Test Report

Report No	EW0071-2
Client	BEVI
Contact	Haley Baril
Address	529 Main St. Suite 304 Charleston MA, 02129
Items tested	Bevi Countertop 1.0
FCC ID	2AMTV-700008
IC ID	22810-700008
HVIN	700-0008
Equipment Type	Digital Transmission System
Equipment Code	DTS
FCC Test Firm Number/ ISED CABID	US1028/ US0106
FCC/IC Rule Parts	CFR Title 47 FCC Part 15.247, ISED Canada RSS-247 Issue 2
Test Dates	April 6,2022 to June 1, 2022
Results	As detailed within this report
Prepared by	Ryan M. Brown - Sr. EMC Wireless Engineer
Authorized by	Yunus Faziloglu - Wireless Manager
Issue Date	7/25/2022
Conditions of Issue	This Test Report is issued subject to the conditions stated in the '*Conditions of Testing*' section on page 126 of this report.

Bureau Veritas Consumer Products Services Inc.
One Distribution Center Circle, #1 • Littleton, MA • TEL (978) 486-8880 • FAX (978) 486-8828

Contents

Summary

This test report supports an application for certification of a transmitter operating pursuant to 47 CFR Title 47 FCC Part 15.247, ISED Canada RSS-247 Issue 2.

Equipment under test (EUT) is Bevi Countertop 1.0 MN 700-0008. It is a Countertop Water Dispenser with an 802.11 abgn transceiver that operates in the 2.4GHz ISM frequency band capable of 20MHz operation only.

We found that the product met the above requirements with modifications see Page 12-14 for modifications. The test sample was received in good condition.

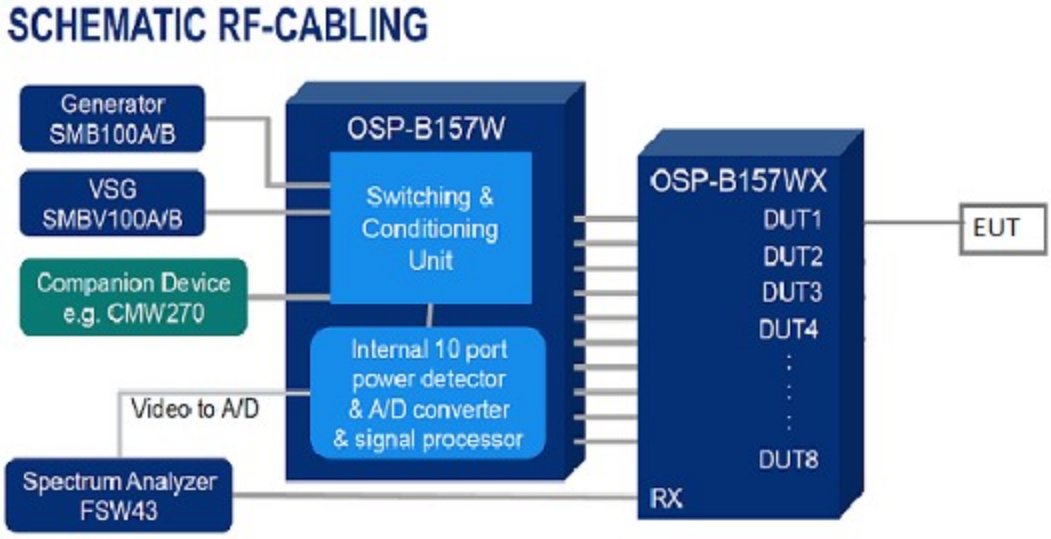
802.11b						
Test	Frequency (MHz)	1 Result	2 Result	5.5 Result	11 Result	Tested By
Emission Bandwidth 6 dB	2412.000 (single)	PASS	PASS	PASS	PASS	RMB
Occupied Channel Bandwidth 99%	2412.000 (single	PASS	PASS	PASS	PASS	RMB
Band Edge low	2412.000 (single)	PASS	PASS	PASS	PASS	RMB
Peak output power	2412.000 (single)	PASS	PASS	PASS	PASS	RMB
Conducted Spurious Emissions	2412.000 (single)	PASS	PASS	PASS	PASS	RMB
Radiated Spurious Emissions	2412.000 (single)	PASS	PASS	PASS	PASS	RMB
Power Spectral Density	2412.000 (single)	PASS	PASS	PASS	PASS	RMB
Emission Bandwidth 6 dB	2437.000 (single)	PASS	PASS	PASS	PASS	RMB
Occupied Channel Bandwidth 99%	2437.000 (single)	PASS	PASS	PASS	PASS	RMB
Peak output power	2437.000 (single)	PASS	PASS	PASS	PASS	RMB
Conducted Spurious Emissions	2437.000 (single)	PASS	PASS	PASS	PASS	RMB
Radiated Spurious Emissions	2437.000 (single)	PASS	PASS	PASS	PASS	RMB
Power Spectral Density	2437.000 (single)	PASS	PASS	PASS	PASS	RMB
Emission Bandwidth 6 dB	2462.000 (single)	PASS	PASS	PASS	PASS	RMB
Occupied Channel Bandwidth 99%	2462.000 (single)	PASS	PASS	PASS	PASS	RMB
Band Edge high	2462.000 (single)	PASS	PASS	PASS	PASS	RMB
Peak output power	2462.000 (single)	PASS	PASS	PASS	PASS	RMB
Conducted Spurious Emissions	2462.000 (single)	PASS	PASS	PASS	PASS	RMB
Radiated Spurious Emissions	2462.000 (single)	PASS	PASS	PASS	PASS	RMB
Power Spectral Density	2462.000 (single)	PASS	PASS	PASS	PASS	RMB
AC Line Conducted Emissions	PASS					RMB

802.11g										
Test	Frequency (MHz)	6 Result	9 Result	12 Result	18 Result	24 Result	36 Result	48 Result	54 Result	Tested By
Emission Bandwidth 6 dB	2412.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Occupied Channel Bandwidth 99%	2412.000 (single	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Band Edge low	2412.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Peak output power	2412.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Conducted Spurious Emissions	2412.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Radiated Spurious Emissions	2412.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Power Spectral Density	2412.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Emission Bandwidth 6 dB	2437.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Occupied Channel Bandwidth 99%	2437.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Peak output power	2437.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Conducted Spurious Emissions	2437.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Radiated Spurious Emissions	2437.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Power Spectral Density	2437.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Emission Bandwidth 6 dB	2462.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Occupied Channel Bandwidth 99%	2462.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Band Edge high	2462.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Peak output power	2462.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Conducted Spurious Emissions	2462.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Radiated Spurious Emissions	2462.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Power Spectral Density	2462.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
AC Line Conducted Emissions	Pass									RMB

802.11n										
Test	Frequency (MHz)	MCS 0 Result	MCS 1 Result	MCS 2 Result	MCS 3 Result	MCS 4 Result	MCS 5 Result	MCS 6 Result	MCS 7 Result	Tested By
Emission Bandwidth 6 dB	2412.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Occupied Channel Bandwidth 99%	2412.000 (single	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Band Edge low	2412.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Peak output power	2412.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Conducted Spurious Emissions	2412.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Radiated Spurious Emissions	2412.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Power Spectral Density	2412.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Emission Bandwidth 6 dB	2437.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Occupied Channel Bandwidth 99%	2437.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Peak output power	2437.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Conducted Spurious Emissions	2437.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Radiated Spurious Emissions	2437.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Power Spectral Density	2437.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Emission Bandwidth 6 dB	2462.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Occupied Channel Bandwidth 99%	2462.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Band Edge high	2462.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Peak output power	2462.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Conducted Spurious Emissions	2462.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Radiated Spurious Emissions	2462.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
Power Spectral Density	2462.000 (single)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	RMB
AC Line Conducted Emissions	PASS									RMB

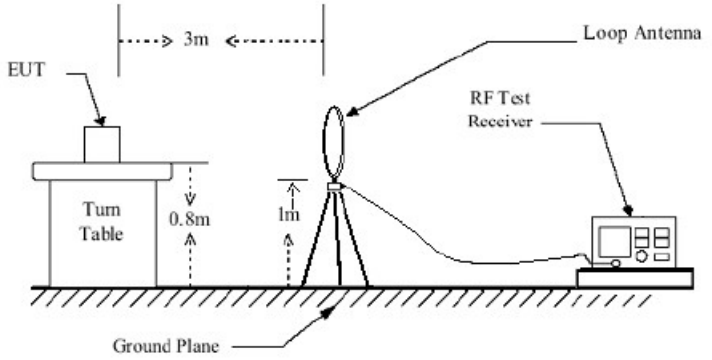
***Test Setup Diagrams**:*

Conducted Antenna Port Measurements

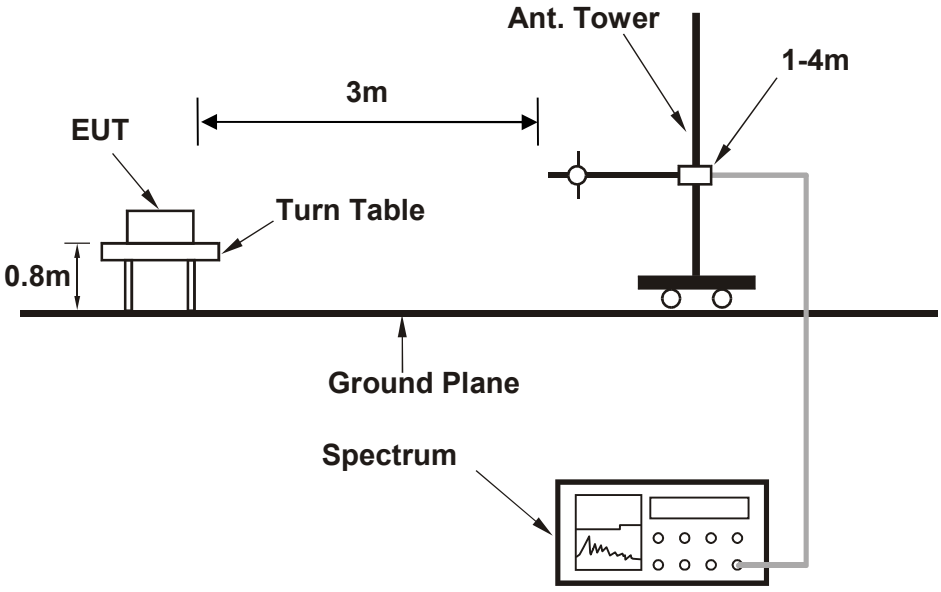


Radiated Emissions

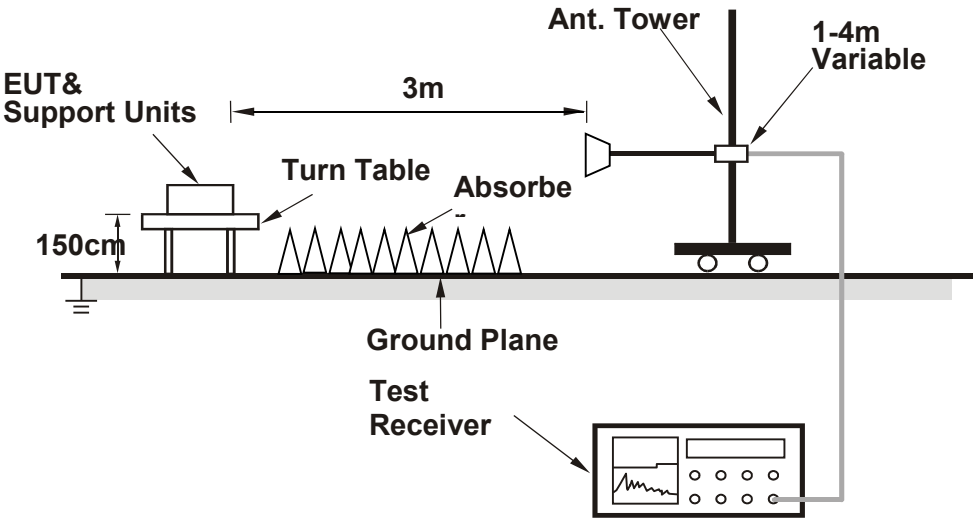
Below 30MHz test setup



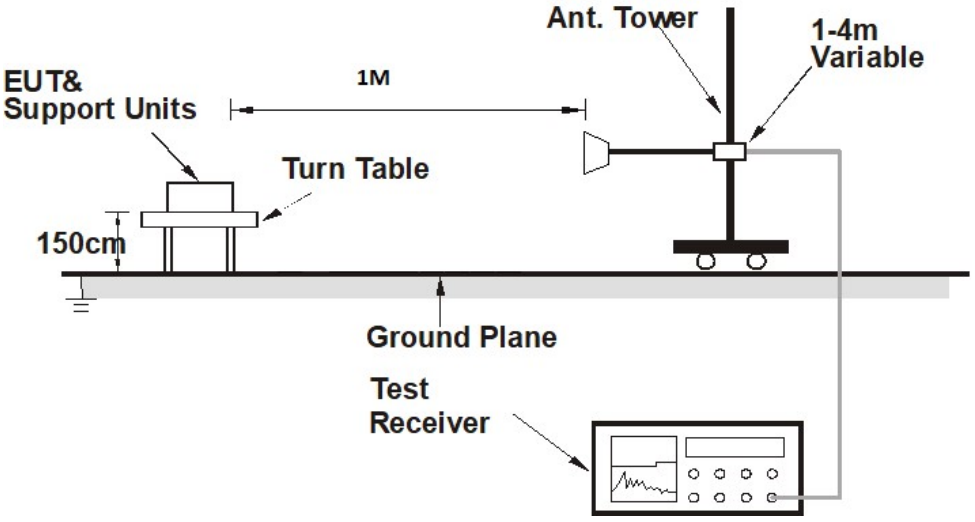
Below 1GHz test setup



1-6GHz test setup



6-18GHz test setup



All Radiated Emissions Measurements were taken in a Semi-Anechoic Chamber.

Test Methodology

All testing was performed according to the following rules/procedures/documents;
CFR Title 47 FCC Part 15.247, ISED Canada RSS-247 Issue 2, ISED Canada RSS-Gen Issue 5, FCC KDB 558074 D01 15.247 Measurement Guidance v05 and ANSI C63.10-2013

Radiated emissions were maximized by rotating the Bevi Countertop 1.0 360 degrees as well as varying the test antenna's height and polarity.
EUT antenna is internal and therefore it cannot be maximized separately.

EUT operating voltage is 120VAC, 60Hz.
For AC line conducted emissions a 50Ω/50µH LISN was used.

Environmental conditions are shown on the associated data tables.

Following bandwidths were used during radiated spurious and line conducted emissions tests.

Frequency	RBW	VBW
0.15-30MHz	9kHz	30kHz
30-1000MHz	120kHz	1MHz
1-25GHz	1MHz	3MHz

Product Tested - Configuration Documentation

EUT Configuration			
Work Order:	W0071		
Company:	BEVI		
Company Address:	529 Main St. Suite 304		
	Charlestown, MA, 02129		
Contact:			
	MN	**PN**	**SN**
EUT:	700-0008		CT7008342211024
EUT Description:	Countertop water Dispenser		
EUT Max Frequency:	5250 MHz		
EUT Min Frequency:			

EUT Components	**MN**	**SN**
AC/DC Power Supply	SDI65-24-U	N/A
Chiller	NIAGARA IN 65IB ACWG (V19)	CHL3212154012

Port Label	Port Type	# ports	# populated	cable type	shielded	ferrites	length (m)	in/out	under test	comment
AC Mains	Power AC	1	1	Power AC	No	Yes	1	in	yes	
AC Mains Chiller	Power AC	1	1	Power AC	No	No	1	in	yes	

Software Operating Mode Description:

Ampak RFTestTool VER.7.0 was used to set the RF test Modes

Performance Criteria:

N/A Emissions only

Channels available:

802.11b, 802.11g, 802.11n:

Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	**2412**	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	**2462**
5	2432		
6	**2437**		
7	2442		

Notes

1. The channels which were marked bold were tested.

Power Settings

802.11b				802.11g			
Channel	Power Setting	Modulation	Data Rate	Channel	Power Setting	Modulation	Data Rate
1	Default	CCK	1-11mbps	1	Default	OFDM	6-54Mbps
6	Default	CCK	1-11mbps	6	Default	OFDM	6-54Mbps
11	Default	CCK	1-11mbps	11	Default	OFDM	6-54Mbps
802.11n (HT20)							
Channel	Power Setting	Modulation	Data Rate				
1	Default	OFDM	MCS 0-7				
6	Default	OFDM	MCS 0-7				
11	Default	OFDM	MCS 0-7				

Antenna Information:
Flexible PCB Antenna with 3M Adhesive, 2.4/5GHzDuel band dipole antenna,
2.5dBi gain at 2.4GHz

Statement of Conformity

RSS-GEN	RSP-100	RSS 247	Part 15	Comments
6.4			15.15(b)	There are no controls accessible to the user that varies the output power to operate in violation of the regulatory requirements.
	3.1		15.19	The label is shown in the label exhibit.
	3.2		15.21	Information to the user is shown in the instruction manual exhibit.
			15.27	No special accessories are required for compliance.
3.2			15.31	The EUT was tested in accordance with the measurement standards in this section.
6.13.2			15.33	Frequency range was investigated according to this section, unless noted in specific rule section under which the equipment operates.
6.13.1			15.35	The EUT emissions were measured using the measurement detector and bandwidth specified in this section, unless noted in specific rule section under which the equipment operates.
6.8			15.203	The antenna for this device is (Flexible PCB Antenna with 3M Adhesive, Magnetic Field antenna, 2.5dBi gain)
8.10			15.205 15.209	The fundamental is not in a Restricted band and the spurious and harmonic emissions in the Restricted bands comply with the general emission limits of 15.209 or RSS-Gen as applicable
8.8			15.207	EUT meets the AC Line conducted emissions requirements of this section.
			15.247	The unit complies with the requirements of 15.247
		RSS 247		The unit complies with the requirements of RSS-247
6.7				99% occupied bandwidth measurements were performed.

Modifications Required for Compliance

Please see: APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING

Test Results

DTS (6dB) Bandwidth

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013 11.8.1
Measurement uncertainty calculated in accordance with ETSI TR 100 028-1.
Expanded Uncertainty (K=2) < 2%

LIMIT
The minimum 6 dB bandwidth shall be at least 500 kHz. [15.247(a) (2)]

The worst case data rate for each mode was determined by the data rate with the widest bandwidth per ANSI C63.10 section 5.6.2.2

MEASUREMENTS / RESULTS

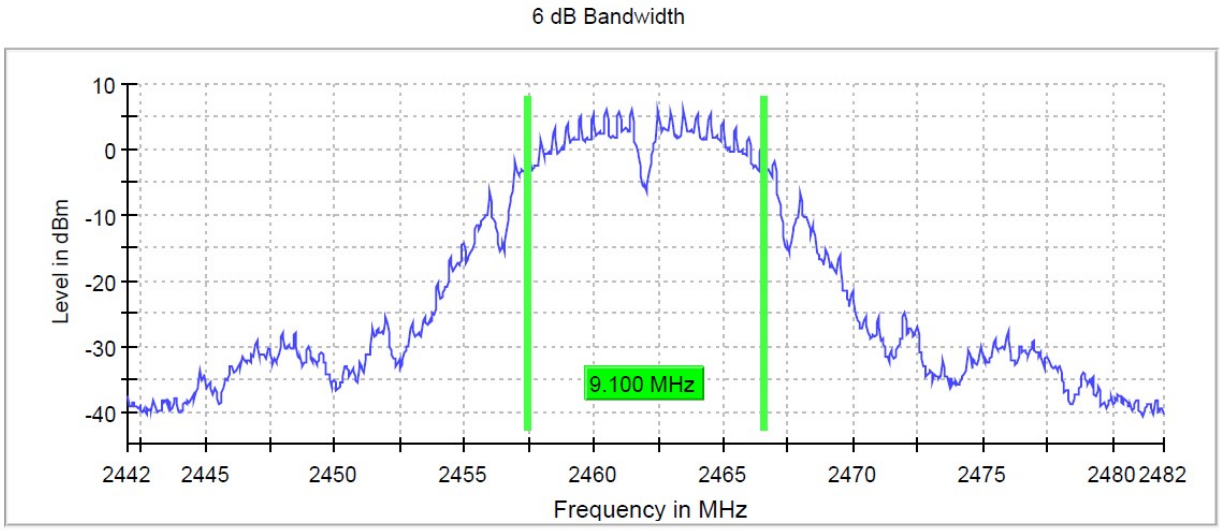
Data Table

802.11 b					
Data Rate	Bandwidth (MHz)	Band Edge Left (MHz)	Center Channel (MHz)	Band Edge Right (MHz)	Result
1	8.2	2407.875000	2412	2416.075000	Pass
1	8.65	2432.425000	2437	2441.075000	Pass
1	9.1	2457.425000	2462	2466.525000	Pass
2	8.4	2407.875000	2412	2416.275000	Pass
2	8.25	2432.675000	2437	2440.925000	Pass
2	8.55	2457.725000	2462	2466.275000	Pass
5.5	8.55	2407.675000	2412	2416.225000	Pass
5.5	8.55	2432.675000	2437	2441.225000	Pass
5.5	8.15	2457.875000	2462	2466.025000	Pass
11	8.4	2407.725000	2412	2416.125000	Pass
11	8.7	2432.675000	2437	2441.375000	Pass
11	8.7	2457.675000	2462	2466.375000	Pass

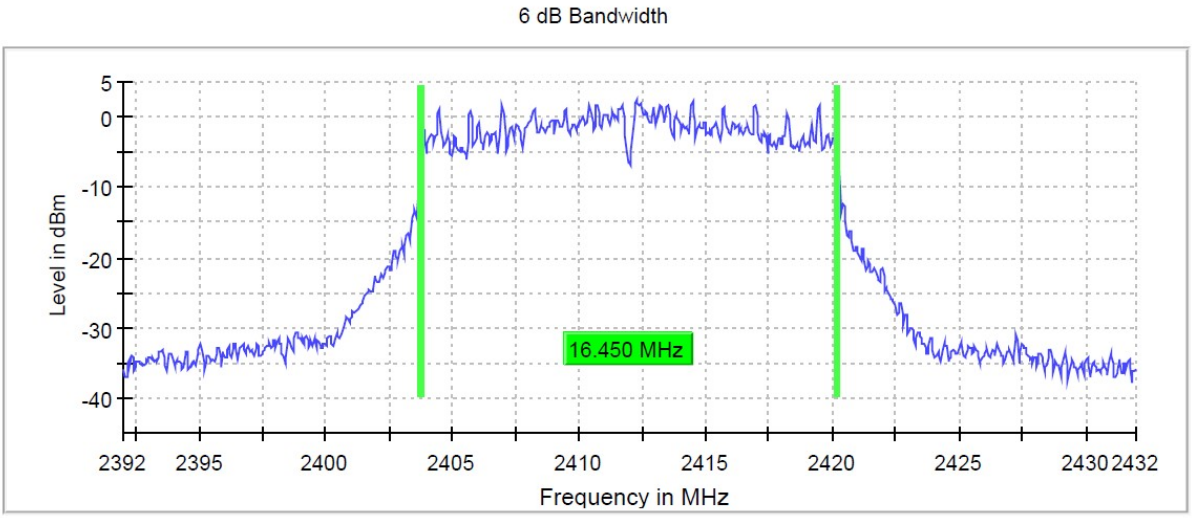
802.11 g					
Data Rate	Bandwidth (MHz)	Band Edge Left (MHz)	Center Channel (MHz)	Band Edge Right (MHz)	Result
6	16.4	2403.775000	2412	2420.175000	PASS
6	16.4	2428.775000	2437	2445.175000	PASS
6	16.1	2454.025000	2462	2470.125000	PASS
9	16.4	2403.775000	2412	2420.175000	PASS
9	16.4	2428.775000	2437	2445.175000	PASS
9	15.6	2454.175000	2462	2469.775000	PASS
12	16.35	2403.825000	2412	2420.175000	PASS
12	16.10	2428.775000	2437	2444.875000	PASS
12	15.45	2454.375000	2462	2469.825000	PASS
18	16.40	2403.775000	2412	2420.175000	PASS
18	16.40	2428.775000	2437	2445.175000	PASS
18	16.00	2454.175000	2462	2470.175000	PASS
24	16.45	2403.725000	2412	2420.175000	PASS
24	16.45	2428.725000	2437	2445.175000	PASS
24	16.10	2453.775000	2462	2469.875000	PASS
36	16.35	2403.825000	2412	2420.175000	PASS
36	16.40	2428.775000	2437	2445.175000	PASS
36	16.35	2453.825000	2462	2470.175000	PASS
48	16.15	2403.775000	2412	2419.925000	PASS
48	16.20	2428.725000	2437	2444.925000	PASS
48	16.05	2453.775000	2462	2469.825000	PASS
54	15.85	2404.075000	2412	2419.925000	PASS
54	15.85	2429.075000	2437	2444.925000	PASS
54	15.75	2454.1750000	2462	2469.925000	PASS

802.11 n					
Data Rate	Bandwidth (MHz)	Band Edge Left (MHz)	Center Channel (MHz)	Band Edge Right (MHz)	Result
MCS 0	17.60	2403.175000	2412	2420.775000	PASS
MCS 0	17.40	2428.175000	2437	2445.575000	PASS
MCS 0	17.00	2453.525000	2462	2470.525000	PASS
MCS 1	17.65	2403.125000	2412	2420.775000	PASS
MCS 1	17.65	2428.125000	2437	2445.775000	PASS
MCS 1	16.95	2453.525000	2462	2470.475000	PASS
MCS 2	17.65	2403.175000	2412	2420.825000	PASS
MCS 2	17.65	2428.125000	2437	2445.775000	PASS
MCS 2	16.70	2453.775000	2462	2470.475000	PASS
MCS 3	17.75	2403.125000	2412	2420.875000	PASS
MCS 3	17.75	2428.125000	2437	2445.875000	PASS
MCS 3	17.65	2453.175000	2462	2470.825000	PASS
MCS 4	17.65	2403.125000	2412	2420.775000	PASS
MCS 4	17.75	2428.075000	2437	2445.825000	PASS
MCS 4	17.00	2453.775000	2462	2470.775000	PASS
MCS 5	17.70	2403.125000	2412	2420.825000	PASS
MCS 5	17.70	2428.125000	2437	2445.825000	PASS
MCS 5	17.30	2453.475000	2462	2470.775000	PASS
MCS 6	17.70	2403.125000	2412	2420.825000	PASS
MCS 6	17.65	2428.125000	2437	2445.775000	PASS
MCS 6	17.00	2453.475000	2462	2470.475000	PASS
MCS 7	17.80	2403.075000	2412	2420.875000	PASS
MCS 7	17.80	2428.075000	2437	2445.875000	PASS
MCS 7	17.70	2453.125000	2462	2470.825000	PASS

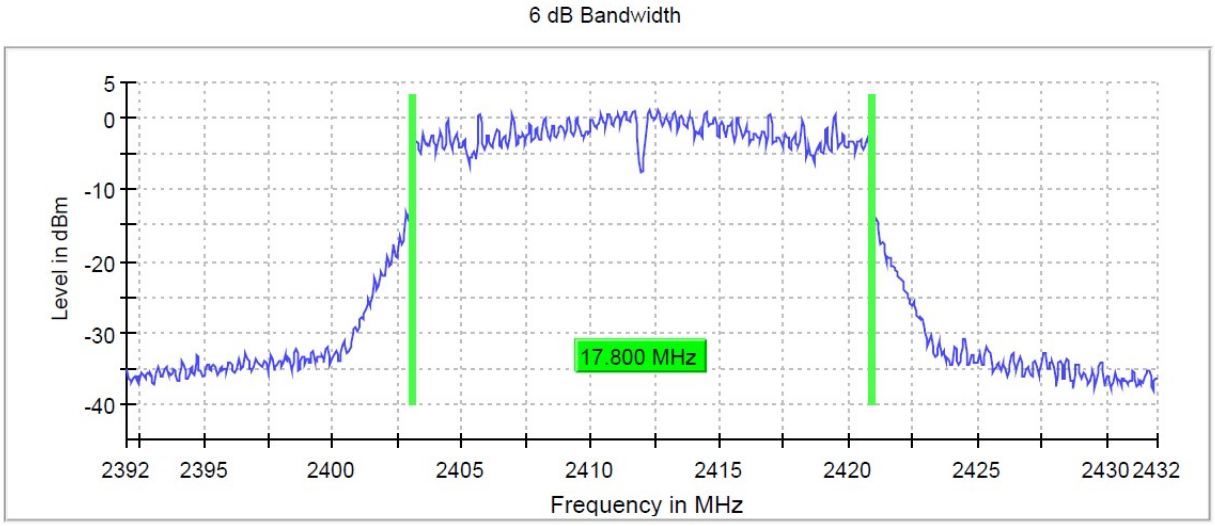
Plots



802.11 b High Channel Data Rate 1



802.11 g Low Channel Data Rate 24



802.11 n Low Channel Data Rate MCS 7

Test Equipment Used

Rev. 7/5/2022

Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
FSV40 Spectrum Analyzer	10Hz-40GHz	FSV40	ROHDE & SCHWARZ	101551	2200	I	10/26/2022	10/26/2021
Signal Generators/Comparaison Noise Emitter	**Range**	**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**	**Calibrated on**
SMBV100A Vector Signal Generator	9KHz-6GHz	SMBV100A	ROHDE & SCHWARZ	261919	2201	I	10/26/2022	10/26/2021
SMB100A Signal Generator	100kHz-40GHz	SMB100A	ROHDE & SCHWARZ	179884	2557	I	10/26/2022	10/26/2021
OSP-B157W8		OSP-B157W8	ROHDE & SCHWARZ	100955	2558	I	8/26/2022	8/26/2021
Meteorological Meters/Chambers		**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**	**Calibrated on**
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	11/23/2022	11/23/2020
Asset #2657		1235C97	Control Company	200435369	2657	I	7/23/2022	7/23/2020
Cables	**Range**		**Mfr**			**Cat**	**Calibration Due**	**Calibrated on**
Asset #2595	9KHz-40GHz		Carlisle			II	1/21/2023	1/21/2022

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

Peak Output Power

Tested according to FCC title 47 part 15 §15.247(b), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013 11.9.2.3.2
Measurement uncertainty calculated in accordance with ETSI TR 100 028-1.
Expanded Combined Uncertainty of absolute Level Measurement (K=2) < 1 dB

LIMIT

1 Watt [15.247(b) (3)]

MEASUREMENTS / RESULTS

Data Table

Data Rate	2412MHz	2437MHz	2462MHz	Limit dBm
802.11 b				
1	18.6	18.4	18.2	30
2	18.7	18.3	18.1	30
5.5	17.9	17.4	17.3	30
11	17.8	17.5	17.3	30
802.11 g				
6	22.8	22.5	22.5	30
9	22.8	22.4	22.4	30
12	23.0	22.5	22.3	30
18	22.9	22.4	22.3	30
24	22.4	21.9	21.8	30
36	22.4	21.9	21.8	30
48	23.0	22.4	22.5	30
54	22.2	22.0	21.9	30
802.11 n				
MCS 0	22.7	22.2	22.2	30
MCS 1	23.0	22.6	22.5	30
MCS 2	23.8	23.1	23.0	30
MCS 3	22.9	22.4	22.3	30
MCS 4	22.4	22.0	22.2	30
MCS 5	22.4	22.0	21.8	30
MCS 6	22.3	22.0	22.1	30
MCS 7	22.2	22.0	21.9	30

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2412.000000	18.7	30.0	PASS

802.11b Data Rate 2 Low Channel 2412MHz

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2412.000000	23.0	30.0	PASS

802.11 g Data Rate 6 Low Channel 2412 MHz

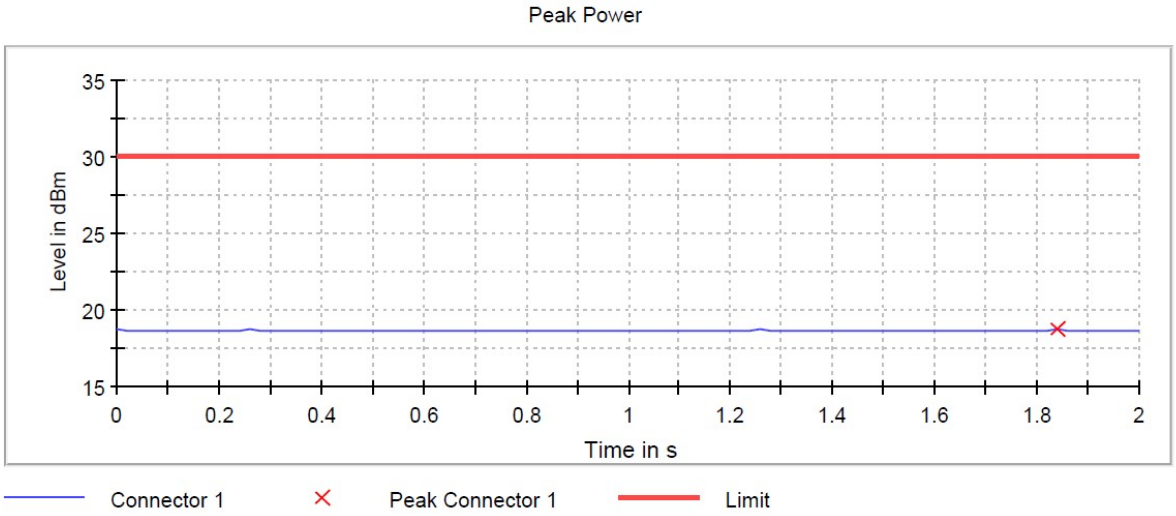
DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2412.000000	23.8	30.0	PASS

802.11 n Data Rate MCS 0 Low Channel 2412 MHz

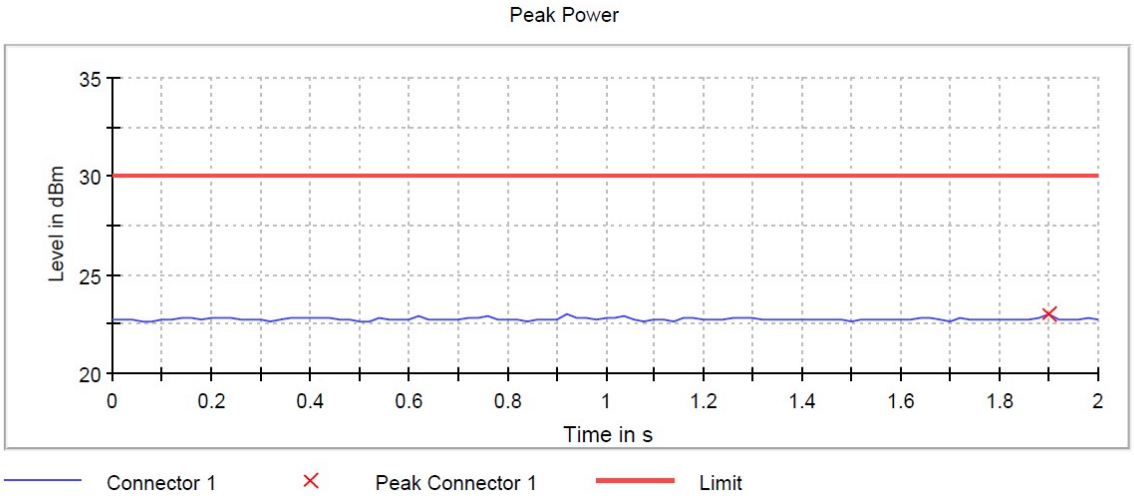
Analyzer Settings

Setting	Instrument Value	Target Value
Center Frequency	2.41200 GHz	2.41200 GHz
Span	ZeroSpan	ZeroSpan
RBW	20.000 MHz	>= 8.400 MHz
VBW	28.000 MHz	>= 30.000 MHz
SweepPoints	101	~ 101
Sweeptime	2.000 s	2.000 s
Reference Level	30.000 dBm	30.000 dBm
Attenuation	50.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	10	10
Filter	Channel	Channel
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off

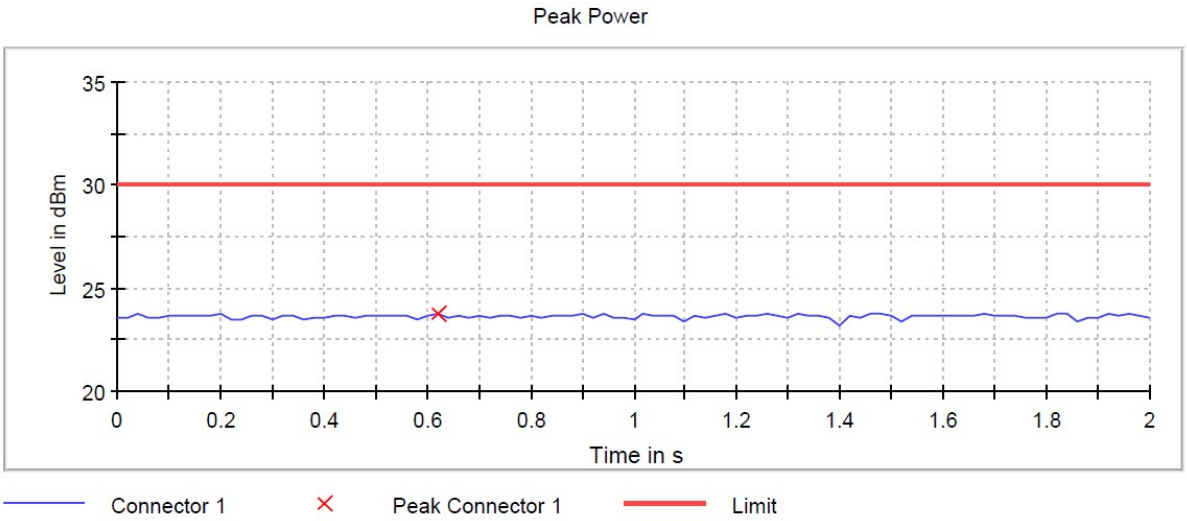
Plots



802.11b Data Rate 2 Low Channel 2412 MHz



802.11g Data Rate 48 Low Channel 2412 MHz



802.11n Data Rate MCS 2 Low Channel 2412 MHz

Test Equipment Used

Rev. 7/5/2022

Spectrum Analyzers / Receivers /Preselectors	Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
FSV40 Spectrum Analyzer	10Hz-40GHz	FSV40	ROHDE & SCHWARZ	101551	2200	I	10/26/2022	10/26/2021
Signal Generators/Comparaison Noise Emitter	**Range**	**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**	**Calibrated on**
SMBV100A Vector Signal Generator	9KHz-6GHz	SMBV100A	ROHDE & SCHWARZ	261919	2201	I	10/26/2022	10/26/2021
SMB100A Signal Generator	100kHz-40GHz	SMB100A	ROHDE & SCHWARZ	179884	2557	I	10/26/2022	10/26/2021
OSP-B157W8		OSP-B157W8	ROHDE & SCHWARZ	100955	2558	I	8/26/2022	8/26/2021
Meteorological Meters/Chambers		**MN**	**Mfr**	**SN**	**Asset**	**Cat**	**Calibration Due**	**Calibrated on**
Weather Clock (Pressure Only)		BA928	Oregon Scientific	C3166-1	831	I	11/23/2022	11/23/2020
Asset #2657		1235C97	Control Company	200435369	2657	I	7/23/2022	7/23/2020
Cables	**Range**		**Mfr**			**Cat**	**Calibration Due**	**Calibrated on**
Asset #2595	9KHz-40GHz		Carlisle			II	1/21/2023	1/21/2022

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

Band Edge Measurements

Test according to FCC title 47 part 15 §15.247(d), KDB 558074 D01 DTS Meas Guidance v05r02 8.7 and ANSI C63.10-2013 section 11.11.3
Measurement uncertainty calculated in accordance with ETSI TR 100 028-1.
Expanded Uncertainty (K=2) < 0.8 dB

Test according to CFR Title 47 FCC Part 15.247(d), ISED Canada RSS-247 Issue 2, ISED Canada RSS-Gen Issue 5, FCC KDB 558074 D01 15.247 Measurement Guidance v05 and ANSI C63.10-2013 section 11.12

LIMITS

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

The worst case data rate for each mode was determined by the data rate with the widest bandwidth per ANSI C63.10 section 5.6.2.2

Worst Case Band edge was determined by the Channels with the widest 99% Bandwidth

Restricted Band Edge settings
RBW-1MHz
VBW 3MHz
Sweep Type: Auto
Detector: Peak
Trace: Max Hold

MEASUREMENTS / RESULTS

Non-Restricted Band Edges

Data Table

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2397.975000	-26.2	11.0	-15.3	PASS
2398.025000	-26.7	11.5	-15.3	PASS
2398.325000	-27.1	11.8	-15.3	PASS
2398.475000	-27.1	11.8	-15.3	PASS
2397.925000	-27.1	11.9	-15.3	PASS
2398.275000	-27.2	11.9	-15.3	PASS
2398.225000	-27.2	12.0	-15.3	PASS
2398.425000	-27.3	12.1	-15.3	PASS
2396.925000	-27.5	12.3	-15.3	PASS
2396.975000	-27.6	12.3	-15.3	PASS
2397.475000	-27.8	12.6	-15.3	PASS
2398.175000	-27.8	12.6	-15.3	PASS
2398.125000	-27.9	12.6	-15.3	PASS
2397.025000	-28.0	12.7	-15.3	PASS
2398.975000	-28.1	12.8	-15.3	PASS

Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	113.672 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	13 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.10 dB	0.50 dB

802.11 b Low Channel Data Rate 1

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2493.225000	-34.7	18.4	-16.3	PASS
2493.175000	-35.3	19.0	-16.3	PASS
2493.275000	-35.3	19.0	-16.3	PASS
2495.325000	-35.4	19.1	-16.3	PASS
2495.375000	-35.4	19.1	-16.3	PASS
2483.675000	-35.6	19.3	-16.3	PASS
2486.825000	-35.6	19.3	-16.3	PASS
2484.075000	-35.7	19.4	-16.3	PASS
2484.025000	-35.7	19.4	-16.3	PASS
2483.975000	-35.7	19.4	-16.3	PASS
2486.775000	-35.7	19.4	-16.3	PASS
2483.525000	-35.9	19.6	-16.3	PASS
2484.475000	-36.0	19.7	-16.3	PASS
2486.025000	-36.0	19.7	-16.3	PASS
2494.775000	-36.0	19.7	-16.3	PASS

Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	5 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.37 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.48350 GHz	2.48350 GHz
Stop Frequency	2.50000 GHz	2.50000 GHz
Span	16.500 MHz	16.500 MHz

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	330	~ 330
Sweeptime	18.945 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

802.11 b High Channel Data Rate 1

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2396.025000	-25.0	6.1	-18.9	PASS
2396.075000	-25.1	6.2	-18.9	PASS
2399.825000	-25.4	6.6	-18.9	PASS
2399.725000	-25.7	6.8	-18.9	PASS
2395.975000	-25.8	6.9	-18.9	PASS
2399.875000	-25.8	7.0	-18.9	PASS
2399.625000	-25.9	7.0	-18.9	PASS
2399.925000	-26.1	7.3	-18.9	PASS
2399.775000	-26.1	7.3	-18.9	PASS
2399.675000	-26.1	7.3	-18.9	PASS
2399.475000	-26.2	7.4	-18.9	PASS
2399.425000	-26.3	7.4	-18.9	PASS
2397.875000	-26.3	7.5	-18.9	PASS
2398.175000	-26.4	7.5	-18.9	PASS
2397.925000	-26.4	7.6	-18.9	PASS

Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	113.672 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	12 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	14 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.22 dB	0.50 dB

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Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2483.525000	-31.4	12.4	-19.0	PASS
2483.575000	-32.7	13.7	-19.0	PASS
2483.775000	-33.3	14.3	-19.0	PASS
2483.725000	-33.4	14.4	-19.0	PASS
2484.075000	-34.3	15.3	-19.0	PASS
2484.125000	-34.5	15.4	-19.0	PASS
2483.625000	-34.7	15.7	-19.0	PASS
2484.825000	-34.8	15.7	-19.0	PASS
2484.775000	-34.8	15.7	-19.0	PASS
2483.825000	-34.9	15.8	-19.0	PASS
2483.875000	-35.0	15.9	-19.0	PASS
2484.175000	-35.0	15.9	-19.0	PASS
2484.725000	-35.0	16.0	-19.0	PASS
2485.525000	-35.1	16.0	-19.0	PASS
2485.475000	-35.1	16.0	-19.0	PASS

Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	15 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.38 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.48350 GHz	2.48350 GHz
Stop Frequency	2.50000 GHz	2.50000 GHz
Span	16.500 MHz	16.500 MHz

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	330	~ 330
Sweeptime	18.945 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

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Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2399.175000	-27.1	7.3	-19.9	PASS
2399.125000	-27.2	7.3	-19.9	PASS
2399.975000	-27.4	7.6	-19.9	PASS
2399.225000	-27.9	8.1	-19.9	PASS
2399.075000	-28.6	8.7	-19.9	PASS
2399.925000	-28.9	9.1	-19.9	PASS
2399.275000	-29.3	9.4	-19.9	PASS
2399.525000	-29.6	9.8	-19.9	PASS
2398.925000	-29.7	9.8	-19.9	PASS
2397.625000	-29.7	9.9	-19.9	PASS
2398.875000	-29.8	9.9	-19.9	PASS
2397.575000	-29.8	10.0	-19.9	PASS
2397.525000	-29.9	10.0	-19.9	PASS
2397.675000	-30.1	10.2	-19.9	PASS
2399.025000	-30.1	10.2	-19.9	PASS

Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	113.672 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	33 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.22 dB	0.50 dB

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