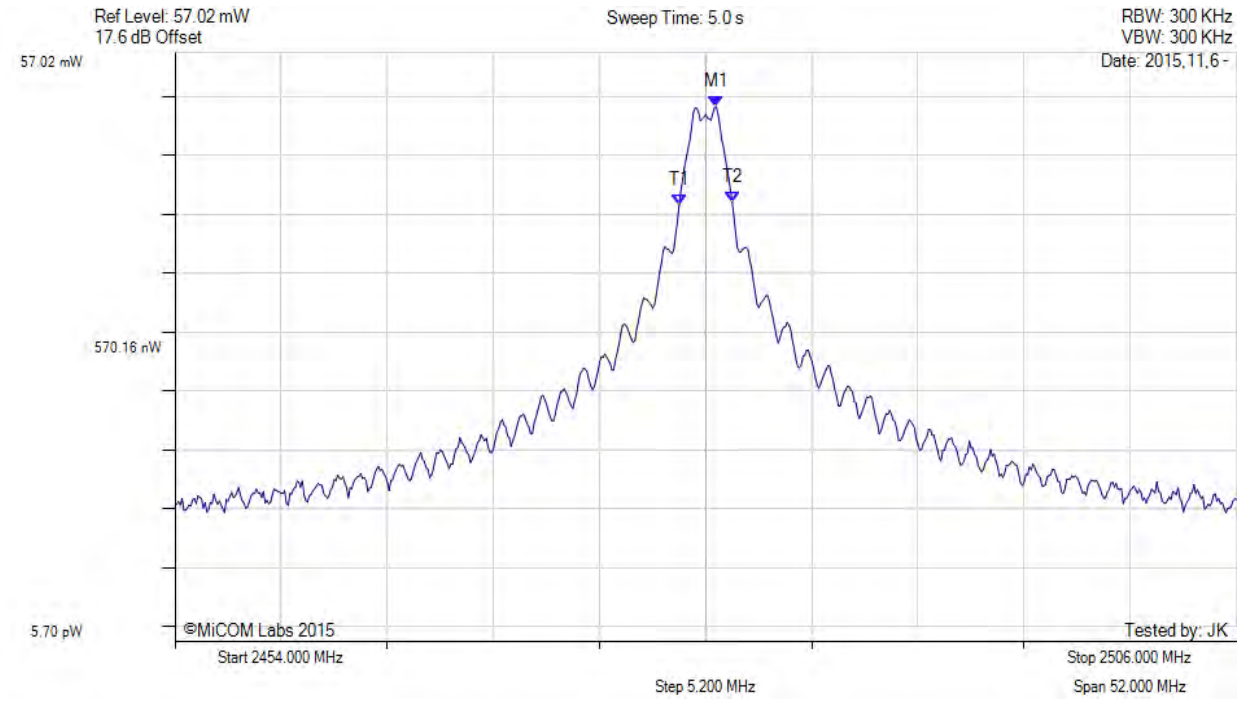


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAXH	Marker Frequency: 2479.60 MHz Marker Amplitude: 6.58 mW	Channel Frequency: 2480.0 MHz 99% Bandwidth: 2.596 MHz Limit: 26.0 MHz Margin:-23.40 MHz

back to matrix

99% OCCUPIED BANDWIDTH

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc



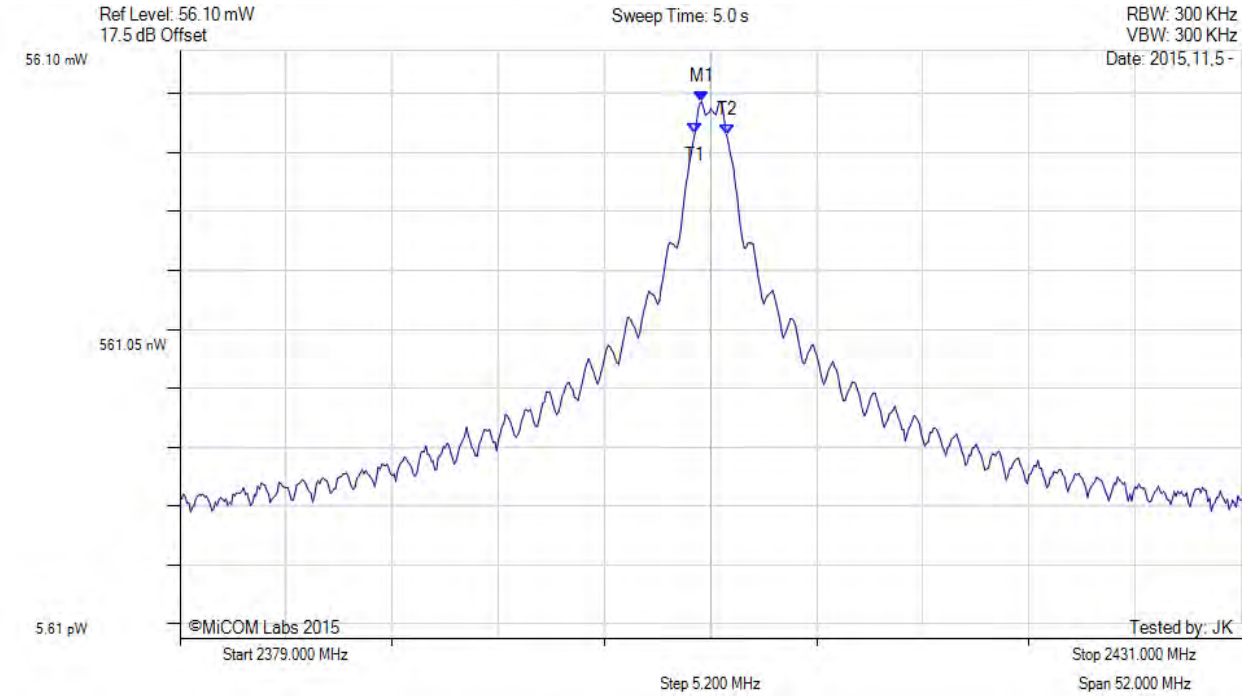
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAXH	Marker Frequency: 2480.50 MHz Marker Amplitude: 6.64 mW	Channel Frequency: 2480.0 MHz 99% Bandwidth: 2.590 MHz Limit: 26.0 MHz Margin:-23.41 MHz

back to matrix

A.3. Spreading Bandwidth

SPREADING BANDWIDTH

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

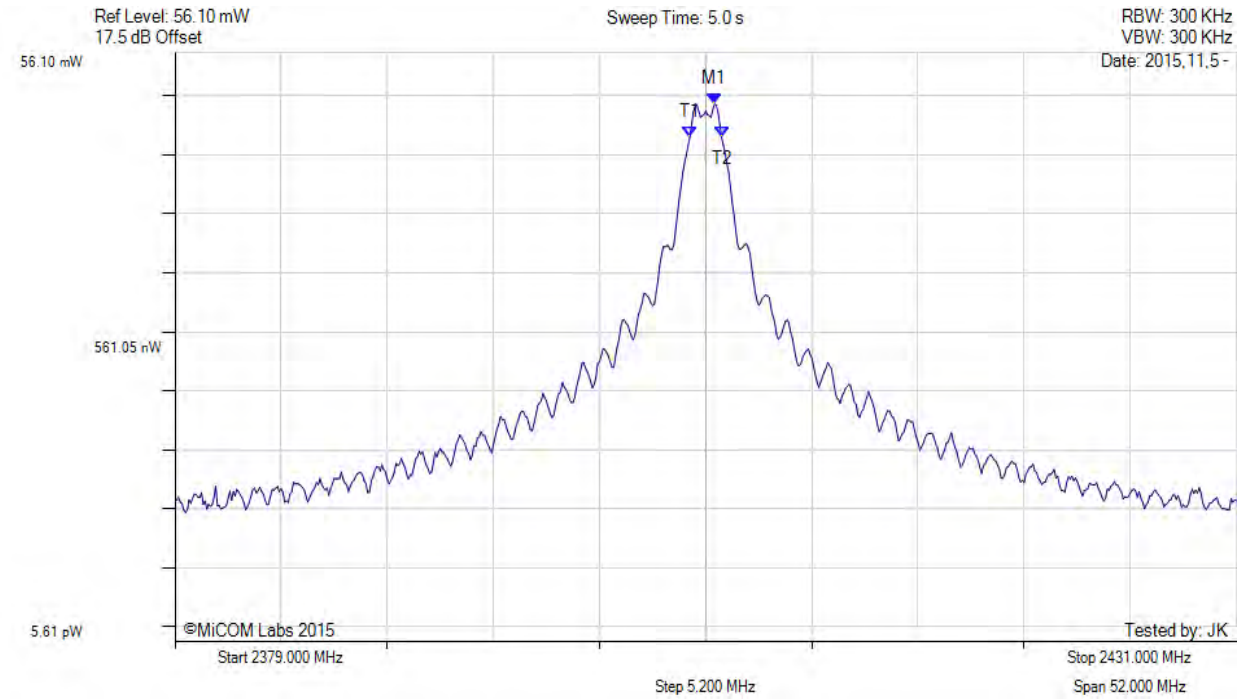


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAXH	Marker Frequency: 2404.60 MHz Marker Amplitude: 7.36 mW	Channel Frequency: 2405.0 MHz Spreading Bandwidth: 1.584 MHz Spreading Factor: 1.15 Limit: 5.0 MHz Margin:3.85 MHz

back to matrix

SPREADING BANDWIDTH

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

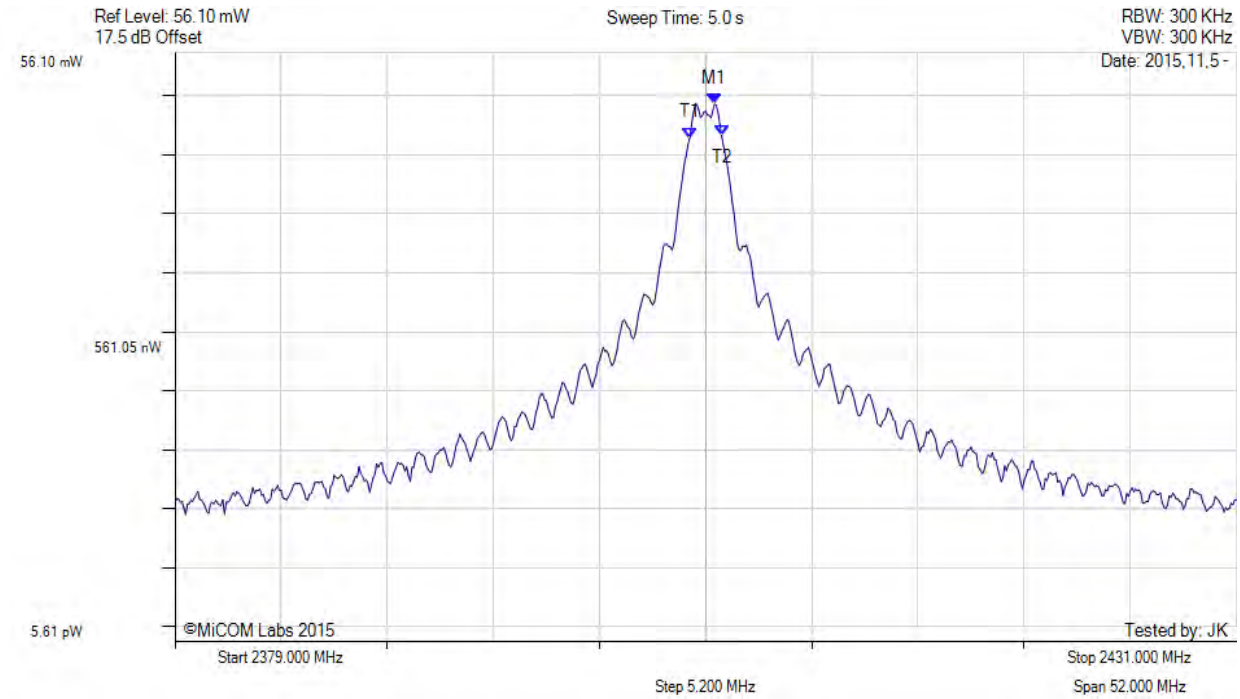


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAXH	Marker Frequency: 2405.40 MHz Marker Amplitude: 7.33 mW	Channel Frequency: 2405.0 MHz Spreading Bandwidth: 1.592 MHz Spreading Factor: 1.15 Limit: 5.0 MHz Margin:3.85 MHz

back to matrix

SPREADING BANDWIDTH

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

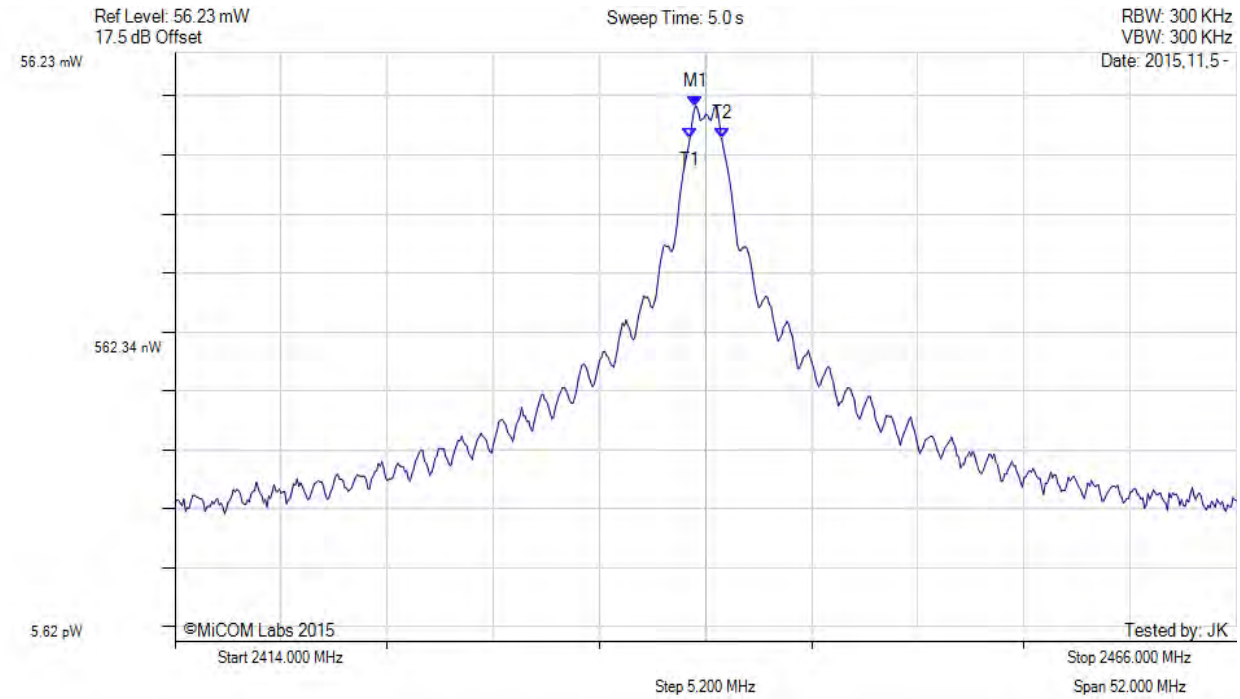


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAXH	Marker Frequency: 2405.40 MHz Marker Amplitude: 7.32 mW	Channel Frequency: 2405.0 MHz Spreading Bandwidth: 1.589 MHz Spreading Factor: 1.15 Limit: 5.0 MHz Margin:3.85 MHz

back to matrix

SPREADING BANDWIDTH

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

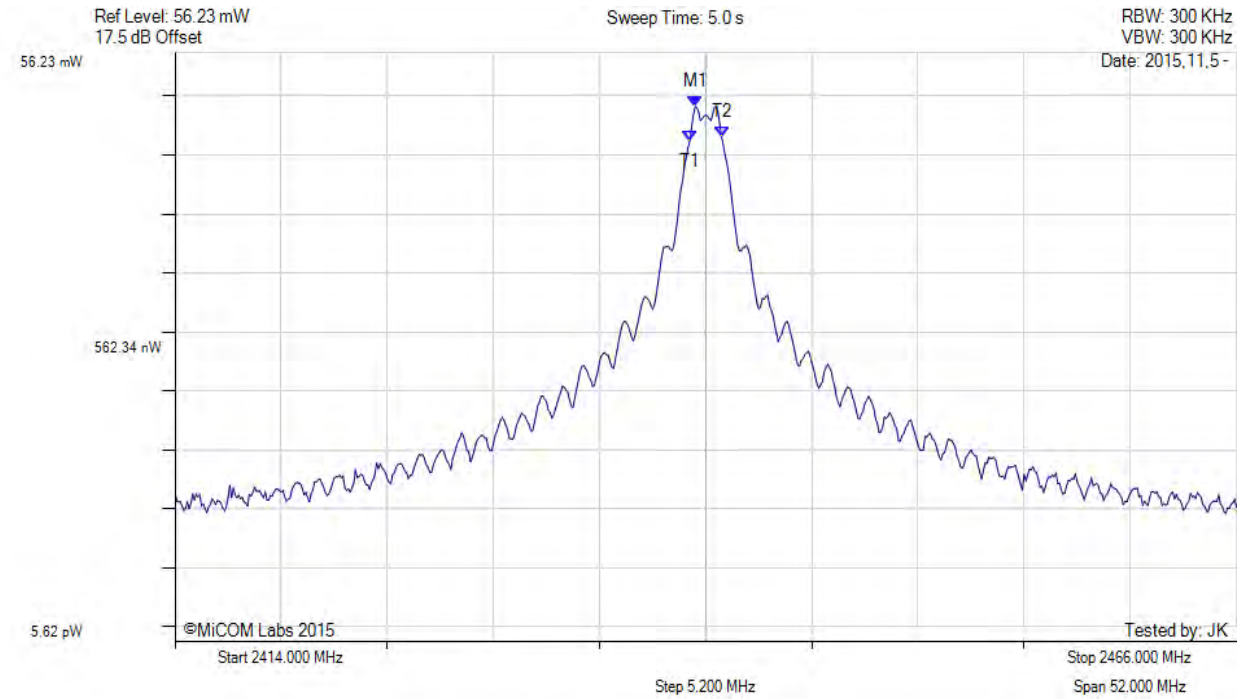


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAXH	Marker Frequency: 2439.50 MHz Marker Amplitude: 6.62 mW	Channel Frequency: 2440.0 MHz Spreading Bandwidth: 1.595 MHz Spreading Factor: 1.16 Limit: 5.0 MHz Margin:3.84 MHz

back to matrix

SPREADING BANDWIDTH

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

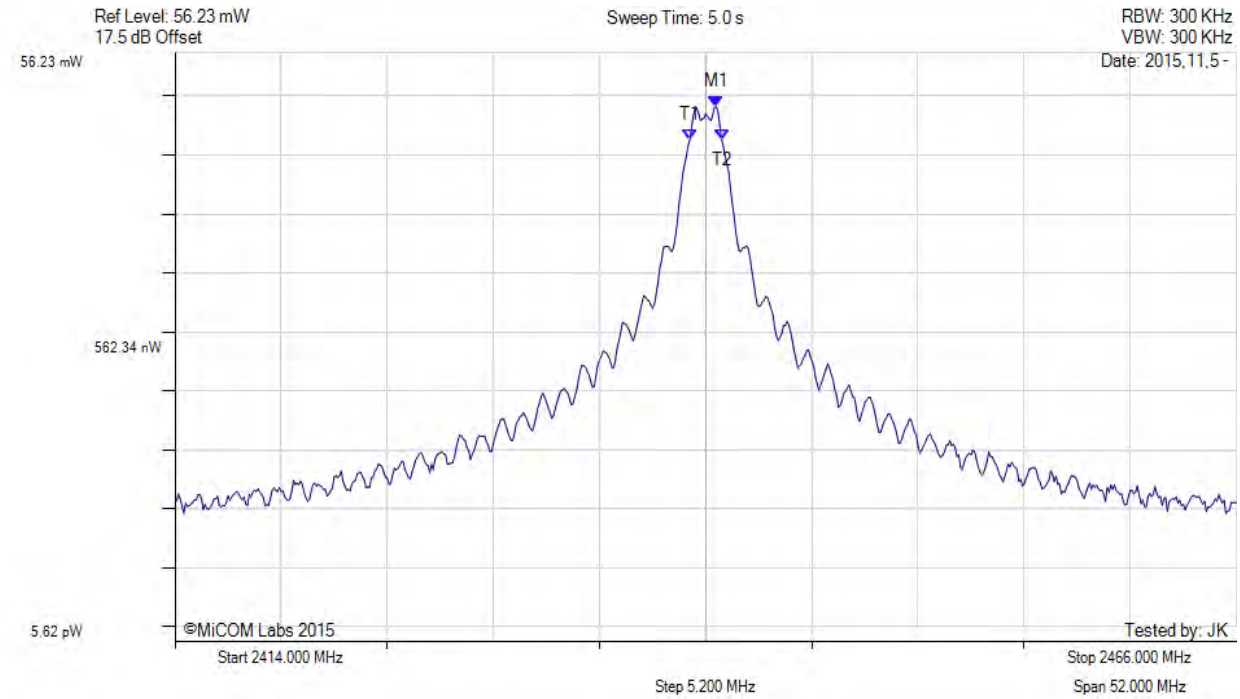


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAXH	Marker Frequency: 2439.50 MHz Marker Amplitude: 6.58 mW	Channel Frequency: 2440.0 MHz Spreading Bandwidth: 1.600 MHz Spreading Factor: 1.16 Limit: 5.0 MHz Margin:3.84 MHz

back to matrix

SPREADING BANDWIDTH

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

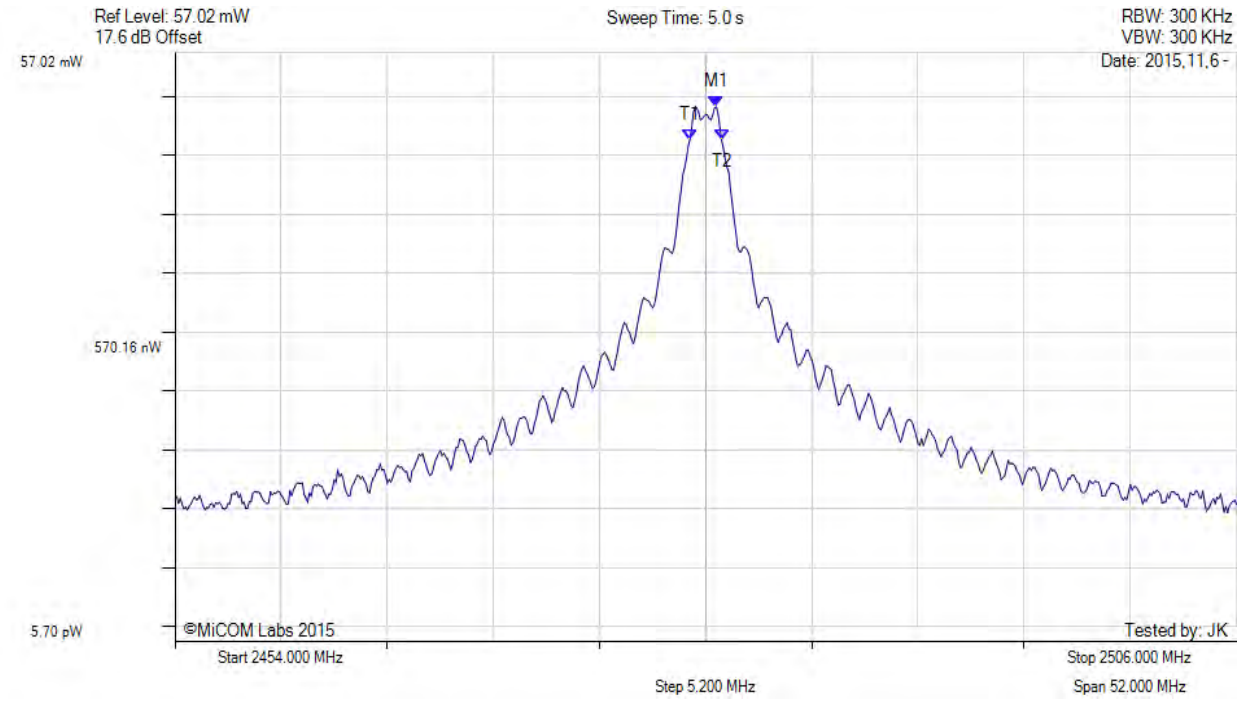


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAXH	Marker Frequency: 2440.50 MHz Marker Amplitude: 6.57 mW	Channel Frequency: 2440.0 MHz Spreading Bandwidth: 1.614 MHz Spreading Factor: 1.17 Limit: 5.0 MHz Margin:3.83 MHz

back to matrix

SPREADING BANDWIDTH

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

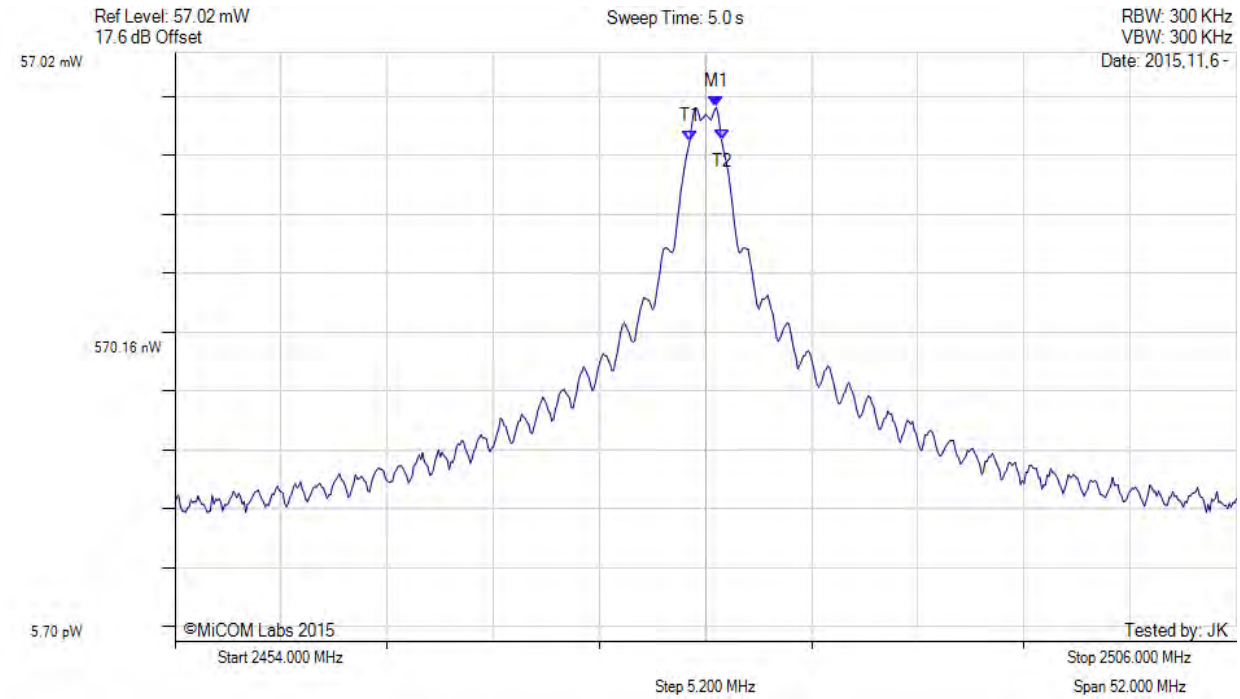


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAXH	Marker Frequency: 2480.50 MHz Marker Amplitude: 6.64 mW	Channel Frequency: 2480.0 MHz Spreading Bandwidth: 1.582 MHz Spreading Factor: 1.15 Limit: 5.0 MHz Margin:3.85 MHz

back to matrix

SPREADING BANDWIDTH

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

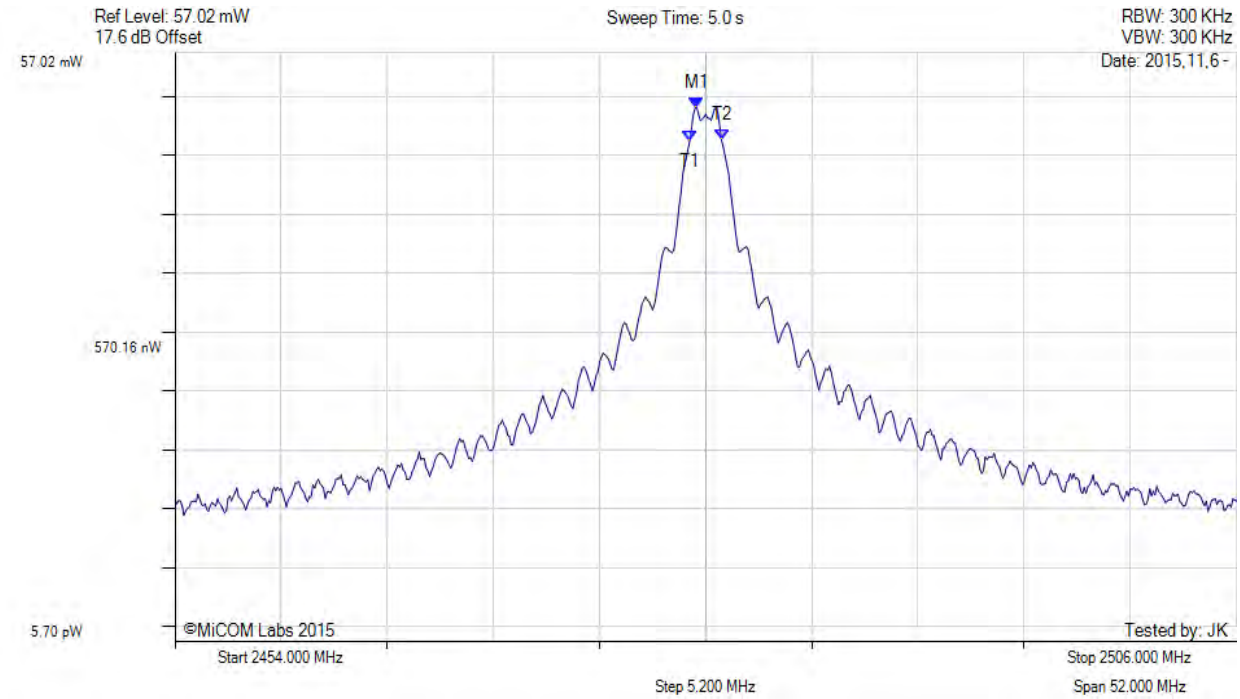


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAXH	Marker Frequency: 2480.50 MHz Marker Amplitude: 6.61 mW	Channel Frequency: 2480.0 MHz Spreading Bandwidth: 1.584 MHz Spreading Factor: 1.15 Limit: 5.0 MHz Margin:3.85 MHz

back to matrix

SPREADING BANDWIDTH

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc



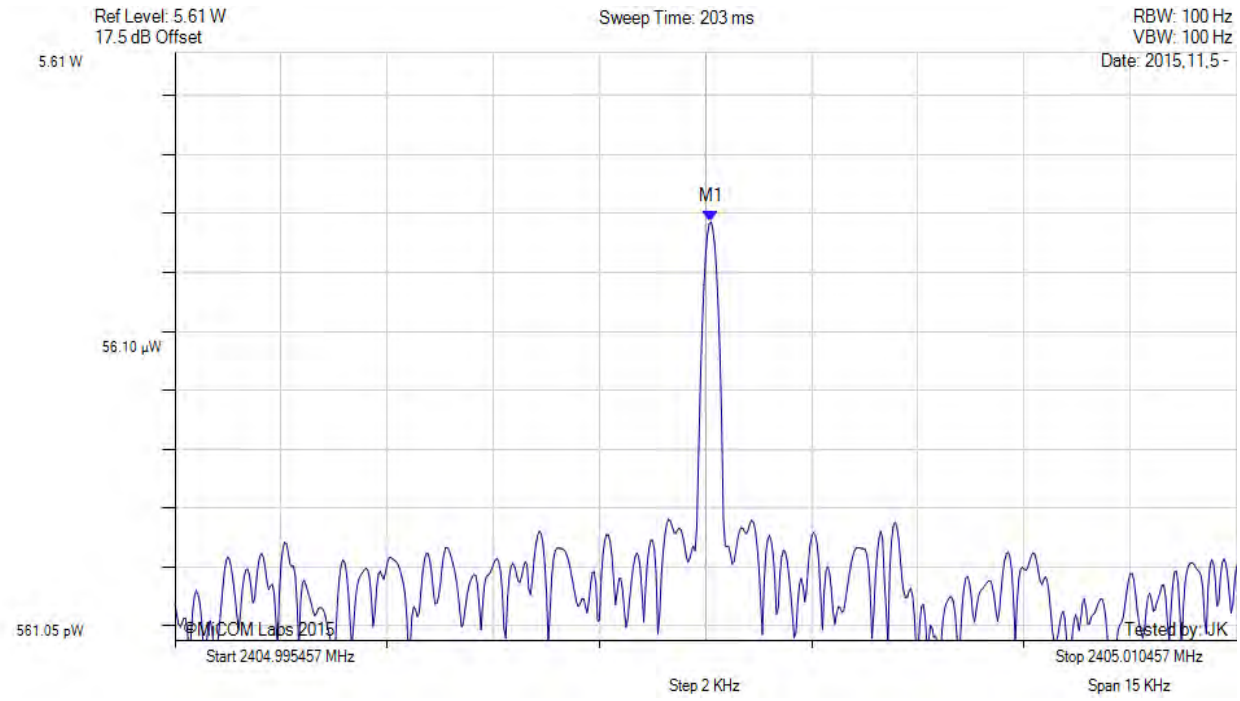
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAXH	Marker Frequency: 2479.60 MHz Marker Amplitude: 6.47 mW	Channel Frequency: 2480.0 MHz Spreading Bandwidth: 1.597 MHz Spreading Factor: 1.16 Limit: 5.0 MHz Margin:3.84 MHz

back to matrix

A.4. Frequency Deviation

FREQUENCY DEVIATION

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

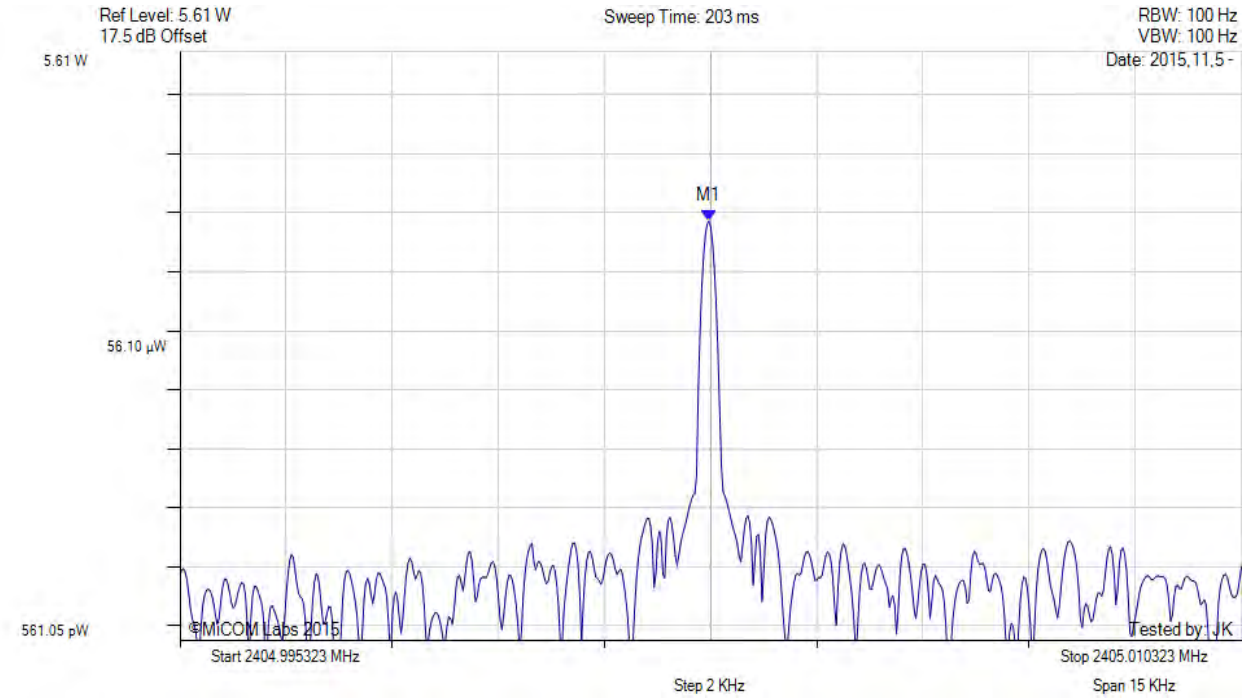


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +1 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 2405.003 MHz : 7.25 mW	Channel Frequency: 2405.0 MHz Δ KHz: 3.032 Δ ppm: 1.261 Limit: -50 to 50 ppm Margin: -48.74 ppm

back to matrix

FREQUENCY DEVIATION

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

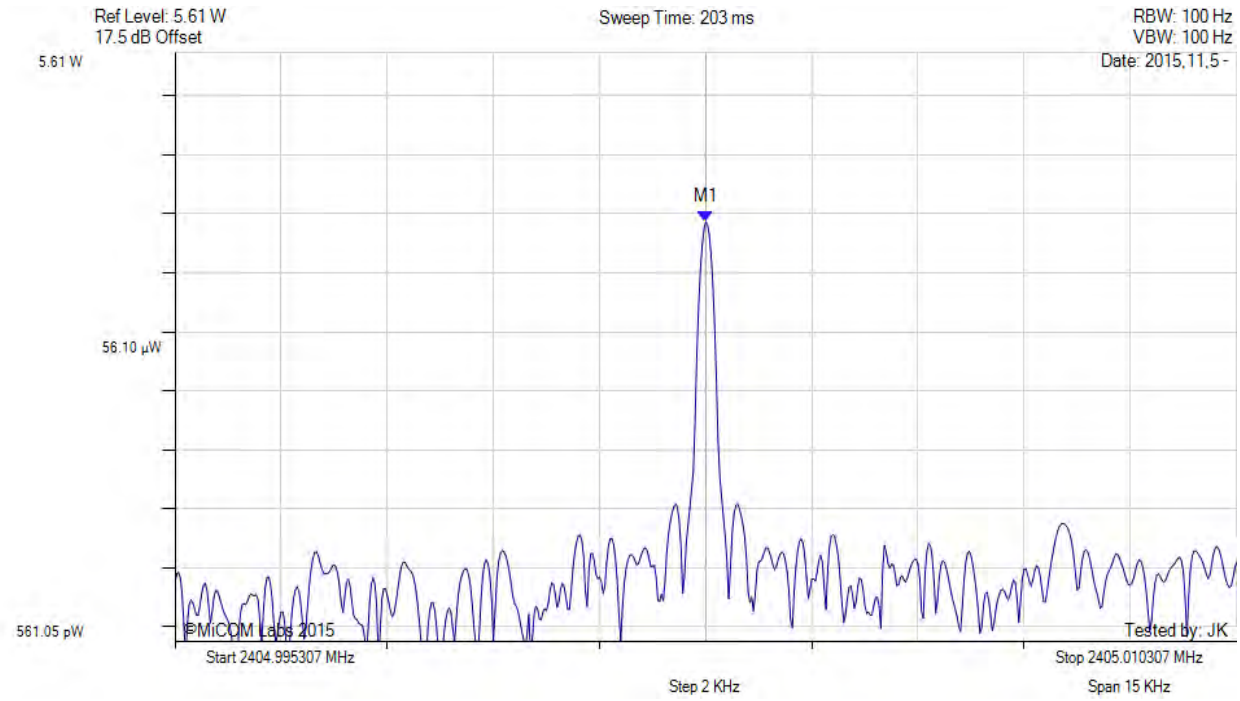


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +1 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 2405.003 MHz : 7.32 mW	Channel Frequency: 2405.0 MHz Δ KHz: 2.798 Δ ppm: 1.163 Limit: -50 to 50 ppm Margin: -48.84 ppm

back to matrix

FREQUENCY DEVIATION

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

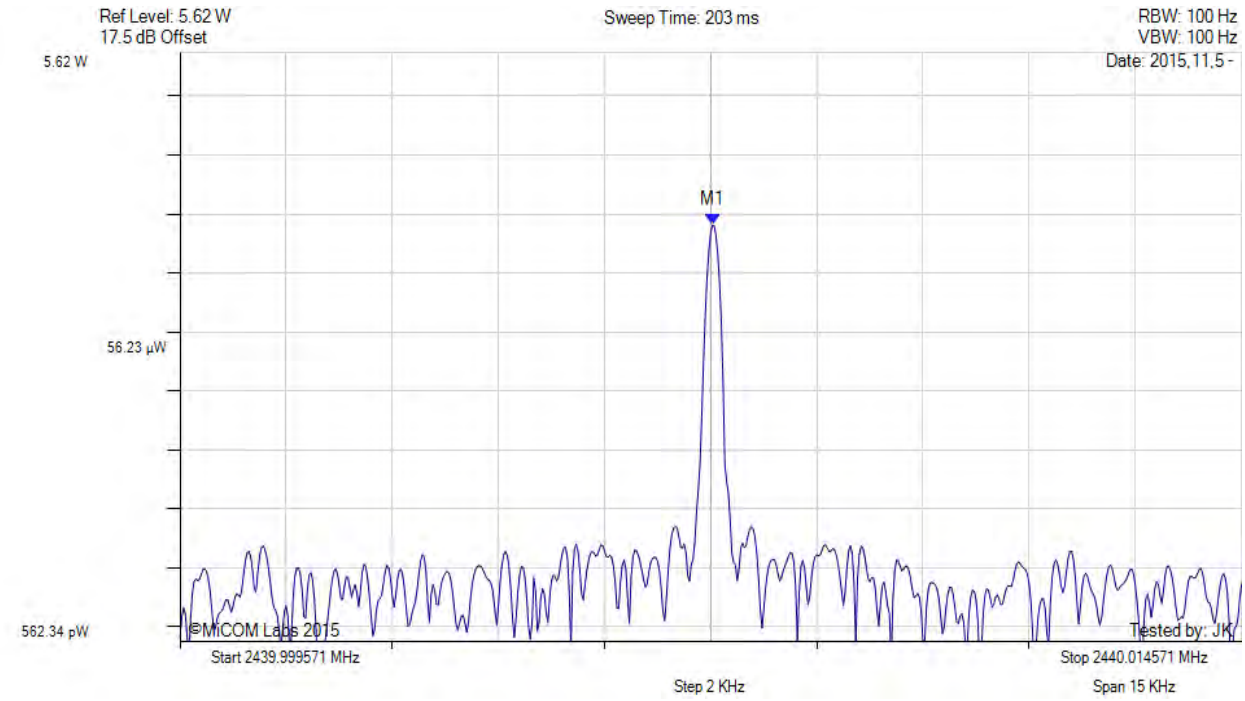


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +1 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 2405.003 MHz : 7.27 mW	Channel Frequency: 2405.0 MHz Δ KHz: 2.807 Δ ppm: 1.167 Limit: -50 to 50 ppm Margin: -48.83 ppm

back to matrix

FREQUENCY DEVIATION

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

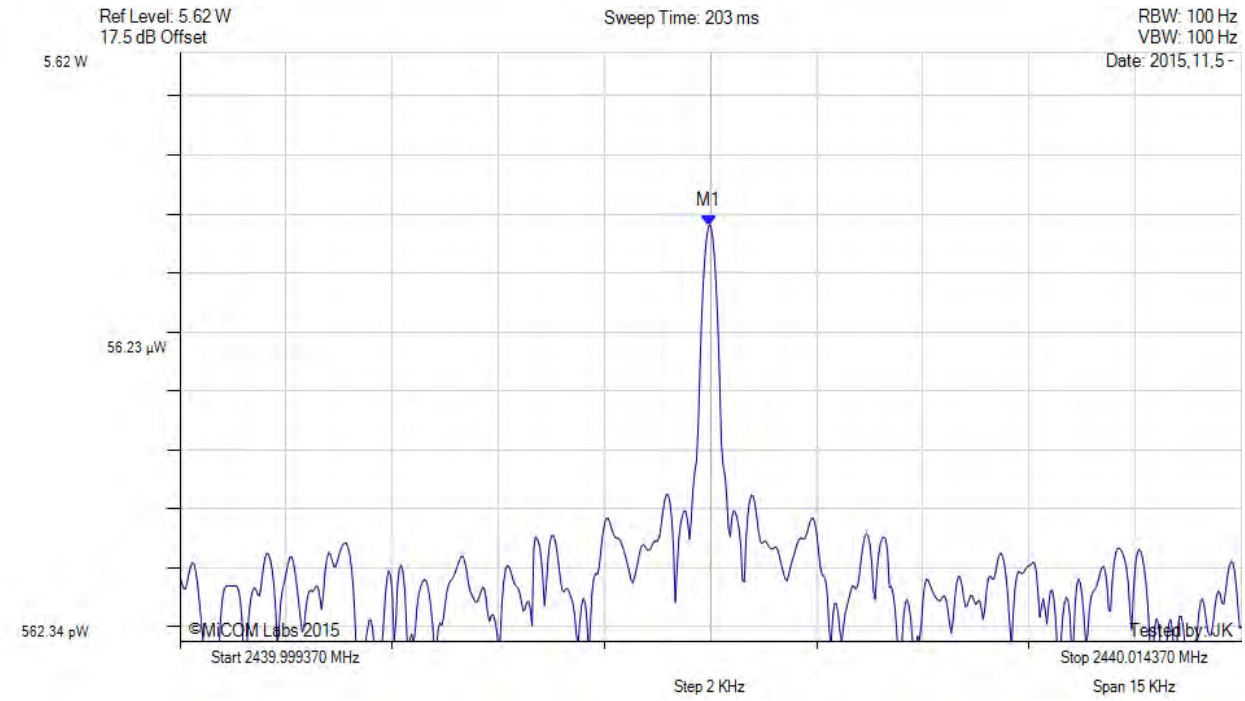


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +1 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 2440.007 MHz : 6.52 mW	Channel Frequency: 2440.0 MHz Δ KHz: 7.096 Δ ppm: 2.908 Limit: -50 to 50 ppm Margin: -47.09 ppm

back to matrix

FREQUENCY DEVIATION

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

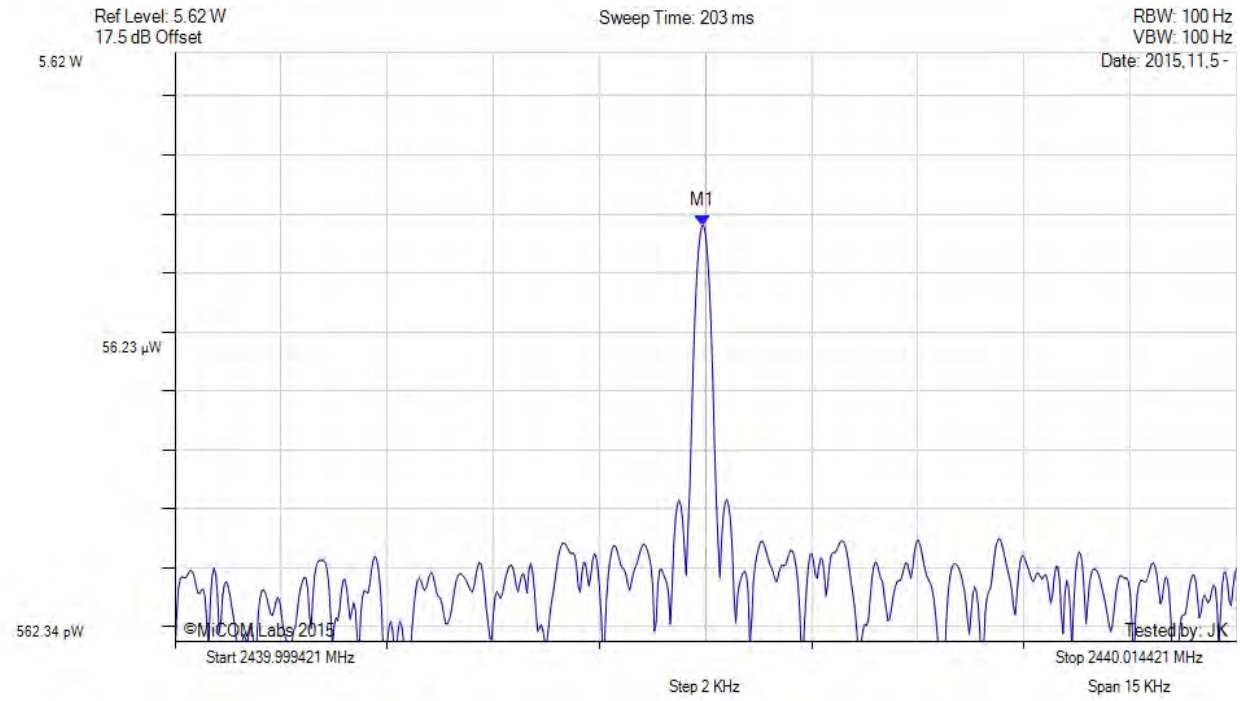


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +1 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 2440.007 MHz : 6.43 mW	Channel Frequency: 2440.0 MHz Δ KHz: 6.845 Δ ppm: 2.805 Limit: -50 to 50 ppm Margin: -47.19 ppm

back to matrix

FREQUENCY DEVIATION

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

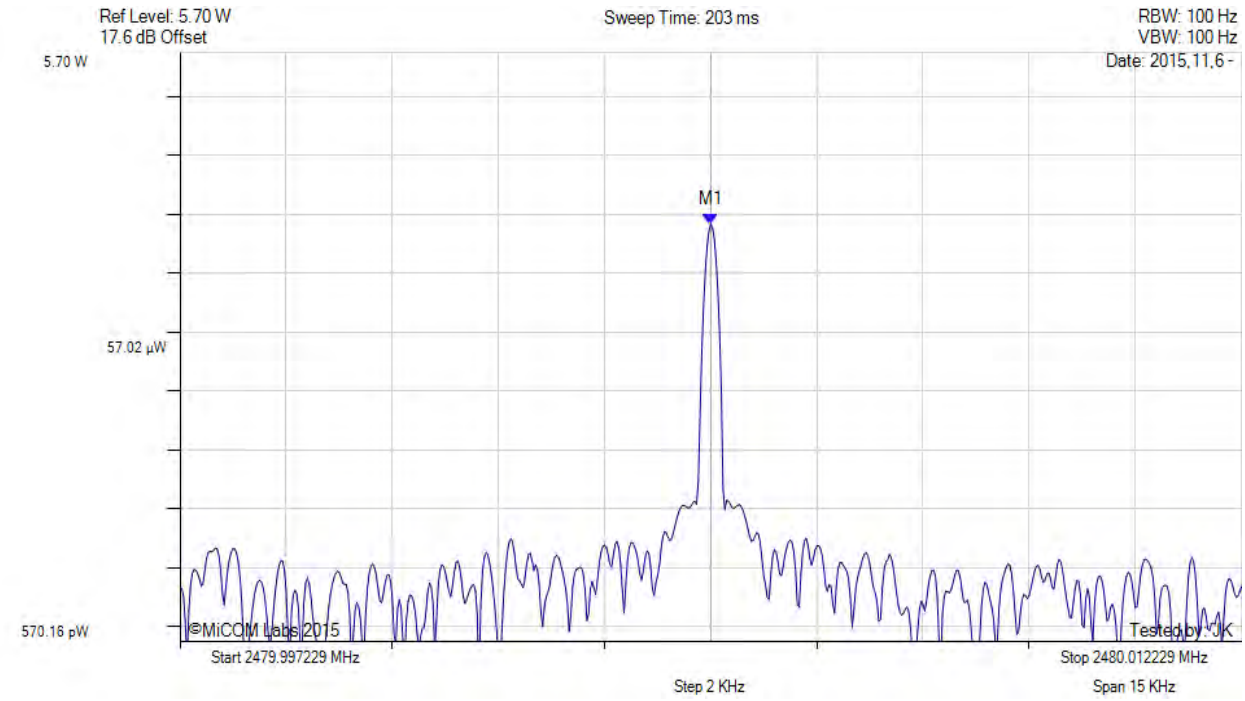


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +1 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 2440.007 MHz : 6.43 mW	Channel Frequency: 2440.0 MHz Δ KHz: 6.871 Δ ppm: 2.816 Limit: -50 to 50 ppm Margin: -47.18 ppm

back to matrix

FREQUENCY DEVIATION

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

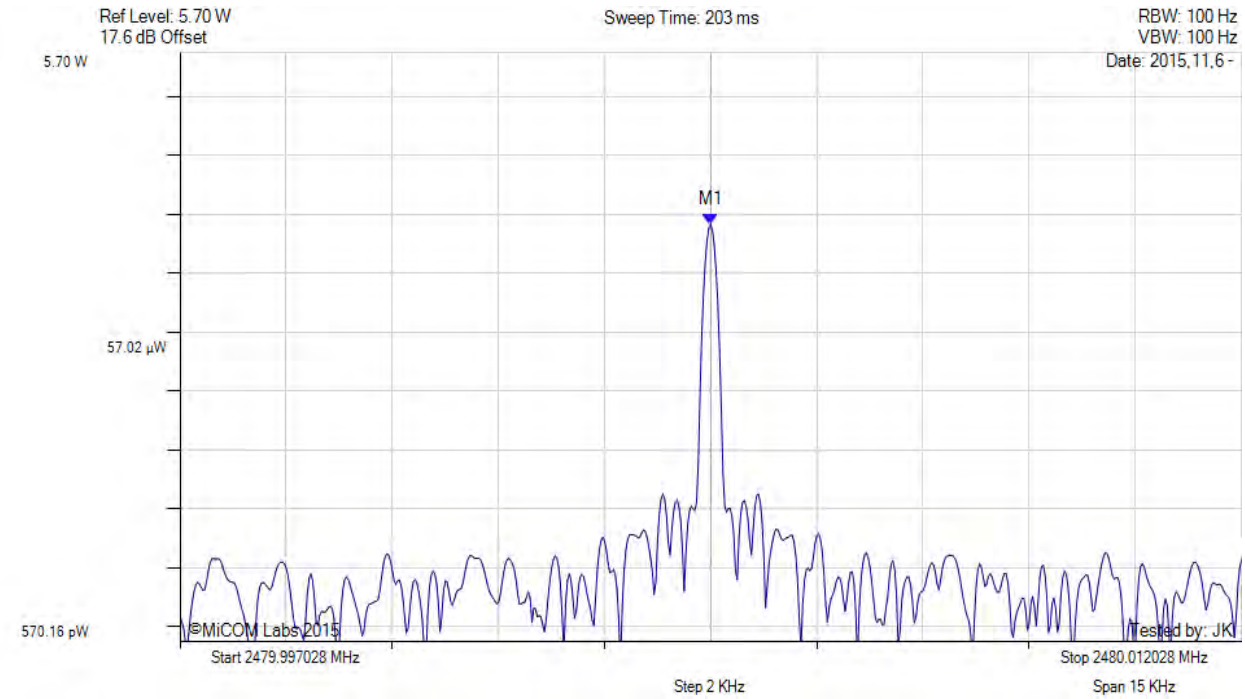


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +1 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 2480.005 MHz : 6.75 mW	Channel Frequency: 2480.0 MHz Δ KHz: 4.729 Δ ppm: 1.907 Limit: -50 to 50 ppm Margin: -48.09 ppm

back to matrix

FREQUENCY DEVIATION

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

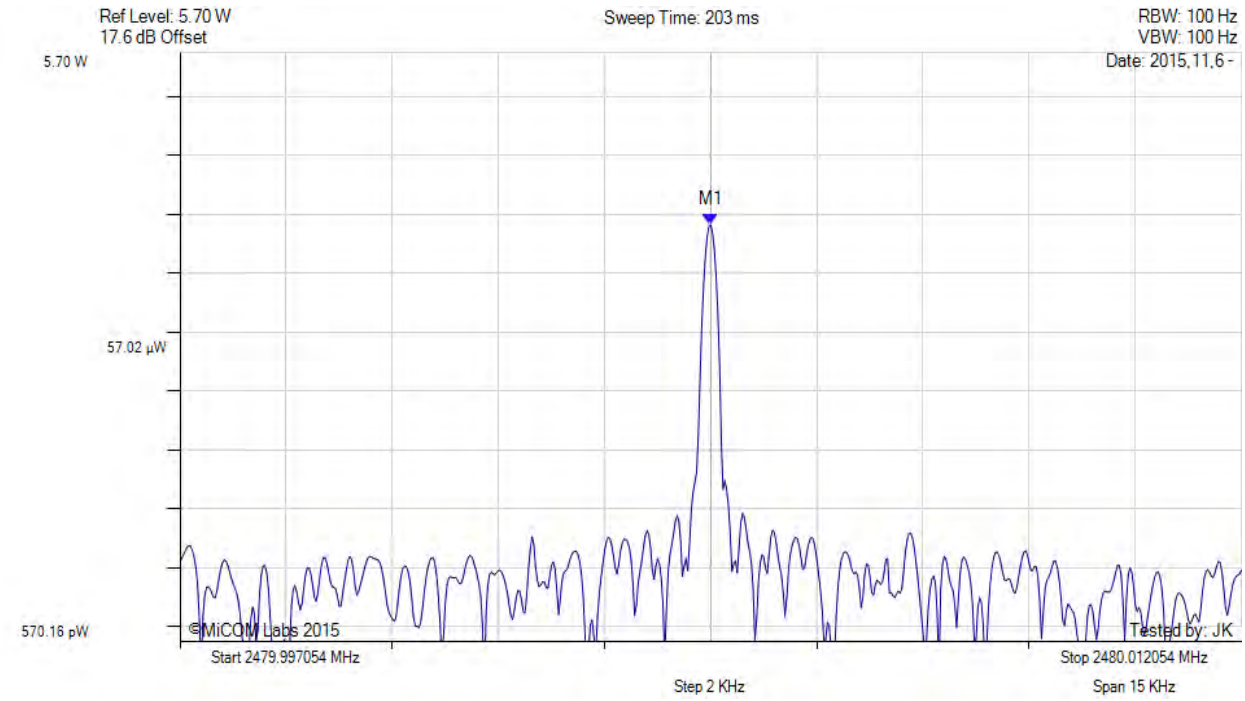


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +1 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 2480.005 MHz : 6.72 mW	Channel Frequency: 2480.0 MHz Δ KHz: 4.528 Δ ppm: 1.826 Limit: -50 to 50 ppm Margin: -48.17 ppm

back to matrix

FREQUENCY DEVIATION

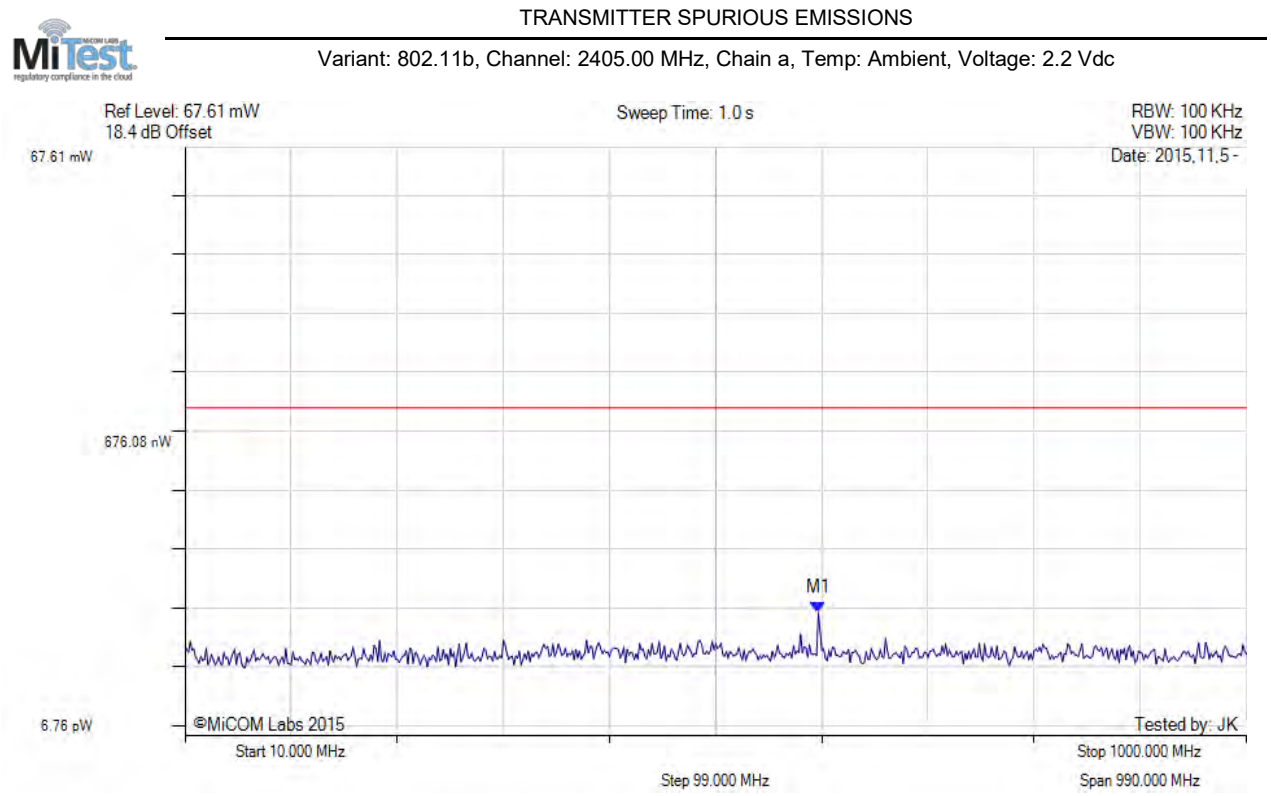
Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +1 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 2480.005 MHz : 6.62 mW	Channel Frequency: 2480.0 MHz Δ KHz: 4.554 Δ ppm: 1.836 Limit: -50 to 50 ppm Margin: -48.16 ppm

back to matrix

A.5. Transmitter Spurious Emissions

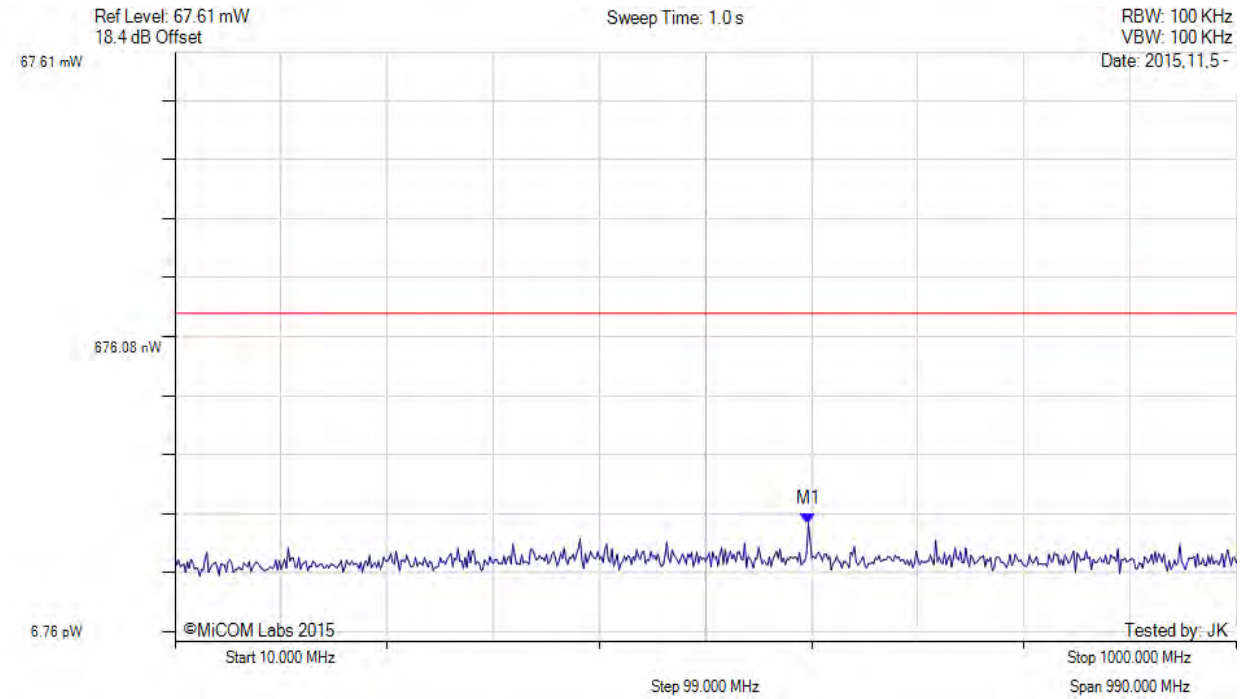


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.001 µW M1 Marker Frequency: 600.700 MHz	Channel Frequency: 2405 MHz Limit: 2.5 µW Margin: -33.98 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

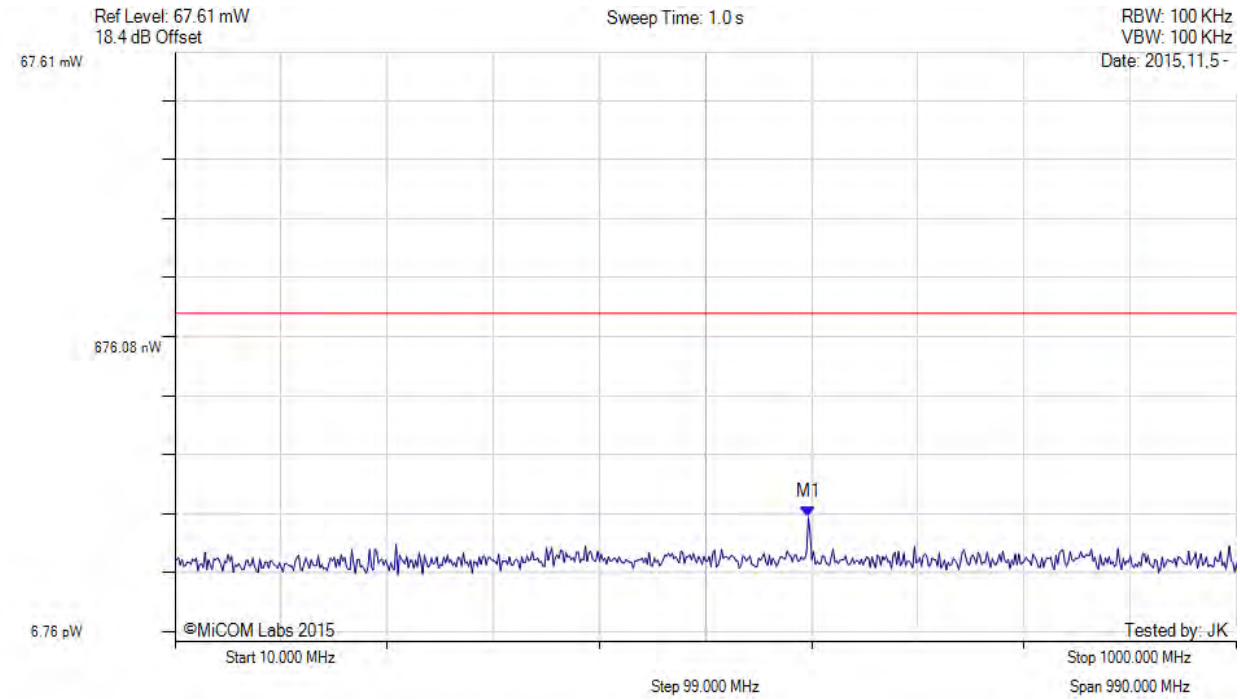


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.001 µW M1 Marker Frequency: 600.700 MHz	Channel Frequency: 2405 MHz Limit: 2.5 µW Margin: -33.98 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

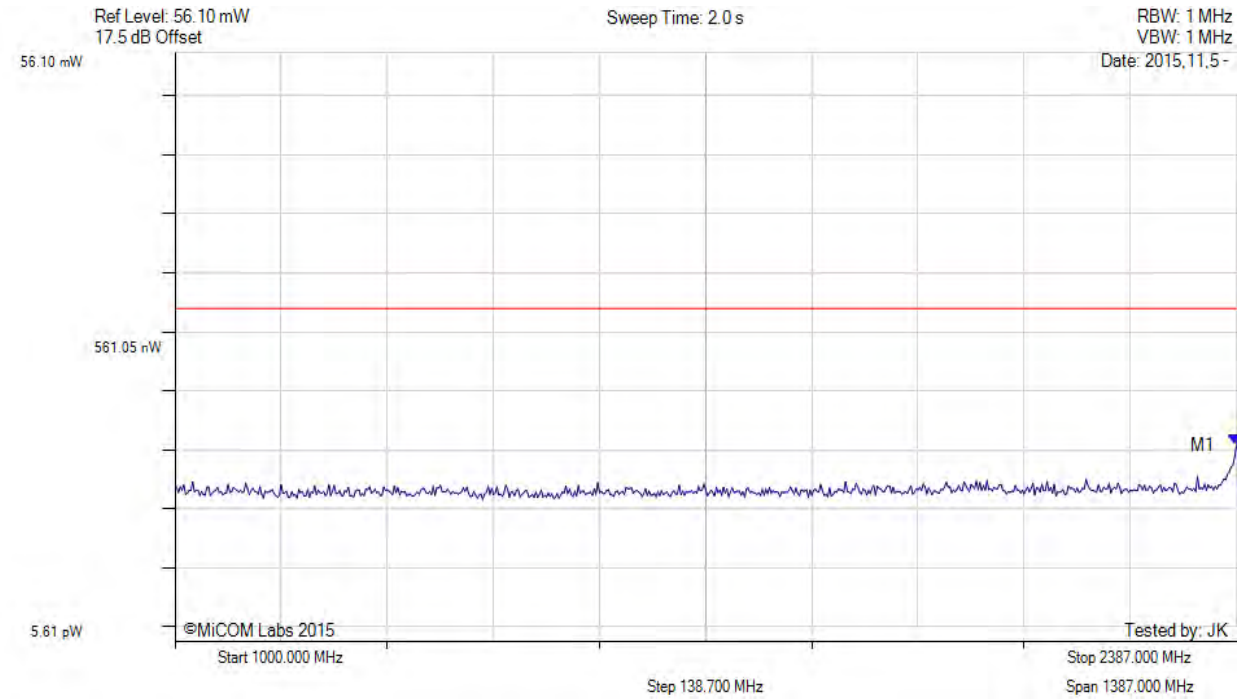


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.001 µW M1 Marker Frequency: 600.700 MHz	Channel Frequency: 2405 MHz Limit: 2.5 µW Margin: -33.98 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

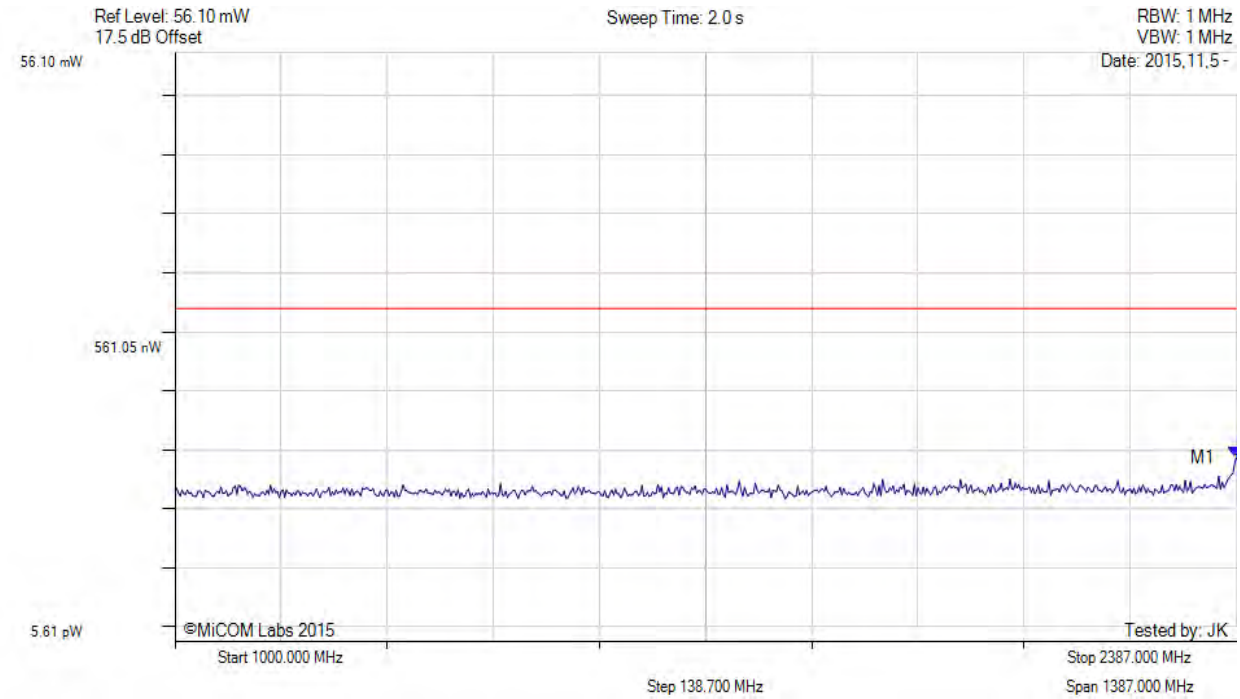


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.012 µW/MHz M1 Marker Frequency: 2387.000 MHz	Channel Frequency: 2405 MHz Limit: 2.5 µW/MHz Margin: -23.19 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

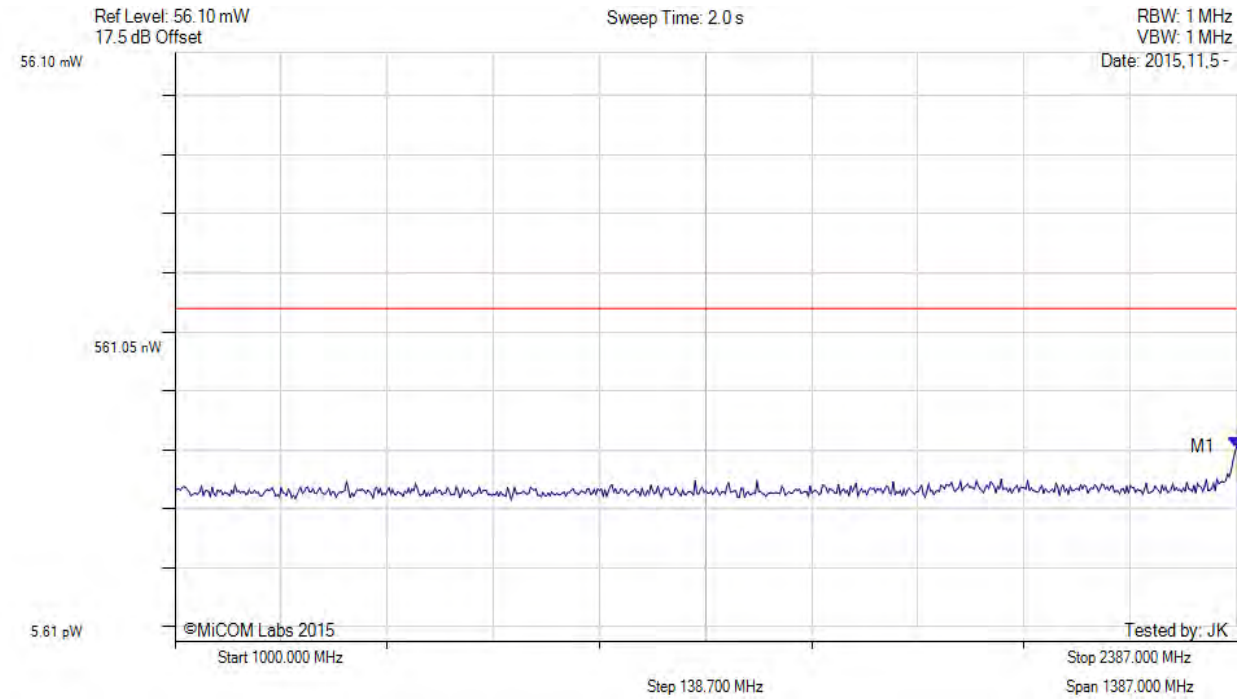


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.007 µW/MHz M1 Marker Frequency: 2387.000 MHz	Channel Frequency: 2405 MHz Limit: 2.5 µW/MHz Margin: -25.53 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

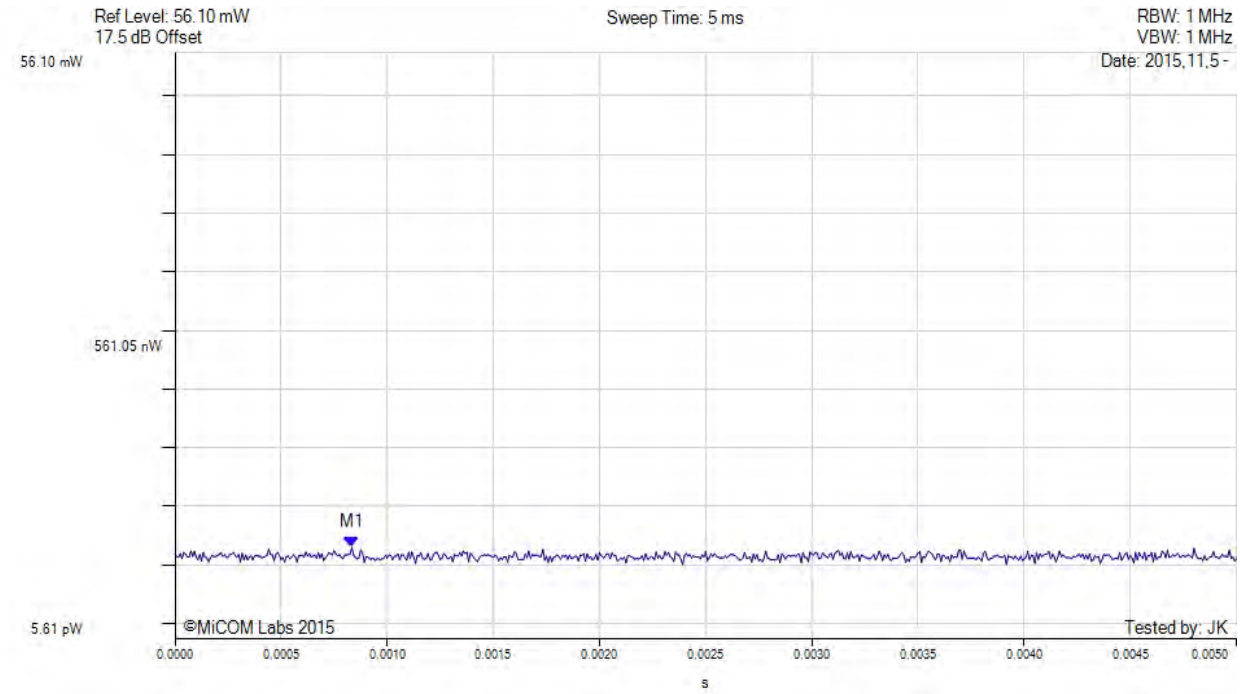


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.011 µW/MHz M1 Marker Frequency: 2387.000 MHz	Channel Frequency: 2405 MHz Limit: 2.5 µW/MHz Margin: -23.57 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

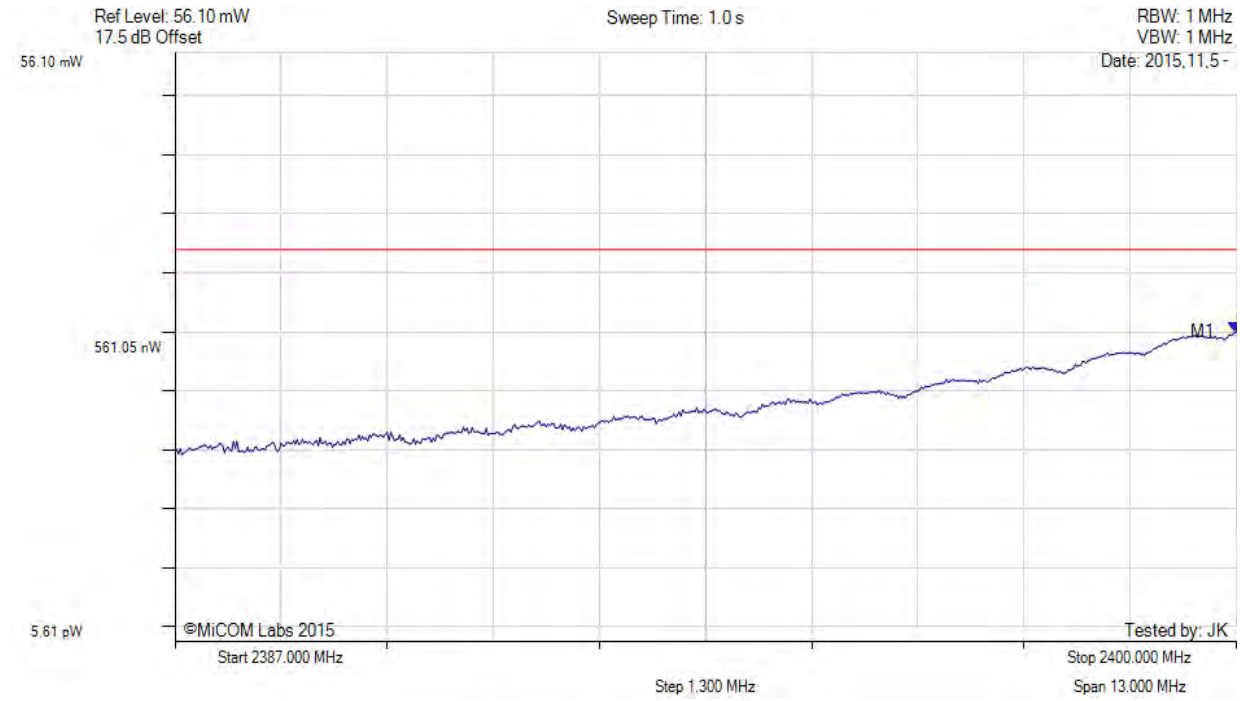


Analyser Setup	Marker:Time:Amplitude	Test Results
Detector = SAMP Sweep Count = +100 RF Atten (dB) = 10 Trace Mode = VIEW	M1(1693.50 MHz) : 0.001 s : 198.11 pW	Channel Frequency: 2405.00 MHz

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

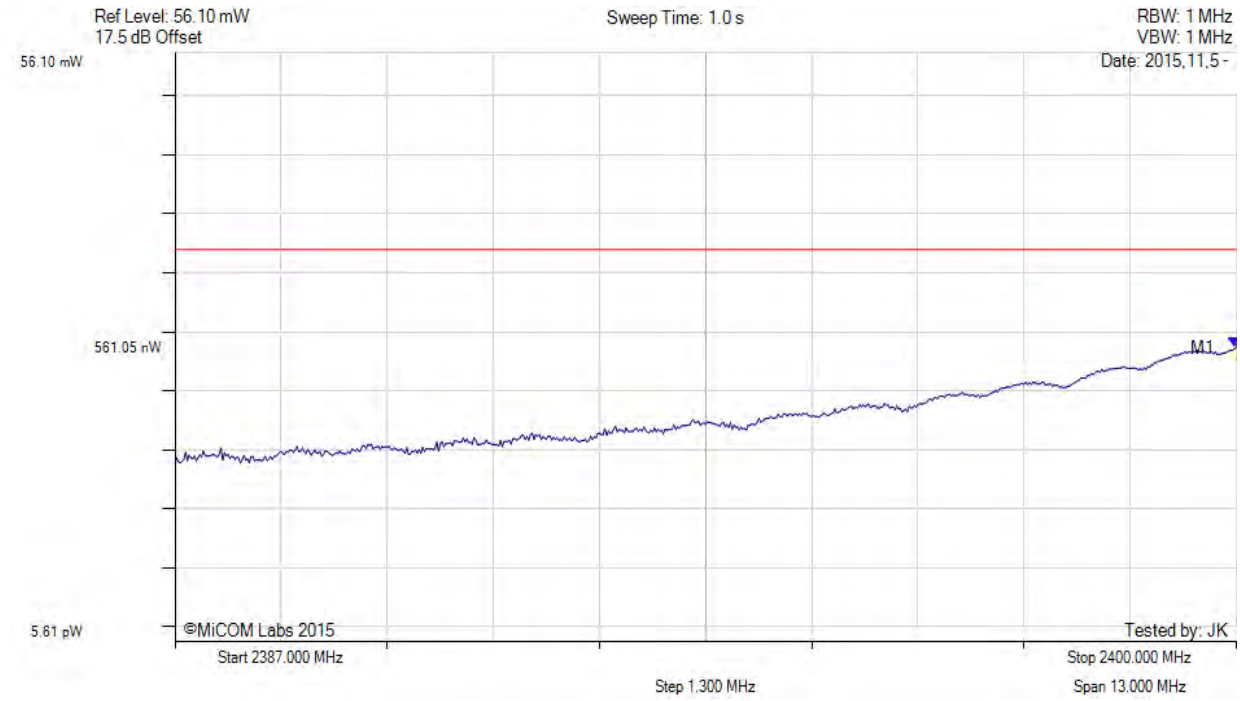


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 1.000 µW/MHz M1 Marker Frequency: 2400.000 MHz	Channel Frequency: 2405 MHz Limit: 25.0 µW/MHz Margin: -13.98 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

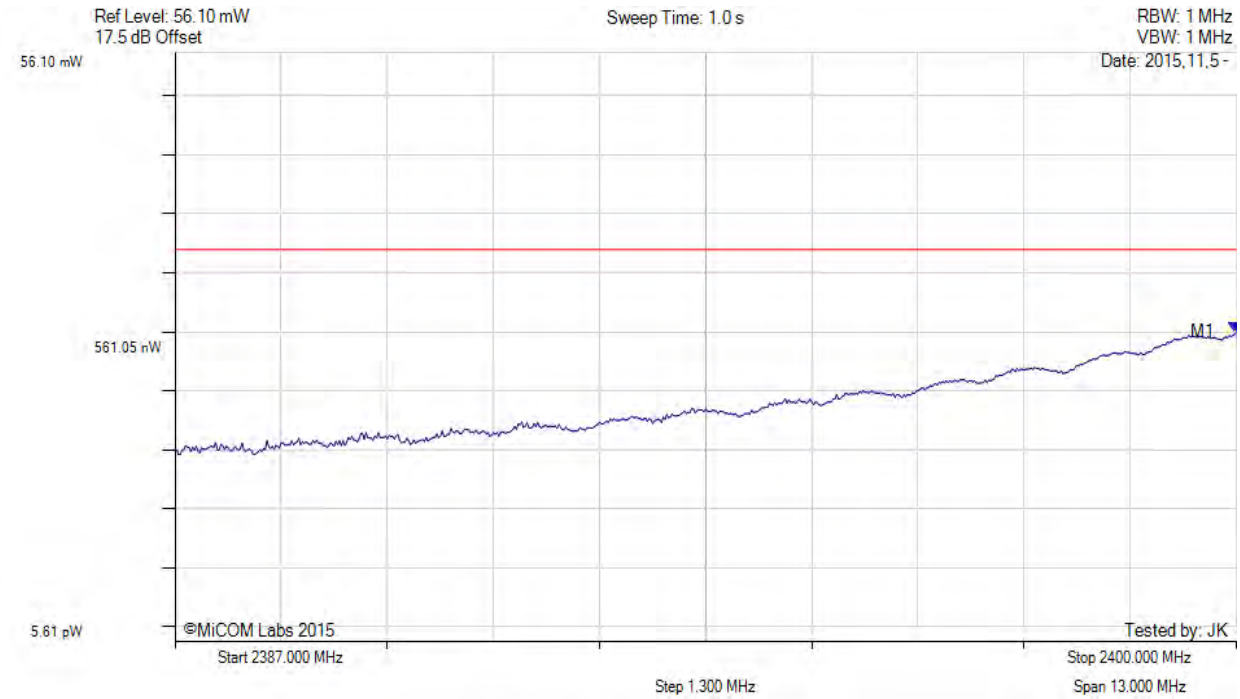


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.539 µW/MHz M1 Marker Frequency: 2400.000 MHz	Channel Frequency: 2405 MHz Limit: 25.0 µW/MHz Margin: -16.66 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

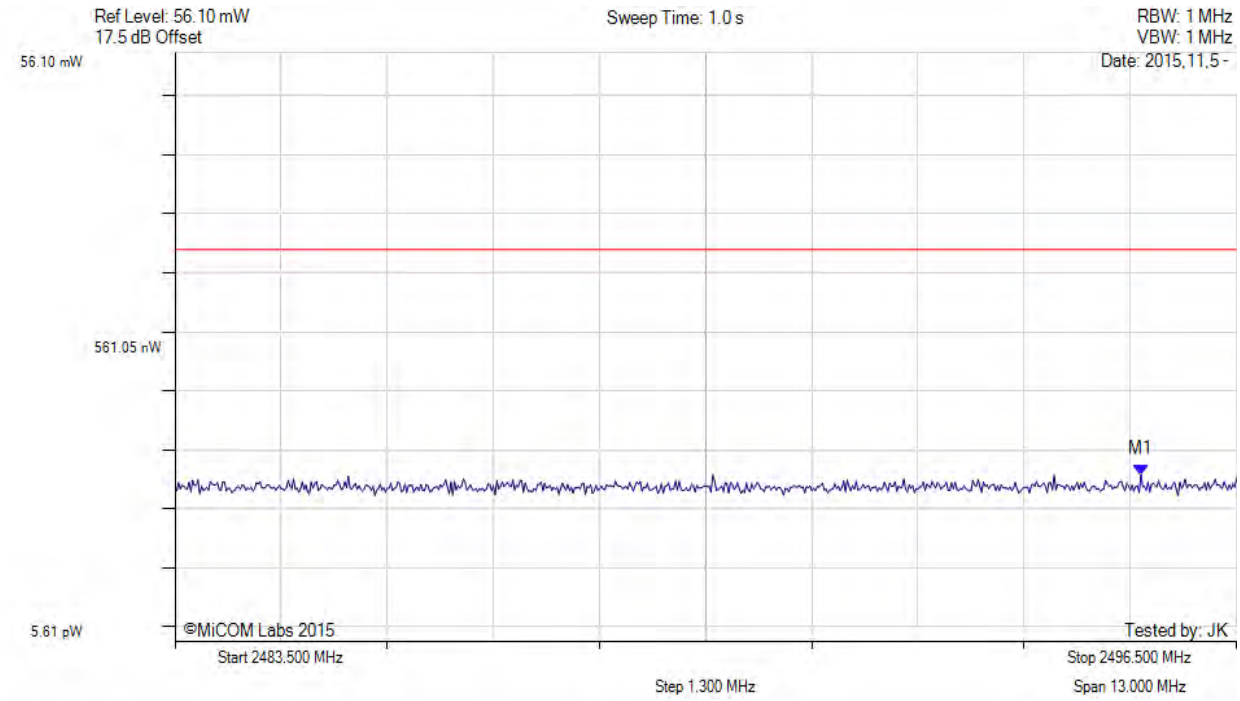


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.987 µW/MHz M1 Marker Frequency: 2400.000 MHz	Channel Frequency: 2405 MHz Limit: 25.0 µW/MHz Margin: -14.04 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

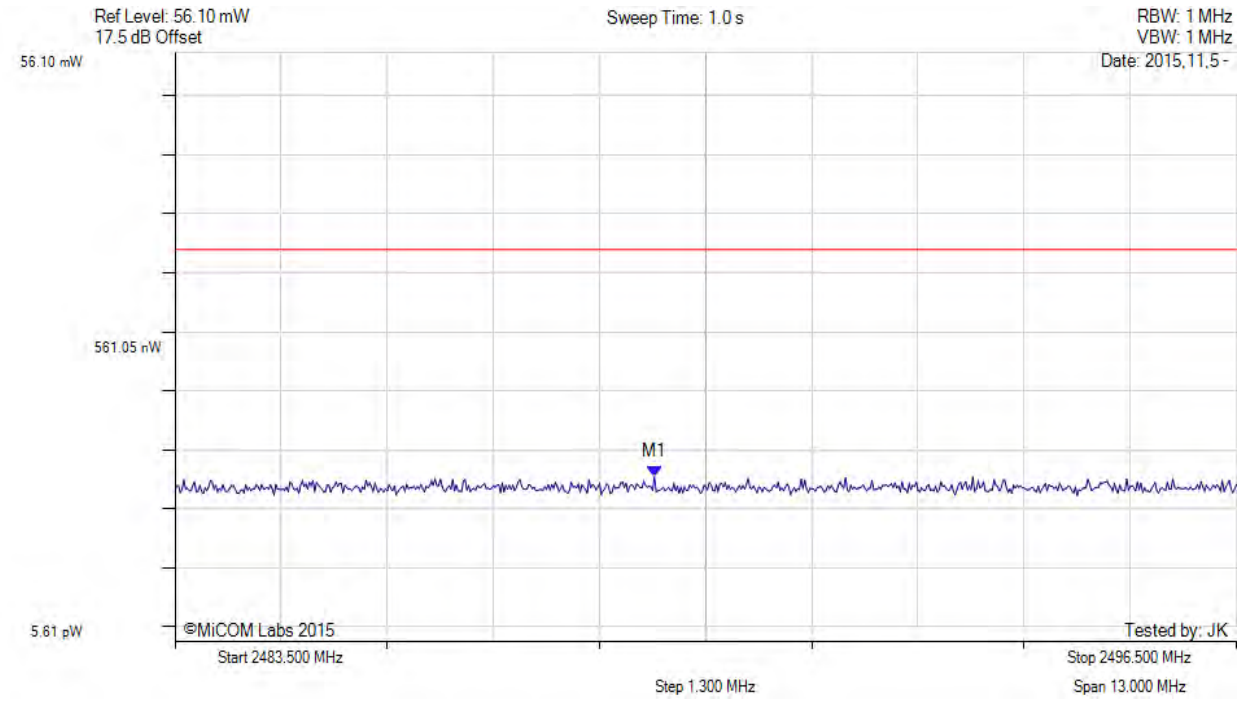


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.004 µW/MHz M1 Marker Frequency: 2495.330 MHz	Channel Frequency: 2405 MHz Limit: 25.0 µW/MHz Margin: -37.96 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

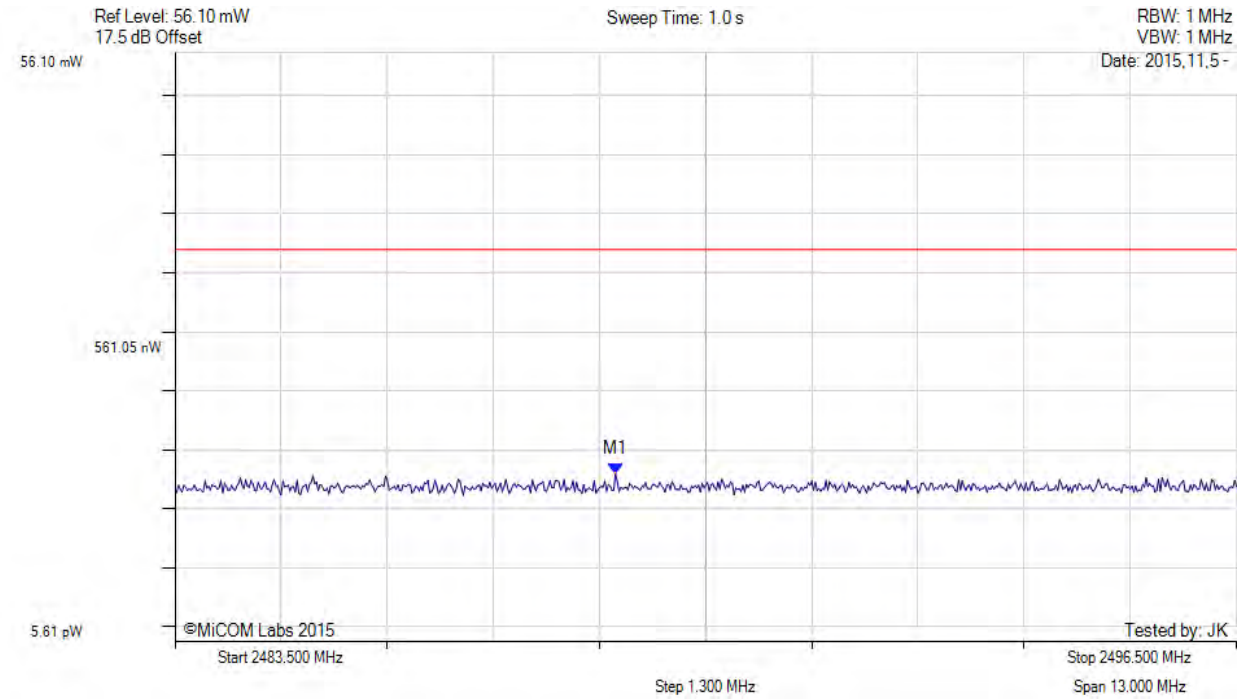


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.003 µW/MHz M1 Marker Frequency: 2489.372 MHz	Channel Frequency: 2405 MHz Limit: 25.0 µW/MHz Margin: -39.21 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

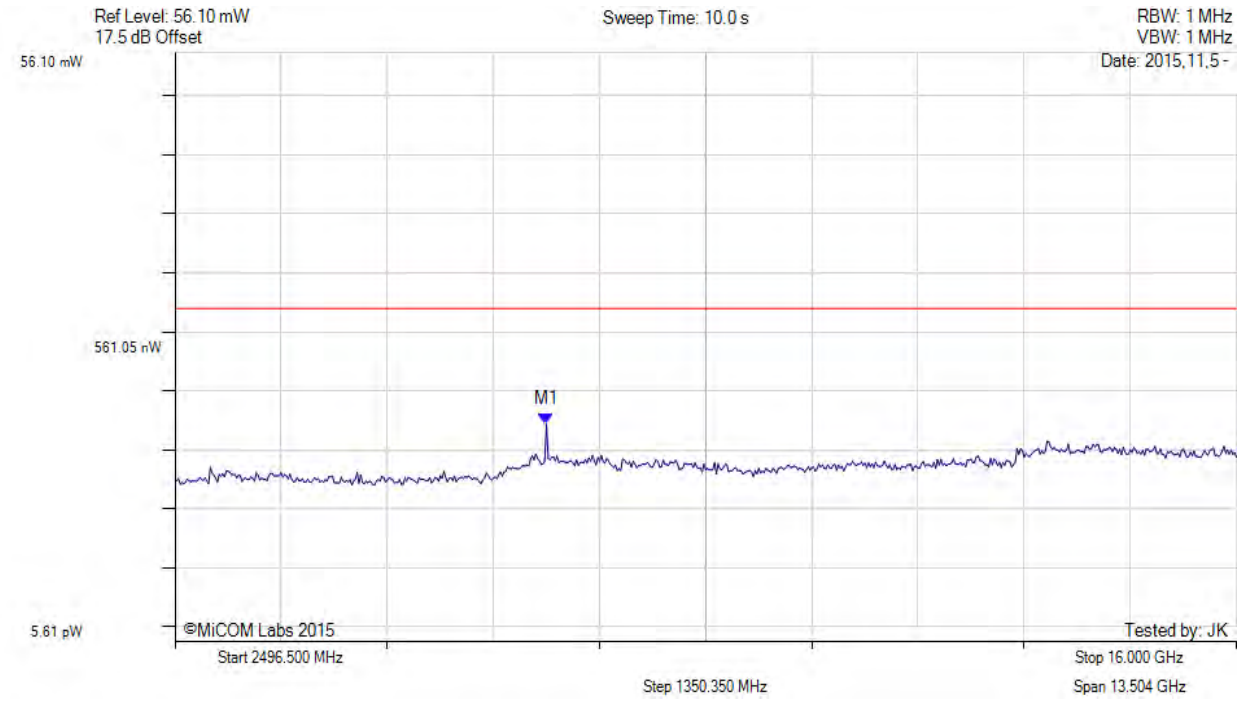


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.004 µW/MHz M1 Marker Frequency: 2488.895 MHz	Channel Frequency: 2405 MHz Limit: 25.0 µW/MHz Margin: -37.96 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

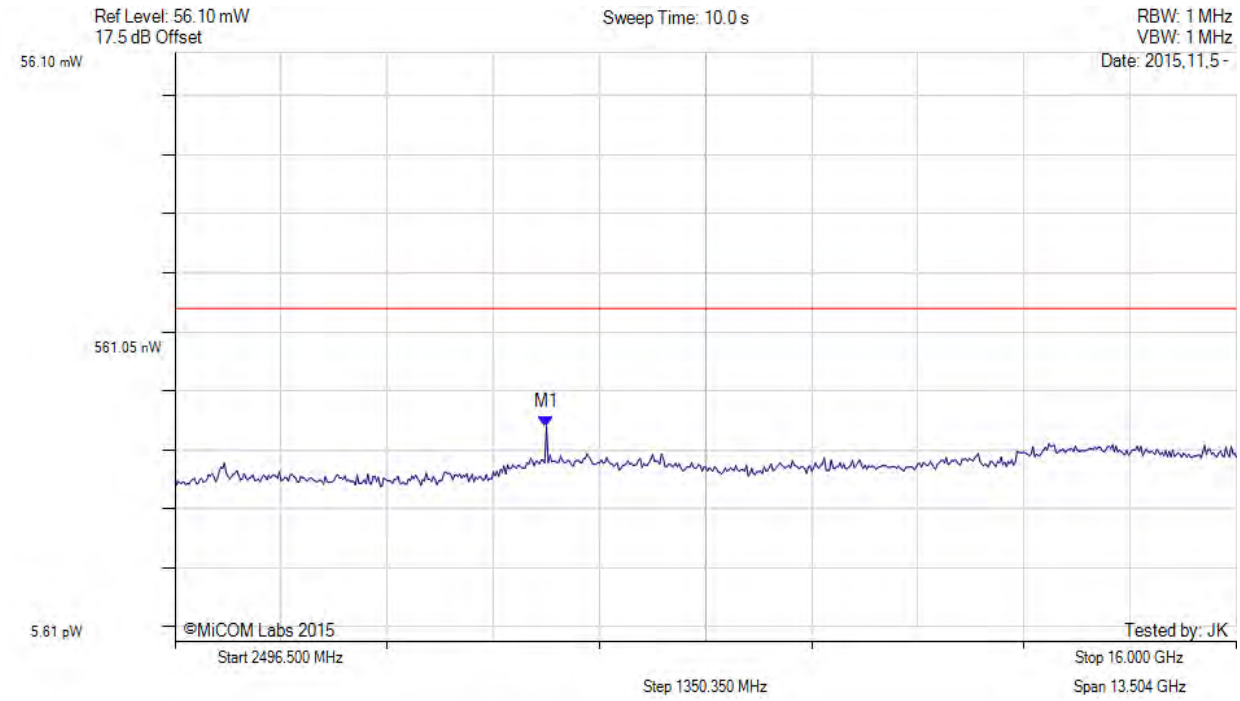


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.027 µW/MHz M1 Marker Frequency: 7223.000 MHz	Channel Frequency: 2405 MHz Limit: 2.5 µW/MHz Margin: -19.67 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

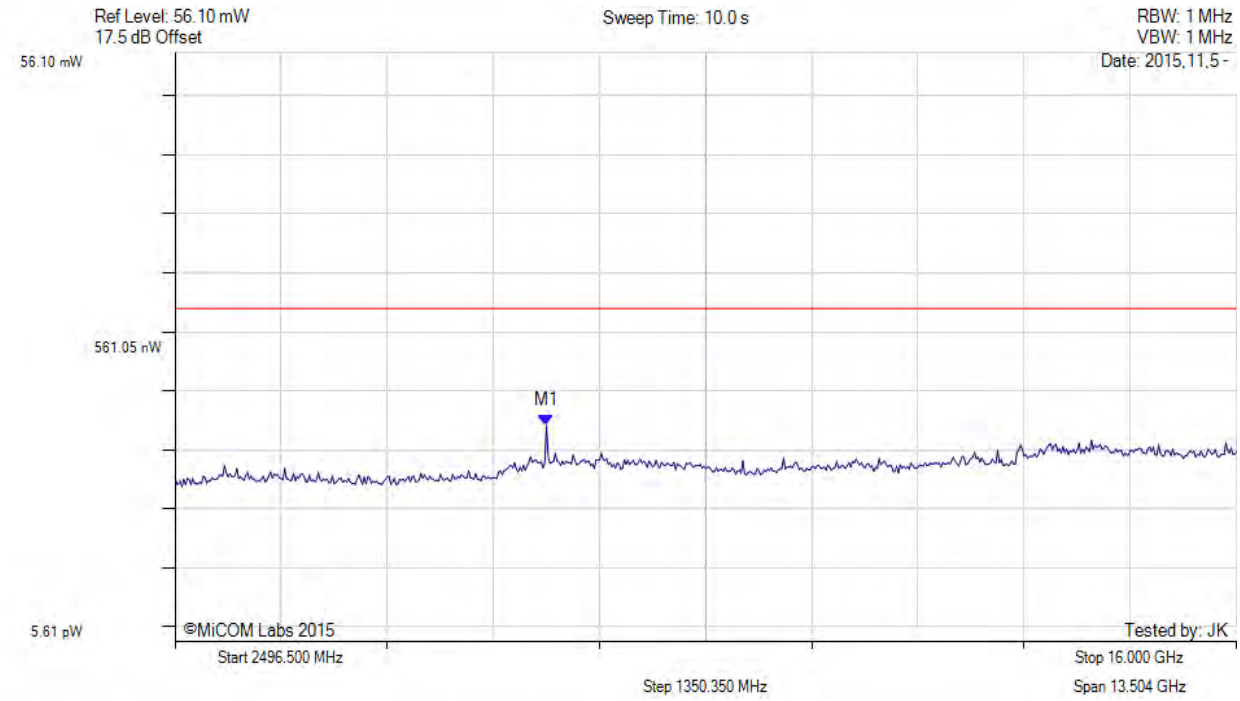


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.025 µW/MHz M1 Marker Frequency: 7223.000 MHz	Channel Frequency: 2405 MHz Limit: 2.5 µW/MHz Margin: -20.00 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

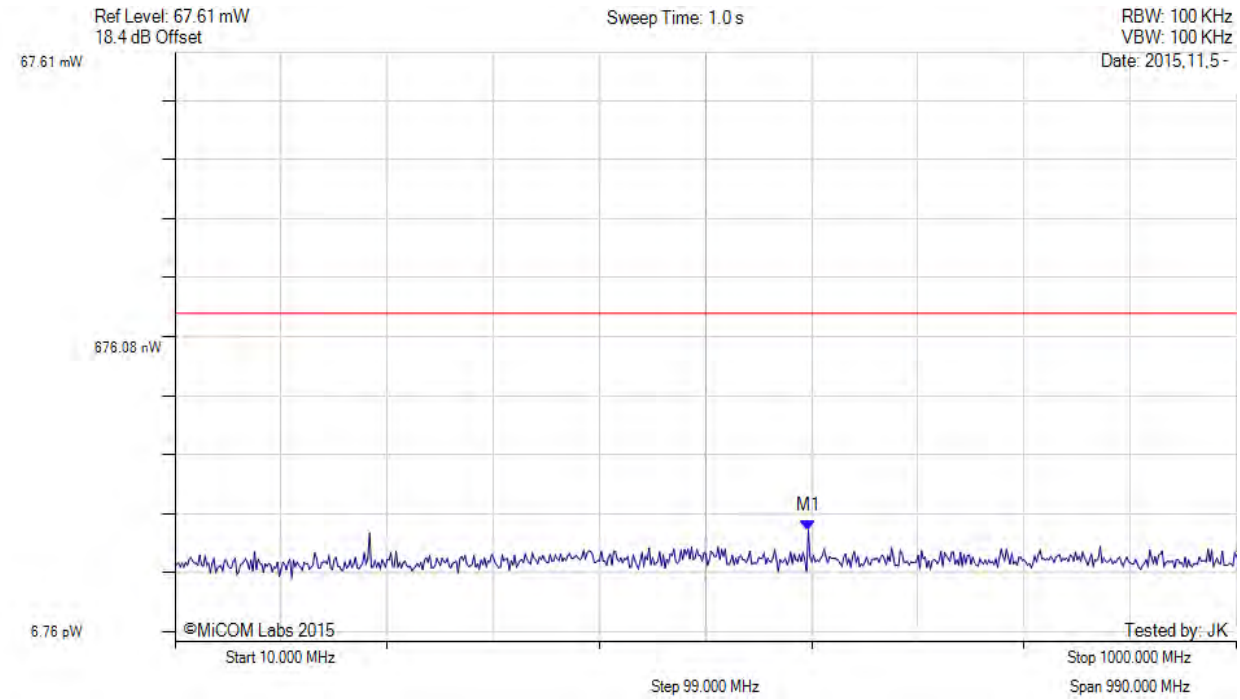


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.026 µW/MHz M1 Marker Frequency: 7223.000 MHz	Channel Frequency: 2405 MHz Limit: 2.5 µW/MHz Margin: -19.83 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

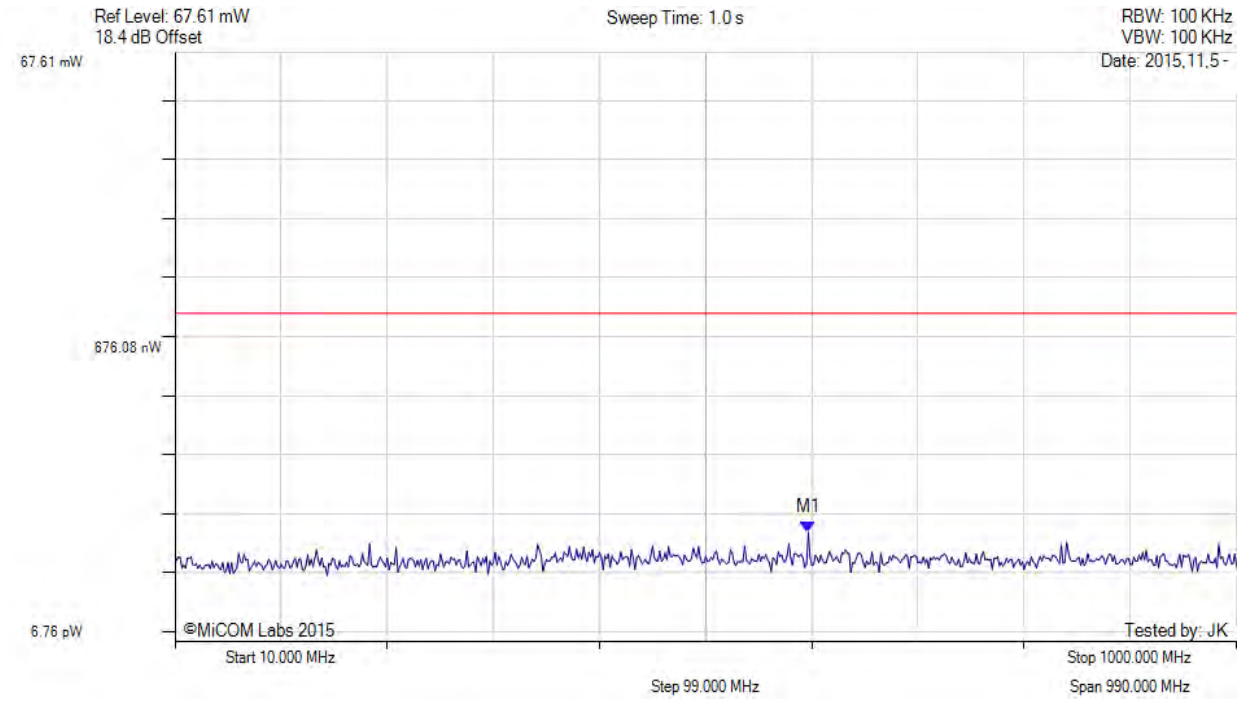


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.001 µW M1 Marker Frequency: 600.700 MHz	Channel Frequency: 2440 MHz Limit: 2.5 µW Margin: -33.98 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

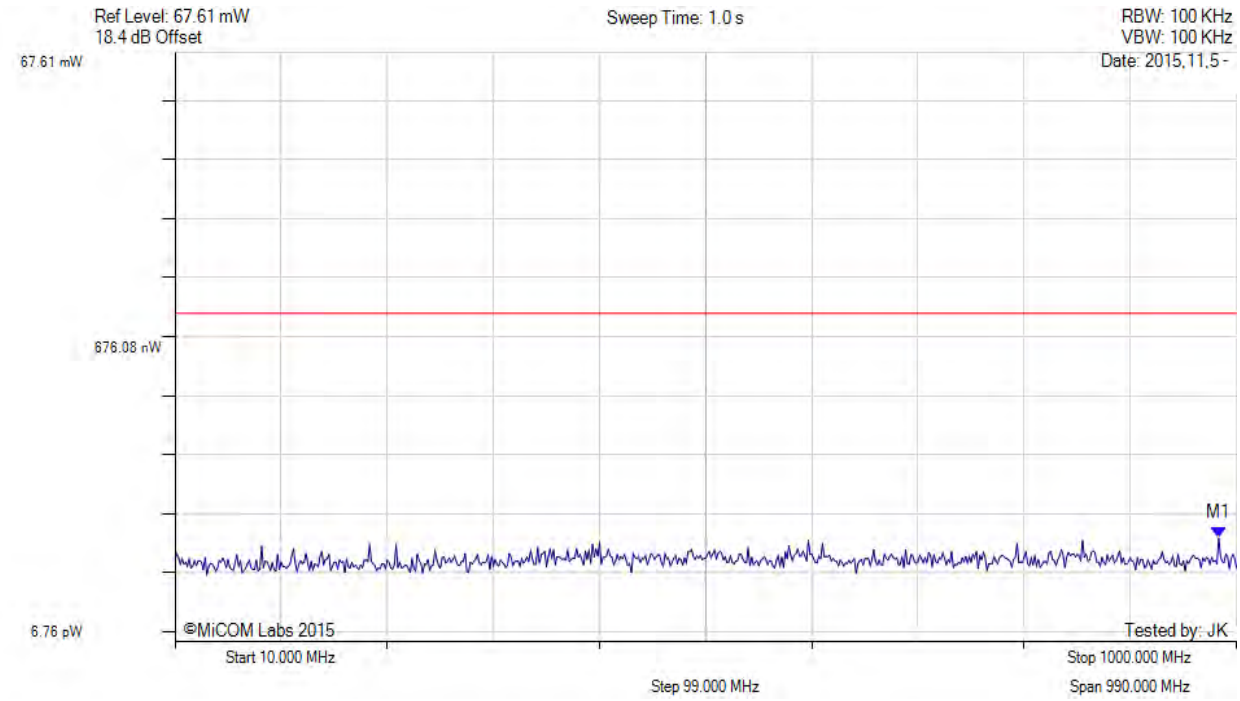


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.000 µW M1 Marker Frequency: 600.700 MHz	Channel Frequency: 2440 MHz Limit: 2.5 µW Margin: #NUM! dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

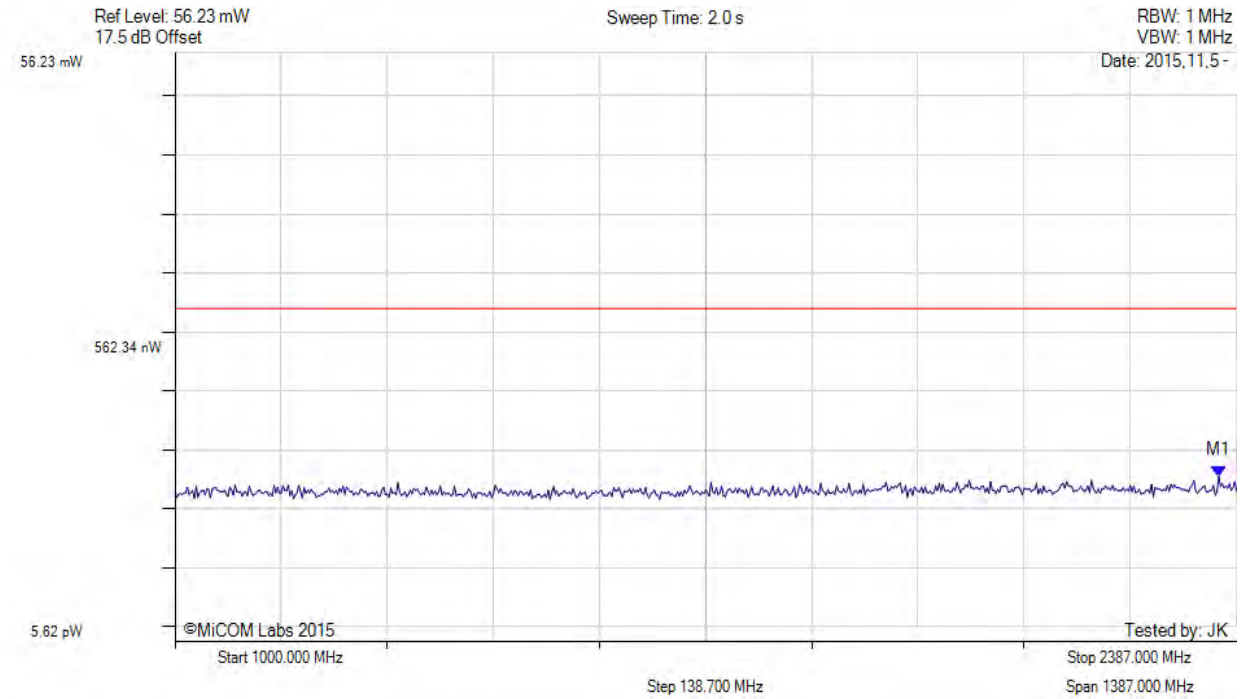


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.000 µW M1 Marker Frequency: 983.500 MHz	Channel Frequency: 2440 MHz Limit: 2.5 µW Margin: #NUM! dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

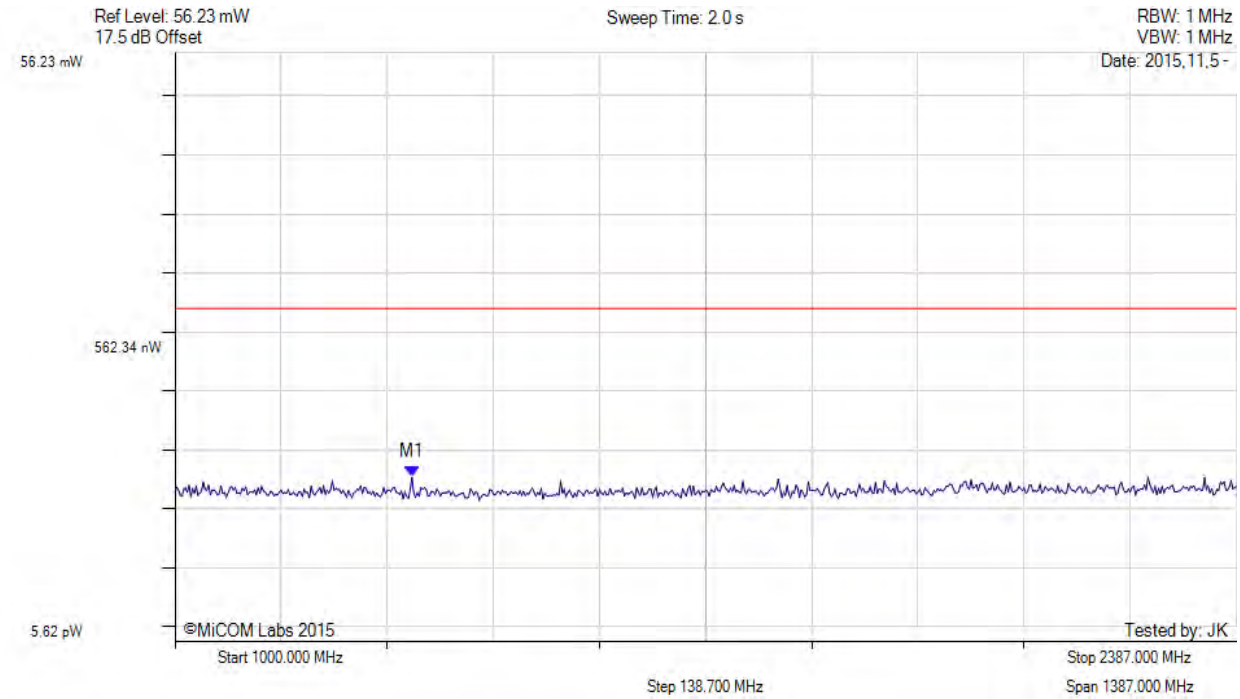


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.004 µW/MHz M1 Marker Frequency: 2363.900 MHz	Channel Frequency: 2440 MHz Limit: 2.5 µW/MHz Margin: -27.96 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

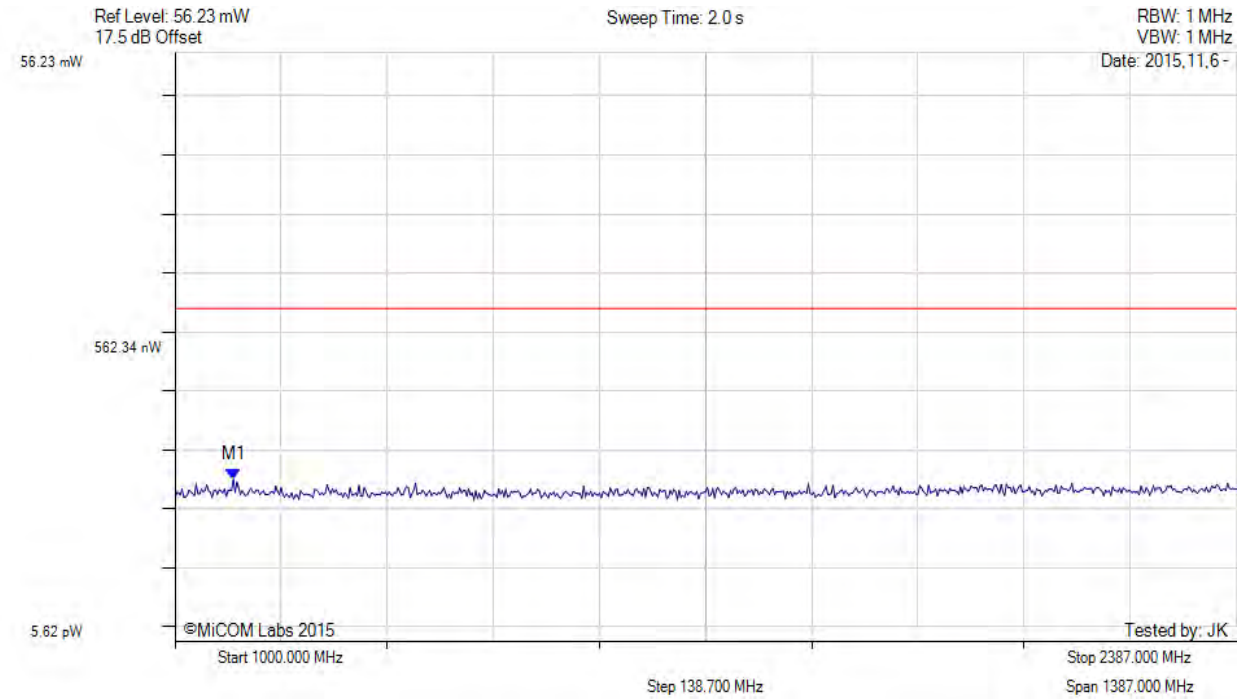


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.003 µW/MHz M1 Marker Frequency: 1309.800 MHz	Channel Frequency: 2440 MHz Limit: 2.5 µW/MHz Margin: -29.21 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

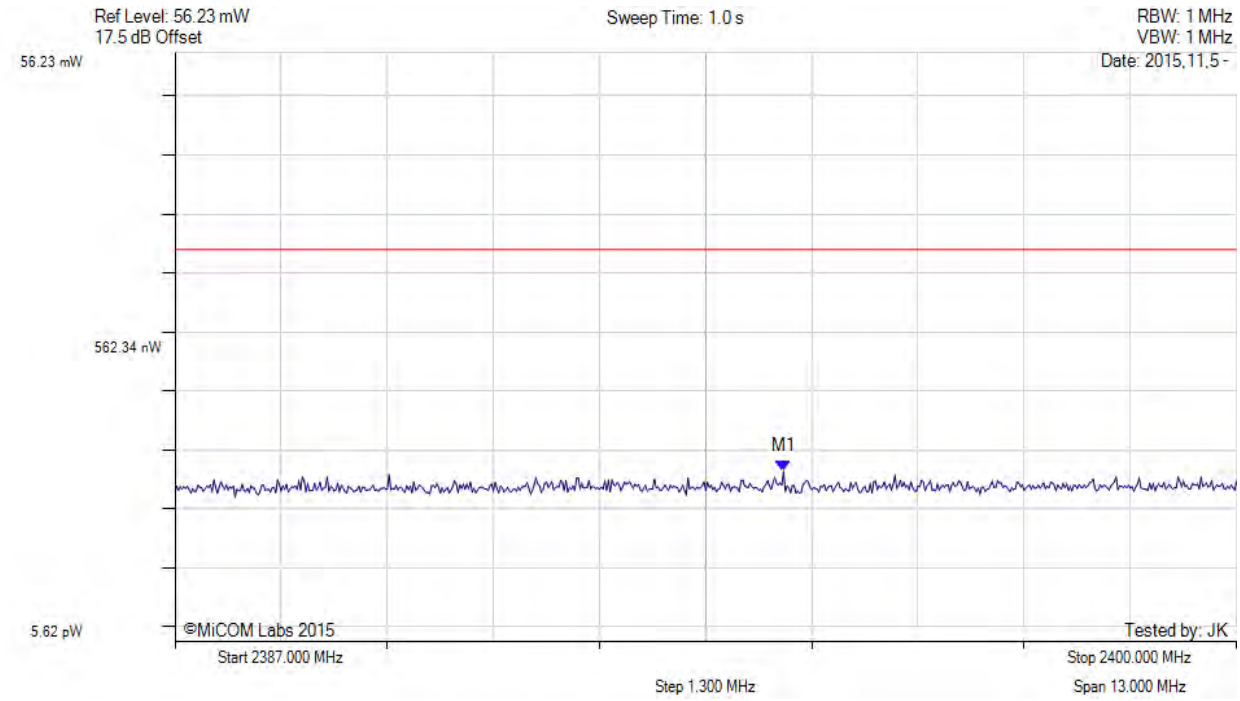


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.003 µW/MHz M1 Marker Frequency: 1076.300 MHz	Channel Frequency: 2440 MHz Limit: 2.5 µW/MHz Margin: -29.21 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

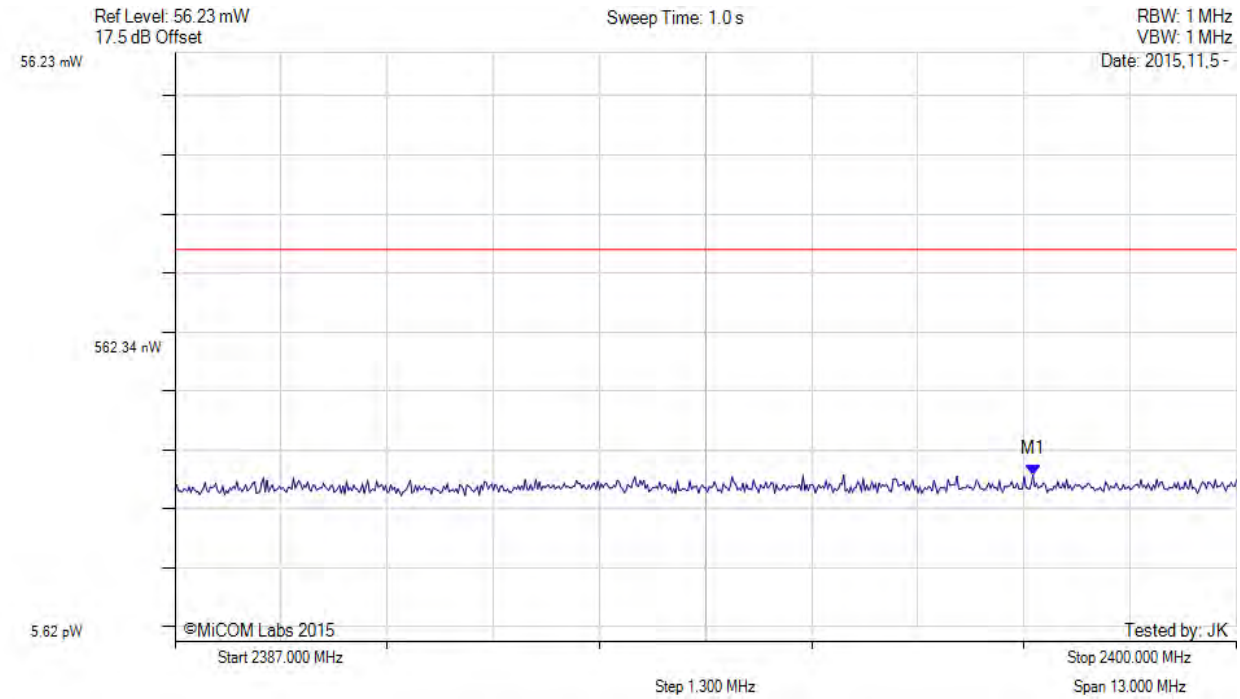


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.004 µW/MHz M1 Marker Frequency: 2394.453 MHz	Channel Frequency: 2440 MHz Limit: 25.0 µW/MHz Margin: -37.96 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

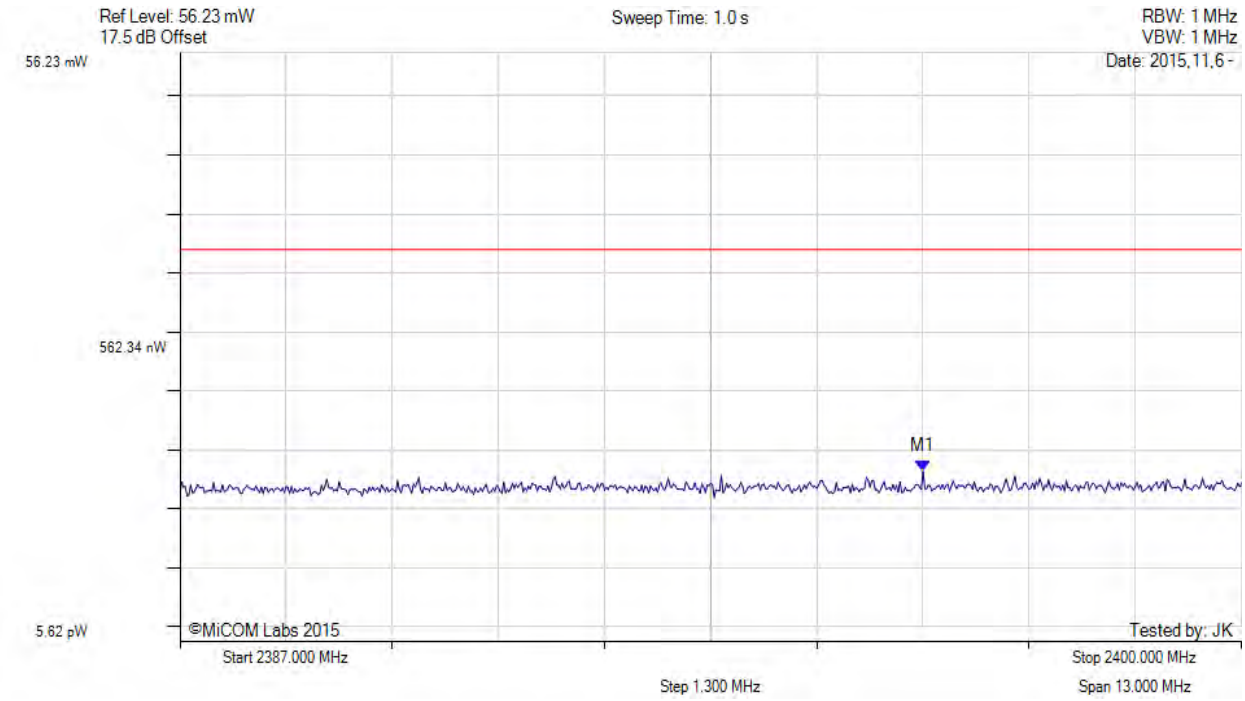


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.004 µW/MHz M1 Marker Frequency: 2397.508 MHz	Channel Frequency: 2440 MHz Limit: 25.0 µW/MHz Margin: -37.96 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

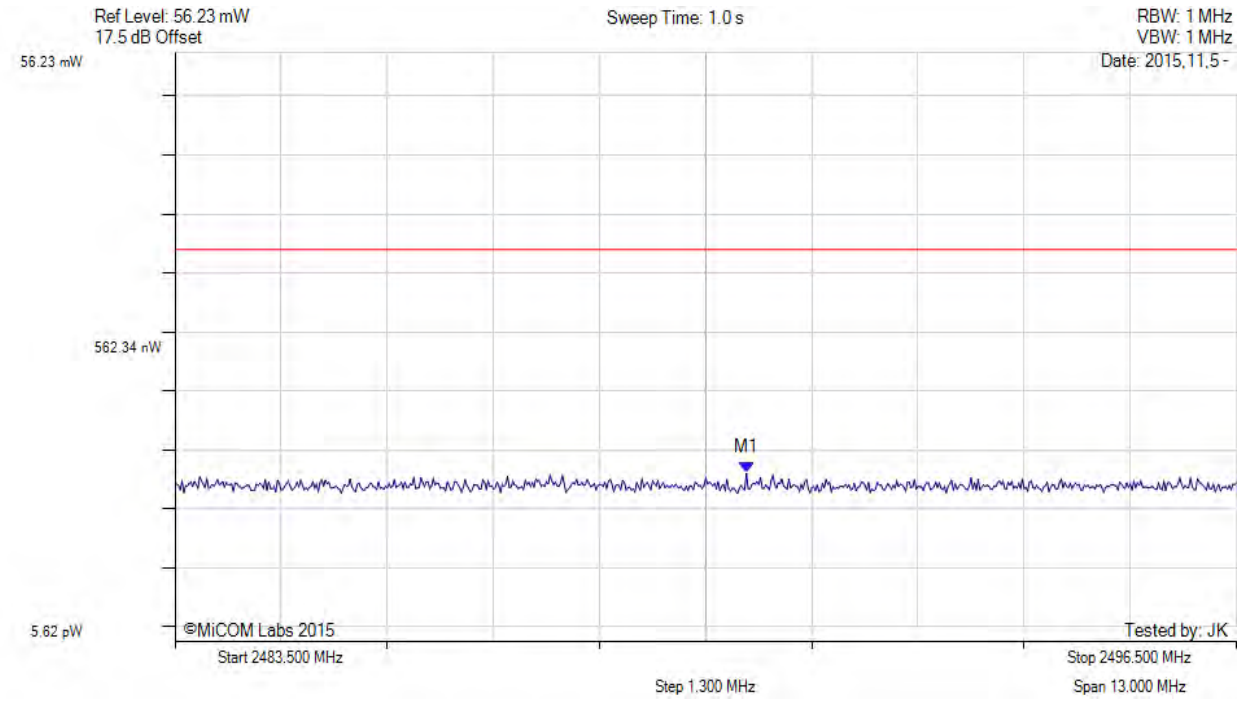


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.004 µW/MHz M1 Marker Frequency: 2396.100 MHz	Channel Frequency: 2440 MHz Limit: 25.0 µW/MHz Margin: -37.96 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

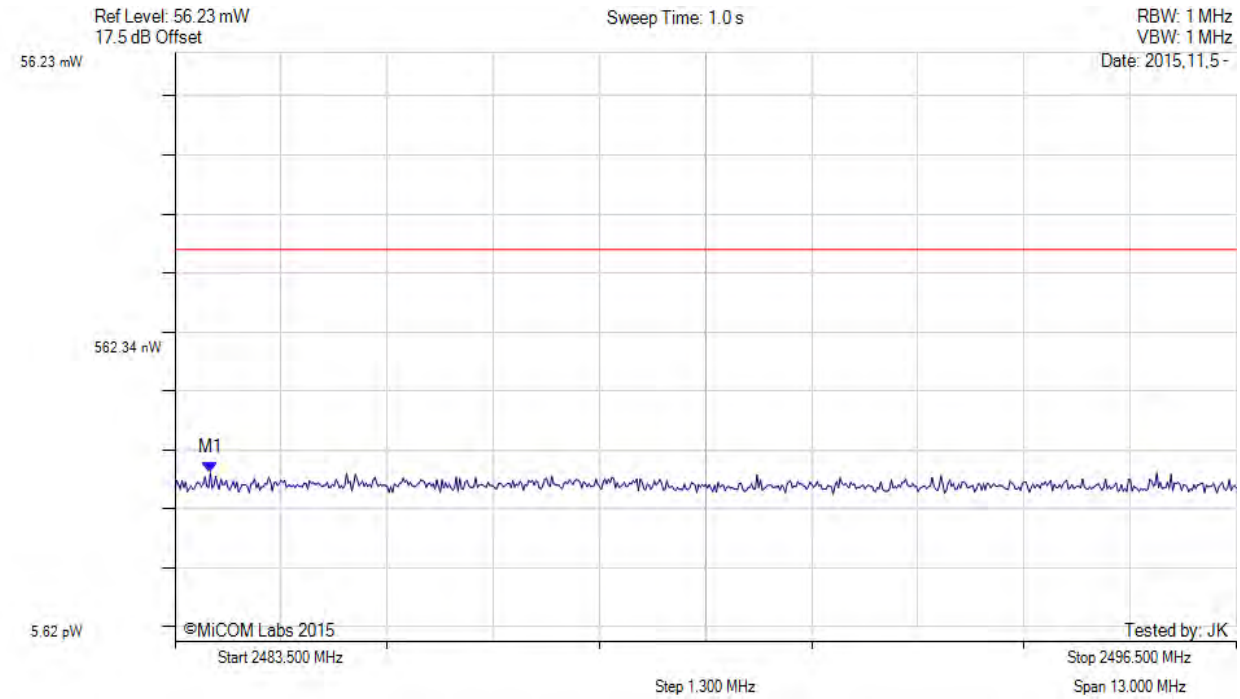


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.004 µW/MHz M1 Marker Frequency: 2490.498 MHz	Channel Frequency: 2440 MHz Limit: 25.0 µW/MHz Margin: -37.96 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

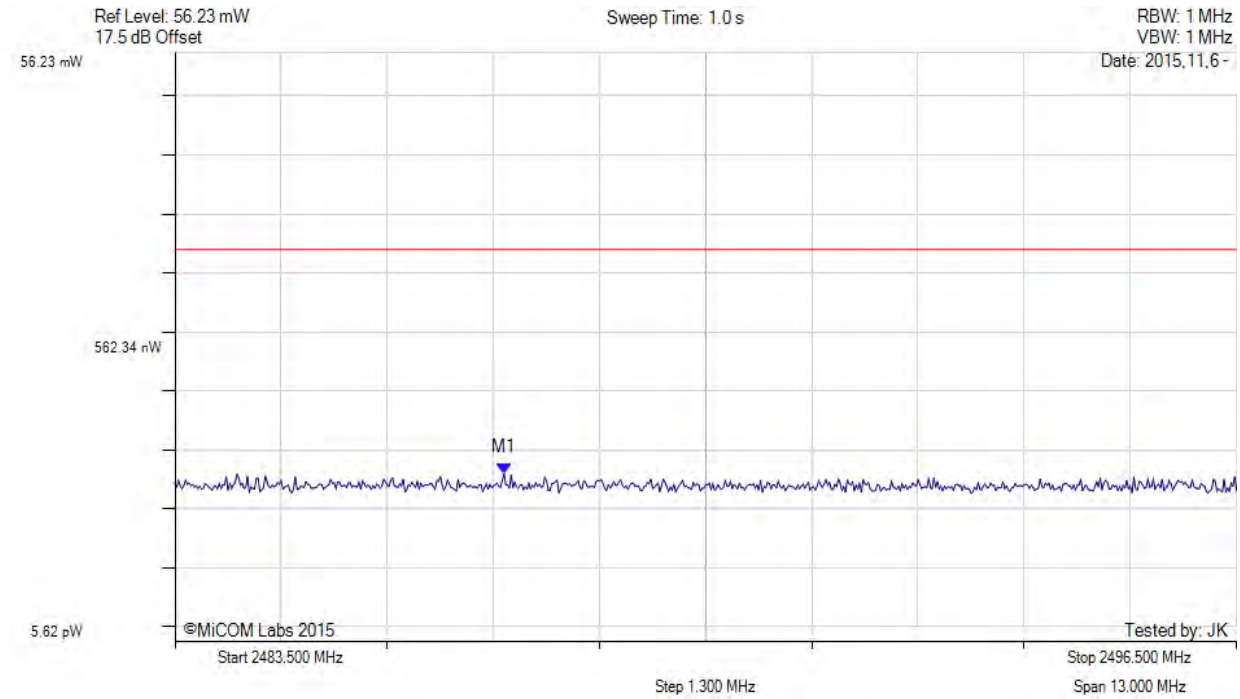


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.004 µW/MHz M1 Marker Frequency: 2483.933 MHz	Channel Frequency: 2440 MHz Limit: 25.0 µW/MHz Margin: -37.96 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

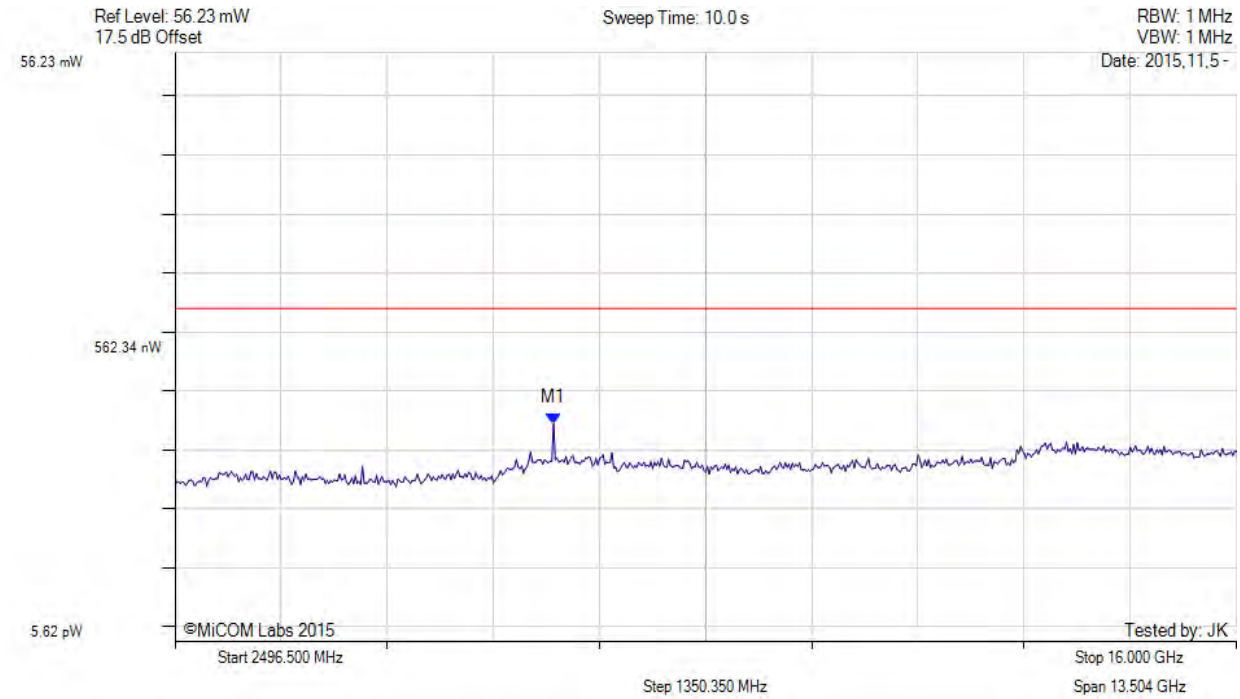


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.004 µW/MHz M1 Marker Frequency: 2487.530 MHz	Channel Frequency: 2440 MHz Limit: 25.0 µW/MHz Margin: -37.96 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

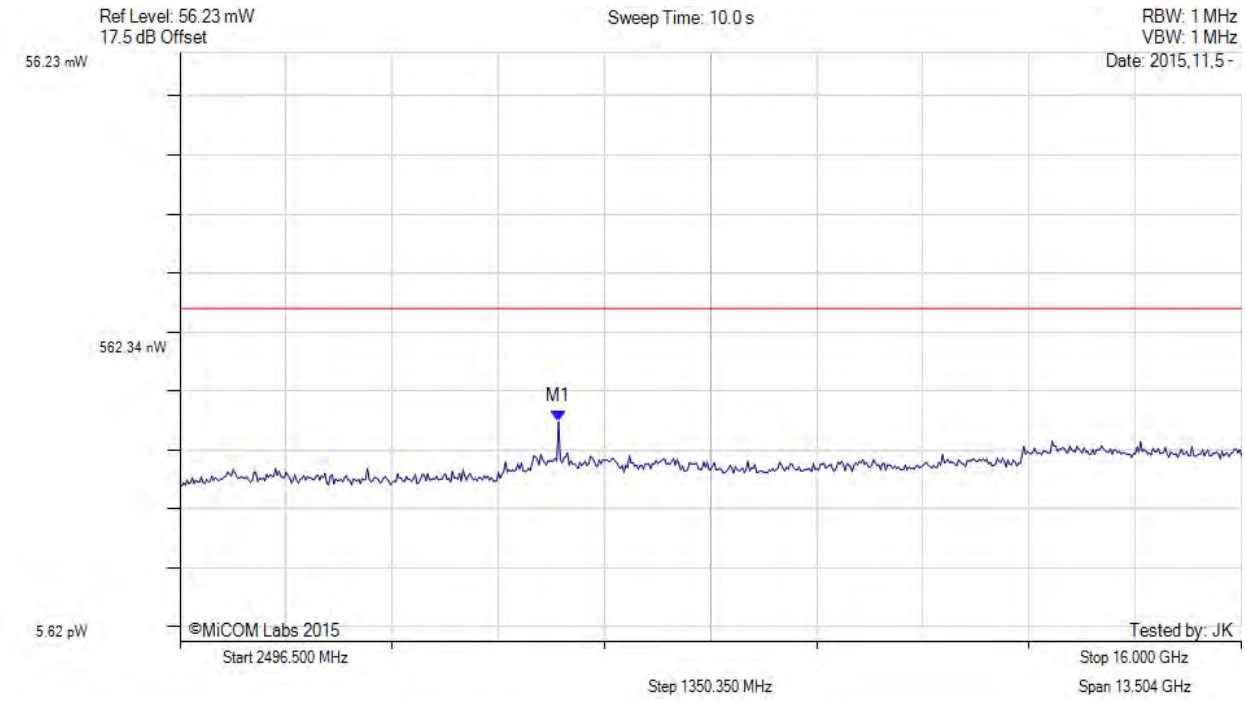


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.028 µW/MHz M1 Marker Frequency: 7313.000 MHz	Channel Frequency: 2440 MHz Limit: 2.5 µW/MHz Margin: -19.51 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

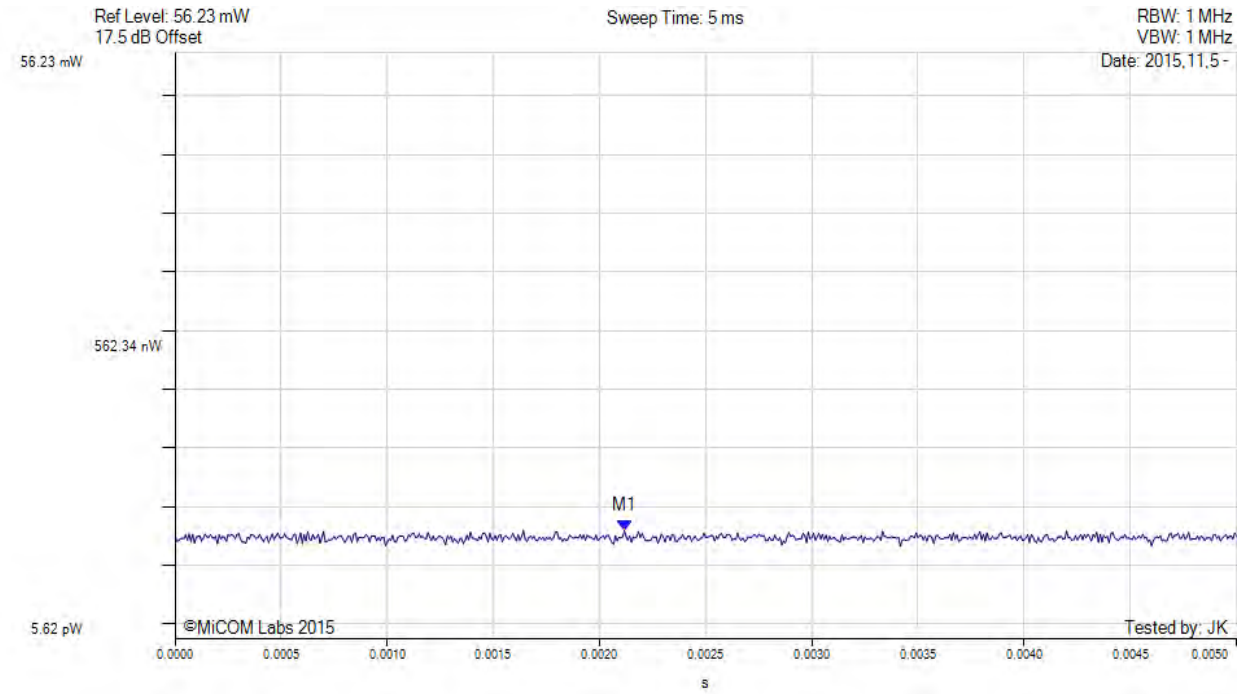


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.030 µW/MHz M1 Marker Frequency: 7313.000 MHz	Channel Frequency: 2440 MHz Limit: 2.5 µW/MHz Margin: -19.21 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

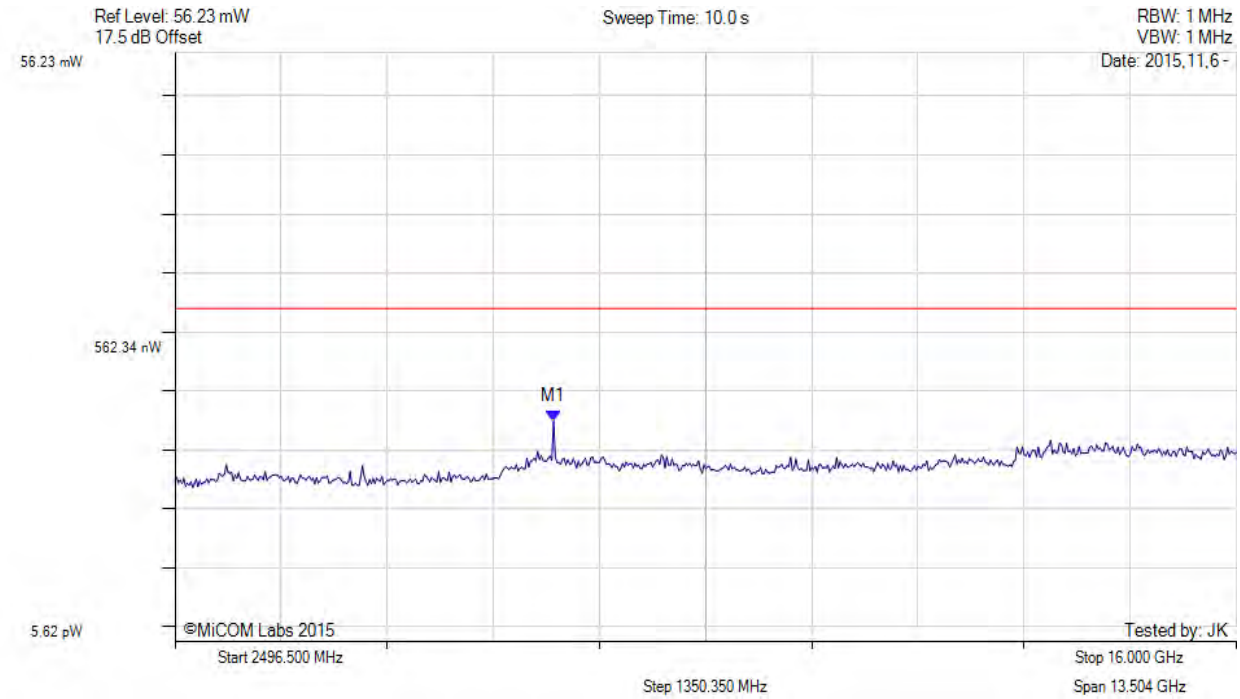


Analyser Setup	Marker:Time:Amplitude	Test Results
Detector = SAMP Sweep Count = +100 RF Atten (dB) = 10 Trace Mode = VIEW	M1(9248.25 MHz) : 0.002 s : 388.51 pW	Channel Frequency: 2440.00 MHz

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

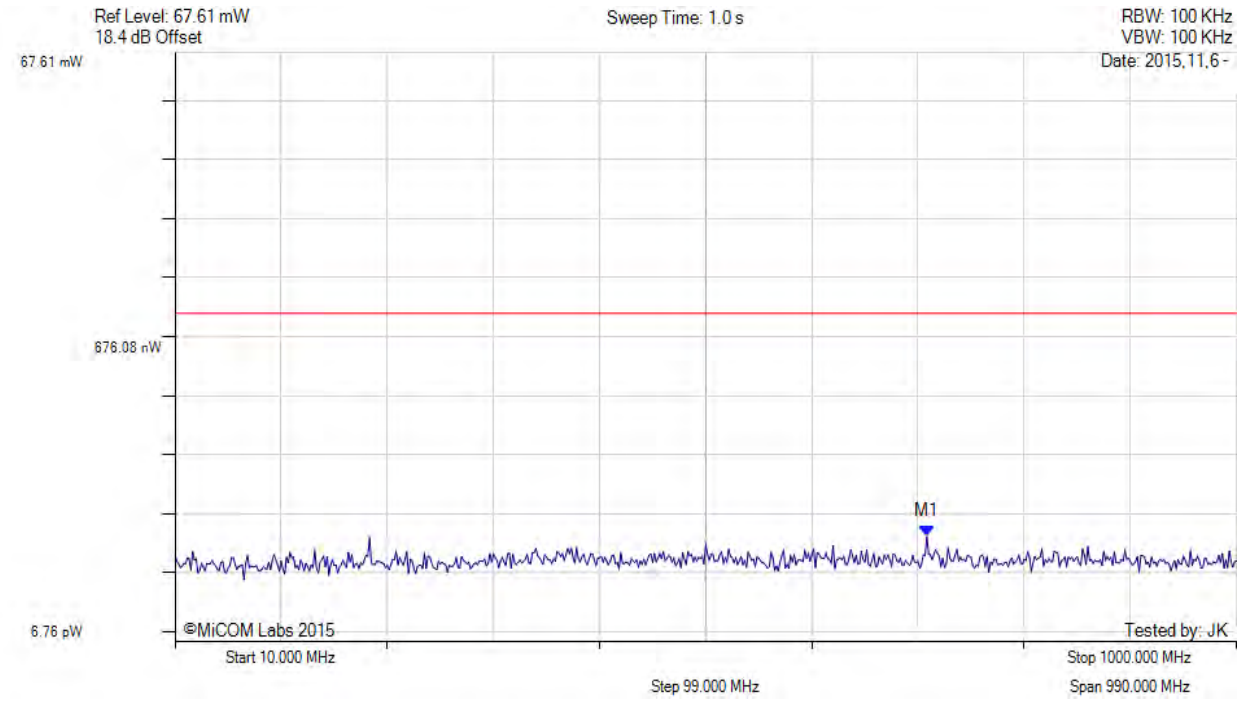


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.031 µW/MHz M1 Marker Frequency: 7313.000 MHz	Channel Frequency: 2440 MHz Limit: 2.5 µW/MHz Margin: -19.07 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

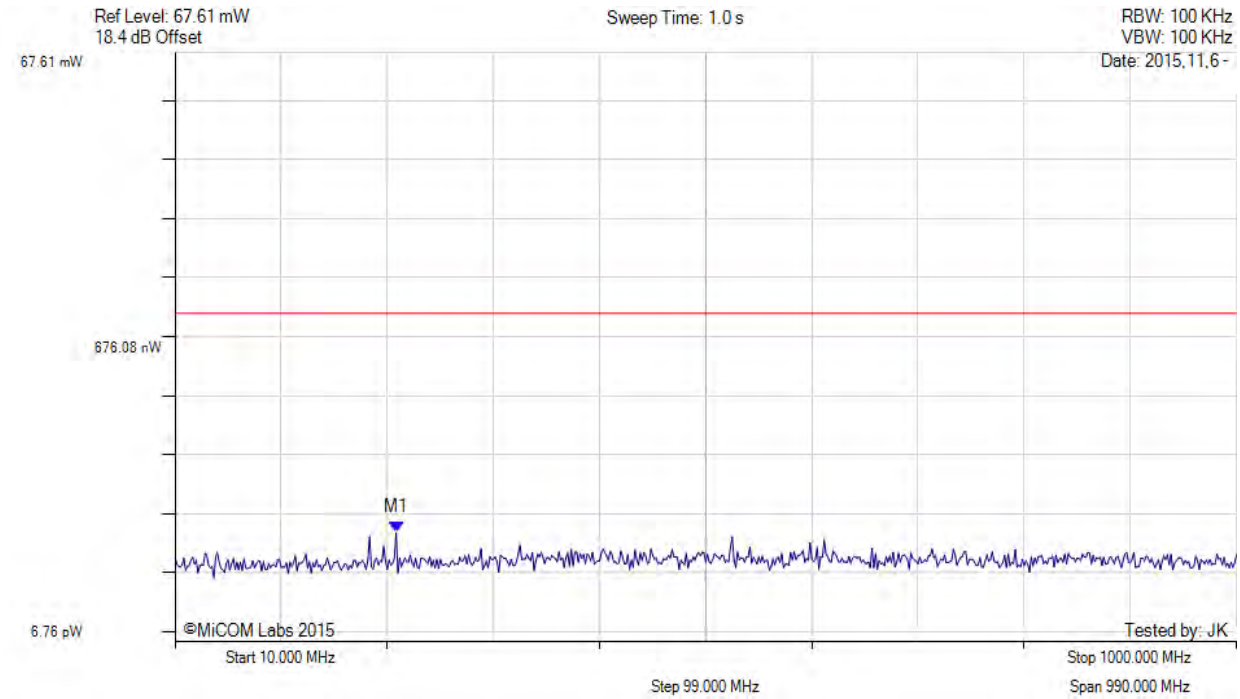


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.000 µW M1 Marker Frequency: 711.250 MHz	Channel Frequency: 2480 MHz Limit: 2.5 µW Margin: #NUM! dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

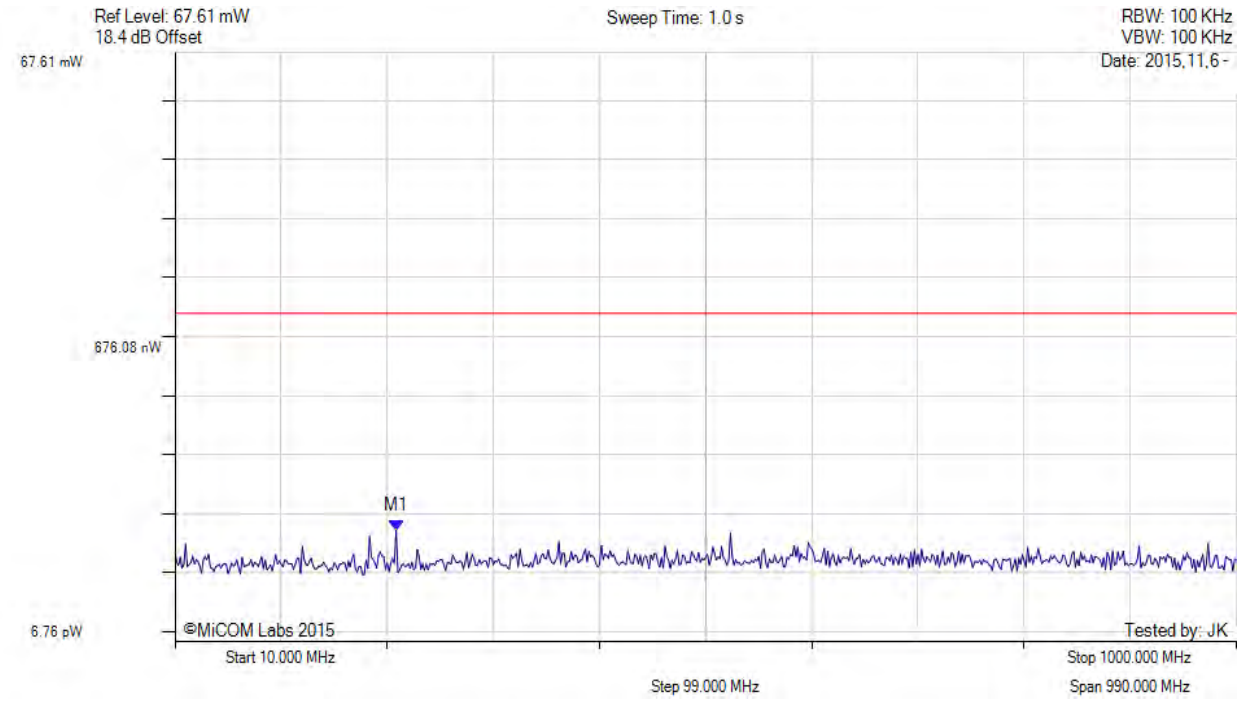


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.000 µW M1 Marker Frequency: 216.250 MHz	Channel Frequency: 2480 MHz Limit: 2.5 µW Margin: #NUM! dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

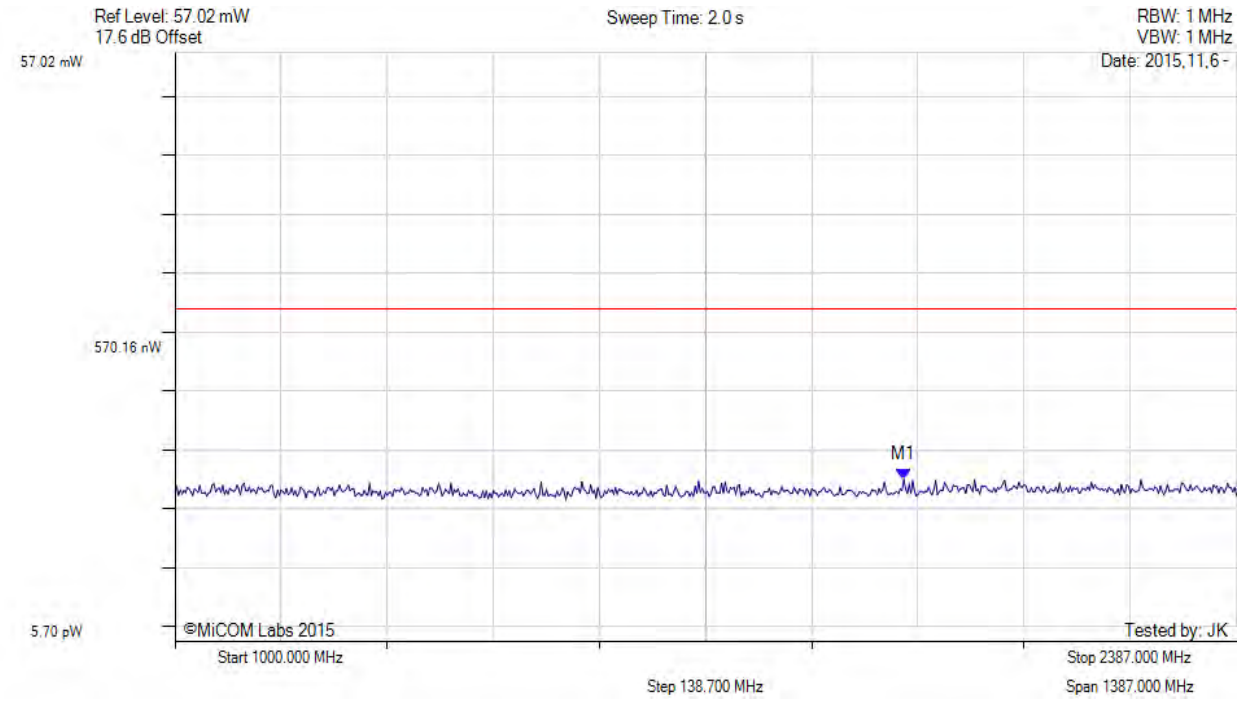


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.001 µW M1 Marker Frequency: 216.250 MHz	Channel Frequency: 2480 MHz Limit: 2.5 µW Margin: -33.98 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

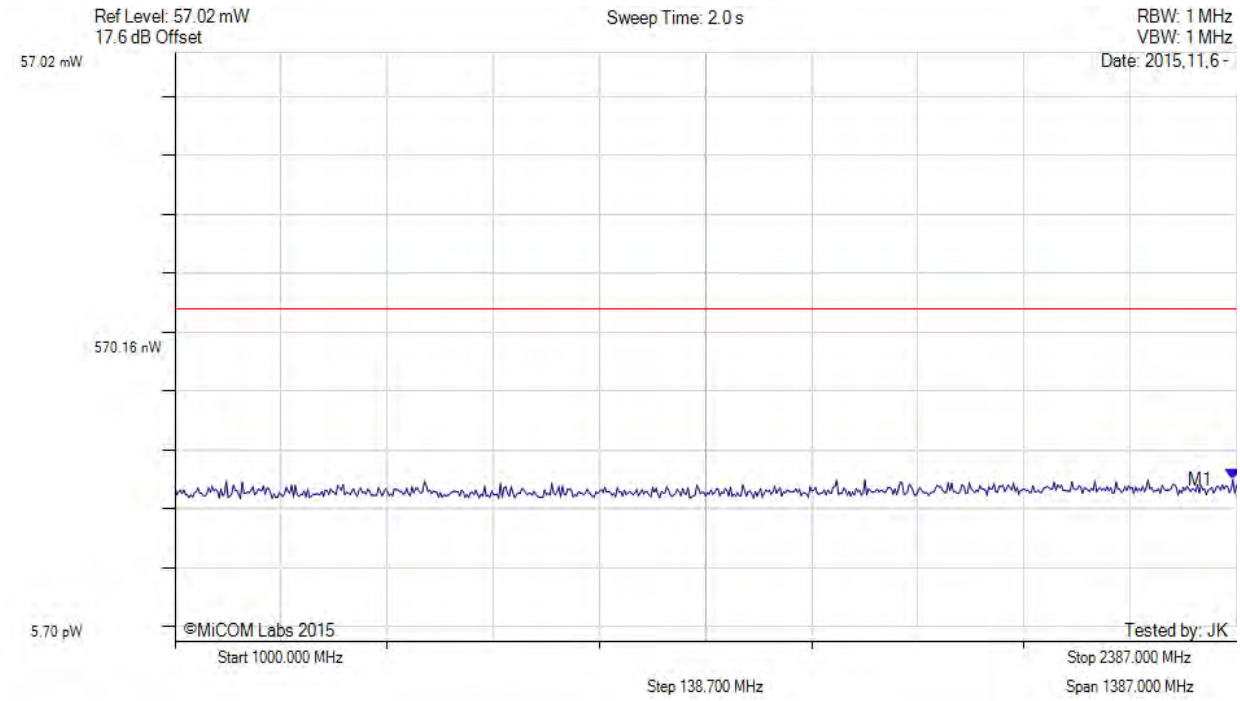


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.003 µW/MHz M1 Marker Frequency: 1952.400 MHz	Channel Frequency: 2480 MHz Limit: 2.5 µW/MHz Margin: -29.21 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

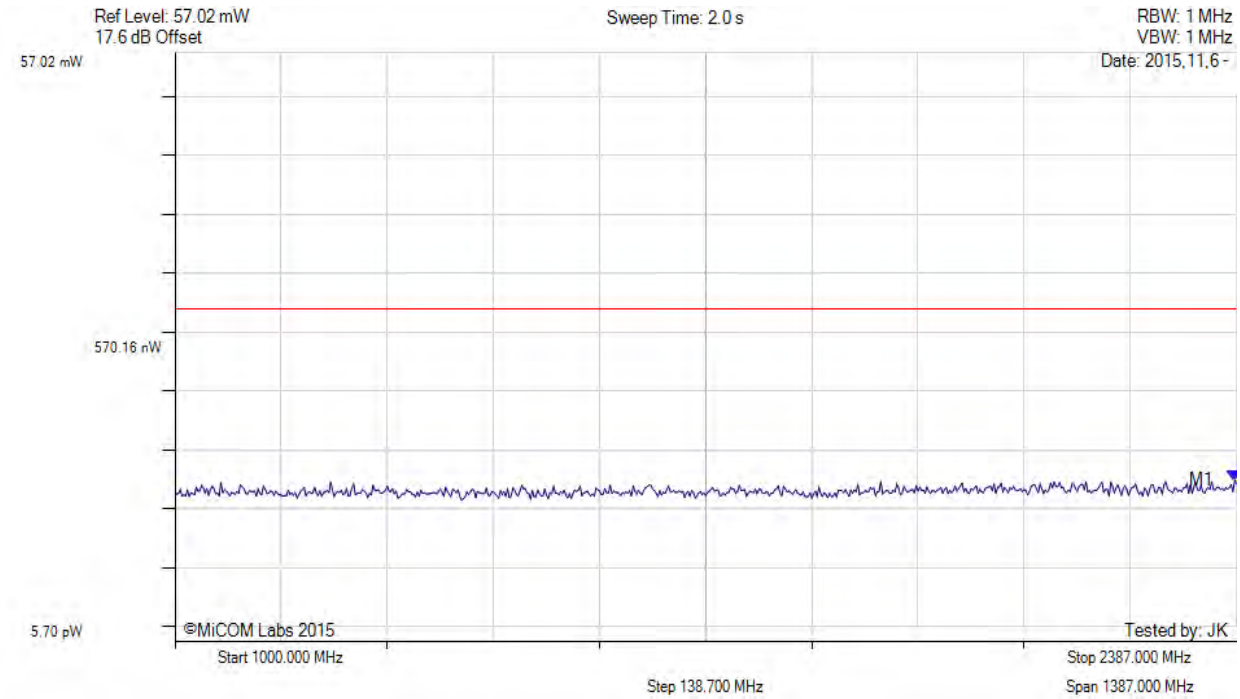


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.003 µW/MHz M1 Marker Frequency: 2382.400 MHz	Channel Frequency: 2480 MHz Limit: 2.5 µW/MHz Margin: -29.21 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

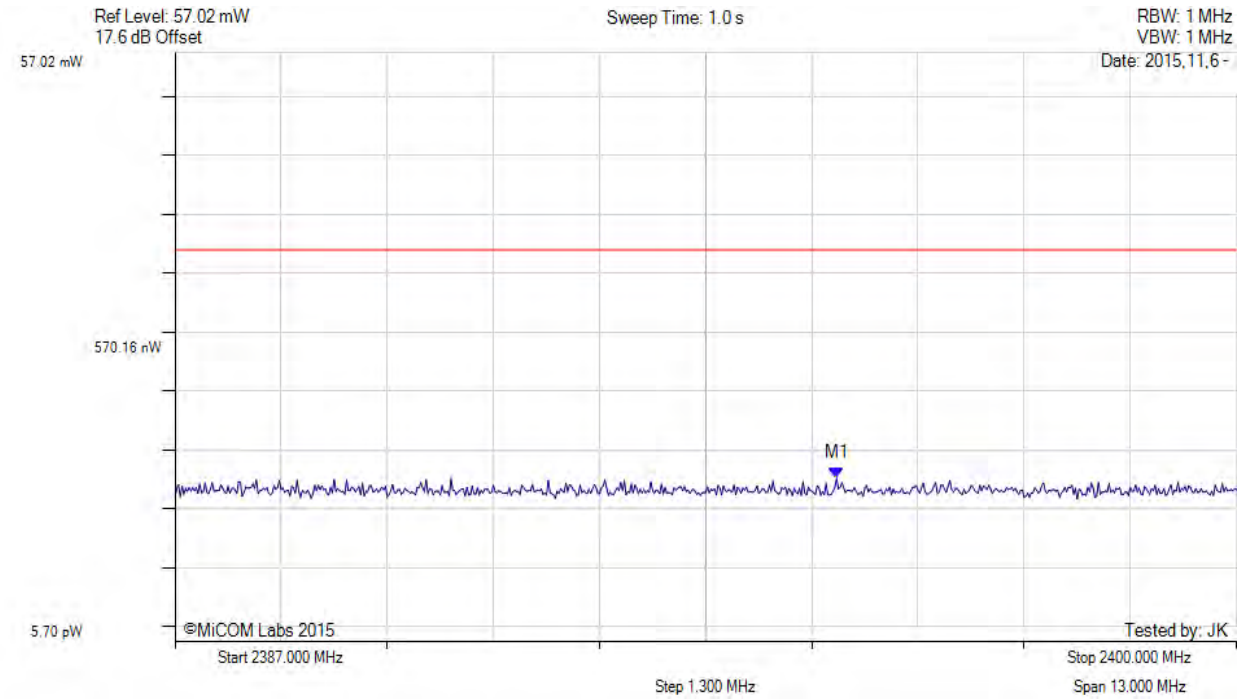


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.003 µW/MHz M1 Marker Frequency: 2384.700 MHz	Channel Frequency: 2480 MHz Limit: 2.5 µW/MHz Margin: -29.21 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

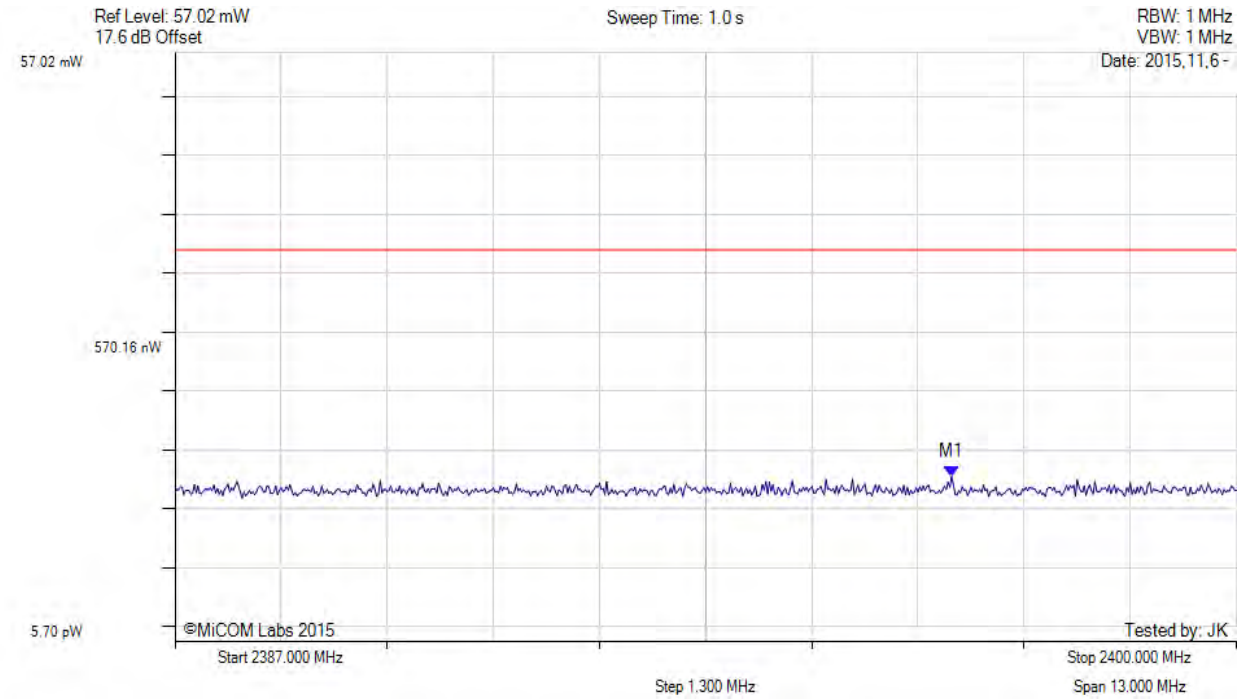


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.003 µW/MHz M1 Marker Frequency: 2395.103 MHz	Channel Frequency: 2480 MHz Limit: 25.0 µW/MHz Margin: -39.21 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

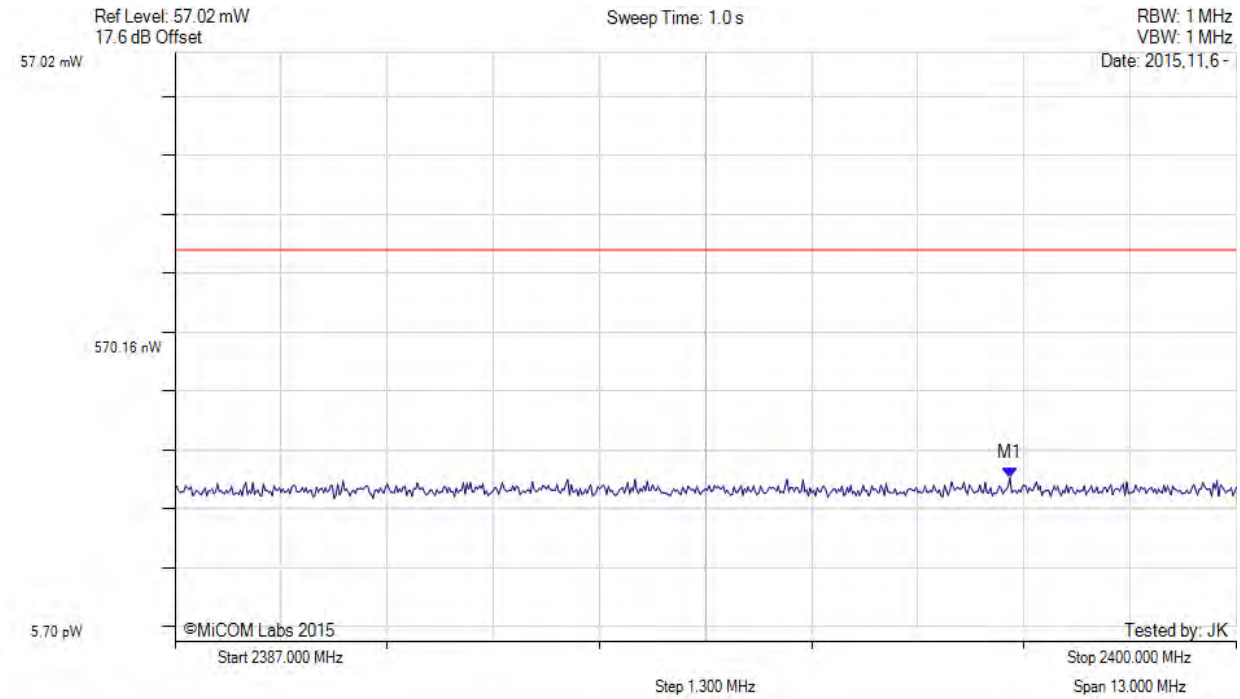


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.004 µW/MHz M1 Marker Frequency: 2396.512 MHz	Channel Frequency: 2480 MHz Limit: 25.0 µW/MHz Margin: -37.96 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

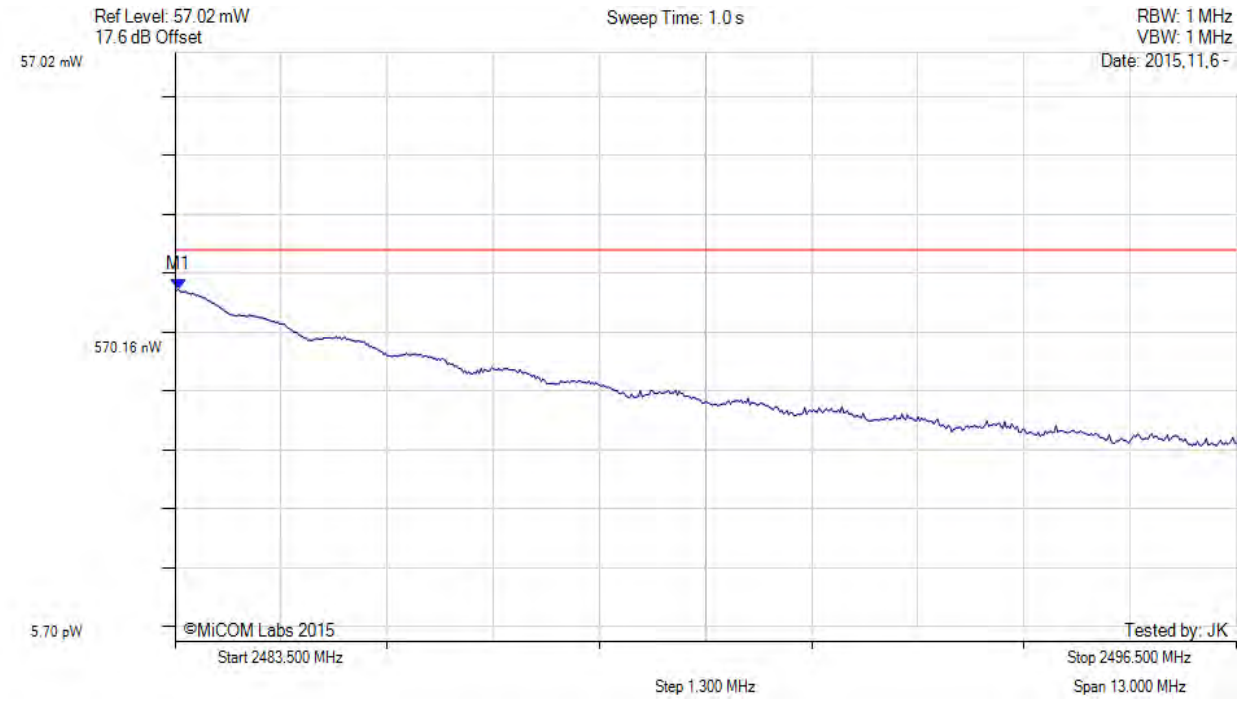


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.003 µW/MHz M1 Marker Frequency: 2397.227 MHz	Channel Frequency: 2480 MHz Limit: 25.0 µW/MHz Margin: -39.21 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

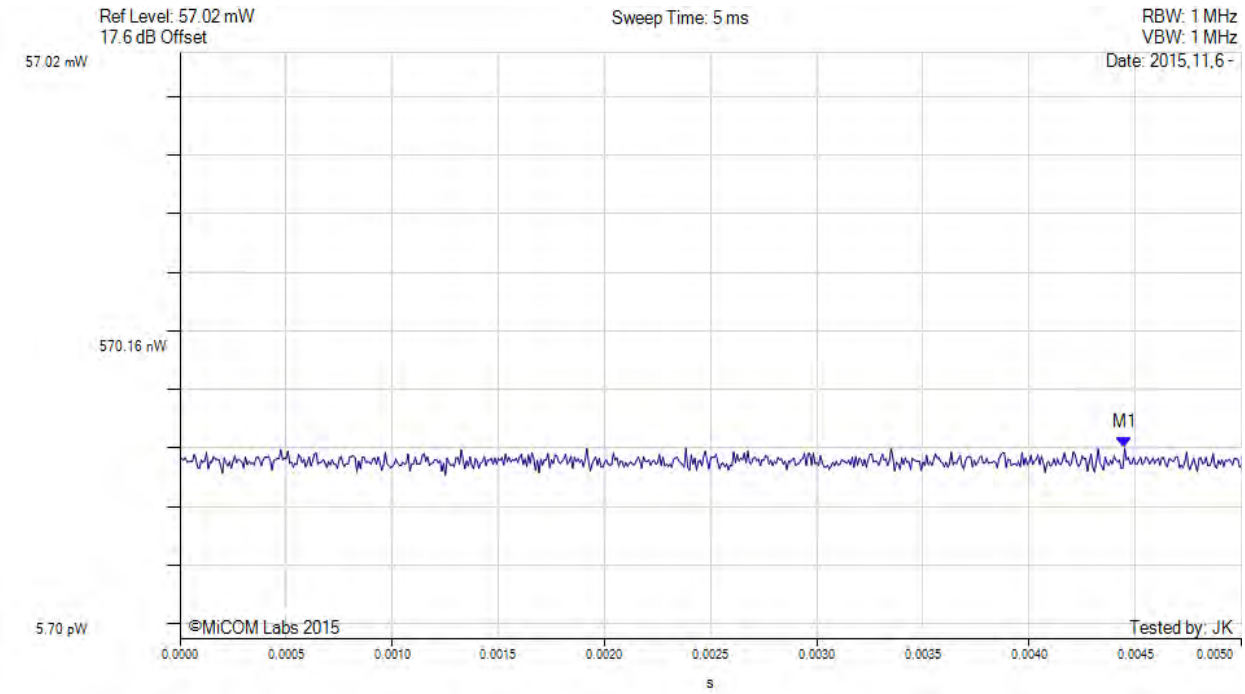


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 5.369 µW/MHz M1 Marker Frequency: 2483.543 MHz	Channel Frequency: 2480 MHz Limit: 25.0 µW/MHz Margin: -6.68 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

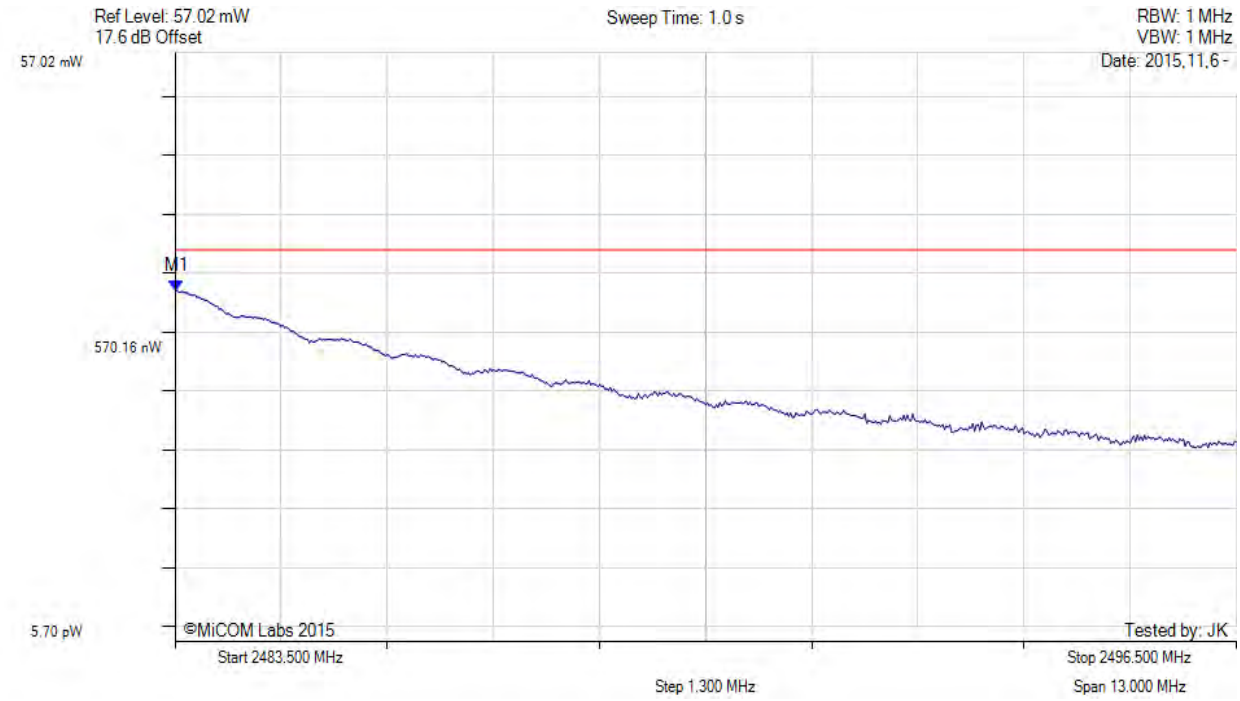


Analyser Setup	Marker:Time:Amplitude	Test Results
Detector = SAMP Sweep Count = +100 RF Atten (dB) = 10 Trace Mode = VIEW	M1(2490.00 MHz) : 0.004 s : 10.03 nW	Channel Frequency: 2480.00 MHz

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

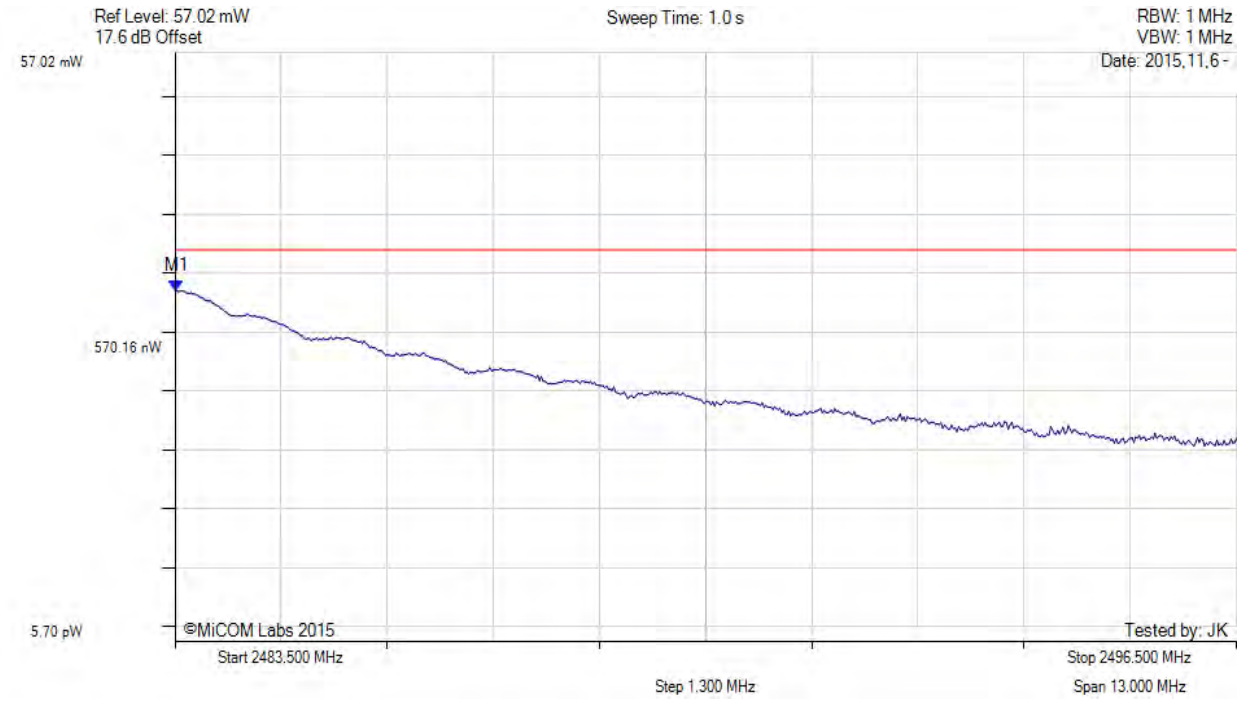


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 5.072 µW/MHz M1 Marker Frequency: 2483.522 MHz	Channel Frequency: 2480 MHz Limit: 25.0 µW/MHz Margin: -6.93 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

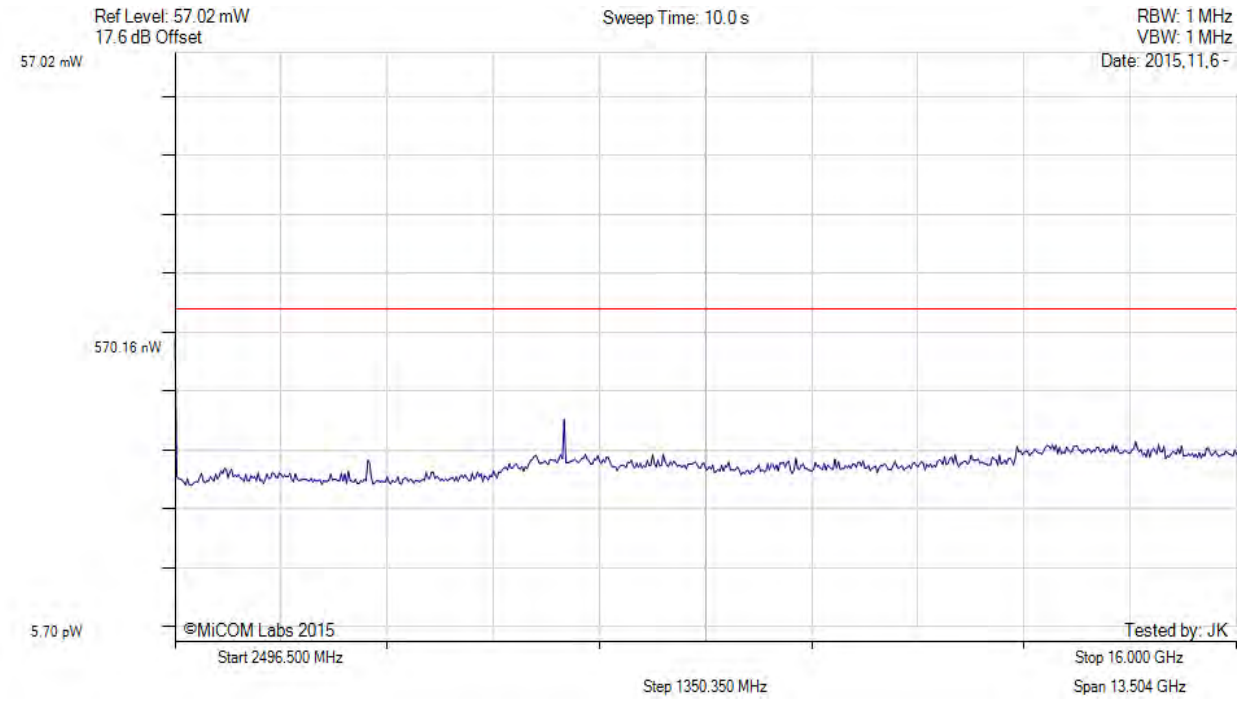


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 5.113 µW/MHz M1 Marker Frequency: 2483.522 MHz	Channel Frequency: 2480 MHz Limit: 25.0 µW/MHz Margin: -6.89 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

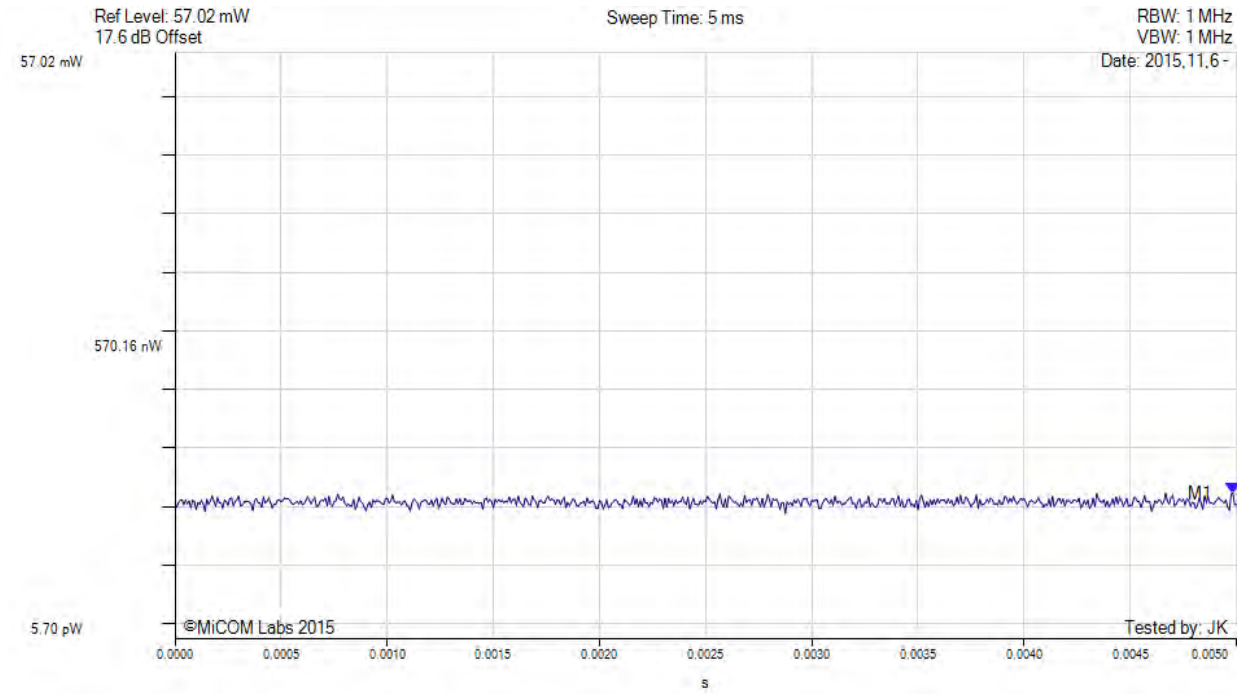


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.760 µW/MHz M1 Marker Frequency: 2496.000 MHz	Channel Frequency: 2480 MHz Limit: 2.5 µW/MHz Margin: -5.17 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

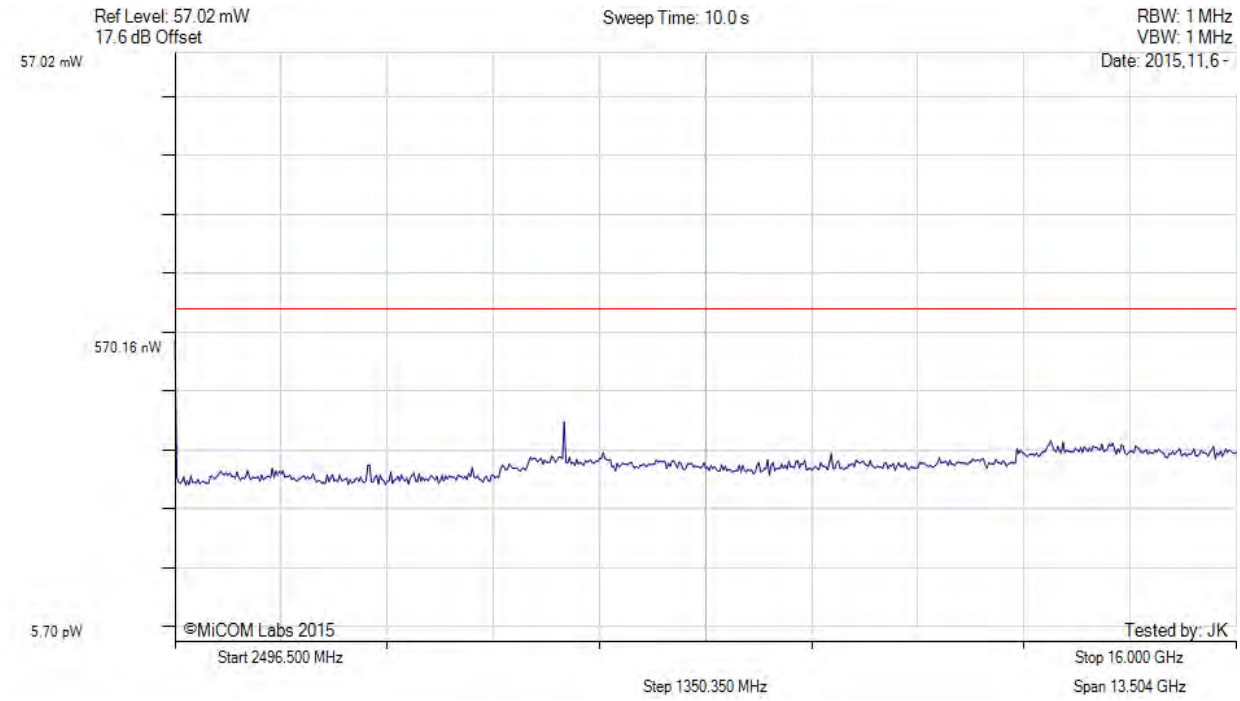


Analyser Setup	Marker:Time:Amplitude	Test Results
Detector = SAMP Sweep Count = +100 RF Atten (dB) = 10 Trace Mode = VIEW	M1(2496.00 MHz) : 0.005 s : 1.71 nW	Channel Frequency: 2480.00 MHz

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

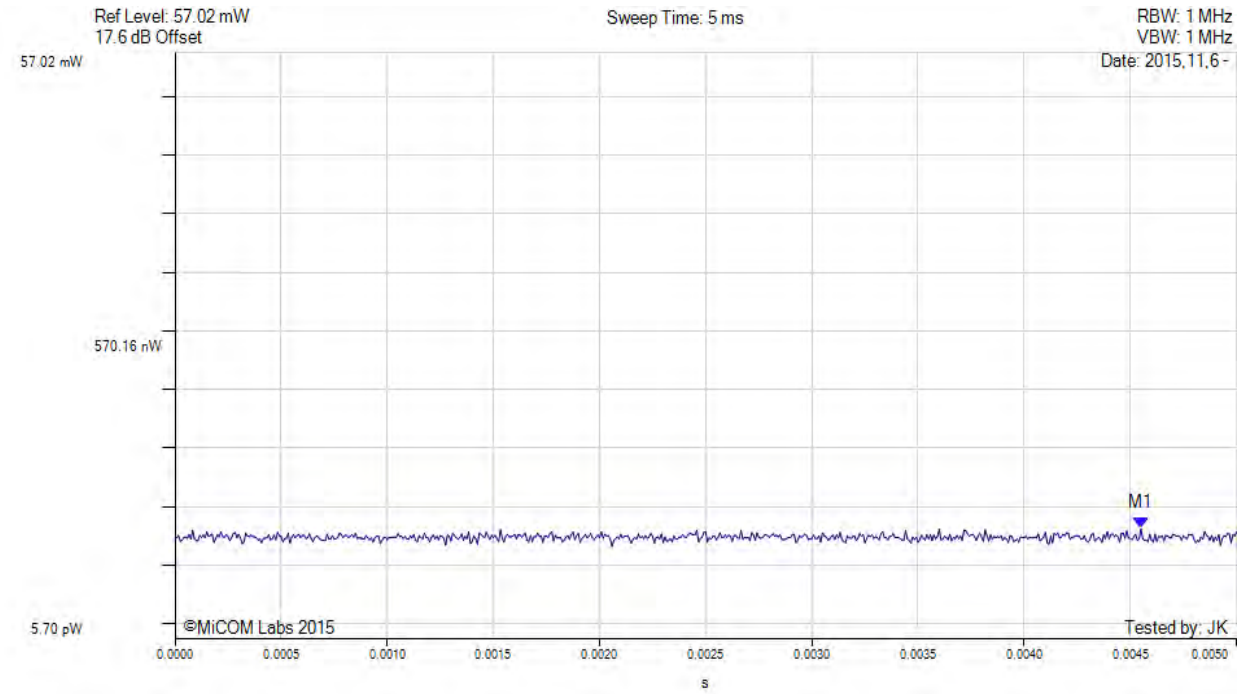


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.733 µW/MHz M1 Marker Frequency: 2496.000 MHz	Channel Frequency: 2480 MHz Limit: 2.5 µW/MHz Margin: -5.33 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

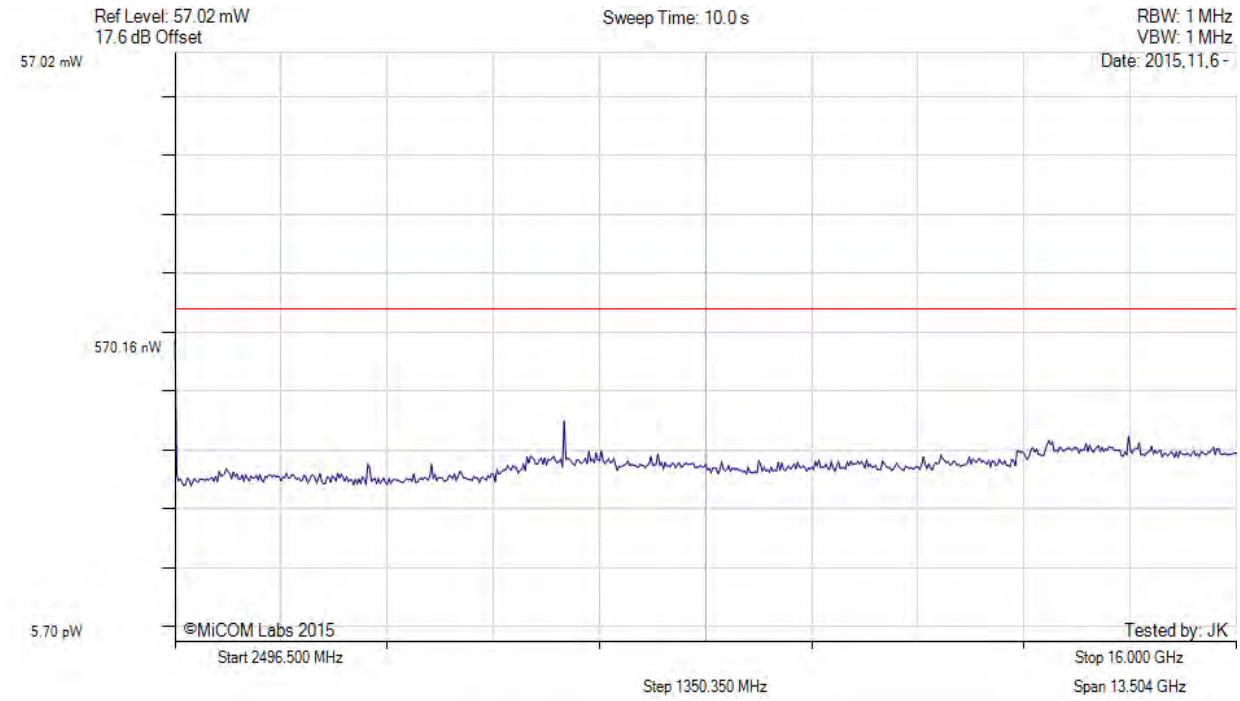


Analyser Setup	Marker:Time:Amplitude	Test Results
Detector = SAMP Sweep Count = +100 RF Atten (dB) = 10 Trace Mode = VIEW	M1(9248.25 MHz) : 0.005 s : 427.76 pW	Channel Frequency: 2480.00 MHz

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

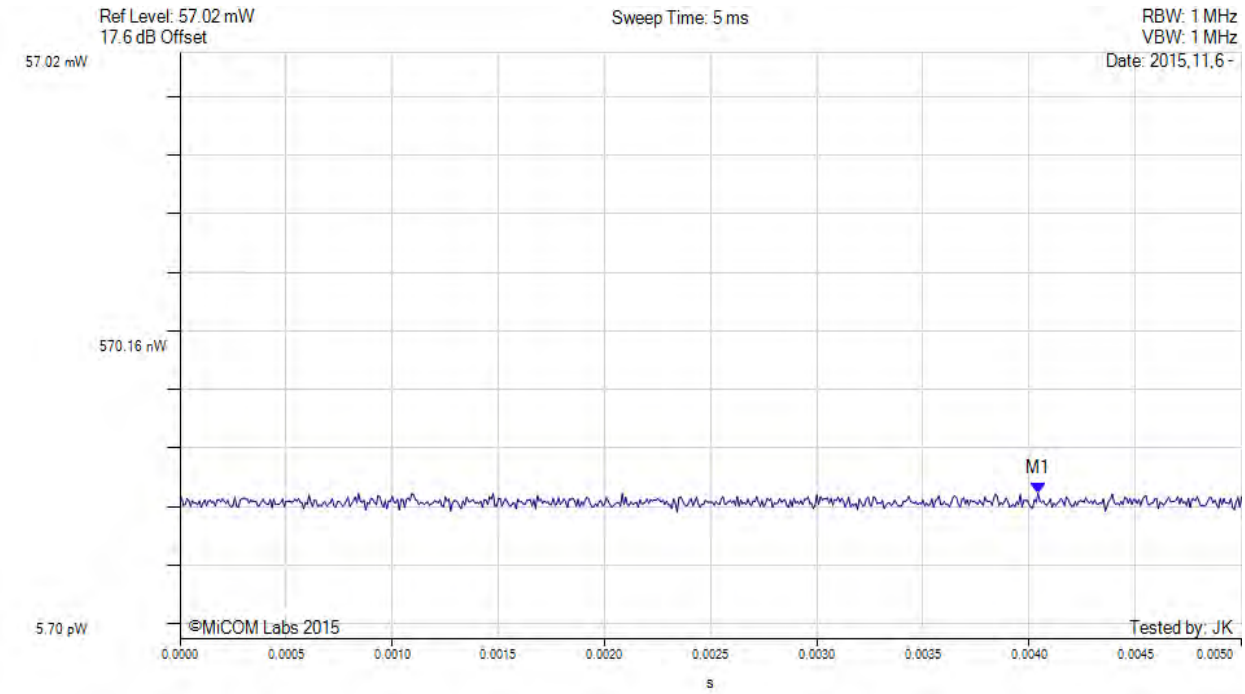


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 Marker Amplitude: 0.734 µW/MHz M1 Marker Frequency: 2496.000 MHz	Channel Frequency: 2480 MHz Limit: 2.5 µW/MHz Margin: -5.32 dB

back to matrix

TRANSMITTER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

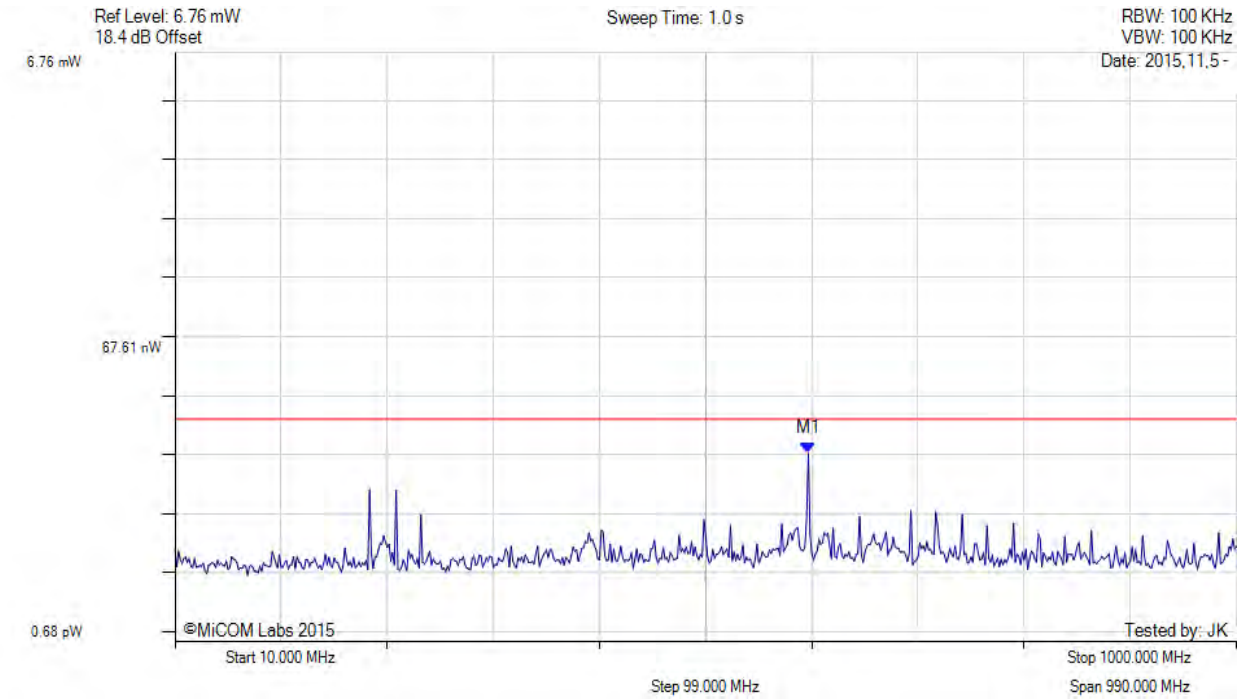


Analyser Setup	Marker:Time:Amplitude	Test Results
Detector = SAMP Sweep Count = +100 RF Atten (dB) = 10 Trace Mode = VIEW	M1(2496.00 MHz) : 0.004 s : 1.71 nW	Channel Frequency: 2480.00 MHz

back to matrix

RECEIVER SPURIOUS EMISSIONS

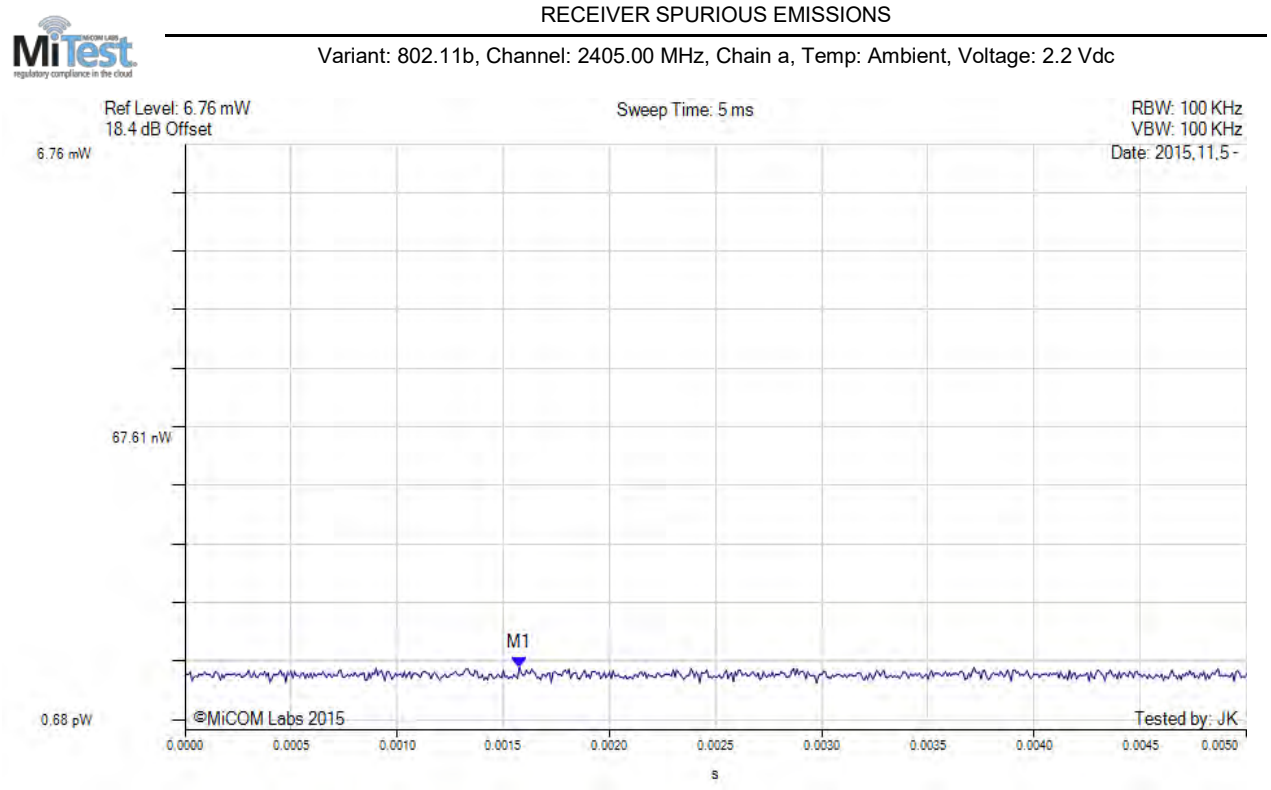
Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = VIEW	M1 Marker Amplitude: 1.045 nW/MHz M1 Marker Frequency: 600.700 MHz	Channel Frequency: 2405.0 MHz Limit: 4.0 nW Margin: -5.83 dB

back to matrix

A.6. Receiver Spurious Emissions

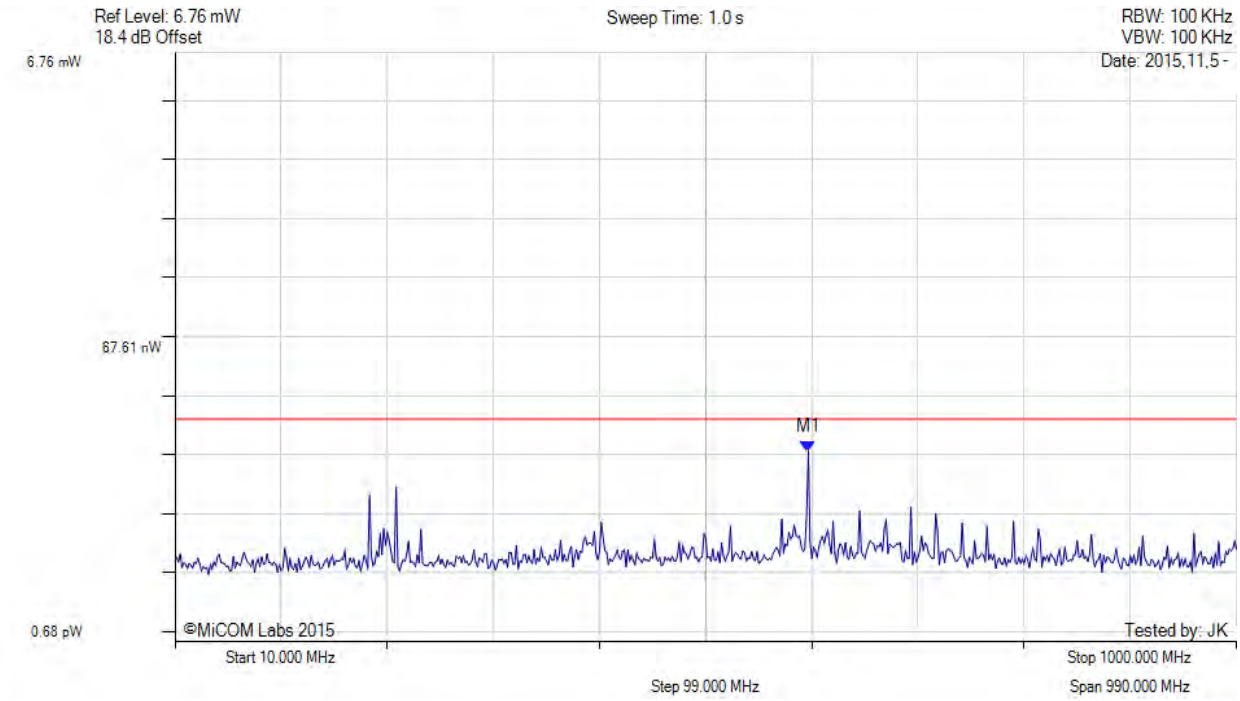


Analyser Setup	Marker:Time:Amplitude	Test Results
Detector = SAMP Sweep Count = +100 RF Atten (dB) = 0 Trace Mode = VIEW	M1(600.70 MHz) : 0.002 s : 7.79 pW	Channel Frequency: 2405.00 MHz

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

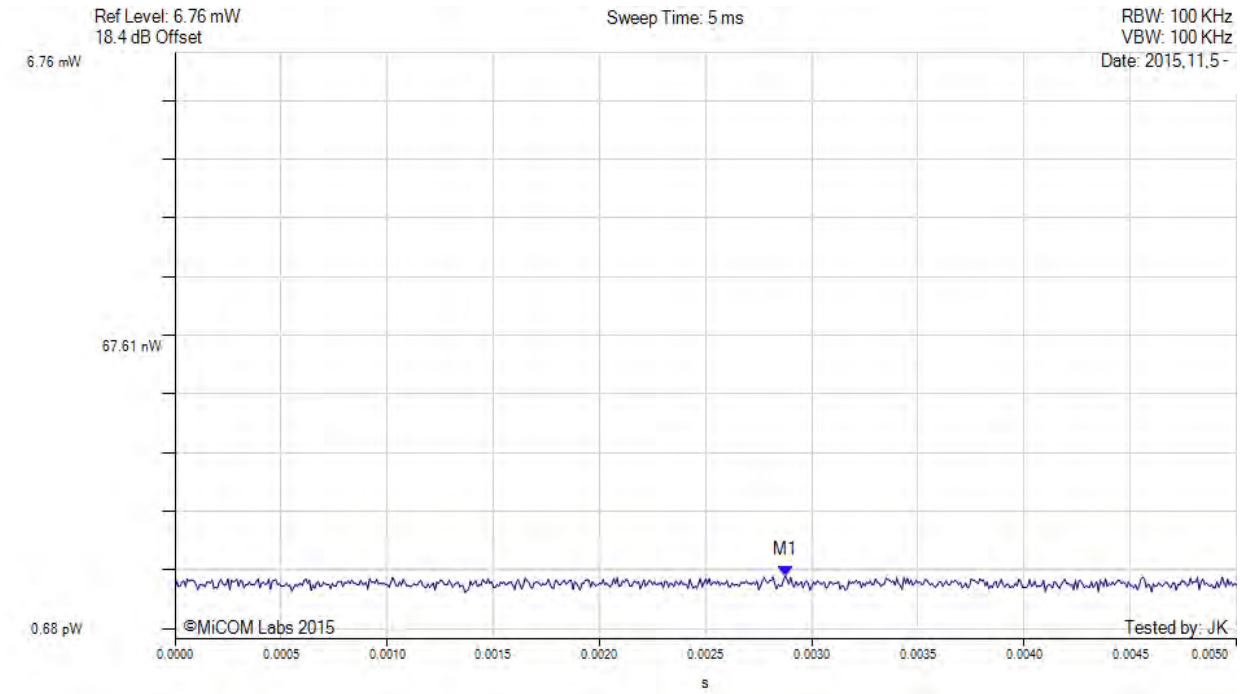


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = VIEW	M1 Marker Amplitude: 1.136 nW M1 Marker Frequency: 600.700 MHz	Channel Frequency: 2405.0 MHz Limit: 4.0 nW Margin: -5.47 dB

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

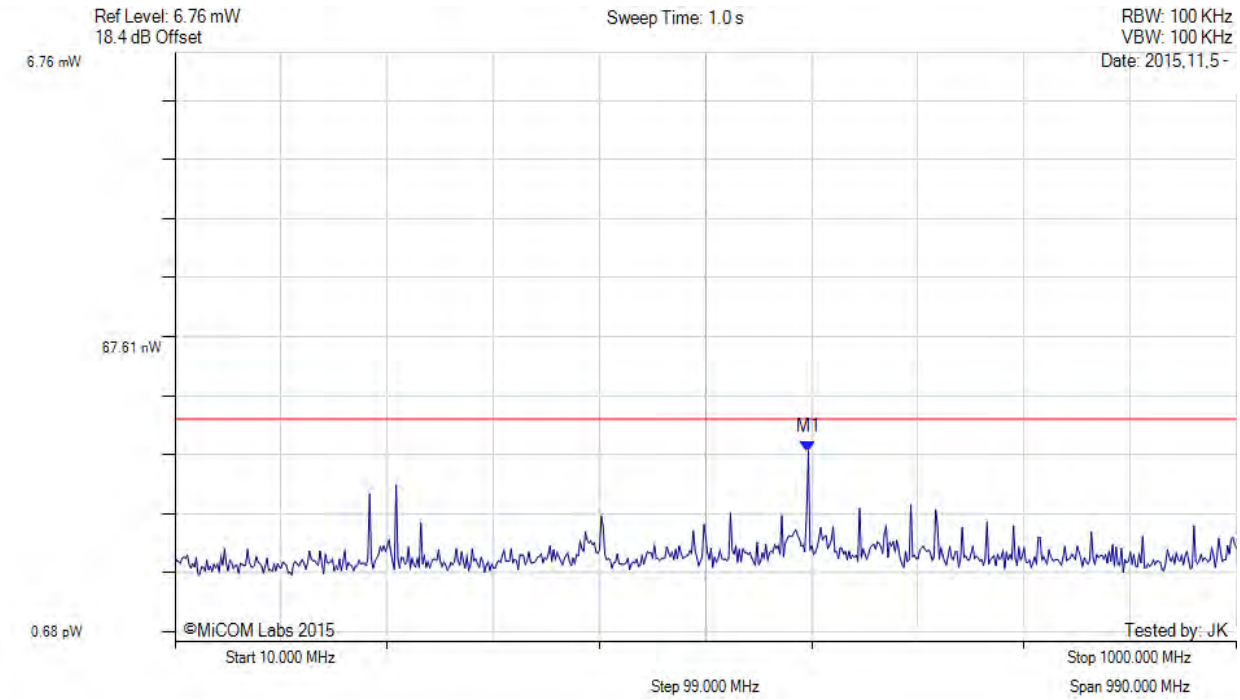


Analyser Setup	Marker:Time:Amplitude	Test Results
Detector = SAMP Sweep Count = +100 RF Atten (dB) = 0 Trace Mode = VIEW	M1(600.70 MHz) : 0.003 s : 7.88 pW	Channel Frequency: 2405.00 MHz

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

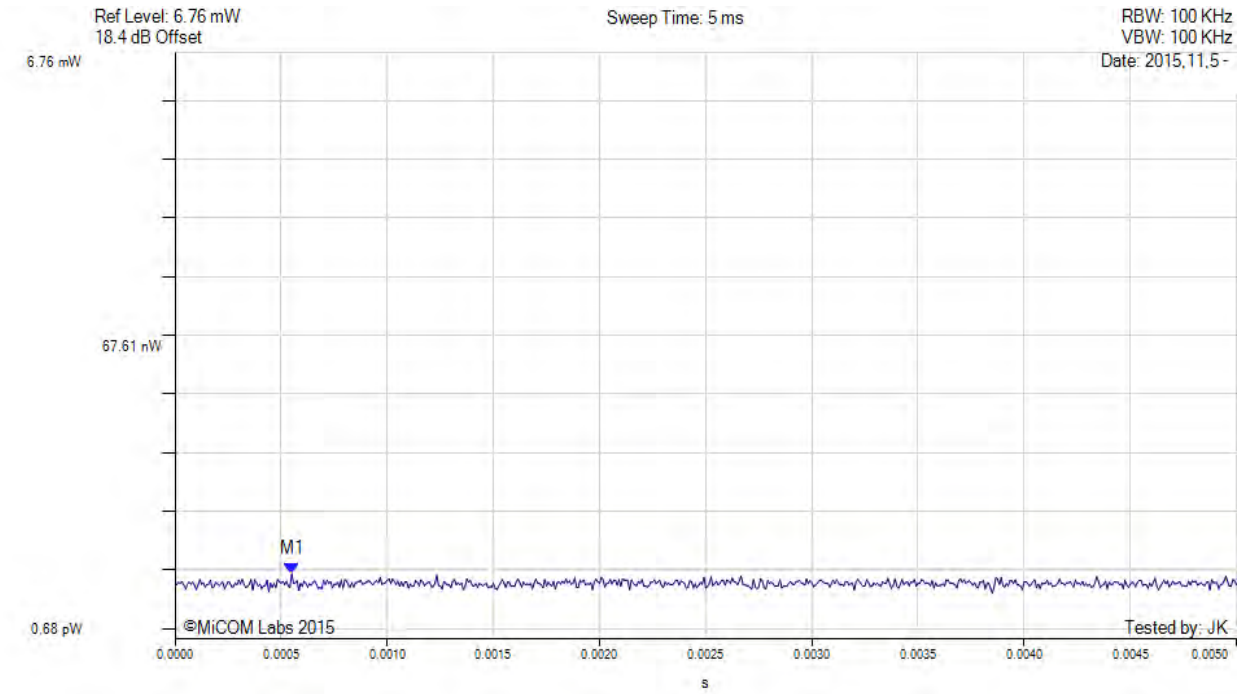


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = VIEW	M1 Marker Amplitude: 1.126 nW M1 Marker Frequency: 600.700 MHz	Channel Frequency: 2405.0 MHz Limit: 4.0 nW Margin: -5.51 dB

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

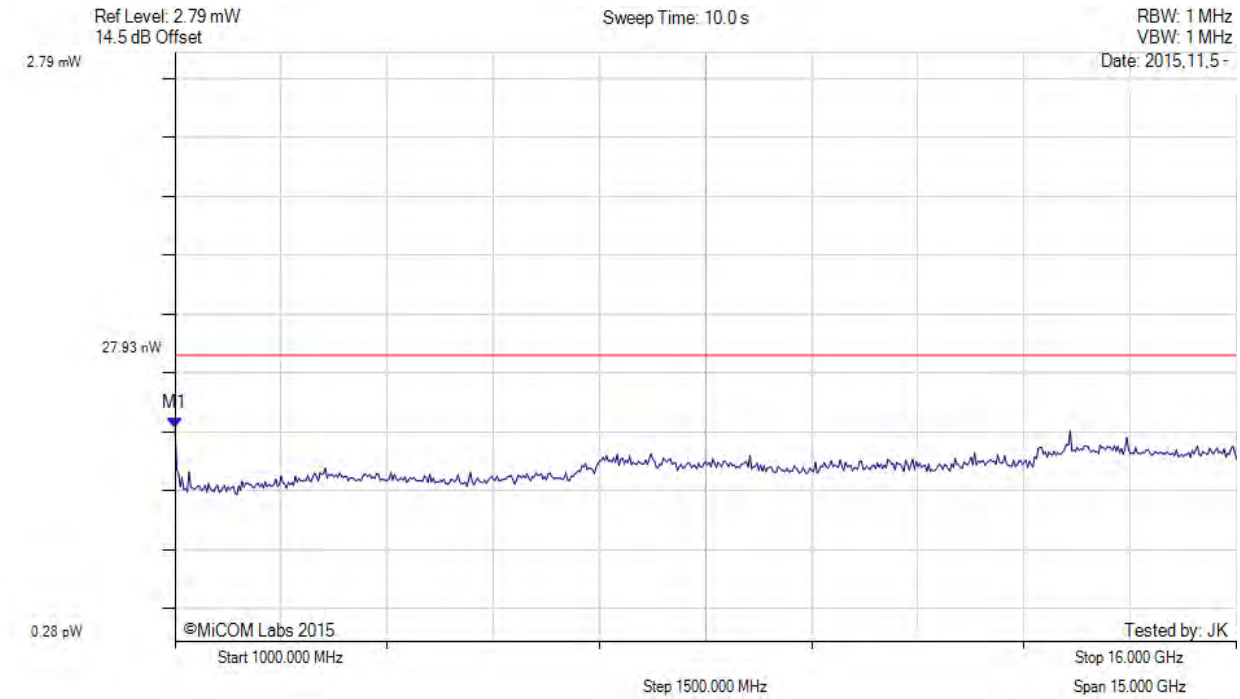


Analyser Setup	Marker:Time:Amplitude	Test Results
Detector = SAMP Sweep Count = +100 RF Atten (dB) = 0 Trace Mode = VIEW	M1(600.70 MHz) : 0.001 s : 8.56 pW	Channel Frequency: 2405.00 MHz

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

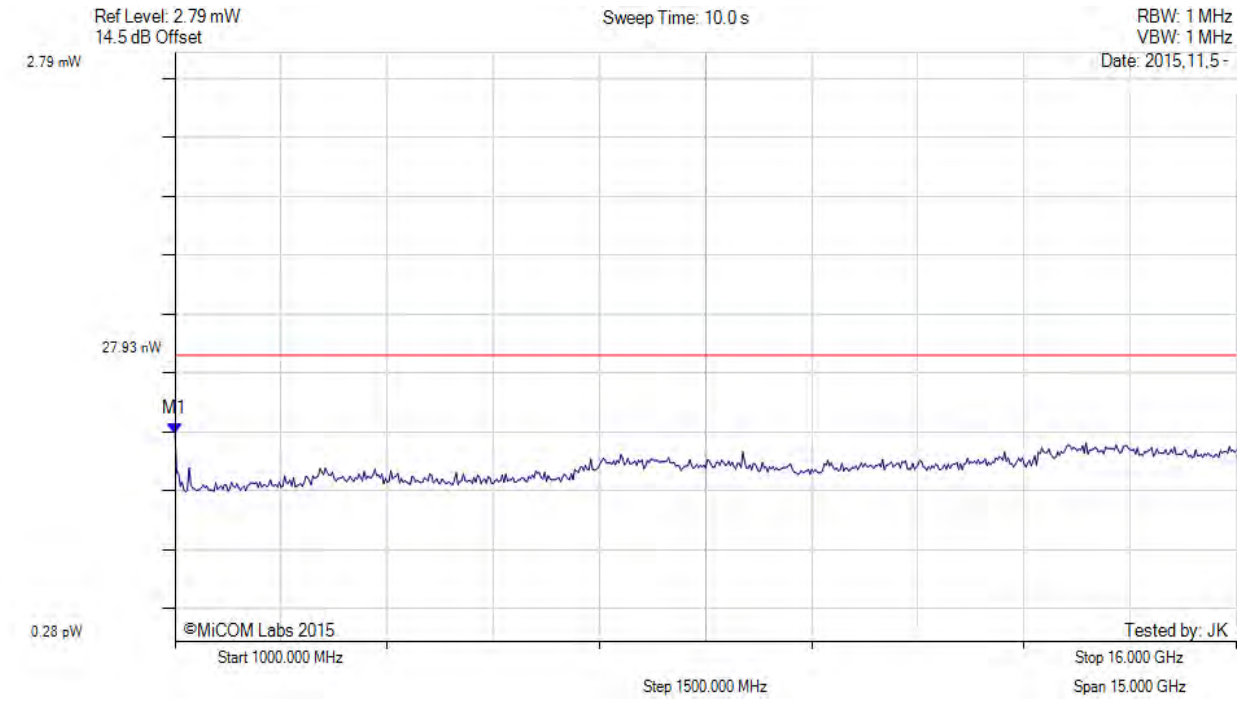


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = VIEW	M1 Marker Amplitude: 1.141 nW/MHz M1 Marker Frequency: 1000.000 MHz	Channel Frequency: 2405.0 MHz Limit: 20.0 nW/MHz Margin: -12.44 dB

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

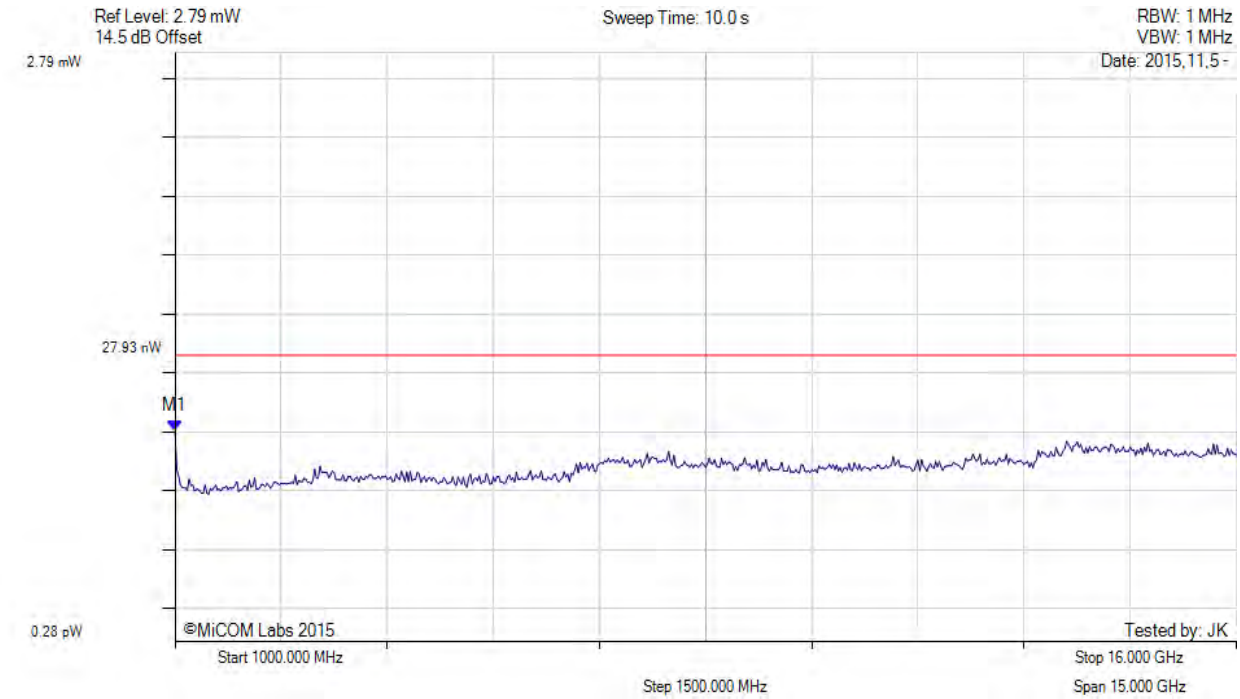


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = VIEW	M1 Marker Amplitude: 0.942 nW/MHz M1 Marker Frequency: 1000.000 MHz	Channel Frequency: 2405.0 MHz Limit: 20.0 nW/MHz Margin: -13.27 dB

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2405.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

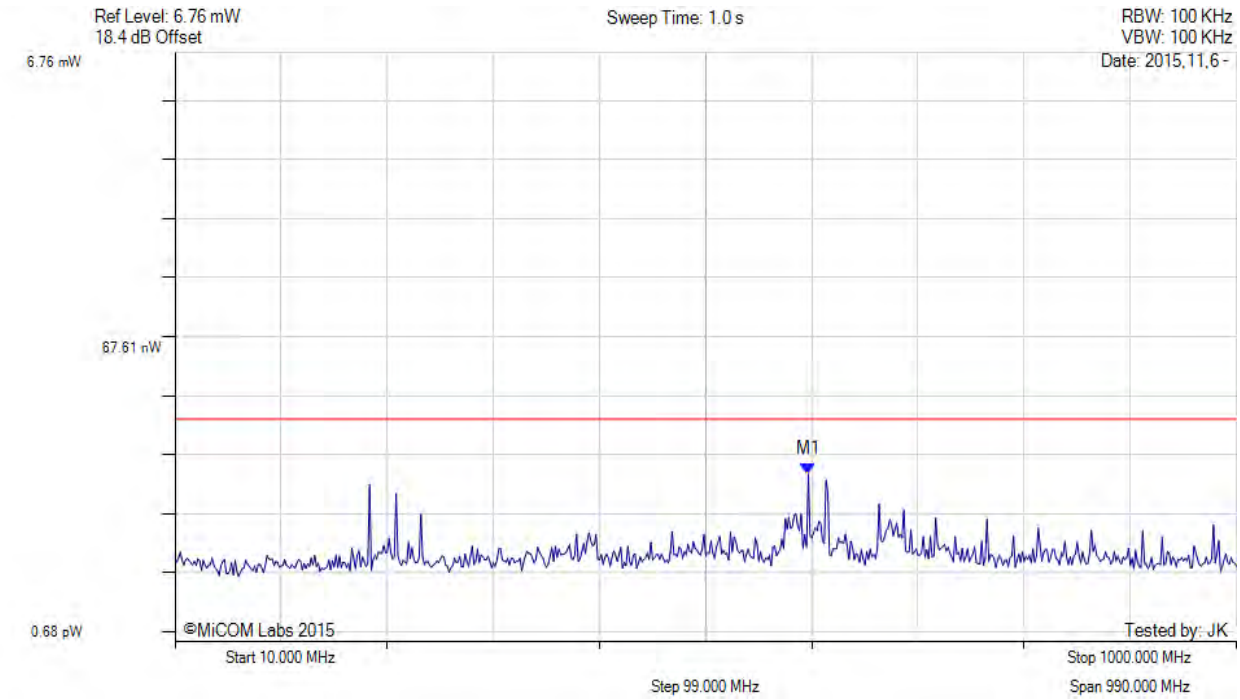


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = VIEW	M1 Marker Amplitude: 1.055 nW/MHz M1 Marker Frequency: 1000.000 MHz	Channel Frequency: 2405.0 MHz Limit: 20.0 nW/MHz Margin: -12.78 dB

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

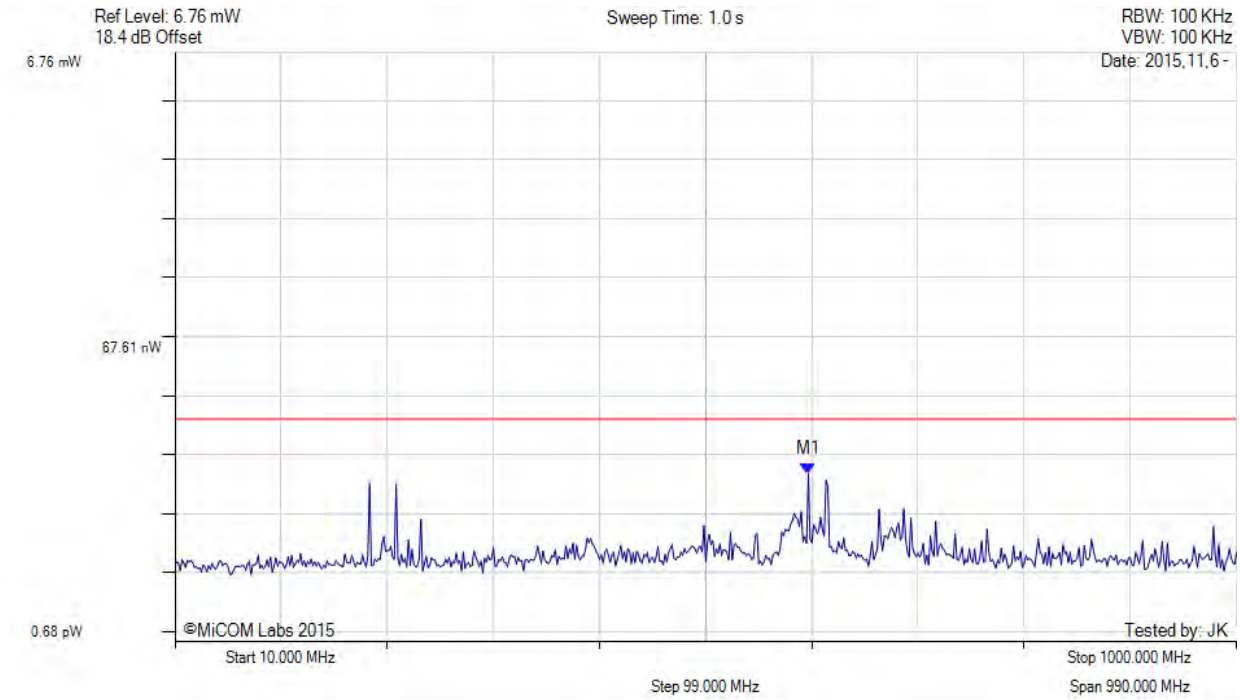


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = VIEW	M1 Marker Amplitude: 0.460 nW M1 Marker Frequency: 600.700 MHz	Channel Frequency: 2440.0 MHz Limit: 4.0 nW Margin: -9.39 dB

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

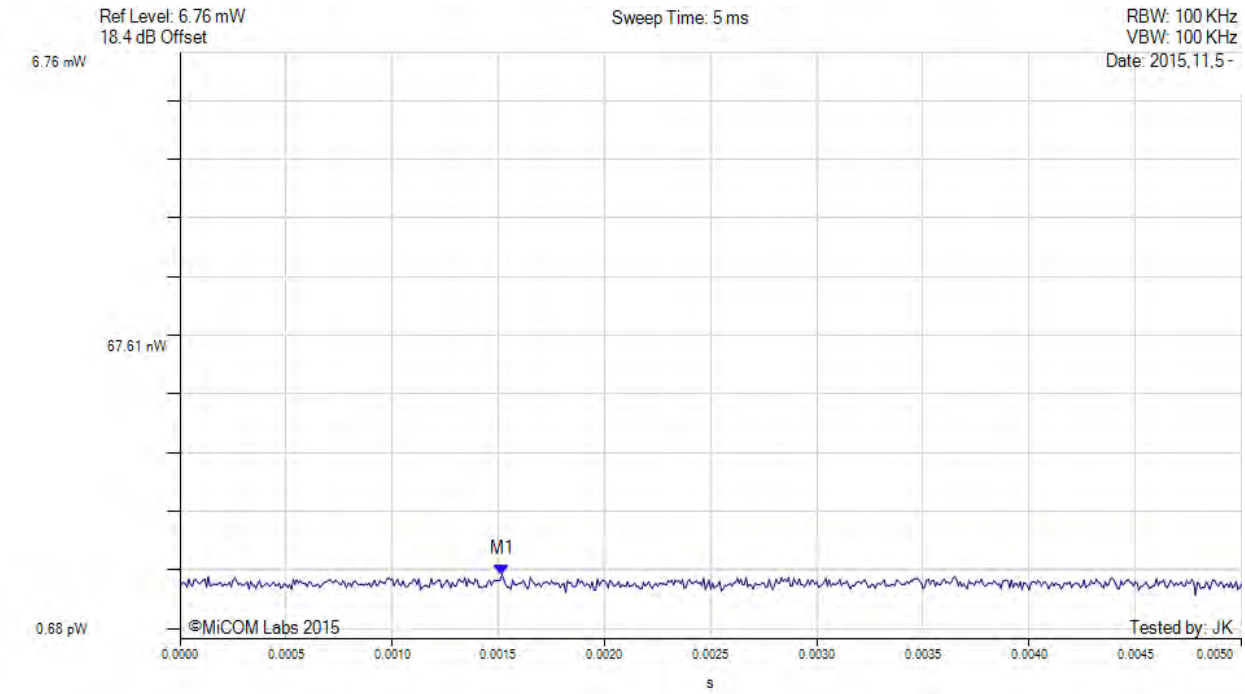


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = VIEW	M1 Marker Amplitude: 0.465 nW M1 Marker Frequency: 600.700 MHz	Channel Frequency: 2440.0 MHz Limit: 4.0 nW Margin: -9.35 dB

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

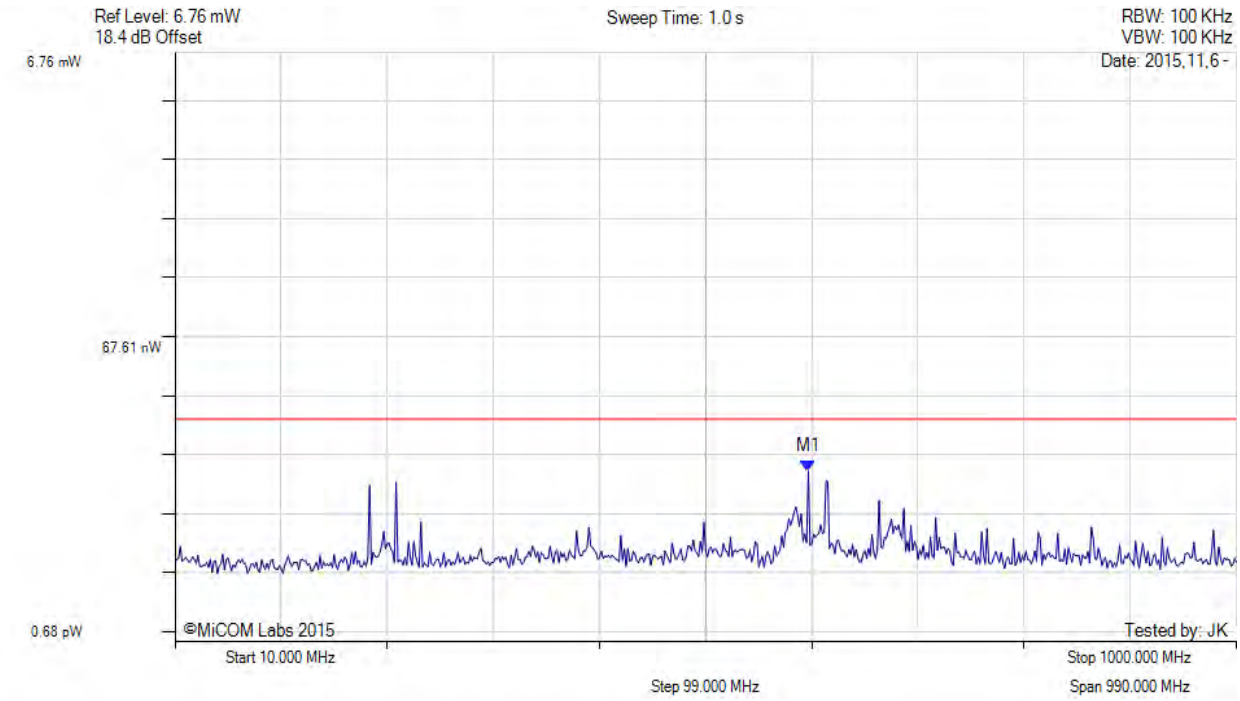


Analyser Setup	Marker:Time:Amplitude	Test Results
Detector = SAMP Sweep Count = +100 RF Atten (dB) = 0 Trace Mode = VIEW	M1(600.70 MHz) : 0.002 s : 8.33 pW	Channel Frequency: 2440.00 MHz

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

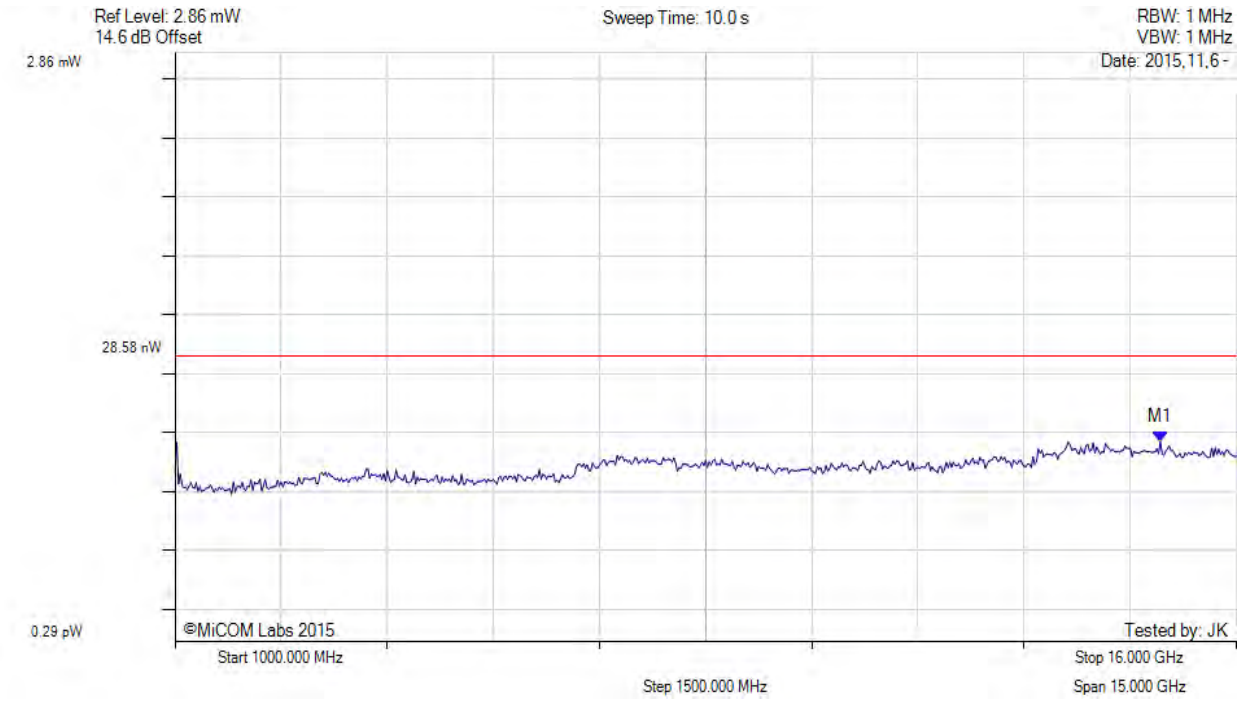


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = VIEW	M1 Marker Amplitude: 0.520 nW M1 Marker Frequency: 600.700 MHz	Channel Frequency: 2440.0 MHz Limit: 4.0 nW Margin: -8.86 dB

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

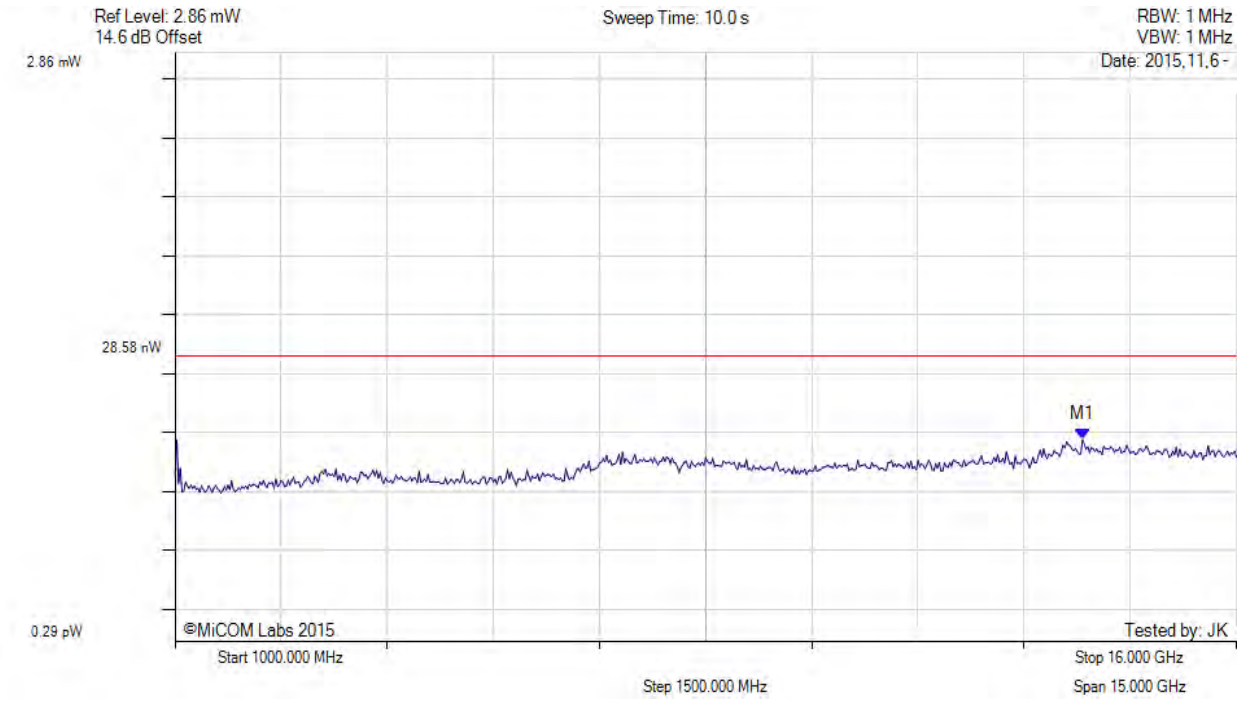


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = VIEW	M1 Marker Amplitude: 0.694 nW/MHz M1 Marker Frequency: 14925.000 MHz	Channel Frequency: 2440.0 MHz Limit: 20.0 nW/MHz Margin: -14.60 dB

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

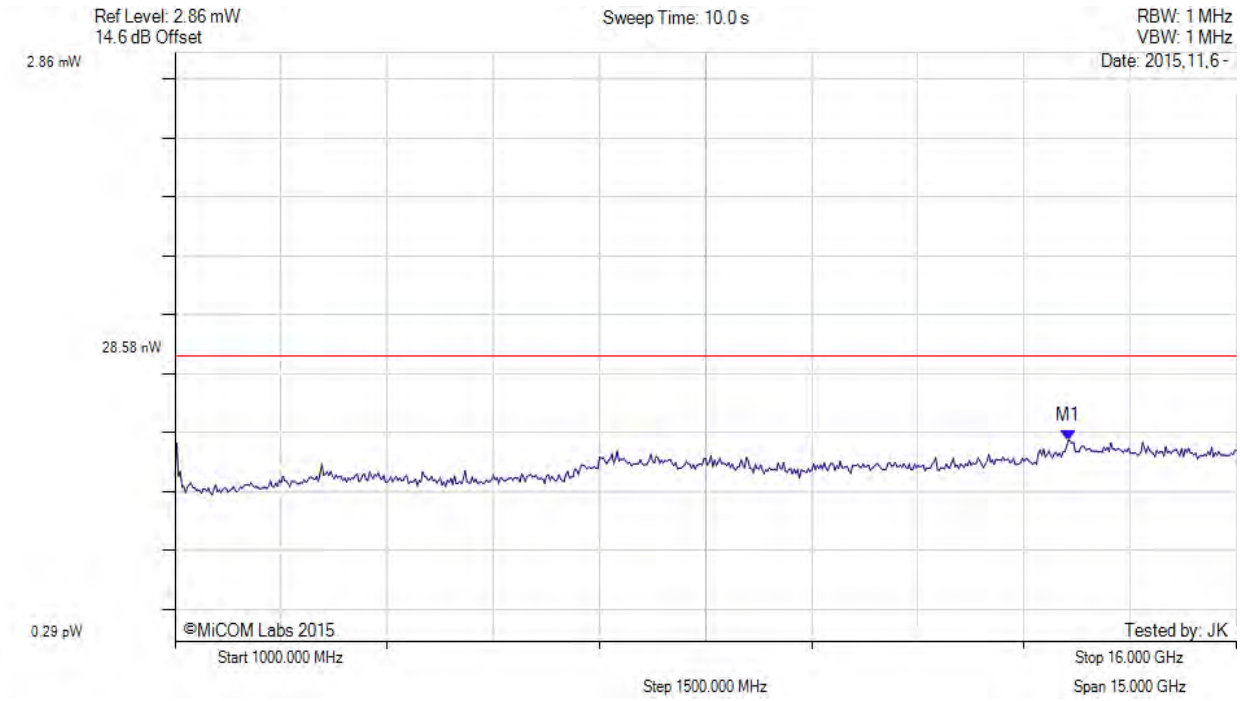


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = VIEW	M1 Marker Amplitude: 0.755 nW/MHz M1 Marker Frequency: 13825.000 MHz	Channel Frequency: 2440.0 MHz Limit: 20.0 nW/MHz Margin: -14.23 dB

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2440.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

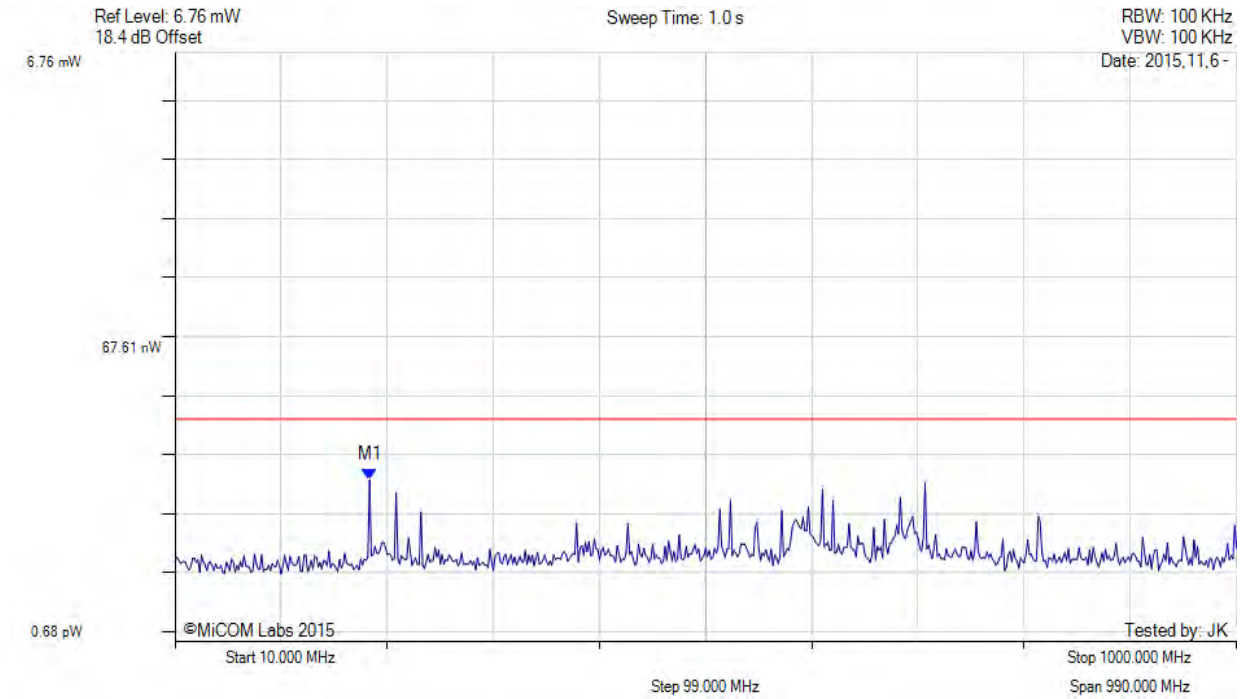


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = VIEW	M1 Marker Amplitude: 0.737 nW/MHz M1 Marker Frequency: 13625.000 MHz	Channel Frequency: 2440.0 MHz Limit: 20.0 nW/MHz Margin: -14.34 dB

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

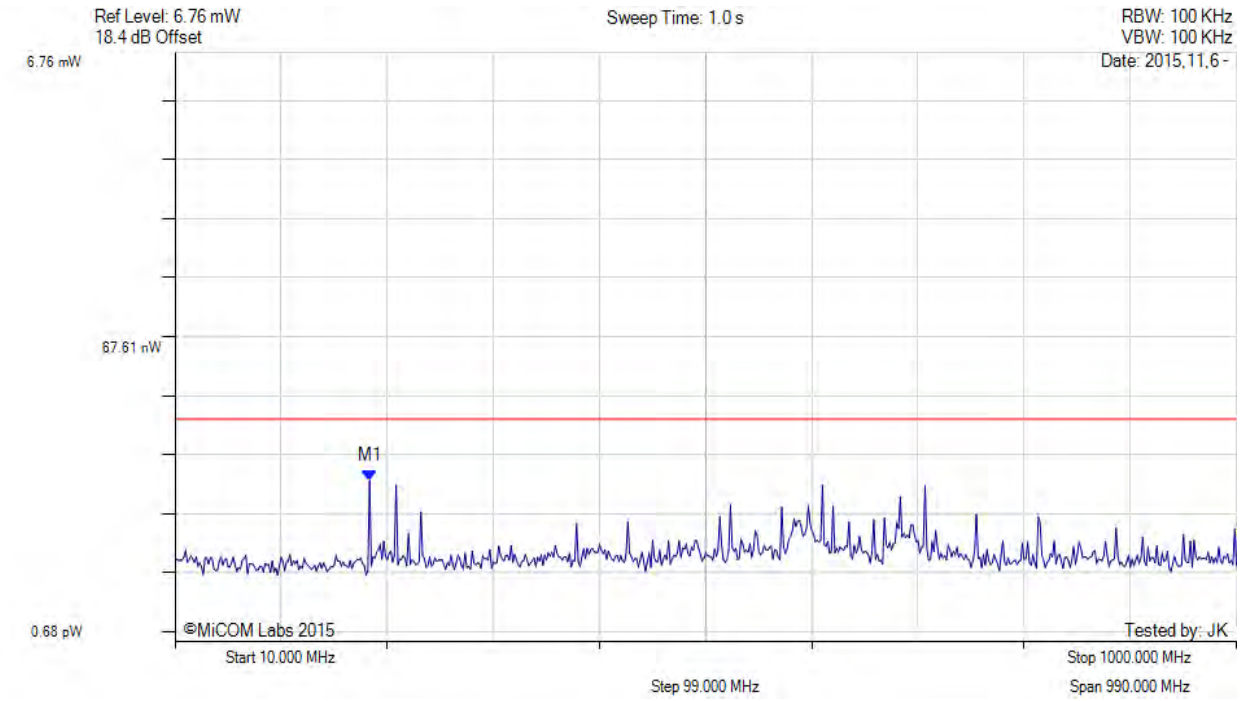


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = VIEW	M1 Marker Amplitude: 0.369 nW M1 Marker Frequency: 191.500 MHz	Channel Frequency: 2480.0 MHz Limit: 4.0 nW Margin: -10.35 dB

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

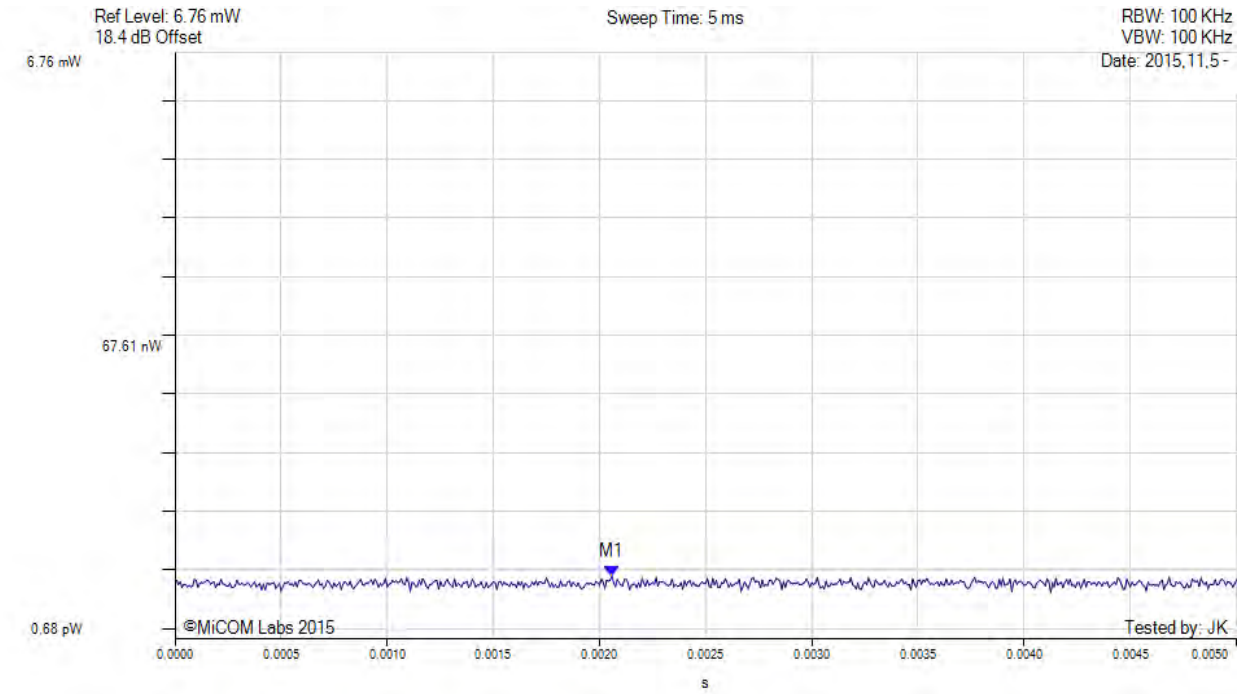


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = VIEW	M1 Marker Amplitude: 0.360 nW M1 Marker Frequency: 191.500 MHz	Channel Frequency: 2480.0 MHz Limit: 4.0 nW Margin: -10.46 dB

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

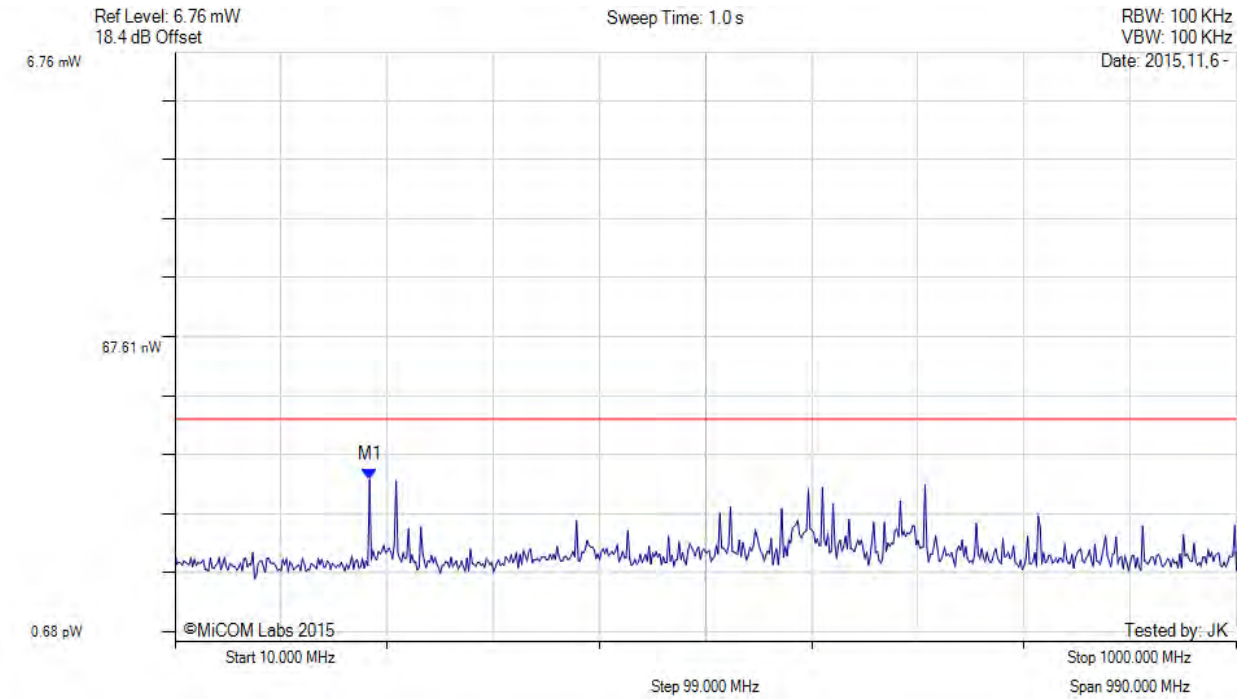


Analyser Setup	Marker:Time:Amplitude	Test Results
Detector = SAMP Sweep Count = +100 RF Atten (dB) = 0 Trace Mode = VIEW	M1(600.70 MHz) : 0.002 s : 7.72 pW	Channel Frequency: 2480.00 MHz

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc

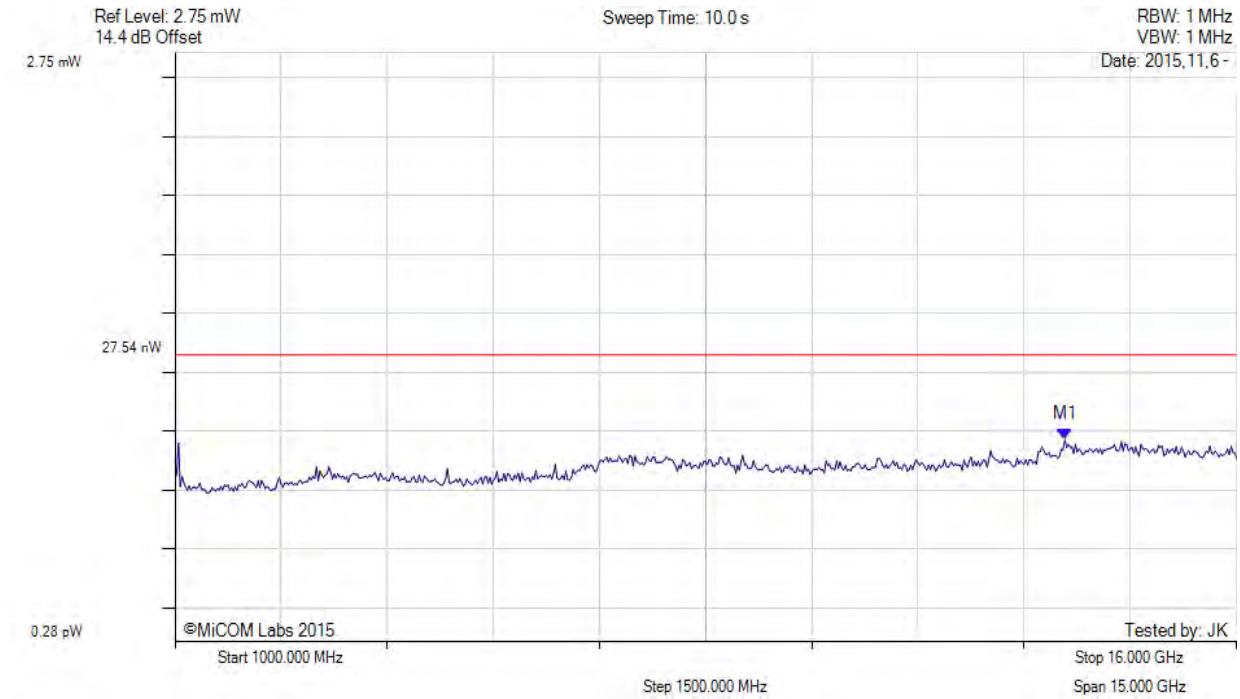


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = VIEW	M1 Marker Amplitude: 0.377 nW M1 Marker Frequency: 191.500 MHz	Channel Frequency: 2480.0 MHz Limit: 4.0 nW Margin: -10.26 dB

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

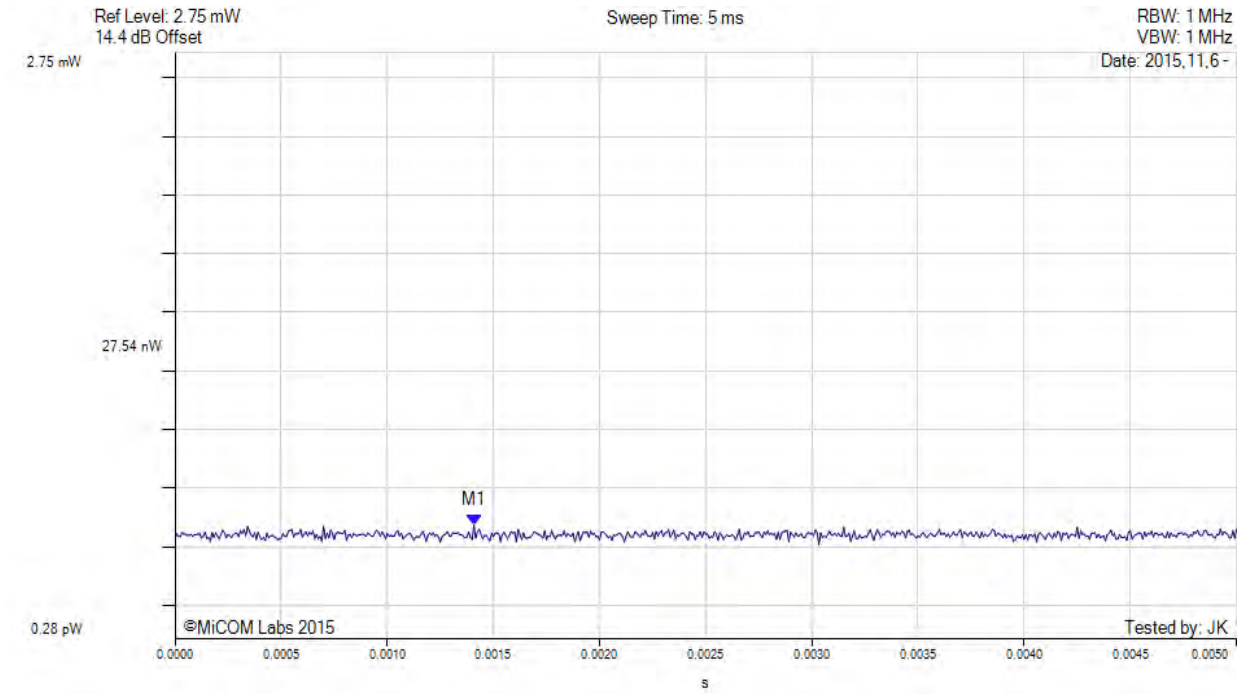


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = VIEW	M1 Marker Amplitude: 0.729 nW/MHz M1 Marker Frequency: 13575.000 MHz	Channel Frequency: 2480.0 MHz Limit: 20.0 nW/MHz Margin: -14.38 dB

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 2.2 Vdc

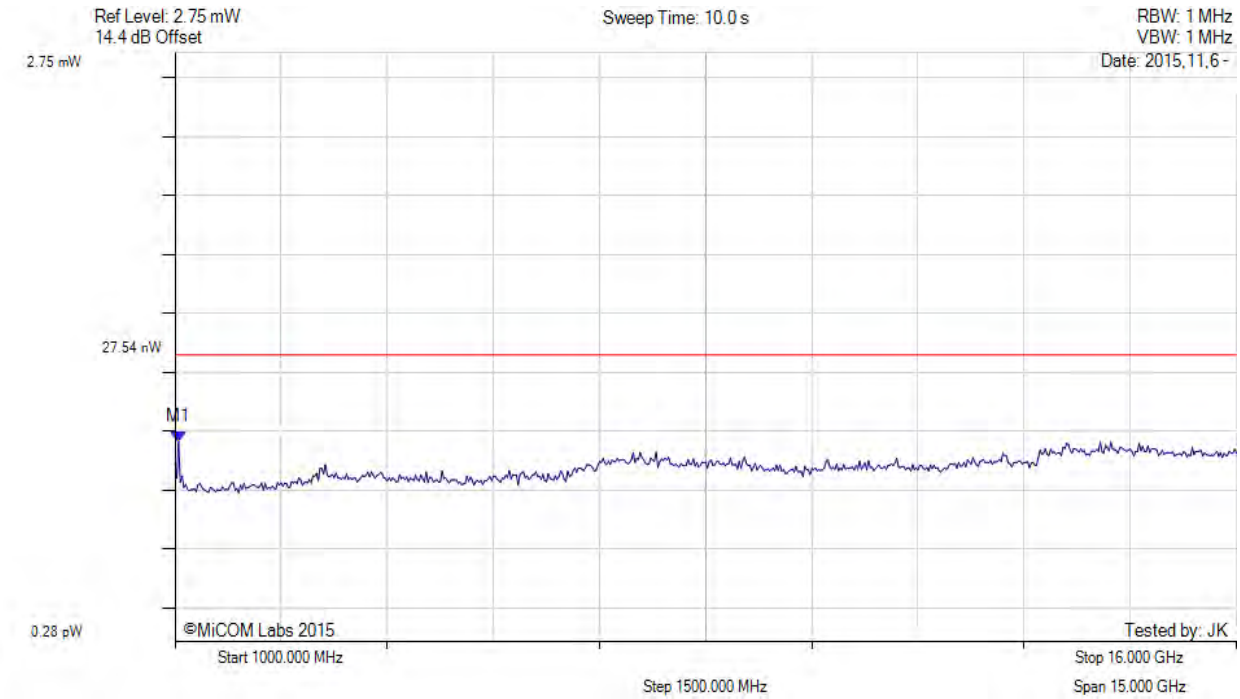


Analyser Setup	Marker:Time:Amplitude	Test Results
Detector = SAMP Sweep Count = +100 RF Atten (dB) = 0 Trace Mode = VIEW	M1(8500.00 MHz) : 0.001 s : 23.66 pW	Channel Frequency: 2480.00 MHz

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.3 Vdc

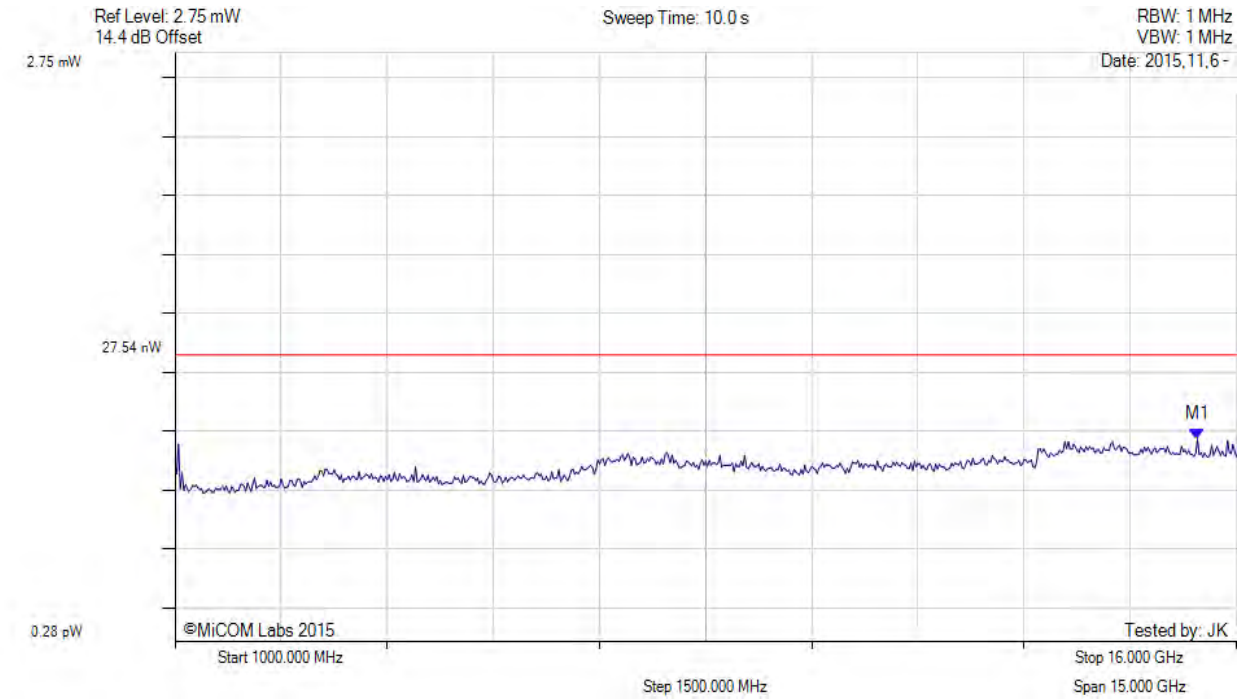


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = VIEW	M1 Marker Amplitude: 0.675 nW/MHz M1 Marker Frequency: 1050.000 MHz	Channel Frequency: 2480.0 MHz Limit: 20.0 nW/MHz Margin: -14.72 dB

back to matrix

RECEIVER SPURIOUS EMISSIONS

Variant: 802.11b, Channel: 2480.00 MHz, Chain a, Temp: Ambient, Voltage: 3.6 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = VIEW	M1 Marker Amplitude: 0.742 nW/MHz M1 Marker Frequency: 15450.000 MHz	Channel Frequency: 2480.0 MHz Limit: 20.0 nW/MHz Margin: -14.31 dB

back to matrix

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