

Multi-Tech Systems, Inc. MTDOT-915 FCC 15.247:2016

Report # MLTI0052

902 - 928 MHz Band Radio



NVLAP Lab Code: 200881-0

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.

CERTIFICATE OF TEST



Last Date of Test: April 21, 2016 Multi-Tech Systems, Inc. Model: MTDOT-915

Radio Equipment Testing

Standards	
Specification	Method
FCC 15.247:2016	ANSI C63.10:2013, KDB 453039

Results	Results							
Method Clause	Test Description	Applied	Results	Comments				
6.2	Powerline Conducted Emissions	No	N/A	See NWEMC Report # MLTI0045 used for original certification. FCC ID: AU792U13A16857				
6.5, 6.6	Spurious Radiated Emissions	No	N/A	See NWEMC Report # MLTI0045 used for original certification. FCC ID: AU792U13A16857				
7.5	Duty Cycle	Yes	Pass					
7.8.2	Carrier Frequency Separation	Yes	Pass					
7.8.3	Number of Hopping Frequencies	Yes	Pass					
7.8.4	Dwell Time	Yes	Pass					
7.8.5	Output Power	Yes	Pass					
7.8.6	Band Edge Compliance	No	N/A	See NWEMC Report # MLTI0045 used for original certification. FCC ID: AU792U13A16857				
7.8.6	Band Edge Compliance - Hopping Mode	Yes	Pass					
7.8.7	Occupied Bandwidth	No	N/A	See NWEMC Report # MLTI0045 used for original certification. FCC ID: AU792U13A16857				
7.8.8	Spurious Conducted Emissions	No	N/A	See NWEMC Report # MLTI0045 used for original certification. FCC ID: AU792U13A16857				
11.10.2	Power Spectral Density	Yes	Pass					

Deviations From Test Standards

None

Approved By:

amitly P. O.

Tim O'Shea, Operations Manager

Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information.

REVISION HISTORY



Revision Number	Description	Date	Page Number
00	None		

ACCREDITATIONS AND AUTHORIZATIONS



United States

FCC - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

A2LA - Accredited by A2LA to ISO / IEC 17065 as a product certifier. This allows Northwest EMC to certify transmitters to FCC and IC specifications.

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

IC - Recognized by Industry Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with IC.

European Union

European Commission - Validated by the European Commission as a Notified Body under the R&TTE Directive.

Australia/New Zealand

ACMA - Recognized by ACMA as a CAB for the acceptance of test data.

Korea

MSIP / RRA - Recognized by KCC's RRA as a CAB for the acceptance of test data.

Japan

VCCI - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

Taiwan

BSMI – Recognized by BSMI as a CAB for the acceptance of test data.

NCC - Recognized by NCC as a CAB for the acceptance of test data.

Singapore

IDA – Recognized by IDA as a CAB for the acceptance of test data.

Israel

MOC - Recognized by MOC as a CAB for the acceptance of test data.

Hong Kong

OFCA - Recognized by OFCA as a CAB for the acceptance of test data.

Vietnam

MIC - Recognized by MIC as a CAB for the acceptance of test data.

SCOPE

For details on the Scopes of our Accreditations, please visit: <u>http://www.nwemc.com/accreditations/</u> <u>http://gsi.nist.gov/global/docs/cabs/designations.html</u>

MEASUREMENT UNCERTAINTY



Measurement Uncertainty

When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement uncertainty is a statistical expression of measurement error qualified by a probability distribution.

A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found included as part of the applicable test description page. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

Test	+ MU	- MU
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.2 dB	-5.2 dB
AC Powerline Conducted Emissions (dB)	2.4 dB	-2.4 dB

FACILITIES





California Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	Minnesota Labs MN01-08, MN10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	New York Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214	Oregon Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	Texas Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Washington Labs NC01-05 19201 120 th Ave NE Bothell, WA 98011 (425)984-6600		
		NV	LAP				
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0		
		Industry	Canada				
2834B-1, 2834B-3	2834E-1	N/A	2834D-1, 2834D-2	2834G-1	2834F-1		
	BSMI						
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R		
VCCI							
A-0029	A-0109	N/A	A-0108	A-0201	A-0110		
Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA							
US0158	US0175	N/A	US0017	US0191	US0157		



PRODUCT DESCRIPTION



Client and Equipment Under Test (EUT) Information

Company Name:	Multi-Tech Systems
Address:	2205 Woodale Drive
City, State, Zip:	Mounds View, MN, 55112
Test Requested By:	Mike Lynch
Model:	MTDOT-915
First Date of Test:	April 21, 2016
Last Date of Test:	April 21, 2016
Receipt Date of Samples:	April 11, 2016
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT:

The MultiConnect[®] mDot[™] is a secure, CE/FCC certified, ARM[®] mbed[®] programmable, low-power RF module, that provides long-range, low bit rate M2M data connectivity to sensors, industrial equipment and remote appliances.

Testing Objective:

To demonstrate compliance of Class II Permissive Changes to FCC ID: AU792U13A16857.

CONFIGURATIONS



Configuration MLTI0052-1

EUI								
Description	Manufacturer	Model/Part Number	Serial Number					
Wireless Module (EUT)	Multi-Tech Systems, Inc.	MTDOT-915	18349449					

Peripherals in test setup boundary							
Description	Manufacturer	Model/Part Number	Serial Number				
Development Board (EUT)	Multi-Tech Systems, Inc.	83150	0040				
AC/DC Adapter	Enercell	Dual USB Port AC Adapter	None				

Remote Equipment Outside of Test Setup Boundary						
Description Manufacturer Model/Part Number Serial Number						
Laptop (EUT)	Dell	Studio	Unknown			
AC Adapter (Laptop)	Dell	DA90PE1-00	CN-0WK890-48661-95C-D0MT-A03			

Cables							
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2		
DC Cable (Laptop)	No	1.8m	Yes	AC Adapter (Laptop)	Laptop		
AC Mains Cable (Laptop)	No	0.9m	No	AC Mains	AC Adapter (Laptop)		
USB Power Cable	Yes	0.5m	No	AC/DC Adapter	Development Board (EUT)		
USB to Serial Adapter	No	1.5m	Yes	Serial Cable	Laptop		
Serial Cable	Yes	1.9m	No	Development Board (EUT)	USB to Serial Adapter		

MODIFICATIONS



Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	4/21/2016	Output	Tested as delivered to	No EMI suppression devices were added or	EUT remained at Northwest EMC
		Power	Test Station.	modified during this test.	following the test.
		Power	Tested as	No EMI suppression	EUT remained at
2	4/21/2016	Spectral	delivered to	devices were added or	Northwest EMC
		Density	Test Station.	modified during this test.	following the test.
			Tested as	No EMI suppression	EUT remained at
3	4/21/2016	Duty Cycle	delivered to	devices were added or	Northwest EMC
			Test Station.	modified during this test.	following the test.
4	4/21/2016	Band Edge Compliance	Tested as delivered to	No EMI suppression devices were added or	EUT remained at Northwest EMC
		Hopping Mode	Test Station.	modified during this test.	following the test.
		Number of	Tested as	No EMI suppression	EUT remained at
5	4/21/2016	Hopping	delivered to	devices were added or	Northwest EMC
		Frequencies	Test Station.	modified during this test.	following the test.
		Carrier	Tested as	No EMI suppression	EUT remained at
6	4/21/2016	Frequency	delivered to	devices were added or	Northwest EMC
		Separation	Test Station.	modified during this test.	following the test.
			Tested as	No EMI suppression	Scheduled testing
7	4/21/2016	Dwell Time	delivered to Test Station.	devices were added or modified during this test.	was completed.



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

					Interval
Description	Manufacturer	Model	ID	Last Cal.	(mo)
Meter - Multimeter	Fluke	117	MLS	1/20/2014	36
Attenuator	S.M. Electronics	SA26B-20	RFW	2/26/2016	12
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/24/2016	12

TEST DESCRIPTION

The Duty Cycle (x) of the single channel operation of the radio as controlled by the provided test software was measured for each of the EUT operating modes.

There is no compliance requirement to be met by this test, so therefore no Pass / Fail criteria.

The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used.

The duty cycle was calculated by dividing the transmission pulse duration (T) by the total period of a single on and total off time.

If the transmit duty cycle < 98 percent, burst gating may have been used during some of the other tests in this report to only take the measurement during the burst duration.



EUT: MTDOT-915					Work Order:	MLTI0052	
Serial Number: 18349449					Date:	04/21/16	
Customer: Multi-Tech Systems					Temperature:	22.6°C	
Attendees: Marcus Glass					Humidity:	45%	
Project: None				E	Barometric Pres.:	980.4	
Tested by: Jared Ison		Power: 5 VDC			Job Site:	MN08	
TEST SPECIFICATIONS		Test Method					
FCC 15.247:2016		ANSI C63.10:2013					
COMMENTS							
None							
DEVIATIONS FROM TEST STANDARD							
DEVIATIONS FROM TEST STANDARD None							
DEVIATIONS FROM TEST STANDARD None							
DEVIATIONS FROM TEST STANDARD None Configuration # 1	<		-				
DEVIATIONS FROM TEST STANDARD None Configuration # 1	Signature	20-					
DEVIATIONS FROM TEST STANDARD None Configuration # 1	Signature	20-		Number of	Value	Limit	
DEVIATIONS FROM TEST STANDARD None Configuration # 1	Signature -	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
DEVIATIONS FROM TEST STANDARD None Configuration # 1 Low Channel, 902.3 MHz	Signature –	Pulse Width 370.296 ms	Period 491.953 ms	Number of Pulses 1	Value (%) 75.3	Limit (%) N/A	Results N/A
DEVIATIONS FROM TEST STANDARD None Configuration # 1 Low Channel, 902.3 MHz Low Channel, 902.3 MHz	Signature -	Pulse Width 370.296 ms NA	Period 491.953 ms N/A	Number of Pulses 1 5	Value (%) 75.3 N/A	Limit (%) N/A N/A	Results N/A N/A
DEVIATIONS FROM TEST STANDARD None Configuration # 1 Low Channel, 902.3 MHz Low Channel, 902.3 MHz Mid Channel, 908.7 MHz	Signature -	Pulse Width 370.296 ms N/A 370.076 ms	Period 491.953 ms N/A 491.878 ms	Number of Pulses 1 5 1	Value (%) 75.3 N/A 75.2	Limit (%) N/A N/A N/A	Results N/A N/A N/A
DEVIATIONS FROM TEST STANDARD None Configuration # 1 Low Channel, 902.3 MHz Low Channel, 902.3 MHz Mid Channel, 908.7 MHz Mid Channel, 908.7 MHz	Signature –	Pulse Width 370.296 ms N/A 370.076 ms N/A	Period 491.953 ms N/A 491.878 ms N/A	Number of Pulses 1 5 1 5	Value (%) 75.3 N/A 75.2 N/A	Limit (%) N/A N/A N/A	Results N/A N/A N/A N/A
DEVIATIONS FROM TEST STANDARD None Configuration # 1 Low Channel, 902.3 MHz Low Channel, 902.3 MHz Mid Channel, 908.7 MHz Mid Channel, 908.7 MHz High Channel, 914.9 MHz	< Signature –	Pulse Width 370.296 ms N/A 370.076 ms N/A 399.691 ms	Period 491.953 ms N/A 491.878 ms N/A 491.86 ms	Number of Pulses 1 5 1 5 1	Value (%) 75.3 N/A 75.2 N/A 75.2	Limit (%) N/A N/A N/A N/A	Results N/A N/A N/A N/A



Pulse Width Period Number of Pulses of Polses of	Pulse Width Period Pulses Value Limit 370.296 ms 491.953 ms 1 75.3 N/A N/A # Agilent 11:34:05 Apr 21, 2016 R T Morthwest EMC, Inc Mkr3 985.2 ms Peak *Atten 10 dB 17.13 dBm *Peak *Atten 10 dB 17.13 dBm *Agilent 11:34:05 *Agilent 10 dB 17.13 dBm *Agilent 10 dB 17.13 dBm					w Channel 002 (0 M⊔			
Pulse Width Period Pulses (%) (%) Results 370.296 ms 491.953 ms 1 75.3 N/A N/A Agilent 11:34:05 Apr 21. 2016 R T Northwest EMC, Inc Mkr3 985.2 ms #Peak 491.953 ms 17.13 dBm #Peak 7 7 #Peak 7 7 #Peak 7 7 #Offst 1 1 2 1 1 1 4B 1 1 1 1 #LgAv 1 1 1 1 #LgAv 1 1 1 1 1 #LgAv 1 1 1 1 1 1 W1 S2 ^ 1 1 1 1 1 1 W1 S2 ^ 1 1 1 1 1 1 1 1 1 1 1 1	Pulse Width Period Pulses (%) (%) Results 370.296 ms 491.953 ms 1 75.3 N/A N/A Agilent 11:34:05 Apr 21, 2016 R T Mkr3 985.2 ms Northwest EMC, Inc #Atten 10 dB 17.13 dBm 17.13 dBm 17.13 dBm *Peak *Agilent 11:34:05 #Atten 10 dB 17.13 dBm 17.13 dBm *Peak *Agilent 10 dB *Atten 10 dB 17.13 dBm 17.13 dBm *Peak *Agilent 10 dB *Agilent 10 dB 17.13 dBm 17.13 dBm *Peak *Agilent 10 dB 17.13 dBm 17.13 dBm 17.13 dBm *Peak *Agilent 10 dB 17.13 dBm 17.13 dBm 17.13 dBm *Peak *Agilent 10 dB 17.13 dBm 17.13 dBm 17.13 dBm *Peak *Agilent 10 dB *Agilent 16 dB 17.13 dBm 17.13 dBm *LogAv *VBH 30 kHz Sweep 1 s (8192 pts) Span 0 Hz *Genter 902.300 MHz *VBM 30 kHz Sweep 1 s (8192 pts) Mar				LU	Number of	Value	Limit		
370.296 ms 491.953 ms 1 75.3 N/A N/A # Agilent 11:34:05 Apr 21, 2016 R T Northwest EMC, Inc Mkr3 985.2 ms Ref 21 dBm #Atten 10 dB 17.13 dBm #Peak Q	370.296 ms 491.953 ms 1 75.3 N/A N/A # Agilent 11:34:05 Apr 21, 2016 R T Northwest EMC, Inc Mkr3 985.2 ms Ref 21 dBm #Atten 10 dB 17.13 dBm #Peak Q <thq< th=""> Q Q</thq<>			Pulse Width	Period	Pulses	(%)	(%)	Results	
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*Peak O O O Log 2 3 GB/ Gfst 2 3 GB/ Gfst 2 3 GB G G G G GB G G G G G HLgAV G G G G G G W1 S2 Center 902,300 MHz Span 0 Hz Span 0 Hz Span 0 Hz Res BW 1 MHz #VBW 30 KHz Sweep 1 s (8192 pts) Span 0 Hz Marker Trace Type X fixis Amplitude 1 1 Time 493.2 ms 17.13 dBm 2 1 Time 985.2 ms 17.13 dBm	*Peak O O O Log 2 3 5 dB/ 2 3 dB/ Offst 2 3 Q 0 0 0 0 Q 0 0 0 0 0 Q 0 0 0 0 0 0 Q 0 0 0 0 0 0 0 Q 0	Ref 21	dBm		#Atten 10	dB			17.13	dBm
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		3	(1)	lime	9	185.2 ms	17.1	.3 dBm		

Low Channel, 902.3 MHz								
				Number of	Value	Limit		
		Pulse Width	Period	Pulses	(%)	(%)	Results	
		N/A	N/A	5	N/A	N/A	N/A	

₩ A	gilent 11:	34:18	Apr	21,20	16				F	₹Т				
Northwe	əst EMC,	Inc												
Ref 21	dBm			#At	ten 10 c	ЯB								
#Peak														
Log				ľ					r –					
5														
dB/														
Uffst														
dB														
#LgAv														
Ŭ														
W1 S2														
sa vs														
•/0.														
FTun														
Center	902.300	MHz										S	pan	0 Hz^
Res BW	1 MHz					#VBW	30 k	:Hz		Sweep 2.	214	ls (8	192	pts)_





	Mid Channel, 908.7 MHz						
				Number of	Value	Limit	
	Pulse Width Period Pulses (%) (%) Results						
ĺ		N/A	N/A	5	N/A	N/A	N/A

* Agilent 11:39:13	Apr 21, 2016		RT	
Northwest EMC, Inc Ref 21 dBm	#Atten 10	dB		
#Peak				
Log				
dB/				
dB				
#LgAv				
W1 S2				
S3 VS				
€(f): FTun				
Center 908.700 MHz Res BW 1 MHz		#URU 30 ⊬H≂	Sween 2 21/	Span 0 Hz´ 1 ∝ (8192 p+c)





		High	Channel, 914.9	MHz		
			Number of	Value	Limit	
Pulse Width Period Pulses (%) (%) Results						
	N/A	N/A	5	N/A	N/A	N/A



CARRIER FREQUENCIES SEPARATION



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

					Interval
Description	Manufacturer	Model	ID	Last Cal.	(mo)
Meter - Multimeter	Fluke	117	MLS	1/20/2014	36
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
Attenuator	S.M. Electronics	SA26B-20	RFW	2/26/2016	12
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/24/2016	12

TEST DESCRIPTION

The channel carrier frequencies in the 902-928 MHz band must be separated by 25 kHz or the 20dB bandwidth of the hopping channel, whichever is greater. Or, if the output power is less than 125 mW, the channel separation can be 25 kHz or 2/3 of the 20dB bandwidth. The EUT was operated in pseudorandom hopping mode. The spectrum was scanned across two adjacent peaks. The separation between the peaks of these channels was measured.

CARRIER FREQUENCIES SEPARATION



EUT:	MTDOT-915					Work Order:	MLTI0052	
Serial Number:	18349449					Date:	04/21/16	
Customer:	Multi-Tech Systems					Temperature:	22.6°C	
Attendees:	Marcus Glass					Humidity:	45%	
Project:	None				Ba	rometric Pres.:	980.4	
Tested by:	Jared Ison		Power:	5 VDC		Job Site:	MN08	
TEST SPECIFICATI	IONS			Test Method				
FCC 15.247:2016				ANSI C63.10:2013				
COMMENTS								
Test command TX	N=0, AT+Sendi=100,5555,	was used in order to count the numb	er channels in hop	ping mode.				
DEVIATIONS FROM	I TEST STANDARD							
None								
Configuration #	1	Signature	$ \ge $					
							Limit	
						Value	(≥)	Results
Hopping Mode						201.5 kHz	138.2 kHz	Pass

Report No. MLTI0052

CARRIER FREQUENCIES SEPARATION





NUMBER OF HOPPING FREQUENCIES



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

					Interval
Description	Manufacturer	Model	ID	Last Cal.	(mo)
Meter - Multimeter	Fluke	117	MLS	1/20/2014	36
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12
Attenuator	S.M. Electronics	SA26B-20	RFW	2/26/2016	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/24/2016	12

TEST DESCRIPTION

The number of hopping frequencies was measured across the authorized band. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The hopping function of the EUT was enabled.

NUMBER OF HOPPING FREQUENCIES



EUT:	MTDOT-915					Work Order:	MLTI0052	
Serial Number:	18349449					Date	04/21/16	
Customer:	Multi-Tech Systems				1	emperature	22.6°C	
Attendees:	Marcus Glass					Humidity	45%	
Project:	None				Baro	metric Pres.:	980.4	
Tested by:	Jared Ison		Power:	5 VDC		Job Site:	MN08	
TEST SPECIFICATI	ONS			Test Method				
FCC 15.247:2016				ANSI C63.10:2013				
COMMENTS								
Test command TXV	V=0, AT+Sendi=100,5555,	was used in order to count the numb	er channels in hop	ping mode.				
DEVIATIONS FROM	I TEST STANDARD							
None								
Configuration #	1	Signature	2	2				
					N (umber of Channels	Limit	Results
Hopping Mode						64	50	Pass

Report No. MLTI0052

NUMBER OF HOPPING FREQUENCIES



NORTHWEST



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

					Interval
Description	Manufacturer	Model	ID	Last Cal.	(mo)
Meter - Multimeter	Fluke	117	MLS	1/20/2014	36
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12
Attenuator	S.M. Electronics	SA26B-20	RFW	2/26/2016	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/24/2016	12

TEST DESCRIPTION

The average dwell time per hopping channel was measured at one hopping channel in the middle of the authorized band. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The hopping function of the EUT was enabled.

The dwell time limit is based on the Number of Hopping Channels * 400 mS. For this device it would be 64 Channels * 400mS = 25.6 Sec.



EUT:	MTDOT-915					Work Order:	MLTI0052		
Serial Number:	18349449					Date:	04/21/16		
Customer:	Multi-Tech Systems					Temperature:	22.6°C		
Attendees:	Marcus Glass					Humidity:	45%		
Project:	None					Barometric Pres.: 980.4			
Tested by:	Jared Ison		Power:	5 VDC		Job Site: MN08			
TEST SPECIFICAT	IONS			Test Method					
FCC 15.247:2016				ANSI C63.10:2013					
COMMENTS									
EUT in hopping mo	ode.								
DEVIATIONS FROM	M TEST STANDARD								
None									
Configuration #	1	Signature	\Longrightarrow	2	1				
			Pulse Width	Number of	Average No.	On Time (ms)	Limit		
			(ms)	Pulses	of Pulses	During 25.6 s	(ms)	Results	
Hopping Mode			370.51	N/A	N/A	N/A	N/A	N/A	
Hopping Mode			N/A	1	N/A	N/A	N/A	N/A	
Hopping Mode			N/A	1	N/A	N/A	N/A	N/A	
Hopping Mode			N/A	1	N/A	N/A	N/A	N/A	
Hopping Mode			N/A	1	N/A	N/A	N/A	N/A	
Hopping Mode			370.51	N/A	1	370.51	400	Pass	



				Hopping Mo	de				
P	ulse Width	Number of	Average No.	i ioppilig ilio	On Ti	ime (ms)	Limit	-	
	(ms) 370.51	Pulses N/A	Of Pulses N/A		Durin	N/A	(ms) N/A	Hes N	/A
米 A	gilent 09:	28 : 23 Apr 2:	1,2016				RT	. Milari	270 E
Northw Ref 19	est EML, 15 dBm	Inc	#Atten 10 d	IR				∆ MKr1	370.5 ms —350 dB
#Peak									
Log		*********	ik, ii i <mark>k, ik i k, i</mark>t	18.8 6 6 6 18 18 18 18	<u></u>				*
dB/	L W	WWWWWWWW	nan nan t	MANANAN	MUL\$				
Offst	<u> </u>			11.341111	1 11 1				
dB									
#LaAv									
V1 S2									
£(f):									
Flun									
Contor	902 700	MH-7						<u> </u>	nan 0 Hz
Res Bk	1 300.788 1 300 kHz	2		#VBW 30 kI	Ηz		Sweep	, 750 ms (2	2000 pts)
				Hopping Mo	de				
P		Number of	Average No		On Ti	imo (me)	I incla		
	ulse Width	Pulses	of Pulses		Durin	nne (ms) na 25.6 s	LIMIT (ms)	Res	ulte
	Pulse Width (ms) N/A	Pulses 1	of Pulses N/A		Durin	ng 25.6 s N/A	(ms) N/A	Res N	ults /A
۔ مغد	Pulse Width (ms) N/A	1 1 1 1 1 1 1 1 1 1	of Pulses N/A		Durin	ng 25.6 s N/A	Limit (ms) N/A	Res	alts /A
* A Northw	ulse Width (ms) N/A gilent 09: est EMC.	Pulses 1 49:07 Apr 2:	of Pulses N/A		Durin	ng 25.6 s N/A	R T	Res N	A /A
₩ A Northw Ref 19	ulse Width (ms) N/A gilent 09: est EMC, .5 dBm	Pulses Pulses 49:07 Apr 2: Inc	of Pulses N/A 1, 2016 #Atten 10 d	В	Durin	ng 25.6 s N/A	R T	Res N	ults /A
Northw Ref 19 #Peak	ulse Width (ms) N/A gilent 09: est EMC, .5 dBm	49:07 Apr 2	of Pulses N/A 1, 2016 #Atten 10 d	B	Durin	ng 25.6 s N/A	R T	Res N	ults /A
→ A Northw Ref 19 #Peak Log 5	ulse Width (ms) N/A gilent 09: est EMC, .5 dBm	49:07 Apr 2	nof Pulses N/A 1, 2016 #Atten 10 c	B	Durin	ng 25.6 s N/A	R T	Res N	ults /A
<mark>⊯ A</mark> Northw Ref 19 ≢Peak Log 5 dB∕ Offor	ulse Width (ms) N/A gilent 09: est EMC, .5 dBm	49:07 Apr 2.	of Pulses N/A	B		ng 25.6 s N/A	R T	Res	ults /A
<mark>⊯ A</mark> Northw Ref 19 ≢Peak Log 5 dB/ Offst 21	ulse Width (ms) N/A gilent 09: est EMC, .5 dBm	49:07 Apr 2	nof Pulses N/A 1, 2016 #Atten 10 d	B		ng <u>25.6 s</u> N/A	R T	Res N	ults /A
₩ A Northw Ref 19 #Peak Log 5 dB/ 21 dB	ulse Width (ms) N/A .gilent 09: est EMC, .5 dBm	49:07 Apr 2	of Pulses N/A 1, 2016 #Atten 10 c	B	Durin	N/A	R T	Res N	XAXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
<mark>₩ A</mark> Northw Ref 19 #Peak Log 5 dB/ Offst 21 dB	ulse Width (ms) N/A gilent 09: est EMC, .5 dBm	Pulses Pulses 1 49:07 Apr 2 Inc	nofPulses N/A 1, 2016 #Atten 10 d	B		N/A	R T	Res N	A A
₩ A Northw Ref 19 #Peak Log 5 dB/ 0ffst 21 dB	ulse Width (ms) N/A gilent 09: est EMC, .5 dBm	49:07 Apr 2	of Pulses N/A 1, 2016 #Atten 10 d	B		N/A	R T	Res N	ults /A
<mark>⊯ A</mark> Northw Ref 19 #Peak Log 5 dB/ 0ffst 21 dB #LgAv	ulse Width (ms) N/A gilent 09: est EMC, .5 dBm	49:07 Apr 2.	of Pulses N/A 1, 2016 #Atten 10 d	B		N/A	R T	Res N	ults /A * *
<pre></pre>	ulse Width (ms) N/A gilent 09: est EMC, .5 dBm	Pulses Pulses 1 49:07 Apr 2 Inc	of Pulses N/A 1, 2016 #Atten 10 d	B		N/A	R T	Res N	ults /A /A /A /A
<pre></pre>	ulse Width (ms) N/A gilent 09: est EMC, .5 dBm	Pulses 1 49:07 Apr 2 Inc	of Pulses N/A	B		N/A		Res	ults /A * *
<pre></pre>	ulse Width (ms) N/A gilent 09: est EMC, .5 dBm	49:07 Apr 2.	of Pulses N/A 1, 2016 #Atten 10 d	B		N/A		Res N	ults /A * * * *
<pre></pre>	ulse Width (ms) N/A gilent 09: est EMC, .5 dBm	49:07 Apr 2.	of Pulses N/A 1, 2016 #Atten 10 c	B		N/A	R T	Res N	ults /A /A /A /A
<pre></pre>	ulse Width (ms) N/A gilent 09: est EMC, .5 dBm	Pulses Pulses 1 49:07 Apr 2 Inc	of Pulses N/A 1, 2016 #Atten 10 d			N/A		Res	ults /A * *
<pre></pre>	ulse Width (ms) N/A gilent 09: est EMC, .5 dBm	Pulses 1 49:07 Apr 2: Inc	of Pulses N/A 1, 2016 #Atten 10 d	B		N/A		Res N	ults /A /A
<pre></pre>	ulse Width (ms) N/A gilent 09: est EMC, .5 dBm	Pulses 1 49:07 Apr 2. Inc 1	of Pulses N/A 1, 2016 #Atten 10 c			N/A		Res N	ults /A /A /A /A
<pre></pre>	ulse Width (ms) N/A gilent 09: est EMC, .5 dBm	MHz	of Pulses N/A 1, 2016 #Atten 10 d 			N/A		Res	A A A A A A A A A A A A A A A A A A A



			Honning Mod	0				
Pulse Width	Number of	Average No.	hopping mou	On Time (m	s) Liı	nit		
(ms) N/A	Pulses 1	of Pulses N/A		During 25.6 N/A	s (m N	is) /A	Results N/A	٦
				1971		~		
🔆 Agilent 09:51	1:26 Apr 21,	,2016			R	т		
Northwest EMC, Ir	nc							
Ret 19.5 dBm #Peak		#Atten 10 d	dB					
Log								*
5								
dB/								
21								
dB								
#LgAv								
W1 S2 V								
55-05								
£ (f):								
Flun								
Center 908.700 M	1Hz				~	~	Span 0	⊢Hz^́
Kes BW 300 KHZ			#VRM 30 KH	Ζ	>	weeр бю	9 S (8192 p	its/_
Pulse Width	Number of	Average No.	Hopping Mod	e On Time (m	e) Liu	nit		
(ms)	Pulses	of Pulses		During 25.6		-)	Deculto	
(113)				During 25.0	<u>s (m</u>	IS)	nesuits	٦
N/A	1	N/A		N/A	<u>s (n</u> N	A	N/A	
	1 3:31 Apr 21,	N/A	1	N/A	<u>s (m</u> N R	A T	N/A	1
N/A Agilent 09:53 Northwest EMC, In	1 3:31 Apr 21,	N/A ,2016		N/A	s (m N R	A	N/A	
N/A Agilent 09:53 Northwest EMC, Ir Ref 19.5 dBm #Peak	1 3:31 Apr 21, 10	N/A , 2016 #Atten 10 d	dB	N/A	s (m N R	A T	N/A	
N/A Agilent 09:53 Northwest EMC, Ir Ref 19.5 dBm #Peak Log	1 3:31 Apr 21, 10	N/A , 2016 #Atten 10 (dB	N/A	s (m N R	rs) /A	N/A	*
N/A ** Agilent 09:53 Northwest EMC, Ir Ref 19.5 dBm #Peak Log 5	1 3:31 Apr 21, 10	N/A , 2016 #Atten 10 d	dB	N/A	R	rs) T	N/A	*
N/A N/A Northwest EMC, Ir Ref 19.5 dBm #Peak Log 5 dB/ 0ffe+	1 3:31 Apr 21,	N/A , 2016 #Atten 10 (dB	N/A	R	rs) T	N/A	*
N/A Morthwest EMC, Ir Ref 19.5 dBm #Peak Log 5 dB/ 0ffst 21	1 3:31 Apr 21, 10	N/A , 2016 #Atten 10 d	dB	N/A	s (n N R	T	N/A	*
N/A Morthwest EMC, Ir Ref 19.5 dBm #Peak Log 5 dB/ 0ffst 21 dB	1 3:31 Apr 21.	N/A , 2016 #Atten 10 d	dB	N/A	R	IS) (A [T	N/A	*
N/A	1 3:31 Apr 21, 10	N/A , 2016 #Atten 10 d			R	τ Τ	N/A	*
N/A Northwest EMC, Ir Ref 19.5 dBm #Peak Log 5 dB/ 0ffst 21 dB	1 3:31 Apr 21, nc	N/A , 2016 #Atten 10 (N/A	R	T	N/A	*
× Agilent 09:53 Northwest EMC, Ir Ref 19.5 dBm #Peak Log 5 dB/ 0ffst 21 dB	1 3:31 Apr 21.	N/A , 2016 #Atten 10 d			s (n N R	T	N/A	*
Agilent 09:53 Northwest EMC, Ir Ref 19.5 dBm #Peak Log 5 dB/ 0ffst 21 dB #LgAv	1 3:31 Apr 21, 10	N/A , 2016 #Atten 10 d			R	T	N/A	*
× Agilent 09:53 Northwest EMC, Ir Ref 19.5 dBm #Peak Log 5 dB/ Offst 21 dB #LgAv ¥LgAv W1 S2 ₩ S3 VS	1 3:31 Apr 21, 10	N/A , 2016 #Atten 10 d			R R	T	N/A	
× Agilent 09:53 Northwest EMC, Ir Ref 19.5 dBm *Peak Log 5 dB/ Offst 21 dB #LgAv ¥LgAv	1 3:31 Apr 21, 10	N/A , 2016 #Atten 10 (T		*
Image: style styl	1 3:31 Apr 21.	N/A , 2016 #Atten 10 (T		*
Image: missing state in the image is a state in the image in the image is a state in	1 3:31 Apr 21, 10	N/A , 2016 #Atten 10 o				IS) (A T T (A T (A		
× Agilent 09:53 Northwest EMC, Ir Ref 19.5 dBm *Peak Log 5 dB/ Offst 21 dB *LgAv ¥LgAv ¥LgAv ¥LgAv ¥LgAv ¥LgAv	1 3:31 Apr 21, 10	N/A , 2016 #Atten 10 (T		
× Agilent 09:53 Northwest EMC, Ir Ref 19.5 dBm *Peak Log 5 dB/ Offst 21 dB *LgAv ¥LgAv ₩1 S2 S3 VS £(f): FTun	1 3:31 Apr 21, 10	N/A , 2016 #Atten 10 (T		
Image: state in the image: state i	1 3:31 Apr 21, nc	N/A , 2016 #Atten 10 (IS) (A T T		



				Hopping Mode				
	Pulse Width	Number of	Average No.	hopping	On Time (ms)	Limit		
l	(ms)	Pulses	of Pulses	<u>.</u>	During 25.6 s	(ms)	Results	
	N/A	1	N/A		N/A	N/A	N/A	
来	Agilent 09:5	j8:48 Apr 21	,2016			R 1		
Nor	thwest EMC, I	Inc	0					
Ket #Do	19.5 dBm		#Htten 10 c	IB				
** •	ak							*
5	يعطي الم							
_ dB∕								
Off	st	<u>ل مع مع مع</u>						
21	ويتعالم							
dB								
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111	ea <mark>ul</mark>							
N1 (2)	SZ V	<u>ل مع مع مع</u>						
35	V S							
£ (†	5.							
	in la							
	ر کتر کار							
	ر و و ا							
Cer	nter 908.700	MHz					Span 0	Hz
Res	8 BW 300 kHz			₩VBW 30 kHz		Sweep (300 s (8192 pt	:s)
				Hopping Mode				
	Pulse Width	Number of	Average No.	Topping Wooo	On Time (ms)	Limit		
1			(n ⁻)					

 Pulse Width
 Number of Pulses
 Average No.
 On Time (ms)
 Limit

 (ms)
 Pulses
 of Pulses
 During 25.6 s
 (ms)
 Results

 370.51
 N/A
 1
 370.51
 400
 Pass

Calculation Only

No Screen Capture Required



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TEST EQUIPMENT

					Interval
Description	Manufacturer	Model	ID	Last Cal.	(mo)
Meter - Multimeter	Fluke	117	MLS	1/20/2014	36
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Attenuator	S.M. Electronics	SA26B-20	RFW	2/26/2016	12
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/24/2016	12

TEST DESCRIPTION

The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

Prior to measuring peak transmit power the DTS bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The method found in ANSI C63.10:2013 Section 11.10.2 was used because the RBW on the analyzer was greater than the DTS Bandwidth of the radio..

De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36 dBm.



EUT: MTDOT-915		Work Order: M	LTI0052					
Serial Number: 18349449		Date: 04	1/21/16					
Customer: Multi-Tech Systems		Temperature: 22	2.6°C					
Attendees: Marcus Glass	Humidity: 45%							
Project: None	Barometric Pres.: 98	30.4						
Tested by: Jared Ison	Power: 5 VDC	Job Site: M	N08					
TEST SPECIFICATIONS	Test Method							
FCC 15.247:2016	ANSI C63.10:2013							
COMMENTS								
Peak method was to determine output power due to class 2 permissive change	Peak method was to determine output power due to class 2 permissive change.							
DEVIATIONS FROM TEST STANDARD								
None								
Configuration # 1 Signature	<u> </u>							
			Limit					
		Value	(<)	Result				
Low Channel, 902.3 MHz		52.723 mW	1 W	Pass				
Mid Channel, 908.7 MHz		53.088 mW	1 W	Pass				
High Channel, 914.9 MHz		53.802 mW	1 W	Pass				









BAND EDGE COMPLIANCE -HOPPING MODE



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

					Interval
Description	Manufacturer	Model	ID	Last Cal.	(mo)
Meter - Multimeter	Fluke	117	MLS	1/20/2014	36
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
Attenuator	S.M. Electronics	SA26B-20	RFW	2/26/2016	12
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/24/2016	12

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized band were measured with the EUT set to its normal pseudo-random hopping sequence. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

BAND EDGE COMPLIANCE -HOPPING MODE



EUT: MTDOT-915		Work Order:	MLTI0052								
Serial Number: 18349449		Date:	04/21/16								
Customer: Multi-Tech Systems		Temperature:	22.6°C								
Attendees: Marcus Glass		Humidity:	45%								
Project: None		Barometric Pres.:	980.4								
Tested by: Jared Ison	Power: 5 VDC	Job Site:	MN08								
TEST SPECIFICATIONS	Test Method		• •								
FCC 15.247:2016	ANSI C63.10:2013										
COMMENTS											
Test command TXW-0 AT+Sendi-100 5555 was used in order to count the numb	er channels in honning mode										
	er enamels in hopping mode.										
IDEVIATIONS FROM TEST STANDARD											
DEVIATIONS FROM TEST STANDARD											
None											
None Configuration # 1											
Configuration # 1											
None Configuration # 1 Signature -	20	Value	Limit								
None Configuration # 1 Signature -	22	Value (dBc)	Limit <(dBc)	Besult							
None Configuration # 1 Signature Hopping Mode		Value (dBc)	Limit ≤ (dBc)	Result							
None Configuration # 1 Signature Hopping Mode	20	Value (dBc)	Limit ≤ (dBc)	Result							
Image: Device Transmission Test StanDarb None Configuration # 1 Signature - Hopping Mode Low Channel, 902.3 MHz High channel of 4.0 MHz -	<u></u>	Value (dBc) -59.99	Limit ≤ (dBc) -20	Result Pass							

BAND EDGE COMPLIANCE - HOPPING MODE





#VBW 300 kHz

Sweep 3.397 ms (1000 pts)

#Res BW 100 kHz



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

					Interval
Description	Manufacturer	Model	ID	Last Cal.	(mo)
Meter - Multimeter	Fluke	117	MLS	1/20/2014	36
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Attenuator	S.M. Electronics	SA26B-20	RFW	2/26/2016	12
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	3/24/2016	12

TEST DESCRIPTION

The maximum power spectral density measurements was measured using the channels and modes as called out on the following data sheets.

A direct connection was made between the RF output of the EUT and a spectrum analyzer. External attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

Per the procedure outlined in ANSI C63.10 the AVGPSD-2 method for power spectral density was measured in a 3 kHz RBW.



EUT:	MTDOT-915					Work Order:	MLTI0052			
Serial Number:	18349449					Date:	04/21/16			
Customer:	Multi-Tech Systems	Iulti-Tech Systems					Temperature: 22.6°C			
Attendees:	Marcus Glass					Humidity: 45%				
Project:	None				Barometric Pres.:	980.4				
Tested by:	ared Ison Power: 5 VDC					Job Site:	MN08			
TEST SPECIFICAT	ONS		T	est Method						
FCC 15.247:2016			A	NSI C63.10:2013						
COMMENTS										
None										
DEVIATIONS FROM	I TEST STANDARD									
None										
				8						
Configuration #	1		Sy							
		Signature		10001						
				Power	Duty Cycle	Density	Limit			
				(dBm/kHz)	Factor (dB)	(dBm/kHz)	≤ (dBm / 3 kHz)	Results		
Low Channel, 902.3	MHz			2.157	1.2	3.4	8	Pass		
Mid Channel, 908.7	MHz			2.749	1.2	4	8	Pass		
High Channel, 914.9	MHz			2.327	1.2	3.6	8	Pass		



NORTHWEST



		High	Channel, 914.9	MHz			
	Power	Duty Cycle		Density	Limit		
	(dBm/kHz)	Factor (dB)	r	(dBm/kHz)	≤ (dBm / 3 kHz)	Results	
L	2.327	1.2		3.6	8	Pass	
Siz	47.40 0 04	004.0			D T		
Real Agilent 11	:47:16 Hpr 21	.,2016			K I		
Northwest EML,	Inc		_		Mkrl	914.932 1 1	MHZ
Ret 19 dBm		#Atten 10 d	B			2.327 dl	Bm
#HVg							
21							
dB			1				
				1			
				Λ			
			1 1 1 1 1 1]			
#PAvg							
100							
W1 S2							
S3 FS							
£ (f):							
f>50k							
Swp							
Center 914.900)0 MHz					Span 1 M	lHz
#Res BW 3 kHz		#	ŧVBW 9.1 kHz		_#Sweep 601.	.2 ms (601 pt	ts)_