

Shenzhen Jingwah Information Technology Co., Ltd

Application
For
Certification

FCC ID: RBD-M710GZ

Tablet PC

Model: M710GZ
Additional Model: ST7, ST7-D

2.4GHz WiFi Transceiver

Report No.: 150717001SZN-001

We hereby certify that the sample of the above item is considered to comply with the requirements of FCC Part 15, Subpart C for Intentional Radiator, mention 47 CFR [10-1-13]

Prepared and Checked by:

Approved by:

Sign on file

Robert Li
Project Engineer

Andy Yan
Senior Project Engineer
Date: August 12, 2015

- The test results reported in this test report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample may be said to have been obtained.
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TRF no.: FCC 15C_Tx_b

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INTERTEK TESTING SERVICES

MEASUREMENT/TECHNICAL REPORT

Tablet PC

Model: M710GZ

Additional Model: ST7, ST7-D

FCC ID: RBD-M710GZ

This report concerns (check one) Original Grant ☒ Class II Change ☐

Equipment Type: DTS - Part 15 Digital Transmission Systems (WiFi transmitter portion)

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes ☐ No ☒

If yes, defer until :
date

Company Name agrees to notify the Commission by:
date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? Yes ☐ No ☒

If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [10-01-13] Edition] provision.

Report prepared by:

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List of attached file

Exhibit type	File Description	Filename
Test Report	Test Report	report.pdf
Test Setup Photo	Radiated Emission	radiated photos.pdf
Test Setup Photo	Conducted Emission	conducted photos.pdf
External Photo	External Photo	external photos.pdf
Internal Photo	Internal Photo	internal photos.pdf
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
Operation Description	Technical Description	descri.pdf
ID Label/Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf
Cover Letter	Confidentiality Letter	request.pdf
Cover Letter	Letter of Agency	agency.pdf

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EXHIBIT 1

SUMMARY OF TEST RESULTS

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1.0 Summary of Test results

Tablet PC

Model: M710GZ

Additional Model: ST7, ST7-D

FCC ID: RBD-M710GZ

TEST	REFERENCE	RESULTS
Max. Output power	15.247(b)(3)	Pass
6 dB Bandwidth	15.247(a)(2)	Pass
Max. Power Density	15.247(e)	Pass
Out of Band Antenna Conducted Emission	15.247(d)	Pass
Radiated Emission in Restricted Bands	15.247(d)	Pass
AC Conducted Emission	15.207	Pass
Antenna Requirement	15.203	Pass (See Notes)

Notes: The EUT uses an Integral Antenna which in accordance to Section 15.203 is considered sufficient to comply with the provisions of this section.

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EXHIBIT 2

GENERAL DESCRIPTION

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2.0 General Description

2.1 Product Description

The Equipment Under Test (EUT) is a Tablet PC with WiFi function operating at 2412-2462MHz for 802.11b/g/n-HT20, 11 channels with 5MHz channel spacing and 2422-2452MHz for 802.11n-HT40, 9 channels with 5MHz channel spacing. The EUT can be powered by 3.7 VDC Li-ion rechargeable battery. For more detailed features description, please refer to the user's manual.

The Model: ST7, ST7-D are the same as the model M710GZ in hardware and electronic aspect. The difference is colour and silk-screen only.

Type of Modulation: BPSK, QPSK, 16QAM, 64QAM for OFDM. CCK, DQPSK, DBPSK for DSSS.

Antenna Type: Integral Antenna.

Antenna Gain: 2dBi

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

2.2 Related Submittal(s) Grants

This is an application for certification of:

DTS- Part 15 Digital Transmission Systems (WiFi transmitter portion), and other radio function as below

Bluetooth 4.0: refer to the report 150717001SZN-002

Bluetooth 3.0+EDR: refer to the report 150717001SZN-003

Other Digital function: refer to the report 150717001SZN-004

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2.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.10 (2013) and KDB 558074. Radiated emission measurement was performed in semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the “**Justification Section**” of this Application. All other measurements were made in accordance with the procedures in part 2 of CFR 47.

2.4 Test Facility

The Semi-Anechoic chamber and shield room used to collect the radiated data and conducted data are **Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch** and located at 6F, Block D, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China. This test facility and site measurement data have been fully placed on file with the FCC (Registration Number: 242492).

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EXHIBIT 3

SYSTEM TEST CONFIGURATION

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3.0 System Test Configuration

3.1 Justification

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables were manipulated to produce worst case emissions. The EUT was powered by The EUT was powered by a 3.7 VDC fully charged Li-ion rechargeable battery which was charged by USB Power Adapter with AC 120V, 60Hz input during the test. Only the worst case data was reported.

The signal is maximized through rotation and placement in the three orthogonal axes. The EUT was placed on the styrene turntable with 0.8m up to 1GHz and 1.5 m above 1GHz. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

The rear of unit shall be flushed with the rear of the table.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000 MHz. The resolution is 1 MHz or greater for frequencies above 1000 MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement were performed the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

3.2 EUT Exercising Software

The EUT exercise program (provided by client) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The worst case configuration is used in all specified testing.

The parameters of test software setting:

During the test, Channel and power controlling software provided by the applicant was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the application and is going to be fixed on the firmware of the end product.

Power Parameters of IEEE 802.11b/g/n

On 802.11b, g, n (20MHz, 40MHz) mode, only one antenna is used for transmission. We test all data rate and only the worst – case data is shown in the report.

3.3 Special Accessories

110cm shielded USB Cable was used during test.

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3.4 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

Uncertainty and Compliance – Unless the standard specifically states that measured values are to be extended by the measurement uncertainty in determining compliance, all compliance determinations are based on the actual measured value.

3.5 Equipment Modification

Any modifications installed previous to testing by Shenzhen Jingwah Information Technology Co., Ltd will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch.

3.6 Support Equipment List and Description

This product was tested in the following configuration:

Refer List:

Description	Manufacturer	Model No.
110cm shielded USB Cable	N/A	N/A
USB Power Adapter	Tp Link	JXAS0050500100VU Input: AC 100-240V; 50/60Hz Output: DC 5V; 1000mA
120cm, Un-Shielded Head Phone	N/A	N/A
TF Card	SanDisk	BE0934314559D

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EXHIBIT 4

MEASUREMENT RESULTS

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Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

4.0 Measurement Results

4.1 Maximum Conducted Output Power at Antenna Terminals, FCC Rules 15.247(b)(3):

The antenna power of the EUT was connected to the input of a broadband peak RF power meter. The power meter have a video bandwidth that is greater than DTS bandwidth and utilize a fast-responding diode detector. Power was read directly at the EUT antenna terminals with cable loss added.

For antennas with gains of 6 dBi or less, maximum allowed Transmitter output is 1 watt (+30 dBm).

IEEE 802.11b (Antenna Gain = 2dBi) (CCK, 1Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	21.72	148.59
Middle Channel: 2437	21.84	152.76
High Channel: 2462	21.96	157.04

IEEE 802.11g (Antenna Gain = 2dBi) (16QAM, 6Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	24.32	270.40
Middle Channel: 2437	24.72	296.48
High Channel: 2462	24.30	269.15

IEEE 802.11n-HT20 (Antenna Gain = 2dBi) (16QAM, 6.5Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	24.30	269.15
Middle Channel: 2437	24.32	270.40
High Channel: 2462	24.30	269.15

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IEEE 802.11n-HT40 (Antenna Gain = 2.0dBi) (64QAM, 13.5Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2422	24.05	254.10
Middle Channel: 2437	24.49	281.19
High Channel: 2452	24.11	257.63

Cable loss: 1.0 dB External Attenuation: 0 dB

Cable loss, external attenuation has been included in OFFSET function

EUT max output level = 24.72dBm

For RF Exposure, the information is saved with filename: SAR report. pdf.

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Applicant: Shenzhen Jingwah Information Technology Co., Ltd
Date of Test: July 28, 2015 ~July 29, 2015
Model: M710GZ

4.2 Minimum 6 dB RF Bandwidth, FCC Rule 15.247(a)(2):

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100 KHz according to FCC KDB 558074. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6dB bandwidth was determined from where the channel output spectrum intersected the display line.

Limit: The 6 dB Bandwidth is at least 500 kHz.

IEEE 802.11b (CCK, 1Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	9.609
2437	9.551
2462	9.551

IEEE 802.11g (16QAM, 6Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	15.282
2437	15.745
2462	15.340

IEEE 802.11n-HT20 (16QAM, 6.5Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	16.903
2437	17.077
2462	17.482

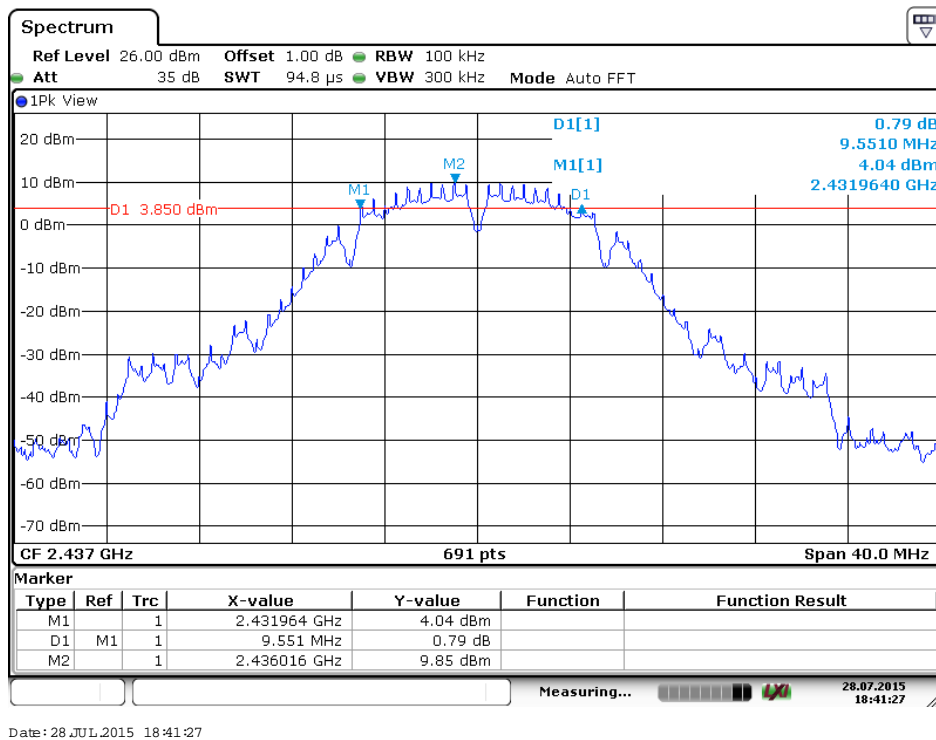
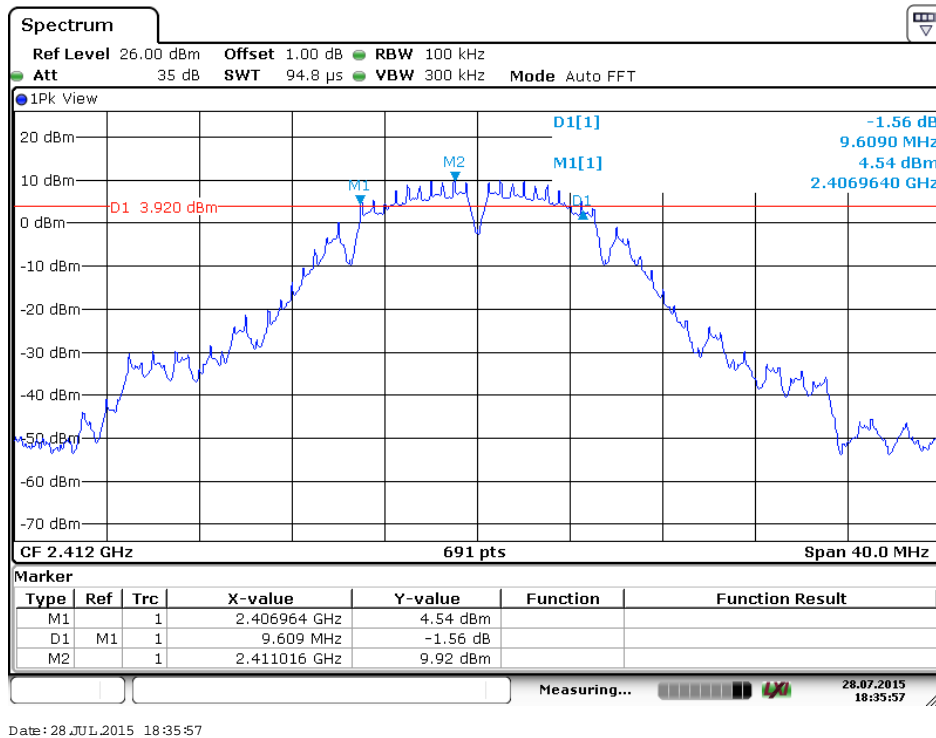
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IEEE 802.11n-HT40 (64QAM, 13.5Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2422	35.224
2437	35.195
2452	35.195

The test plots are attached as below.

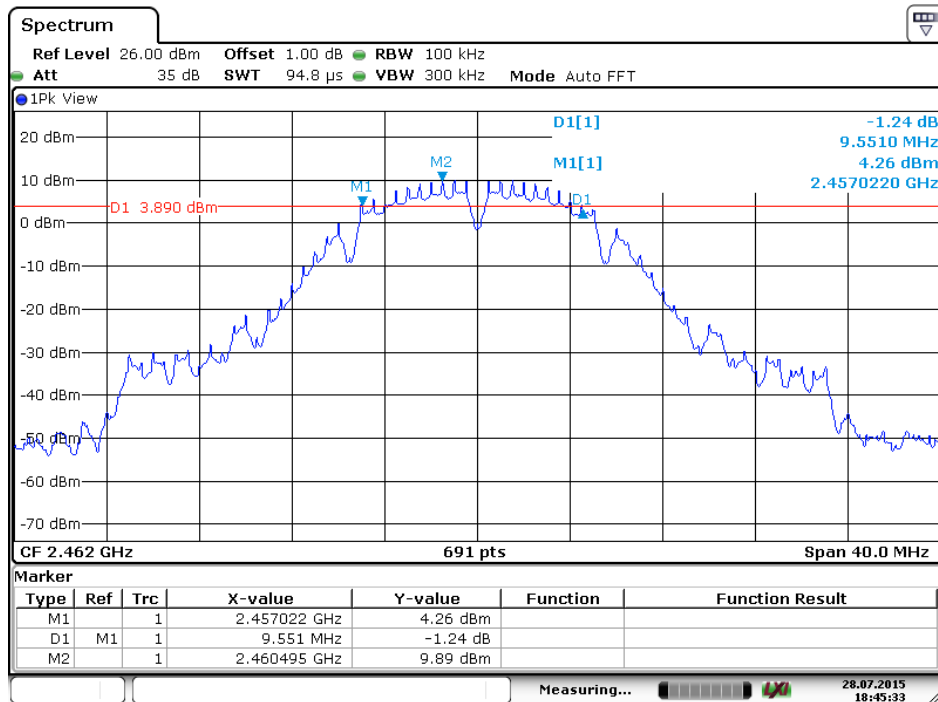
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802.11b



TRF no.: FCC 15C_TX_b
FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

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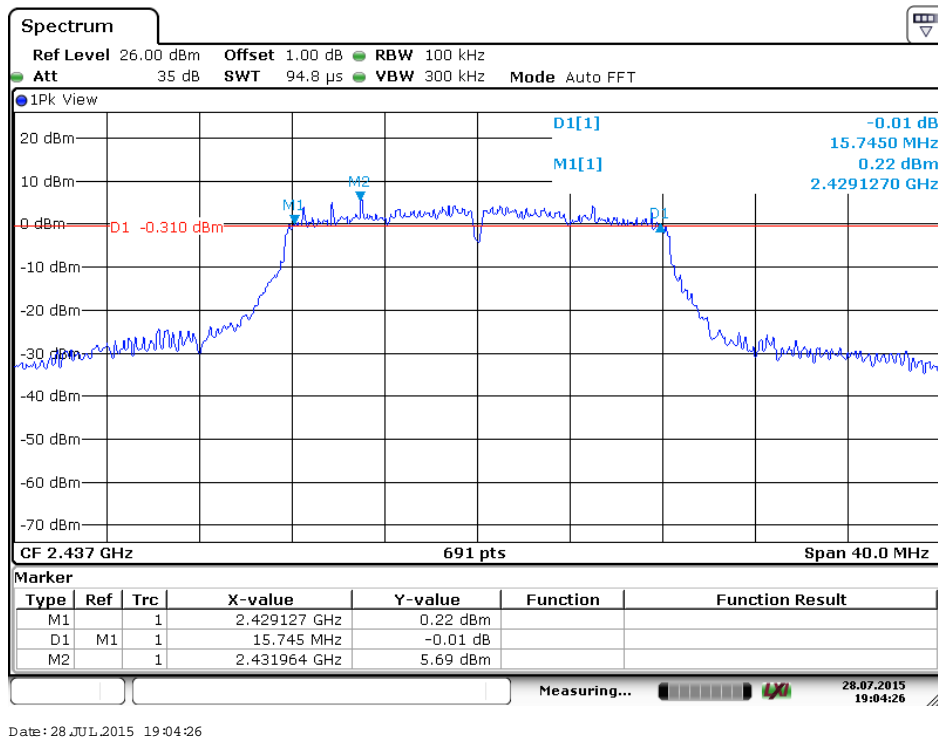
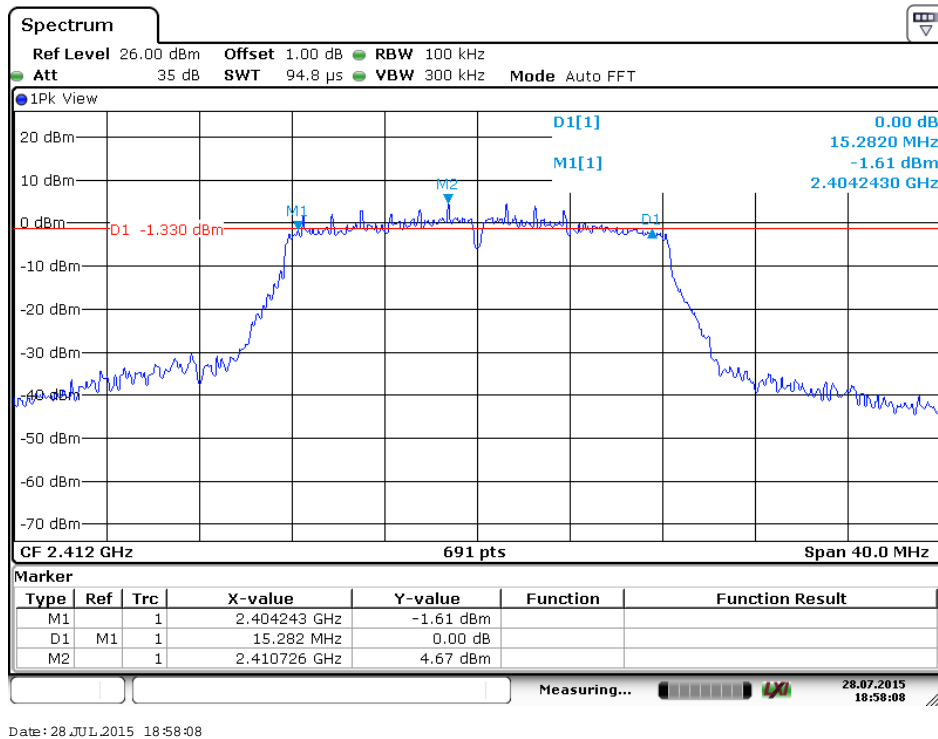


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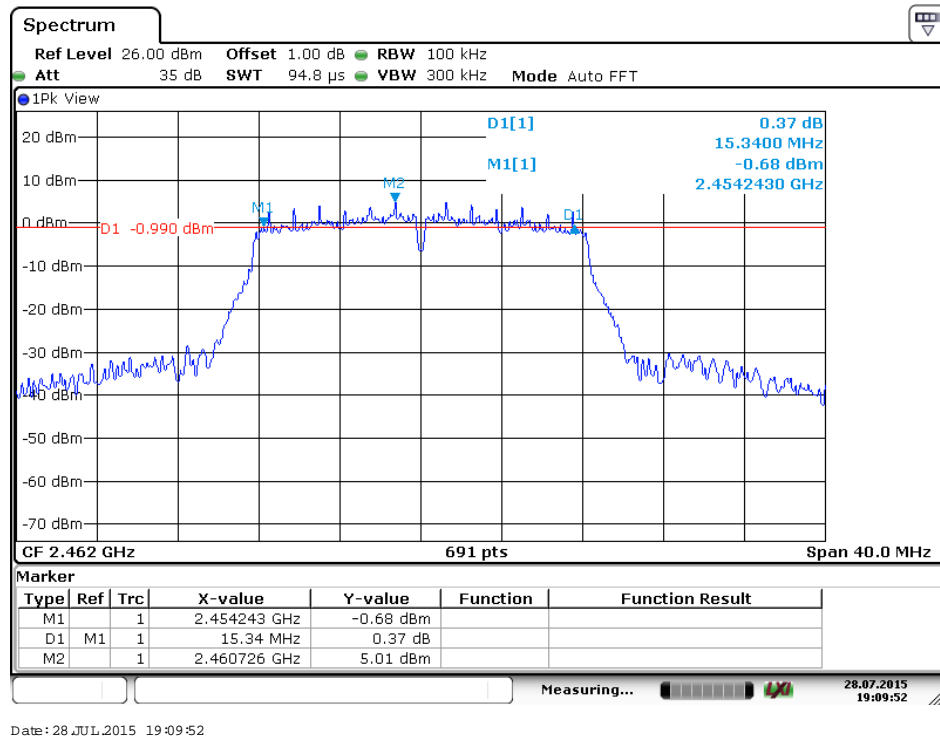
INTERTEK TESTING SERVICES

802.11g



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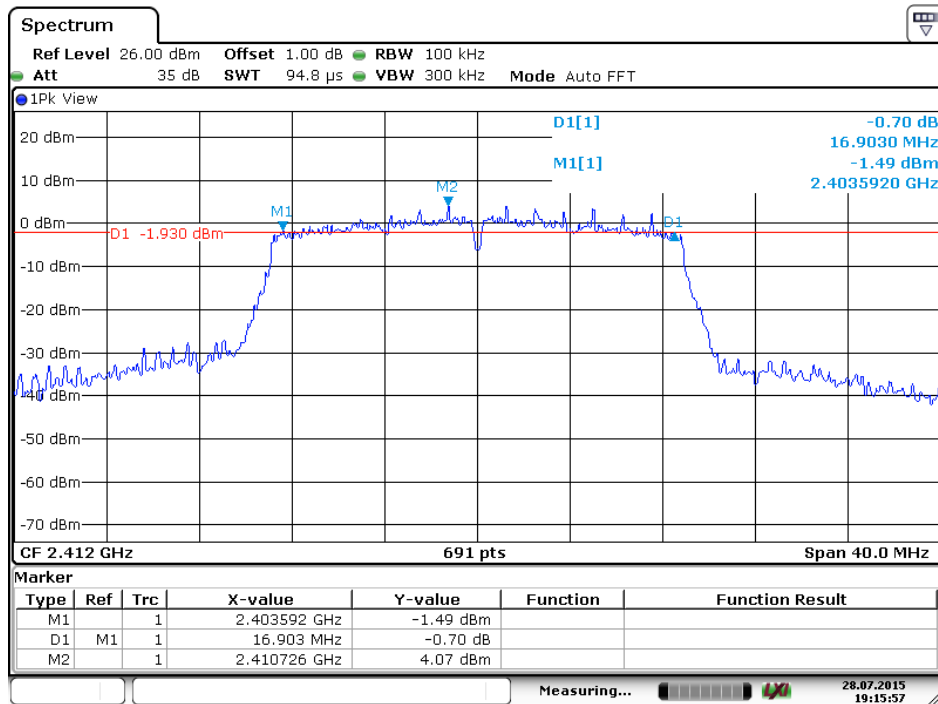
INTERTEK TESTING SERVICES



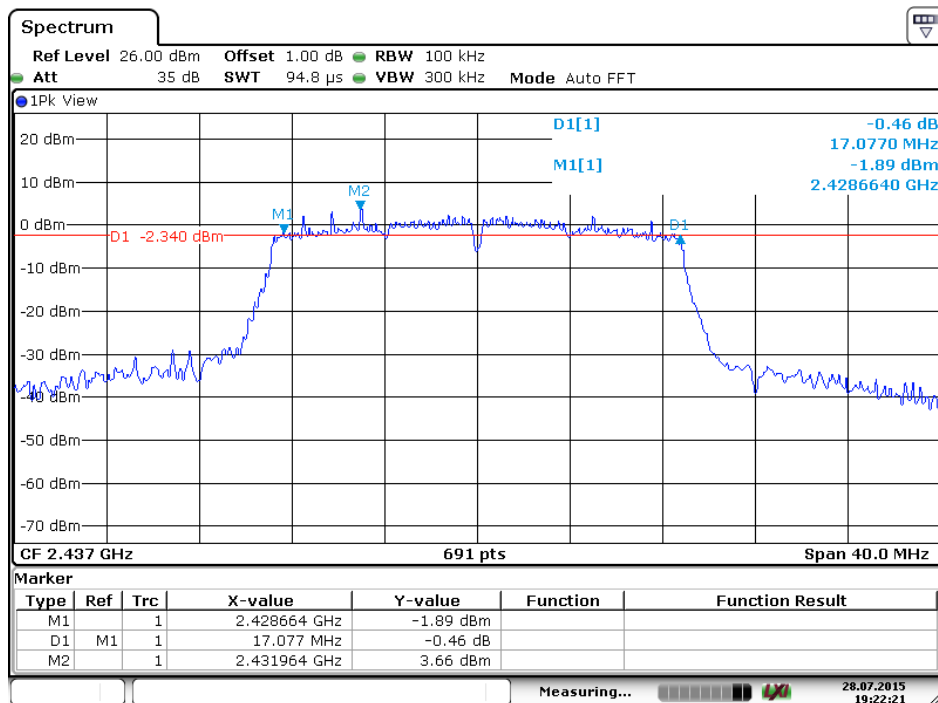
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802.11 n-HT20



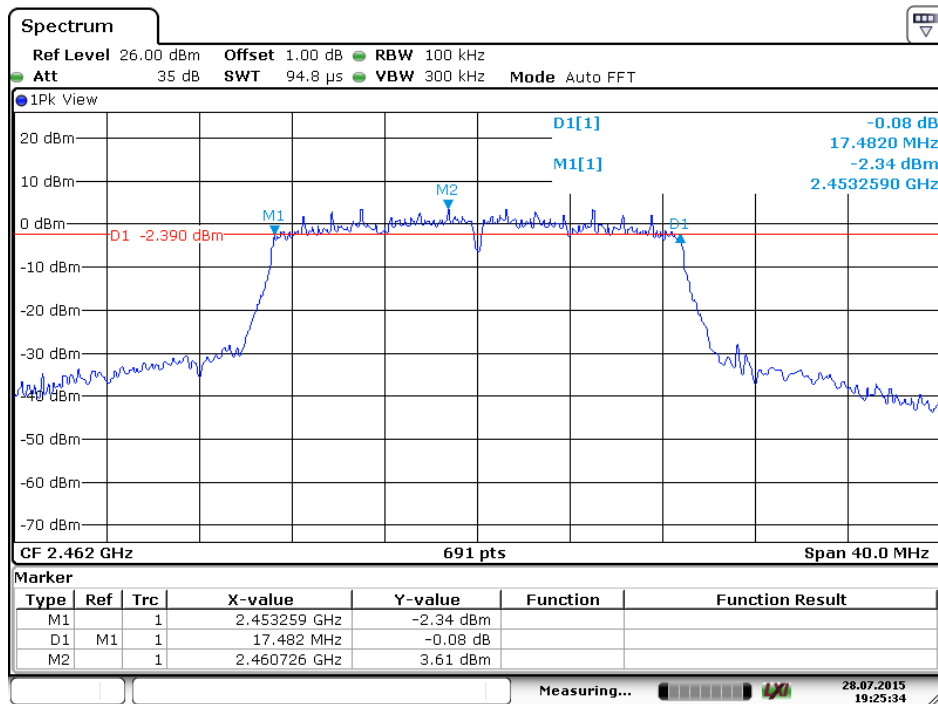
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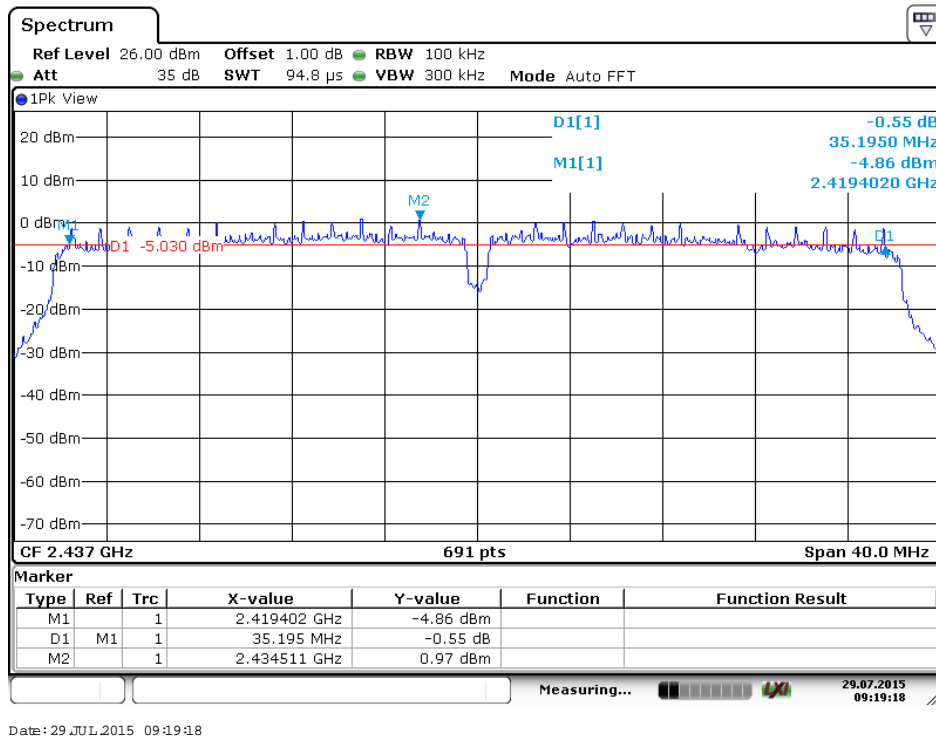
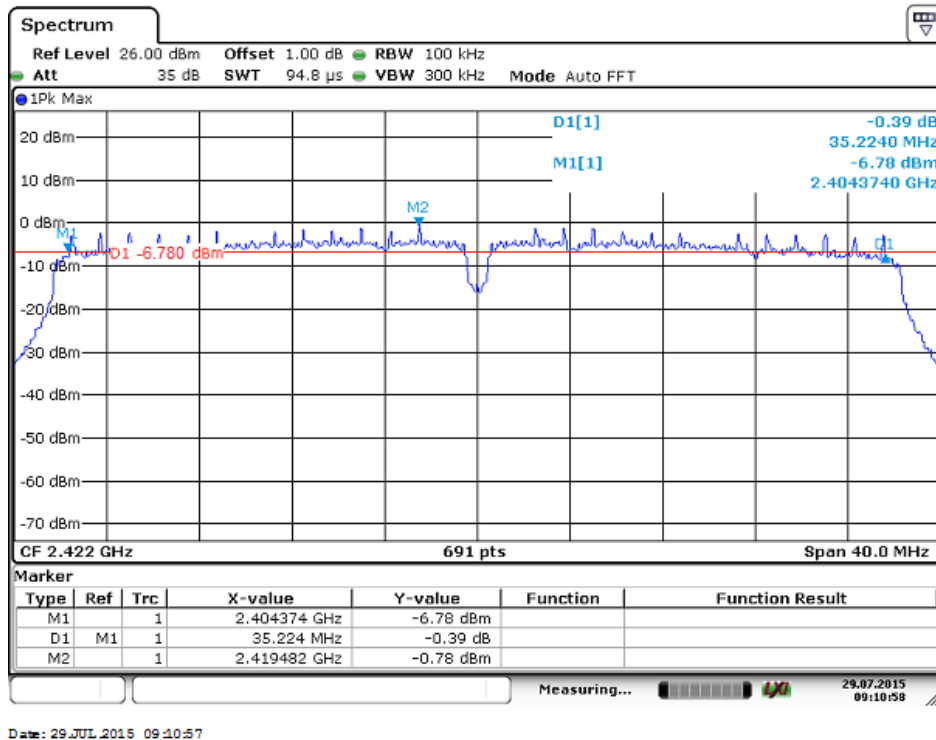


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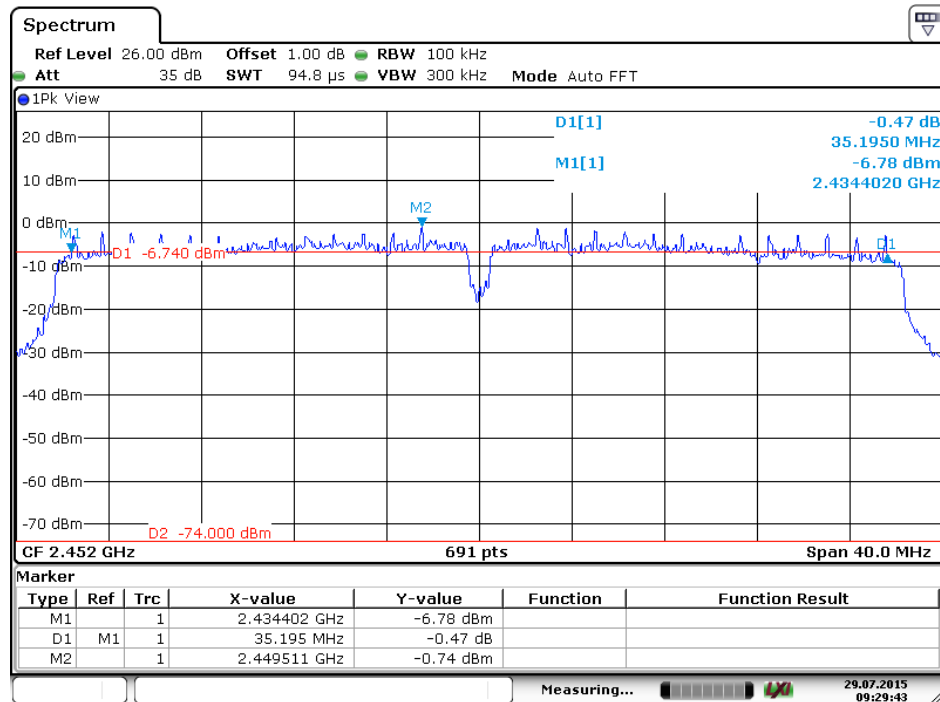
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802.11 n-HT40



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TRF no.: FCC 15C_TX_b
 FCC ID: RBD-M710GZ
 Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 28, 2015 ~ July 29, 2015

Model: M710GZ

4.3 Maximum Power Density Reading, FCC Rule 15.247(e):

The Measurement Procedure PKPSD was set according to the FCC KDB 558074.

Antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

Limit: The Power Density does not exceed 8dBm/3 kHz.

IEEE 802.11b (CCK, 1Mbps)	
Frequency (MHz)	Power Density with RBW 3KHz
2412	-0.67
2437	-1.04
2462	-3.84

IEEE 802.11g (16QAM, 6Mbps)	
Frequency (MHz)	Power Density with RBW 100KHz
2412	4.03
2437	6.76
2462	5.05

IEEE 802.11n-HT20 (16QAM, 6.5Mbps)	
Frequency (MHz)	Power Density with RBW 100KHz
2412	4.73
2437	4.52
2462	5.05

IEEE 802.11n-HT40 (64QAM, 13.5Mbps)	
Frequency (MHz)	Power Density with RBW 100KHz
2422	-0.94
2437	0.81
2452	-0.54

The test plots are attached as below.

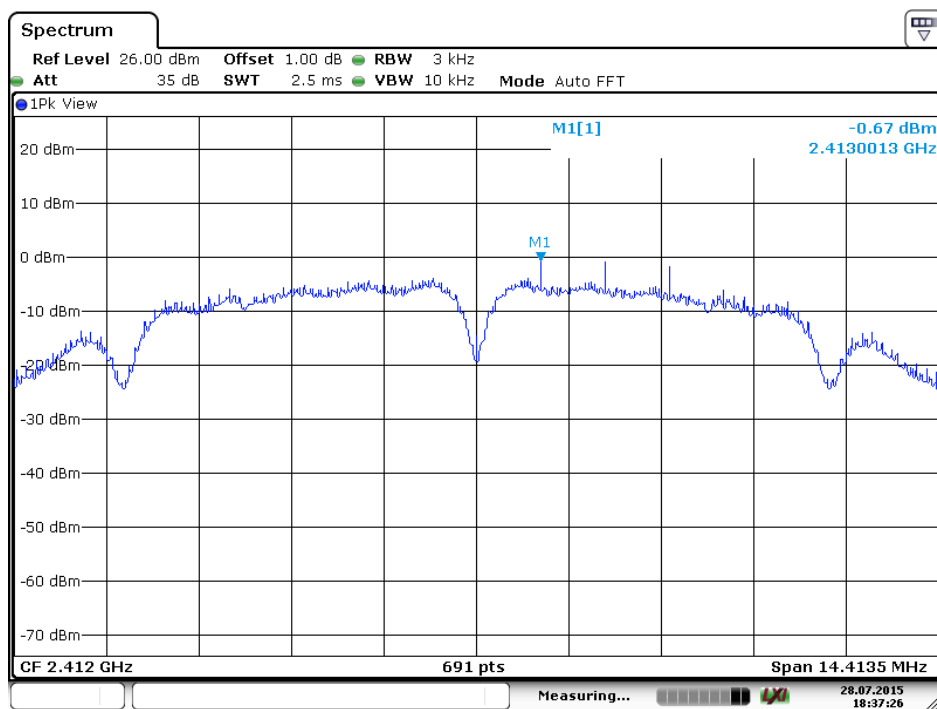
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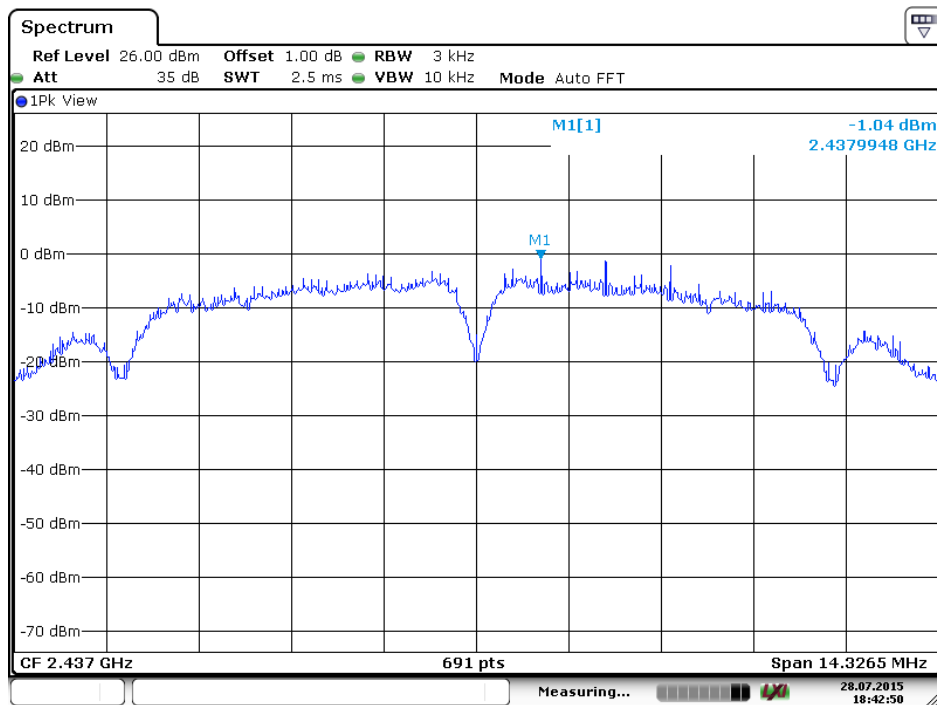
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INTERTEK TESTING SERVICES

802.11b



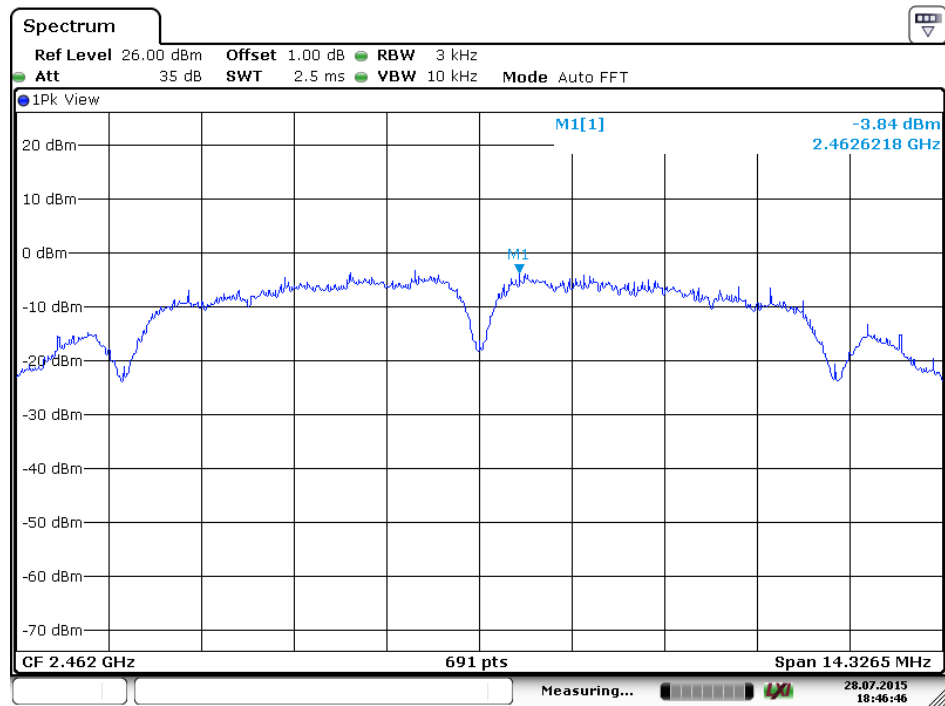
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INTERTEK TESTING SERVICES

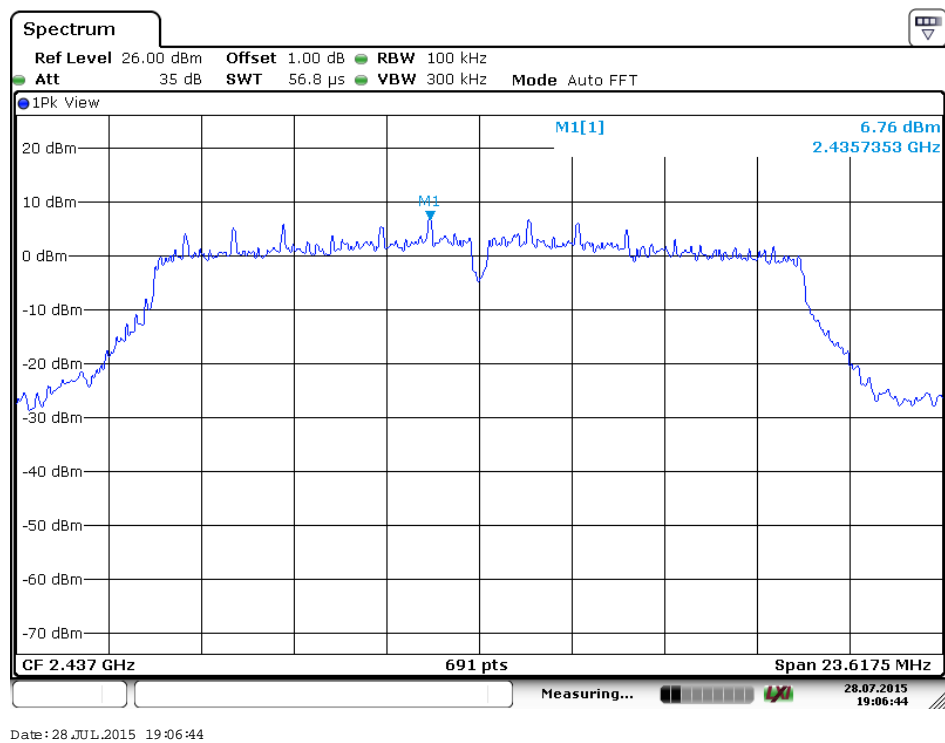
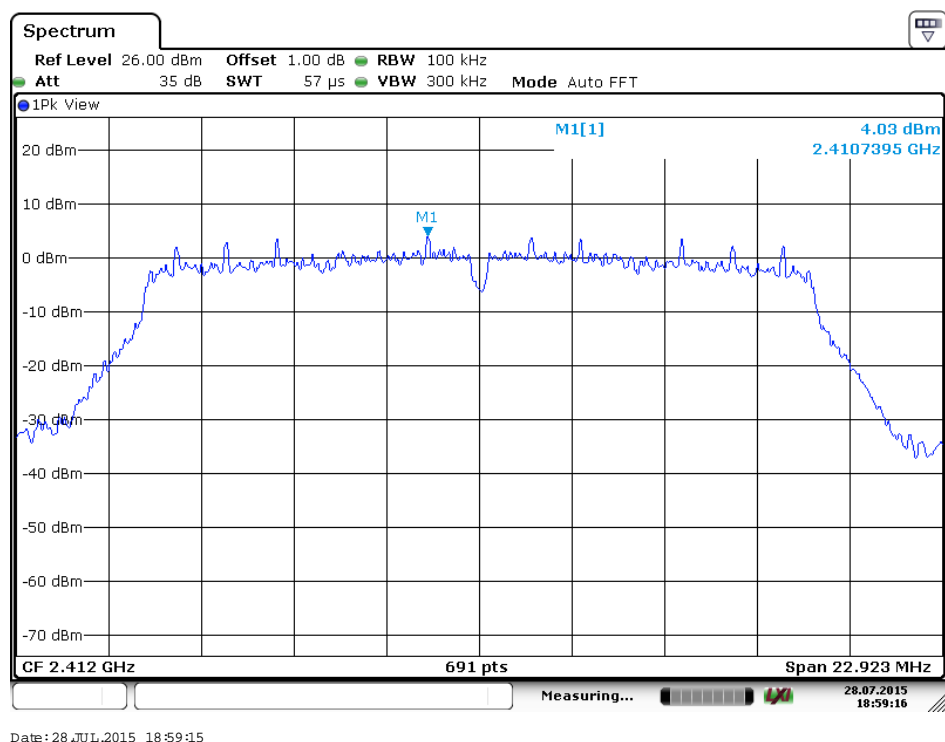


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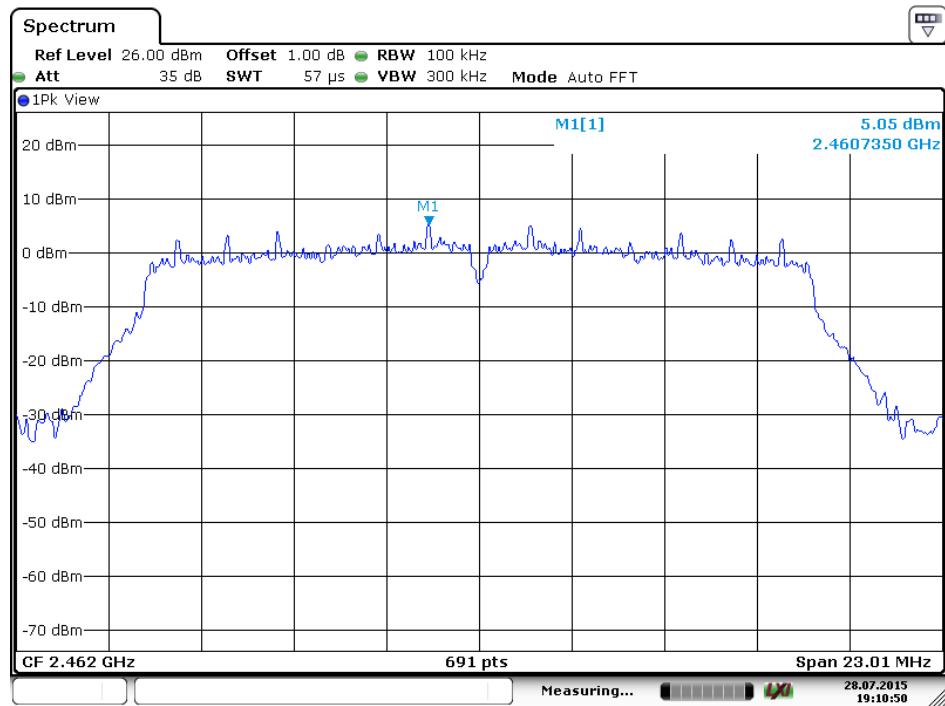
INTERTEK TESTING SERVICES

802.11g



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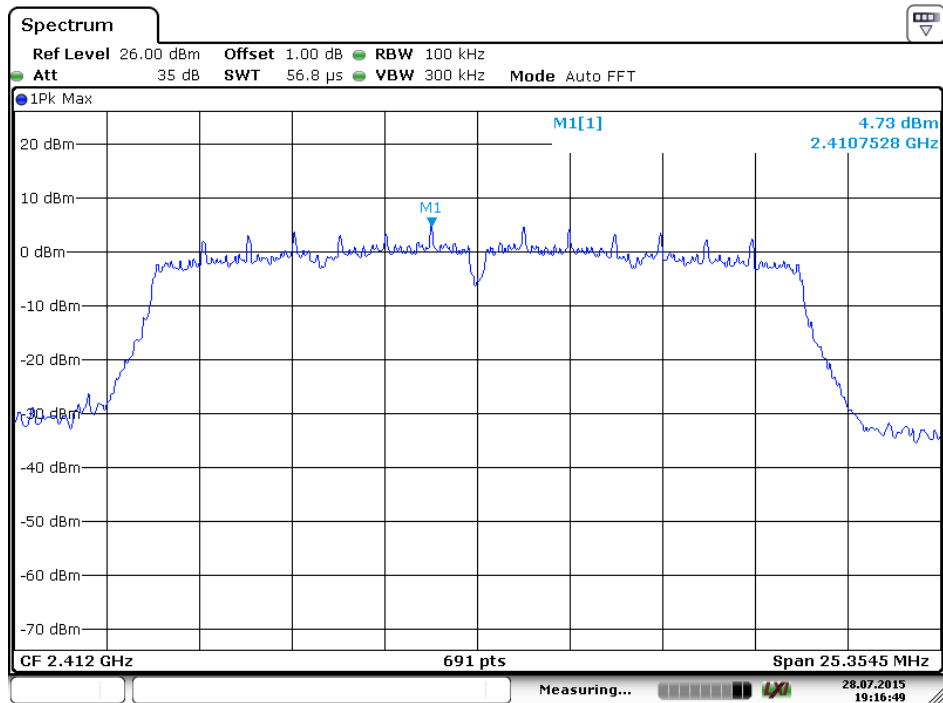


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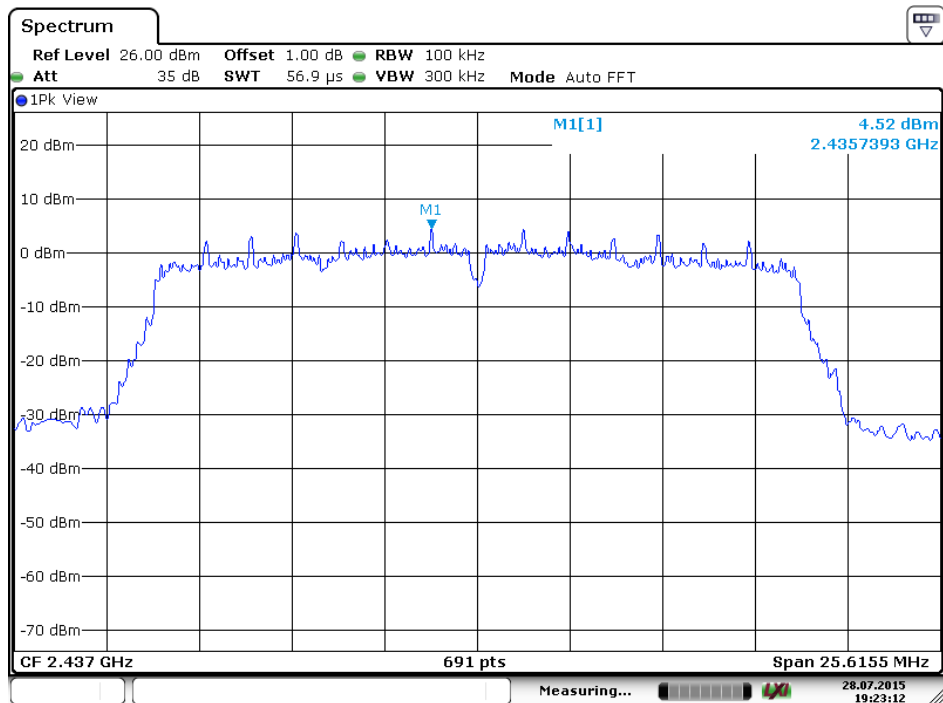
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802.11 n-HT20



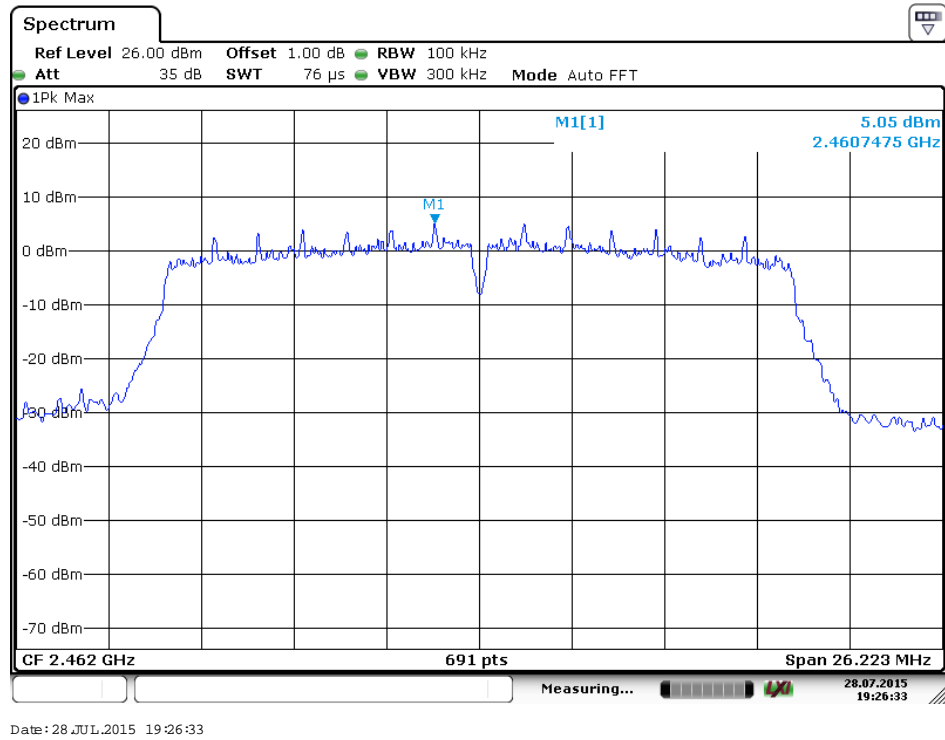
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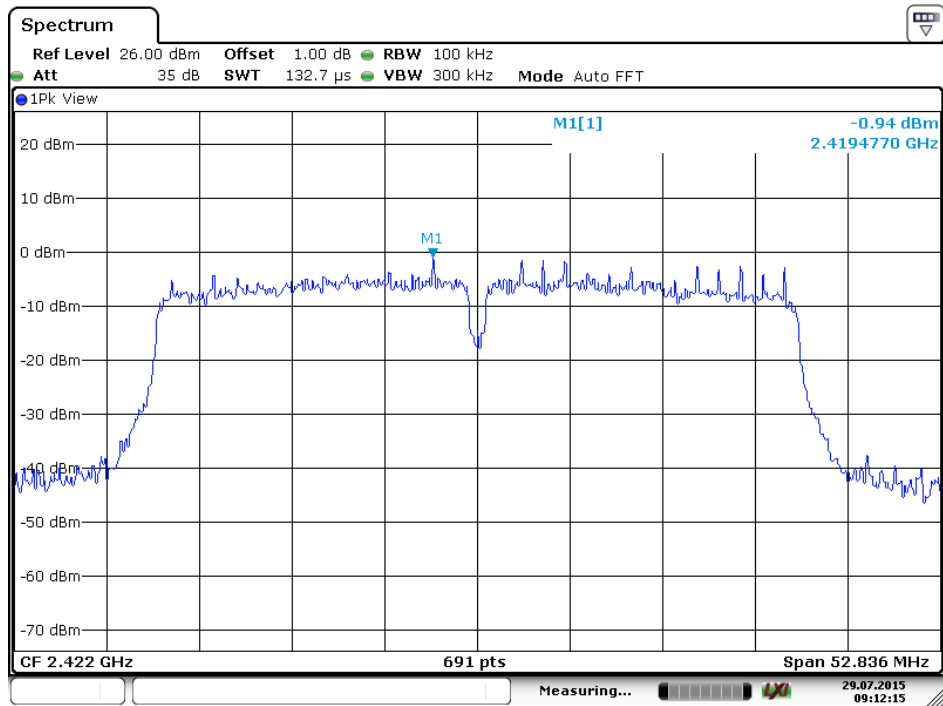
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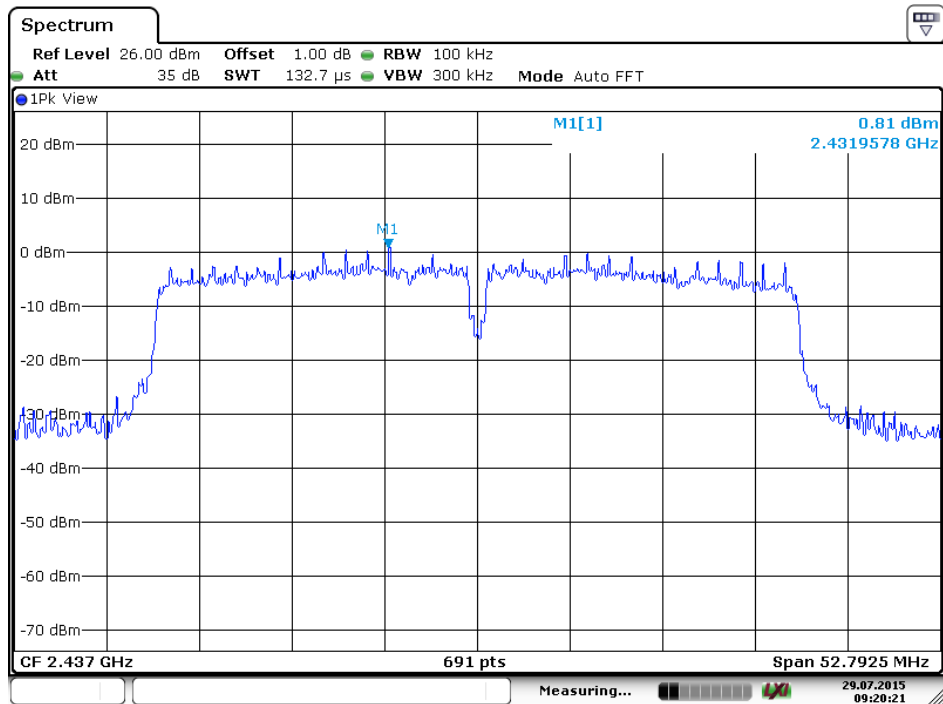
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FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

802.11 n-HT40



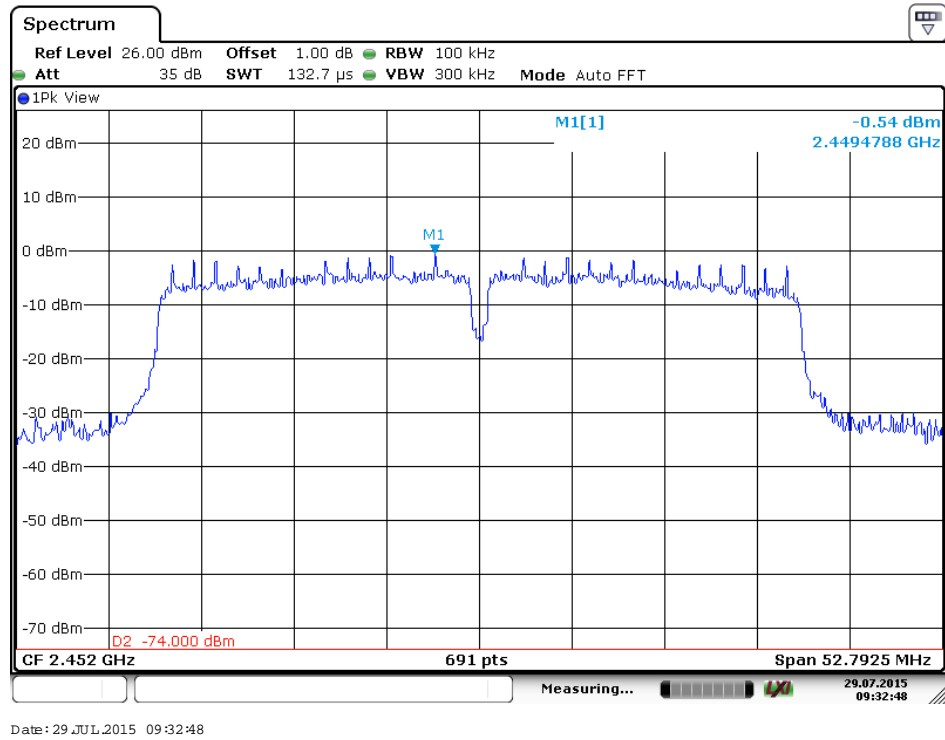
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INTERTEK TESTING SERVICES



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INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 28, 2015 ~July 29, 2015

Model: M710GZ

4.4 Out of Band Conducted Emissions, FCC Rule 15.247(d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. The Measurement Procedure was set according to the FCC KDB 558074.

All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the passband.

Refer to the attached test plots for out of band conducted emissions data with rate of 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n-HT20 and 13.5Mbps for 802.11n-HT40.

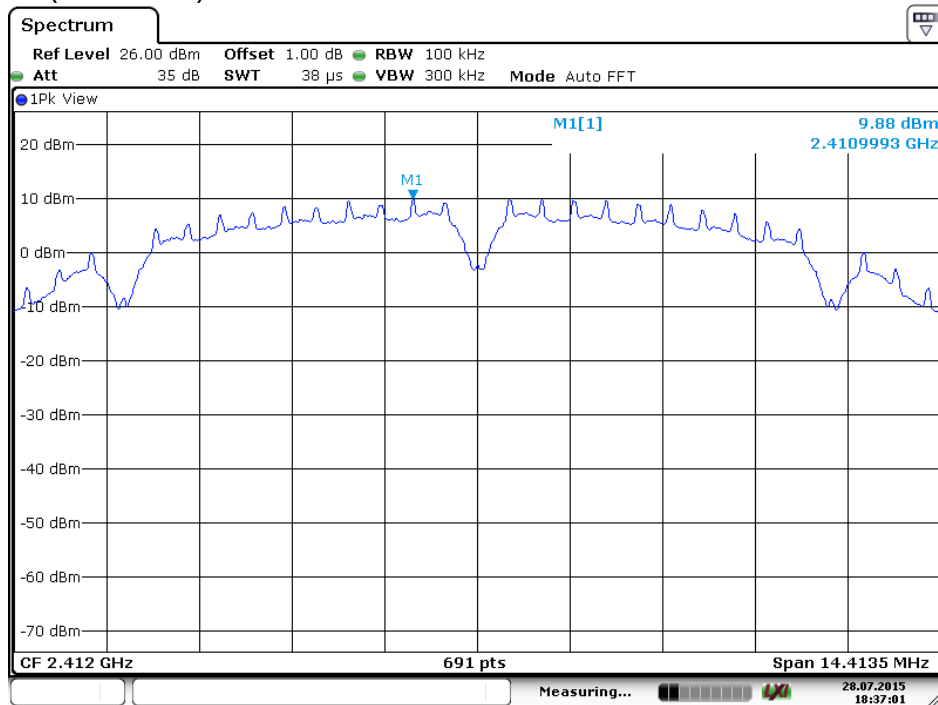
The test plots showed all spurious emission up to the tenth harmonic were measured and they were found to be at least 20 dB below the highest level of the desired power in the passband.

The test plots are attached as below.

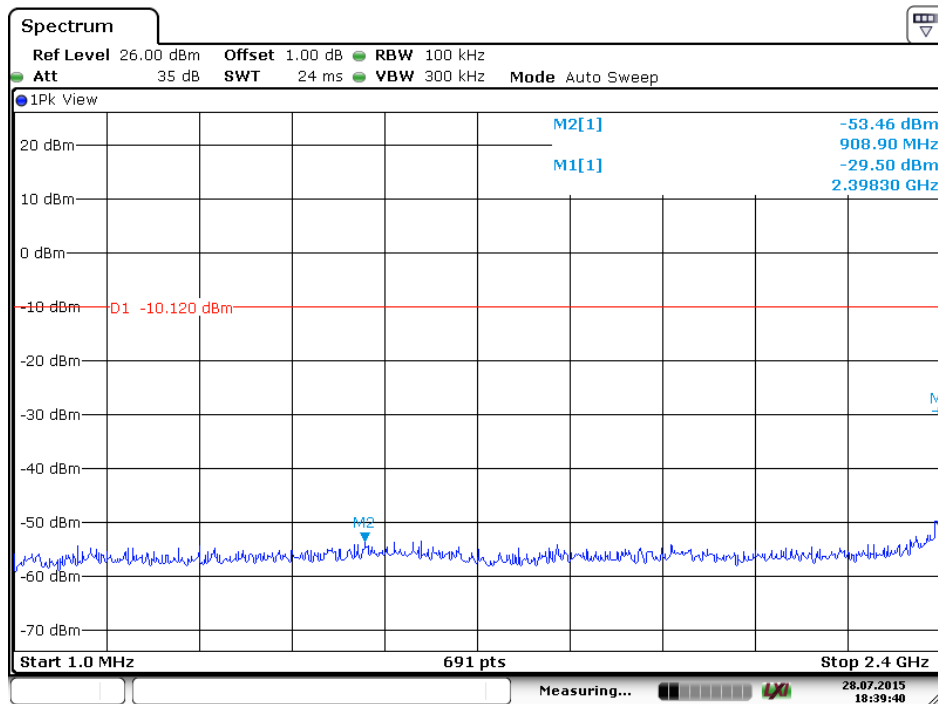
INTERTEK TESTING SERVICES

802.11b

Channel 01 (2412MHz) Reference Level: 9.88dBm



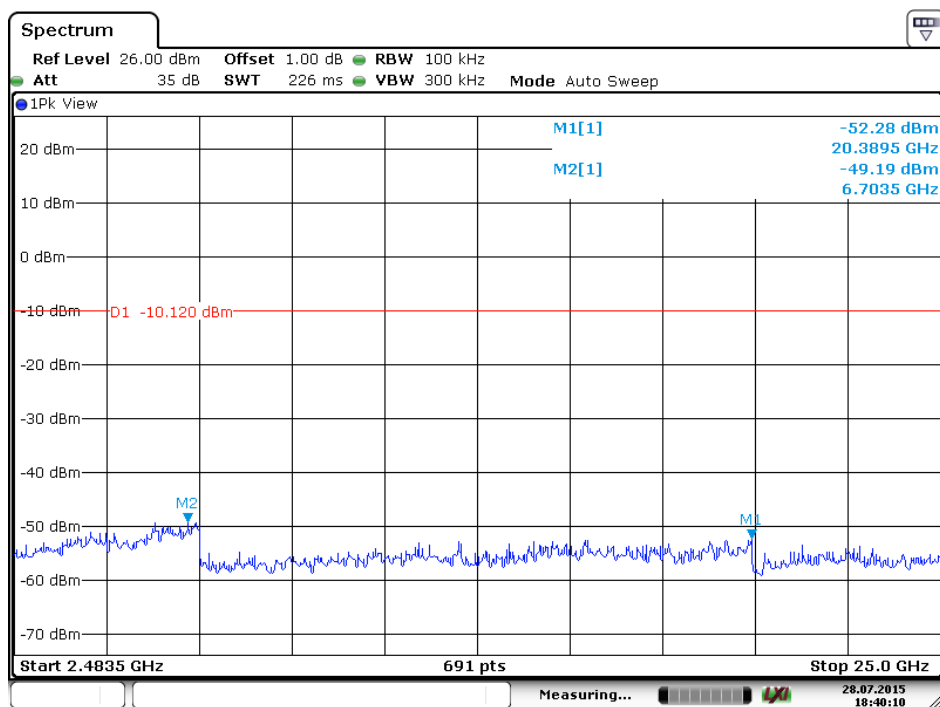
Date: 28 JUL 2015 18:37:02



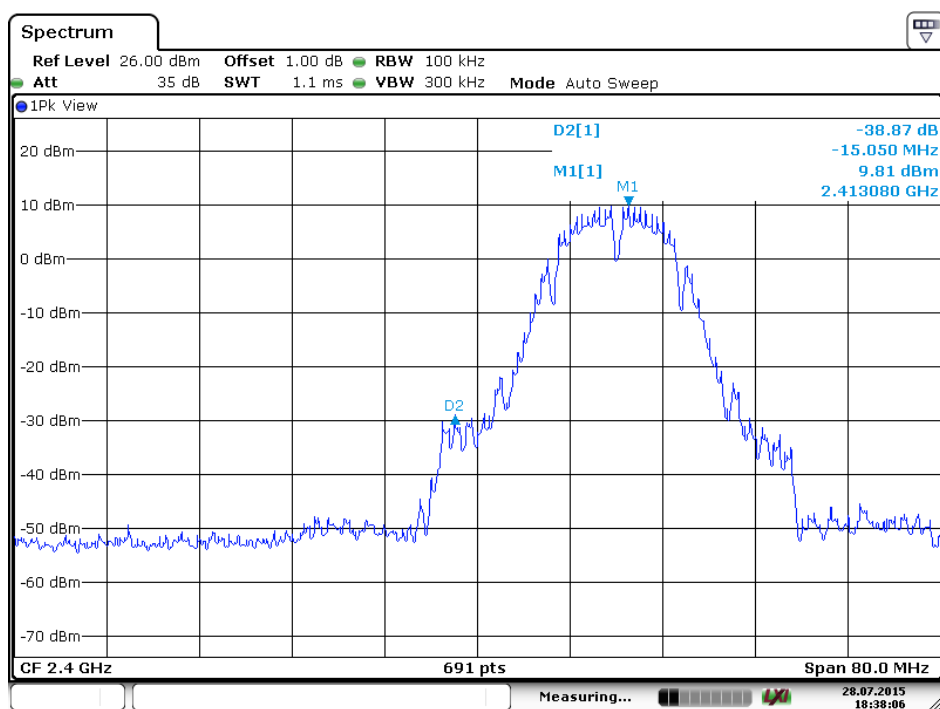
Date: 28 JUL 2015 18:39:40

TRF no.: FCC 15C_TX_b
FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES



Date: 28 JUL 2015 18:40:10

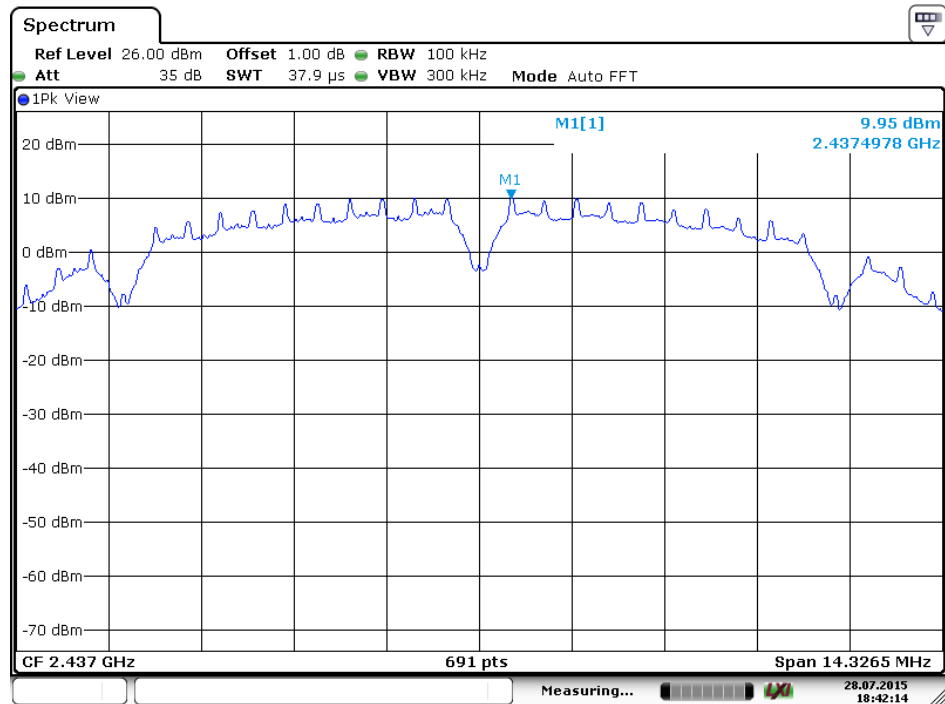


Date: 28 JUL 2015 18:38:06

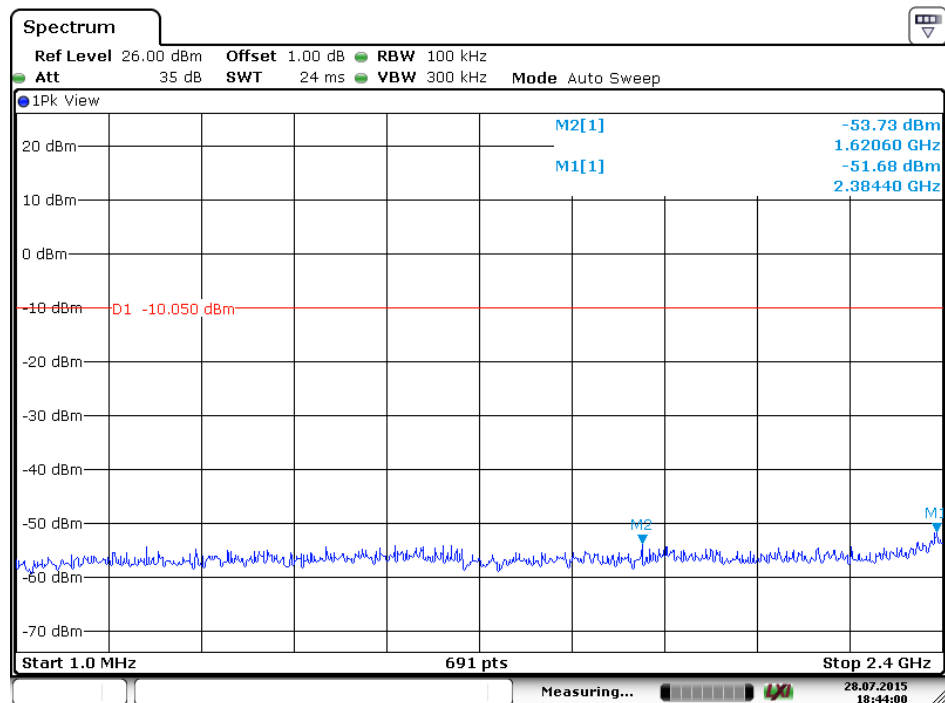
TRF no.: FCC 15C_TX_b
FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Channel 06 (2437MHz) Reference Level: 9.95dBm



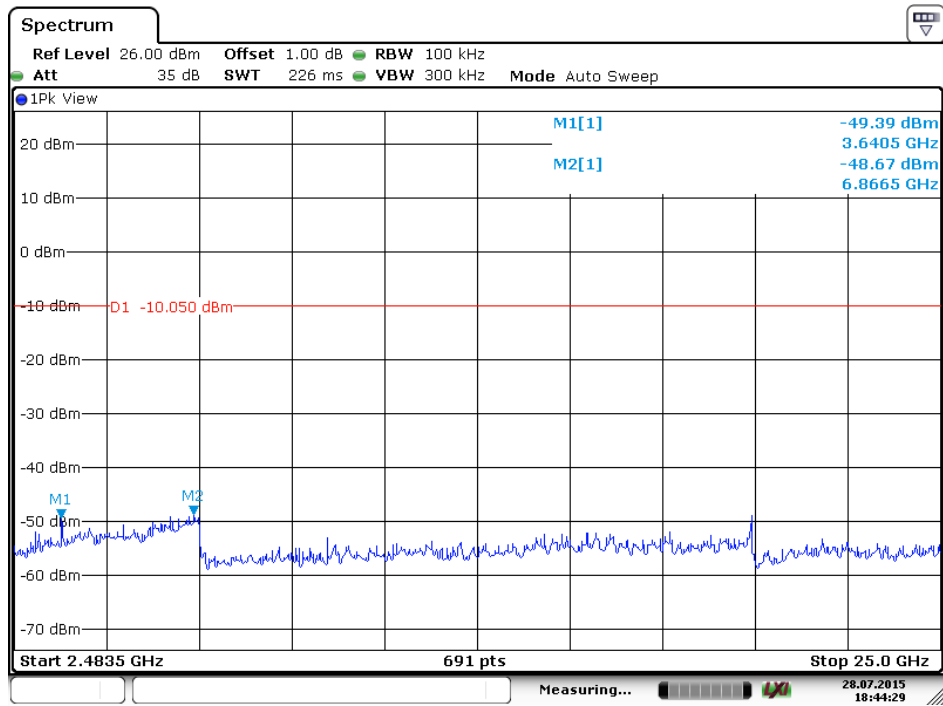
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Date: 28 JUL 2015 18:44:00

TRF no.: FCC 15C_TX_b
 FCC ID: RBD-M710GZ
 Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

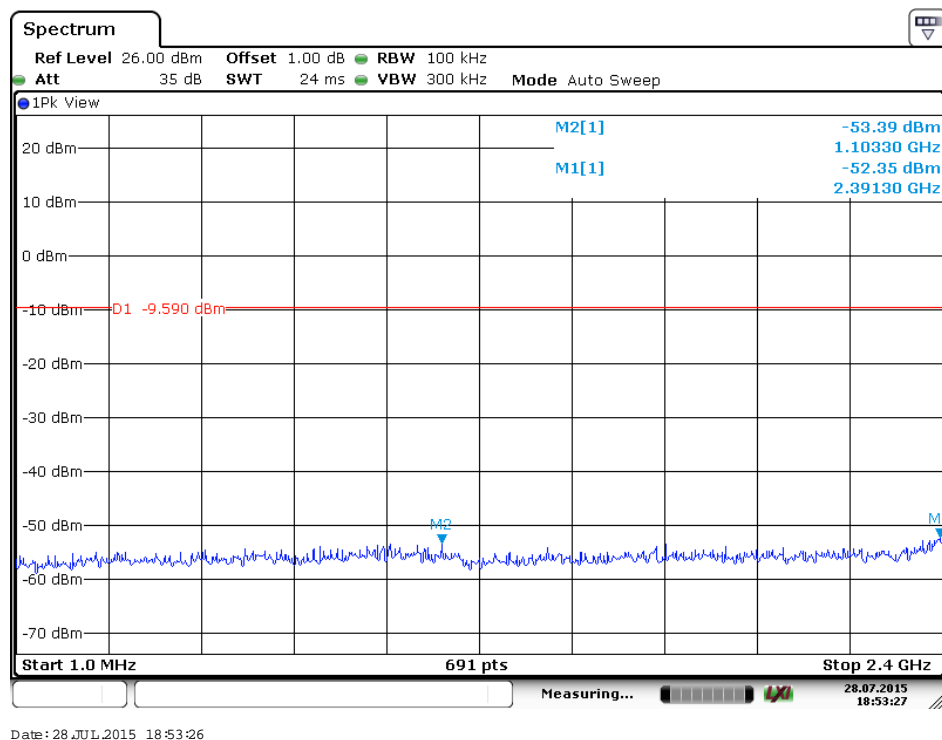
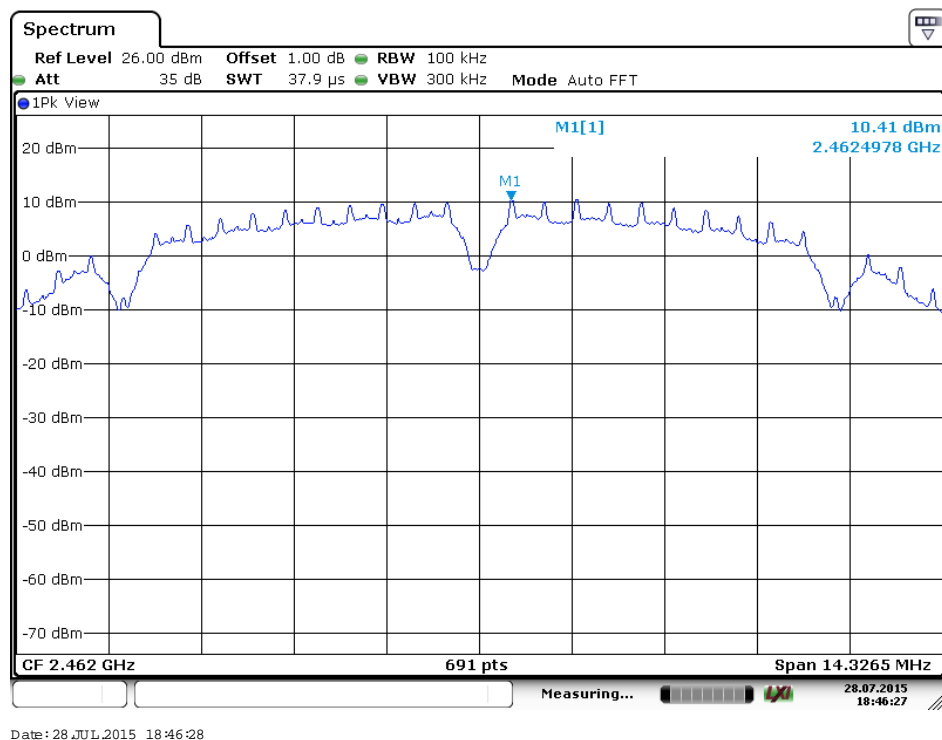


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FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

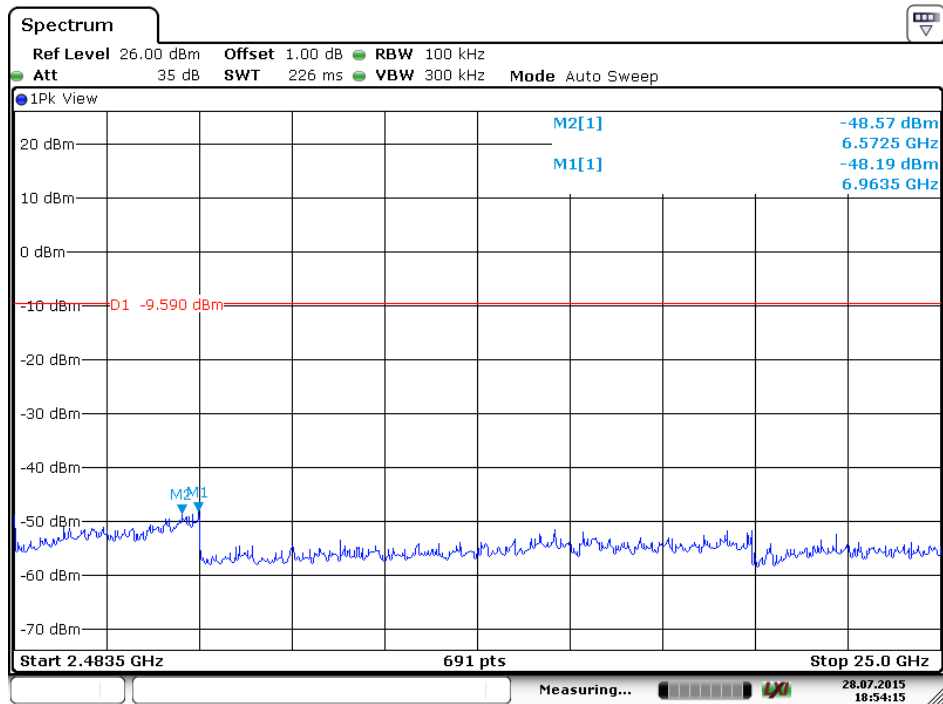
INTERTEK TESTING SERVICES

Channel 11 (2462MHz) Reference Level: 10.41dBm

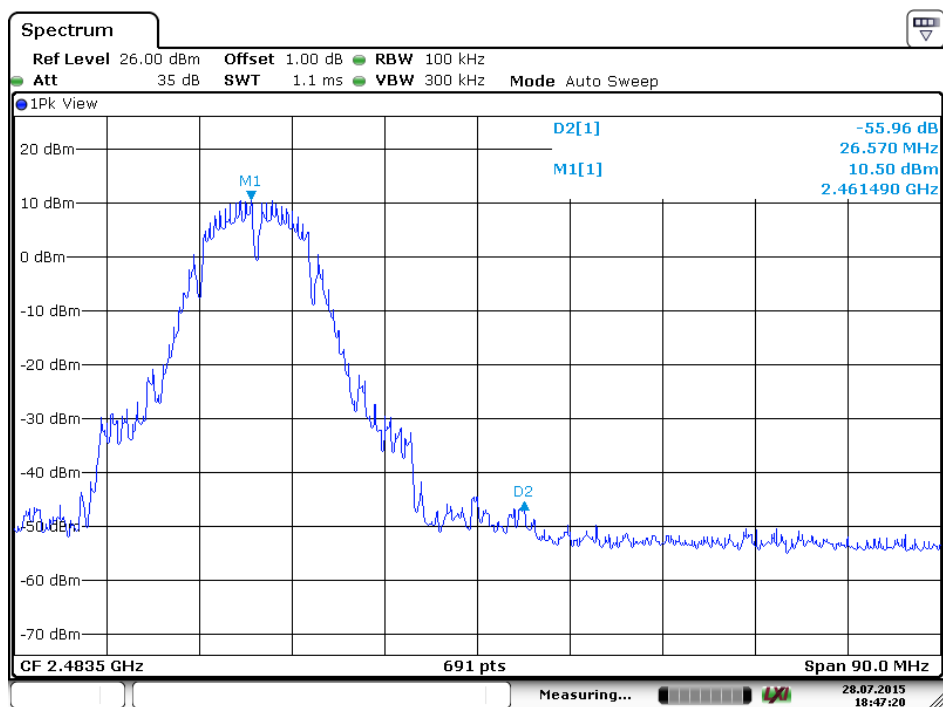


TRF no.: FCC 15C_TX_b
FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES



Date: 28 JUL 2015 18:54:16



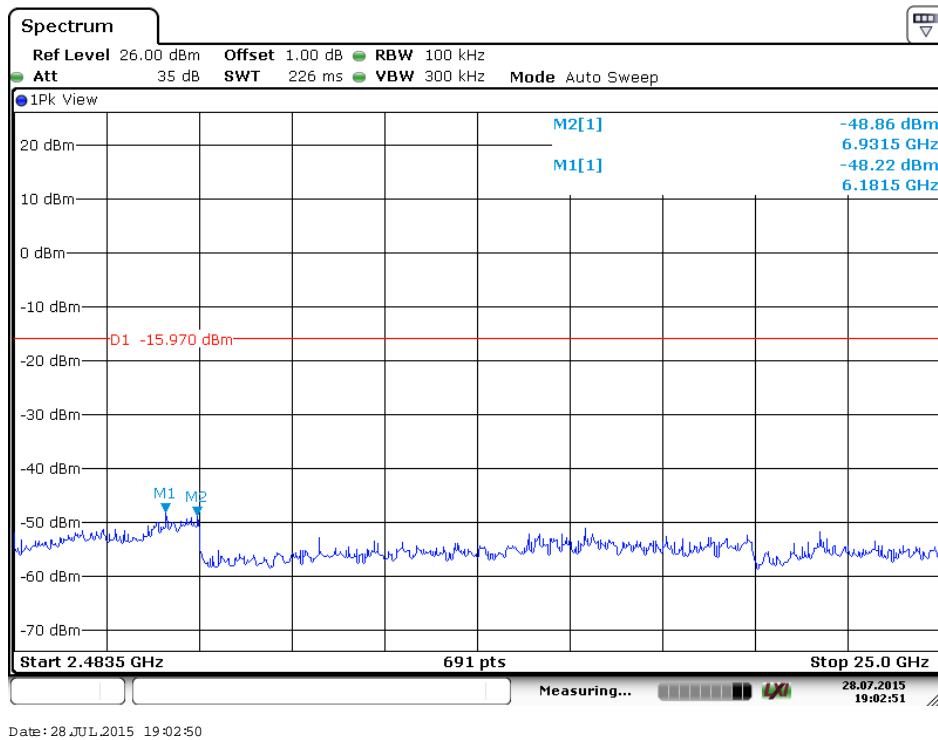
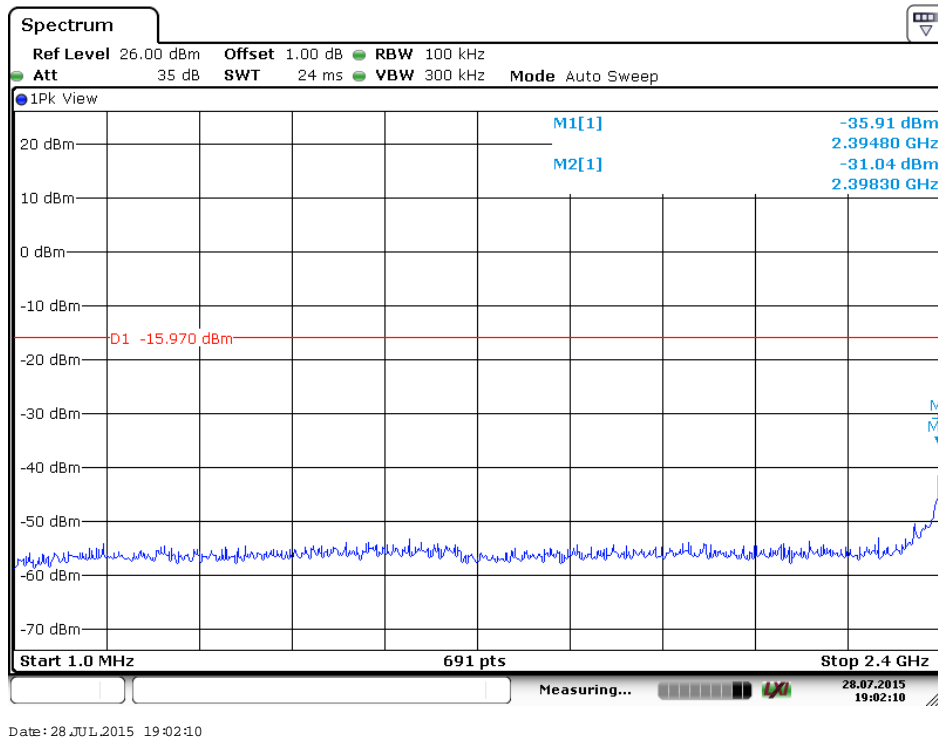
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TRF no.: FCC 15C_TX_b
FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

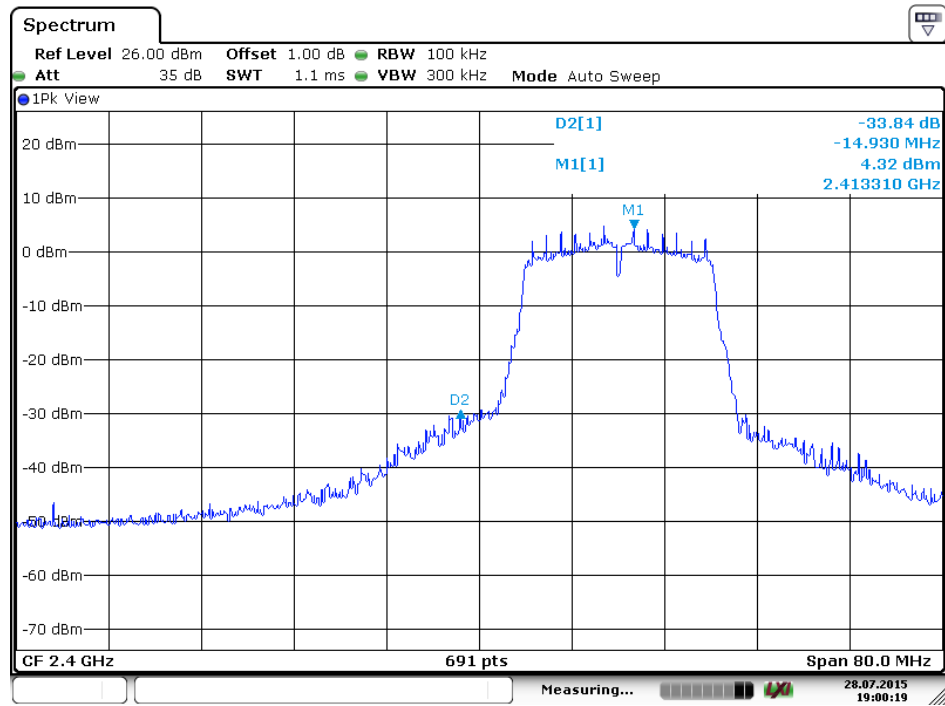
802.11g

Channel 01 (2412MHz) Reference Level: 4.03dBm



TRF no.: FCC 15C_TX_b
FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

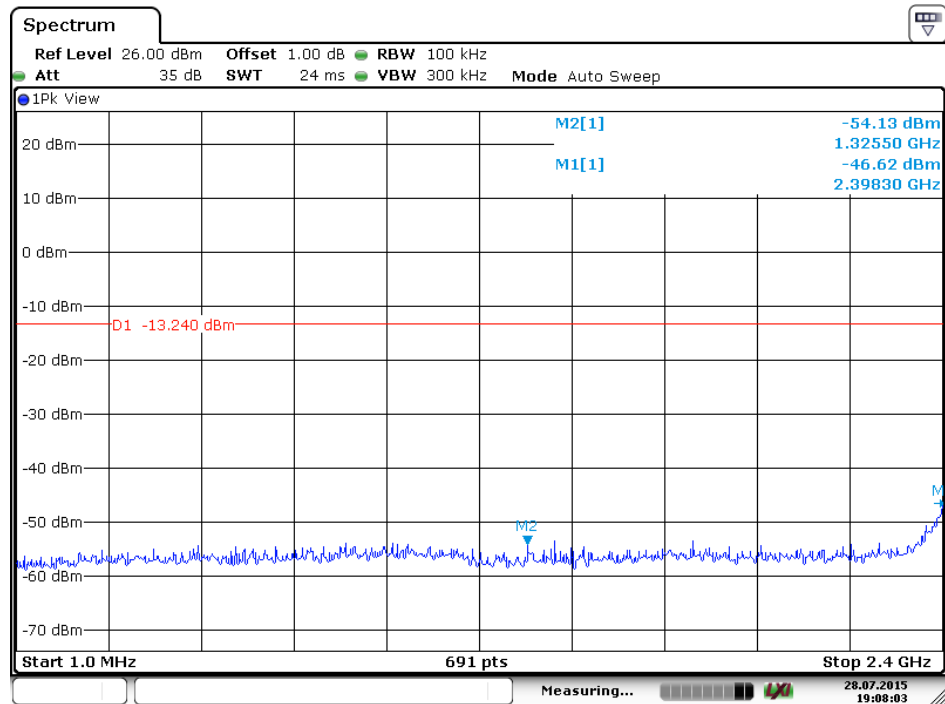


Date: 28 JUL 2015 19:00:20

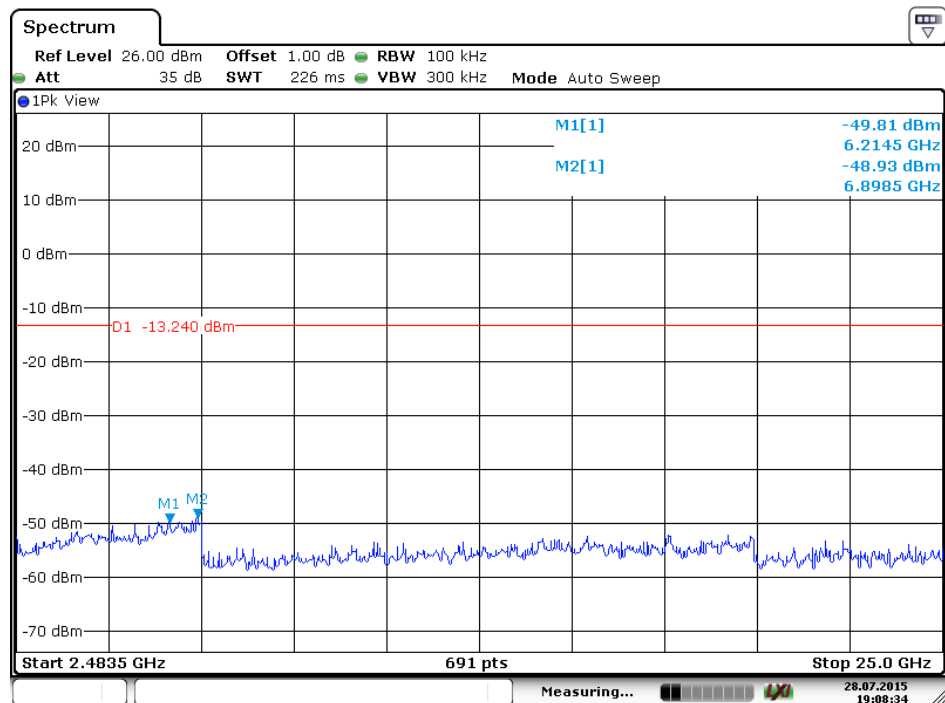
TRF no.: FCC 15C_TX_b
FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Channel 06 (2437MHz) Reference Level: 6.76dBm



Date: 28 JUL 2015 19:08:03

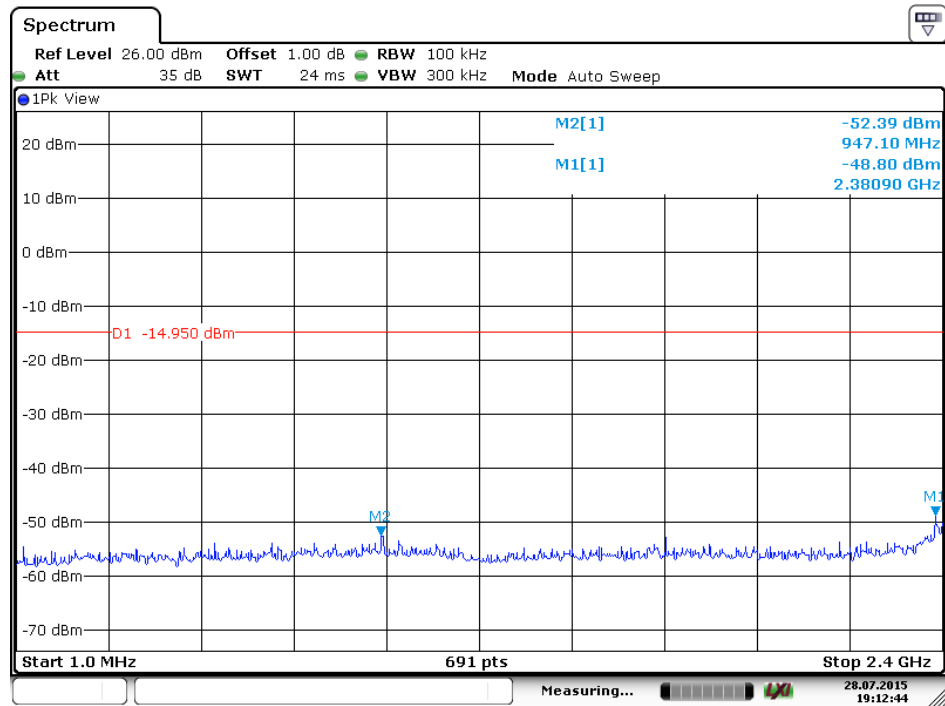


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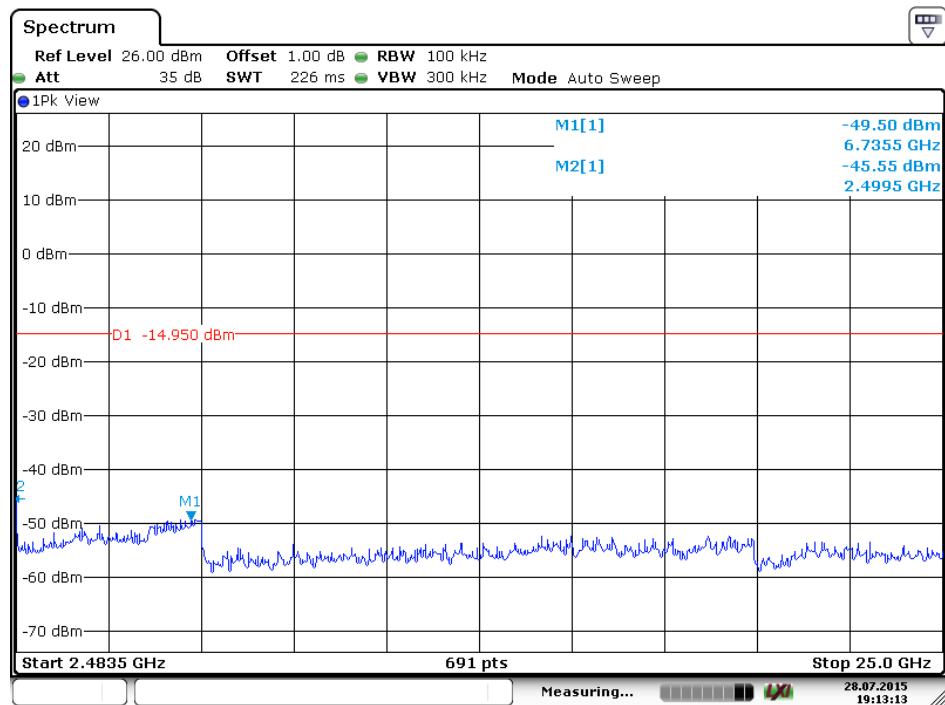
TRF no.: FCC 15C_TX_b
FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Channel 11 (2462MHz) Reference Level: 5.05dBm



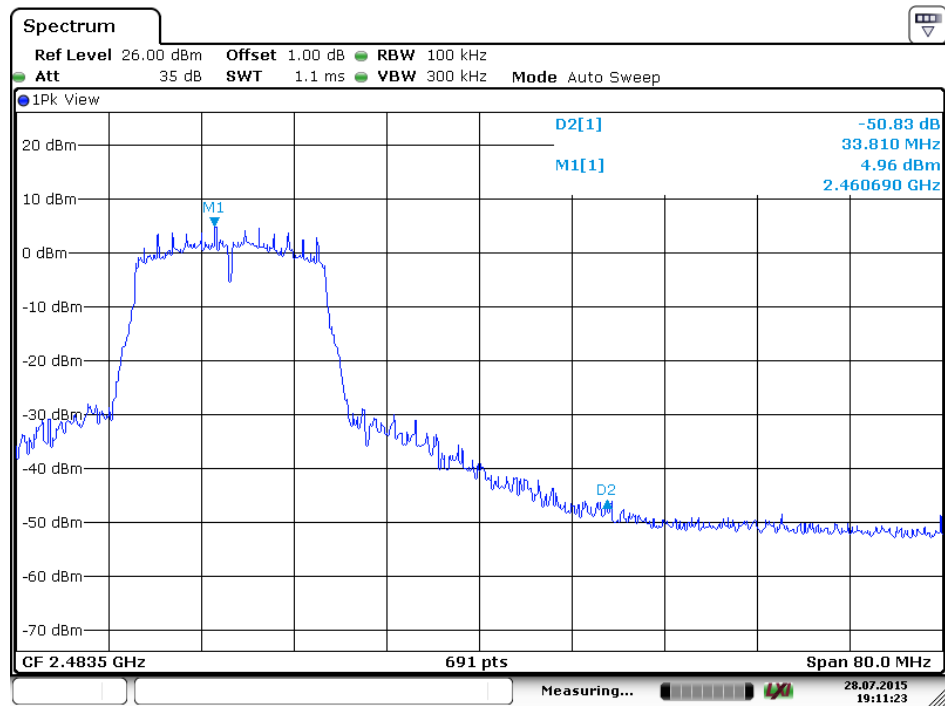
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Date: 28 JUL 2015 19:13:13

TRF no.: FCC 15C_TX_b
FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES



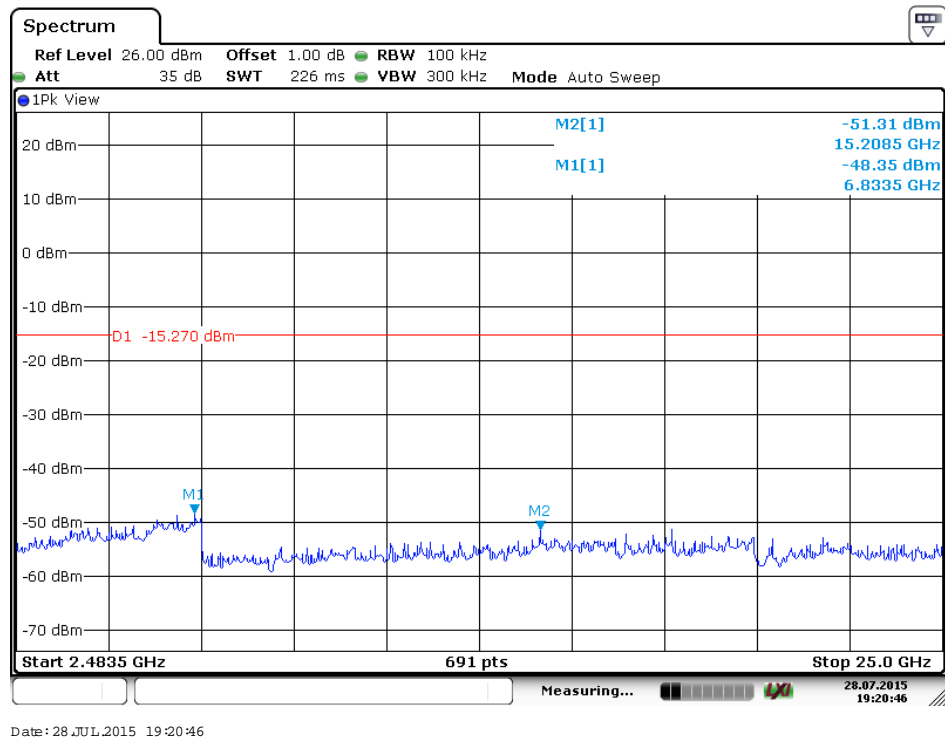
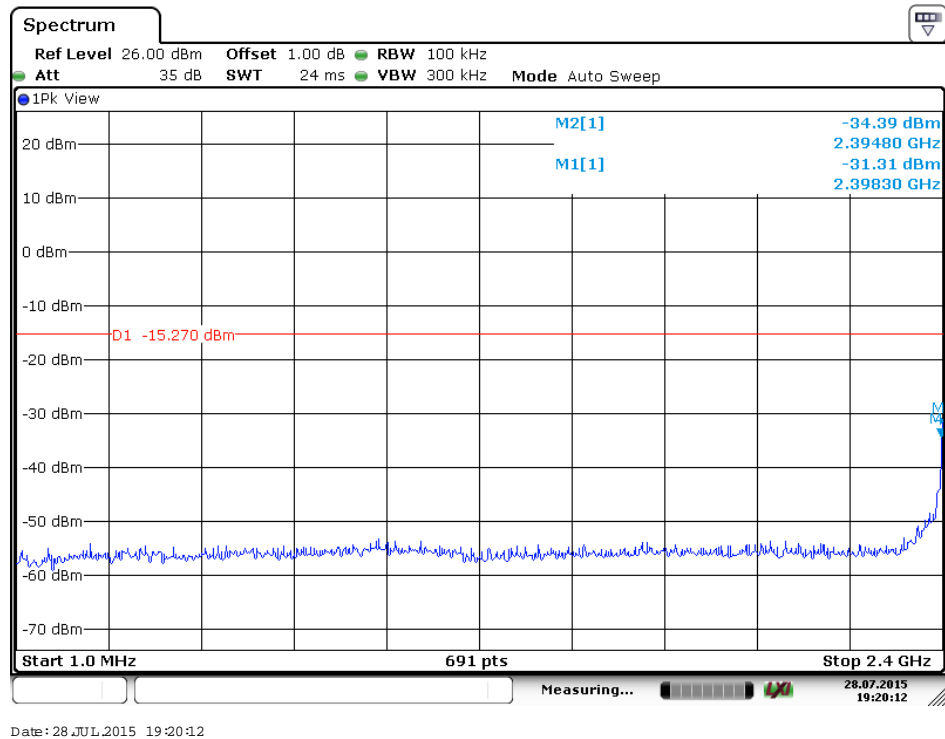
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TRF no.: FCC 15C_TX_b
FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

802.11 n-HT20

Channel 01 (2412MHz) Reference Level: 4.73dBm

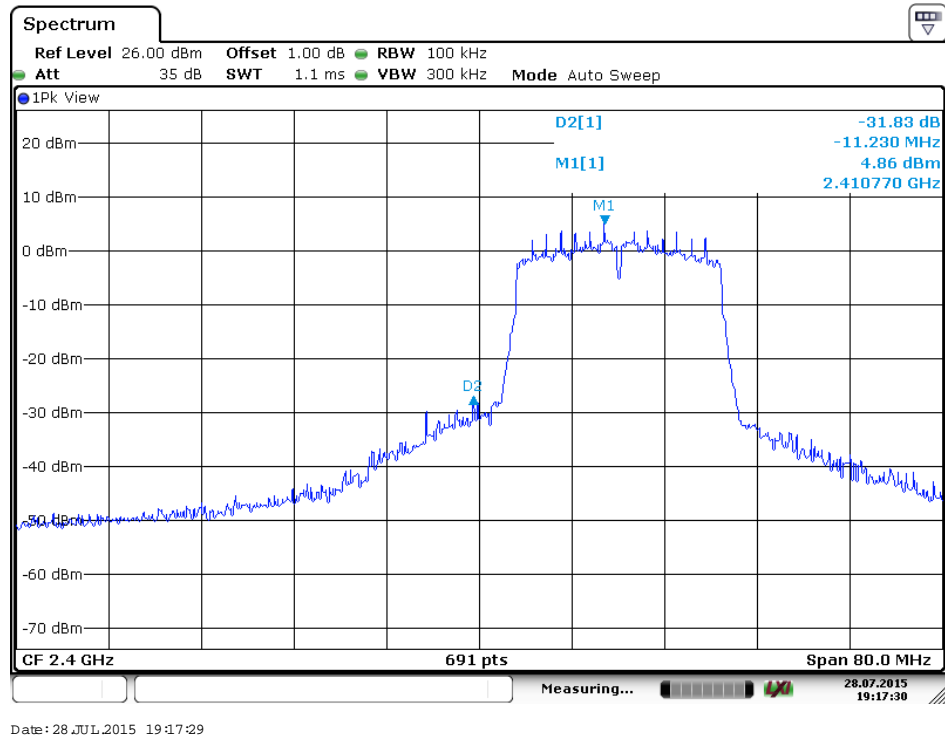


TRF no.: FCC 15C_TX_b

FCC ID: RBD-M710GZ

Report No.: 150717001SZN-001

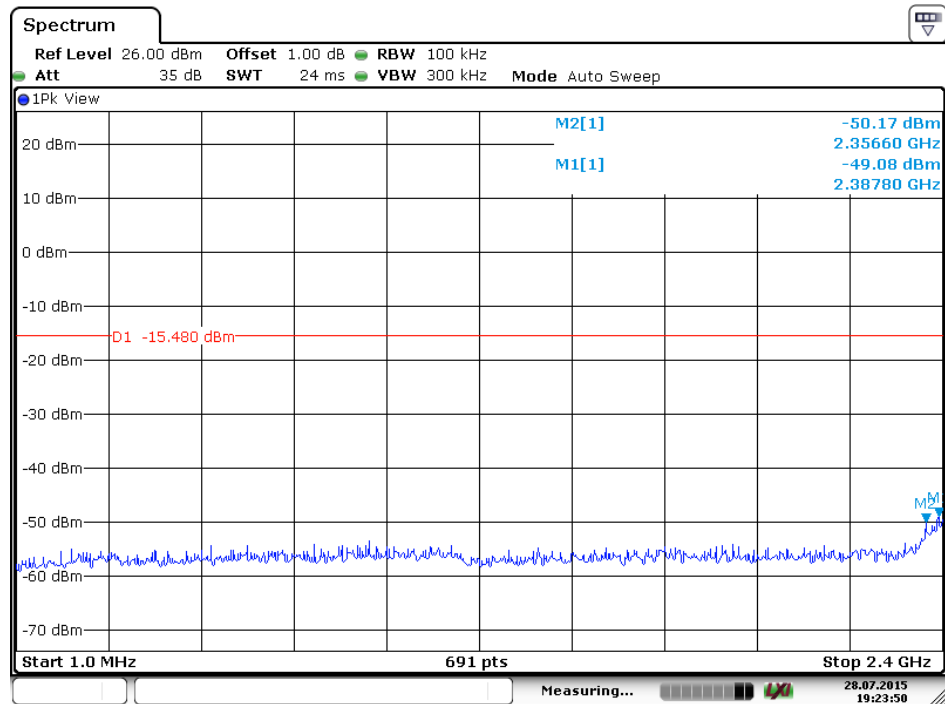
INTERTEK TESTING SERVICES



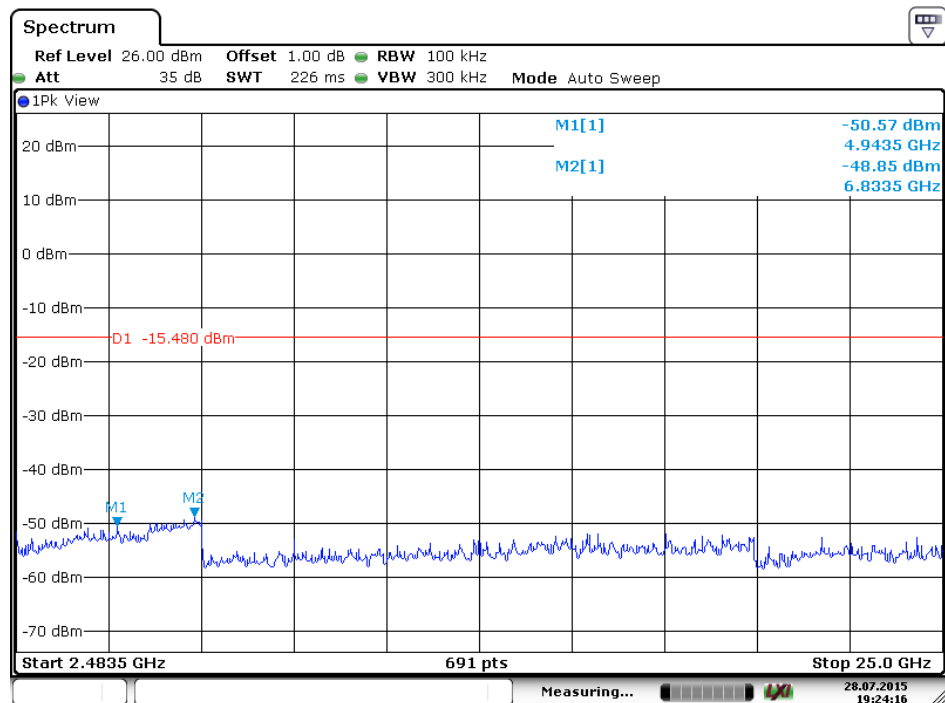
TRF no.: FCC 15C_TX_b
FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Channel 06 (2437MHz) Reference Level: 4.52dBm



Date: 28 JUL 2015 19:23:50

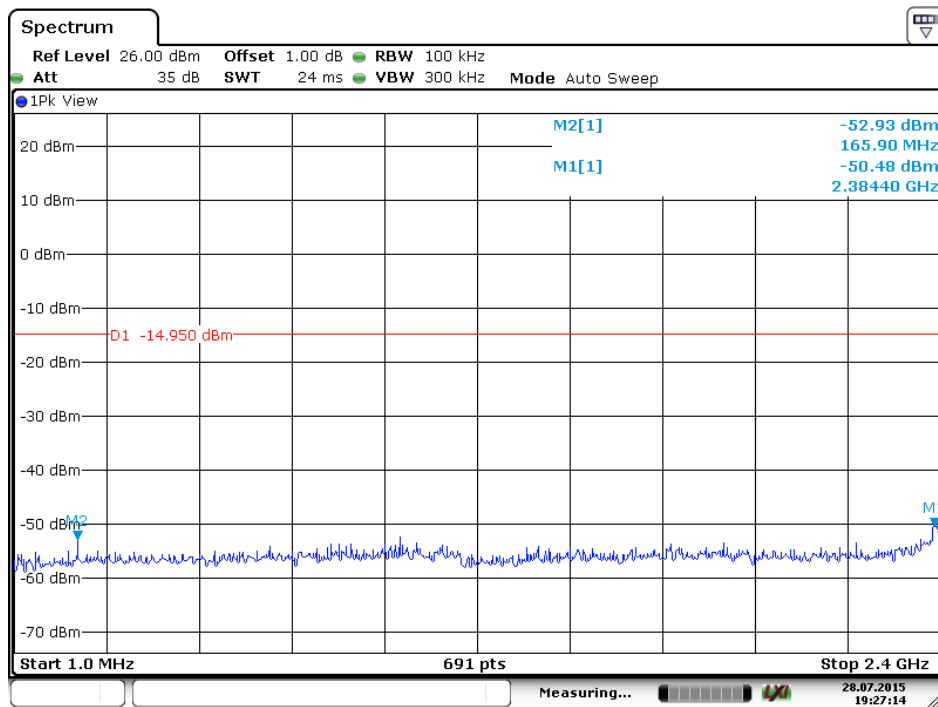


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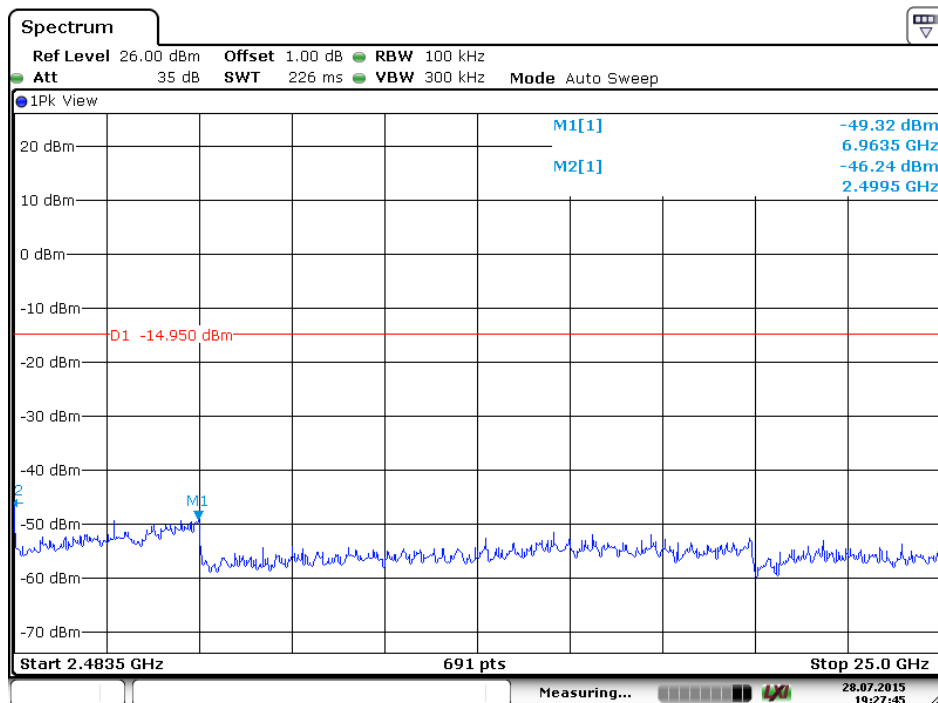
TRF no.: FCC 15C_TX_b
FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Channel 11 (2462MHz) Reference Level: 5.05dBm



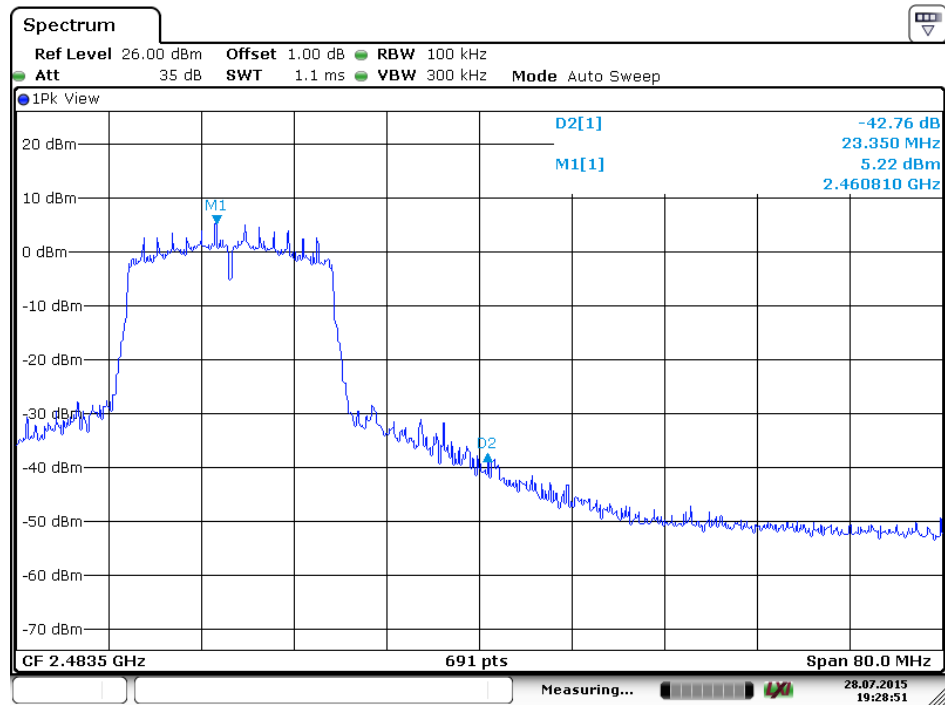
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Date: 28 JUL 2015 19:27:45

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Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES



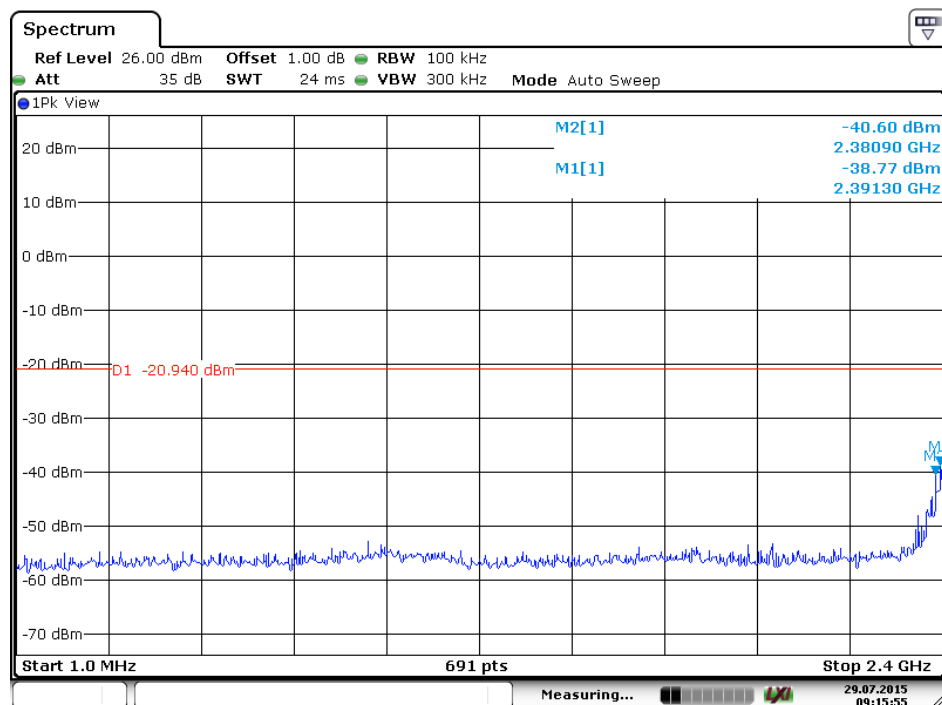
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Report No.: 150717001SZN-001

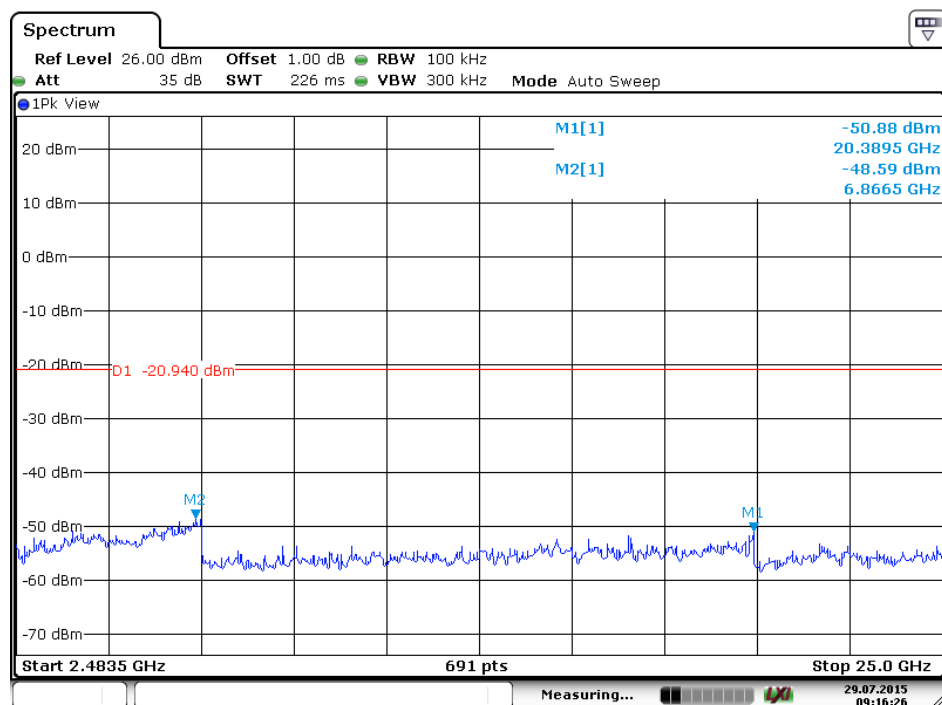
INTERTEK TESTING SERVICES

802.11 n-HT40

Channel 01 (2422MHz) Reference Level: -0.94dBm



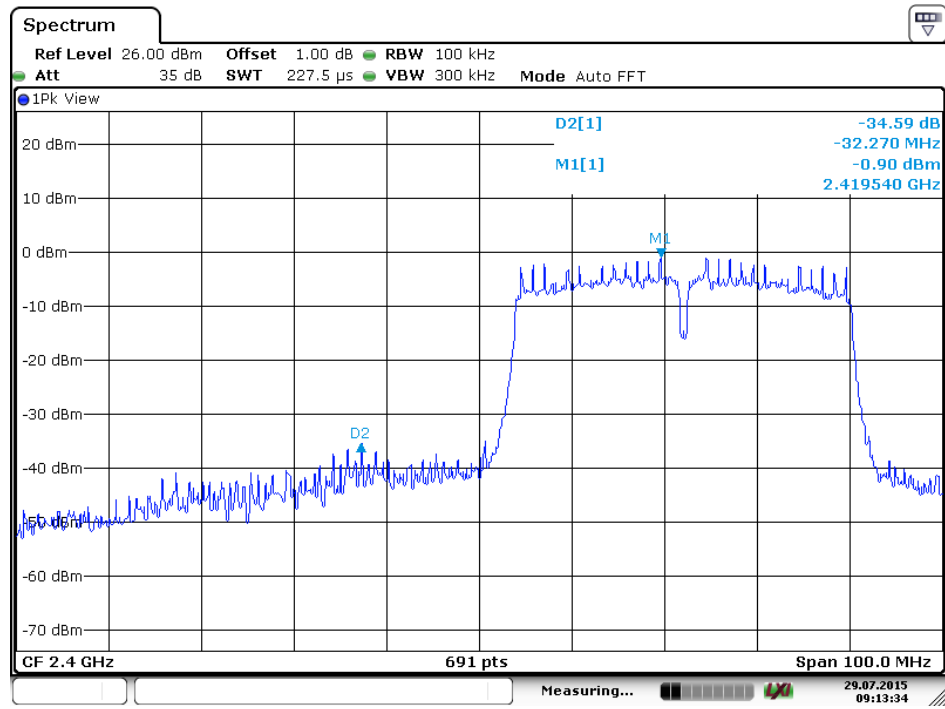
Date: 29 JUL 2015 09:15:55



Date: 29 JUL 2015 09:16:26

TRF no.: FCC 15C_TX_b
FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

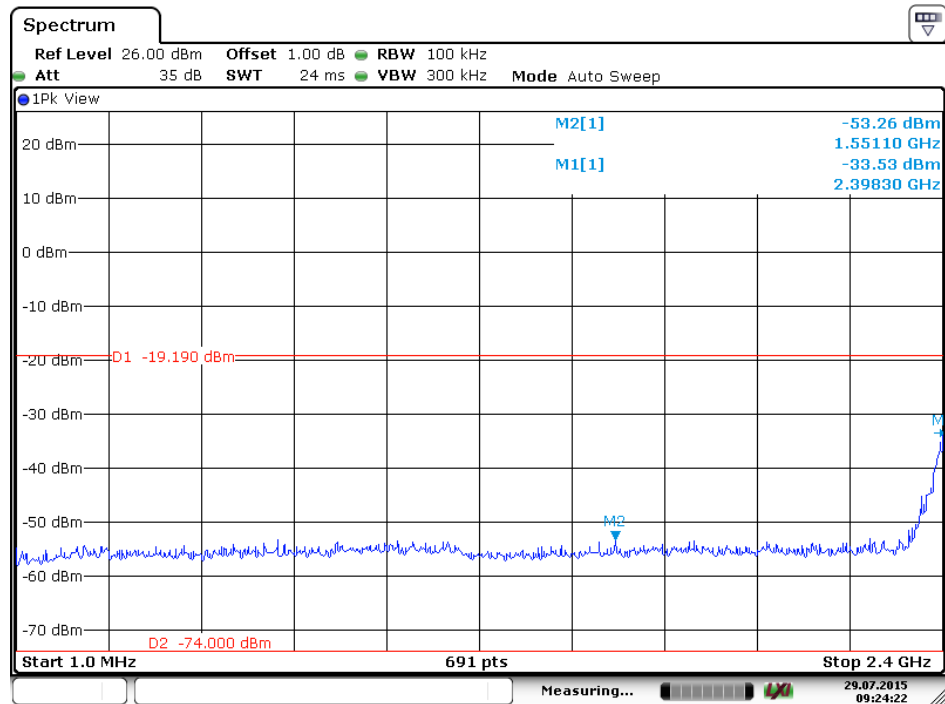


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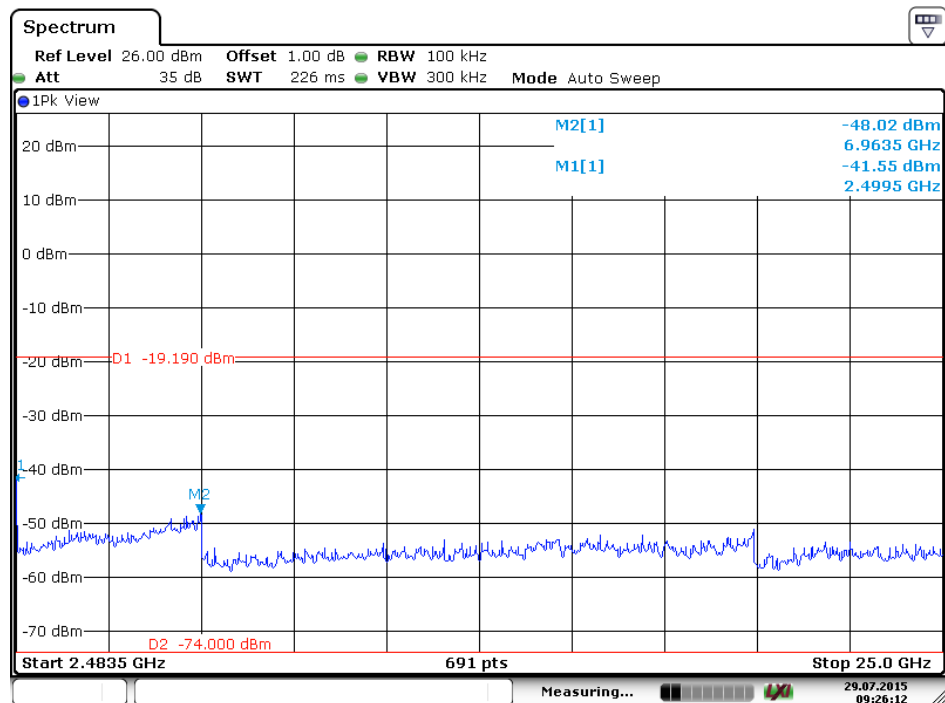
TRF no.: FCC 15C_TX_b
FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Channel 06 (2437MHz) Reference Level: 0.81dBm



Date: 29 JUL 2015 09:24:22

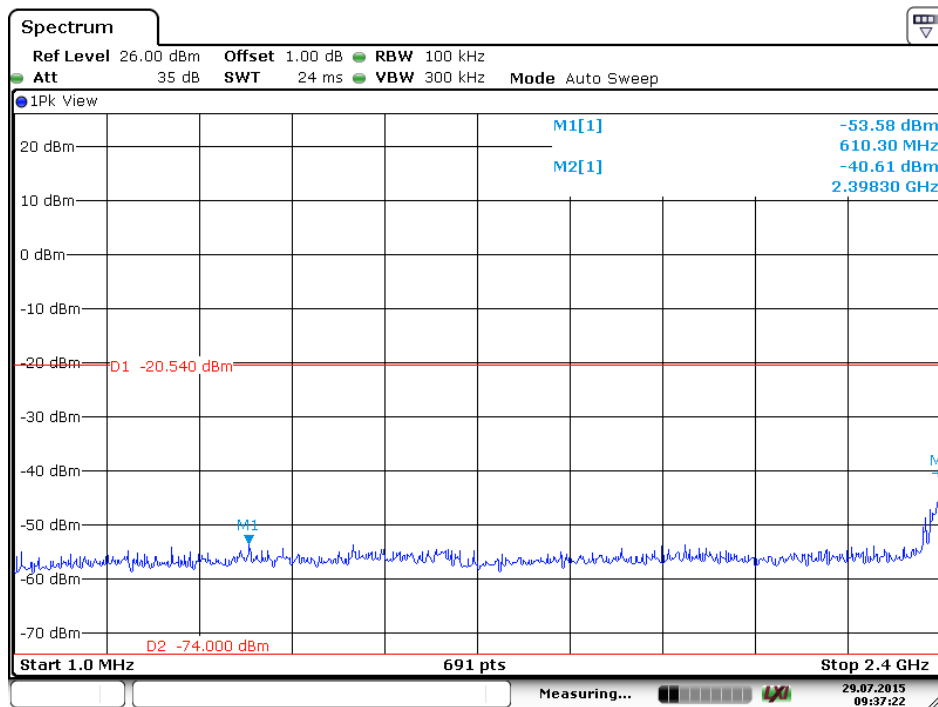


Date: 29 JUL 2015 09:26:12

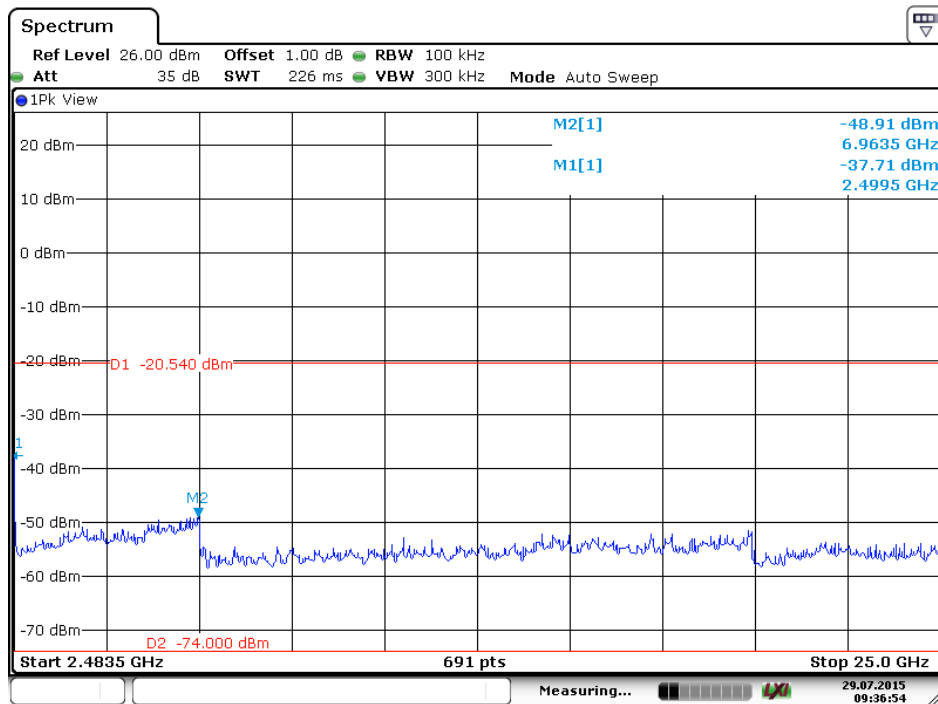
TRF no.: FCC 15C_TX_b
FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Channel 11 (2452MHz) Reference Level: -0.54dBm



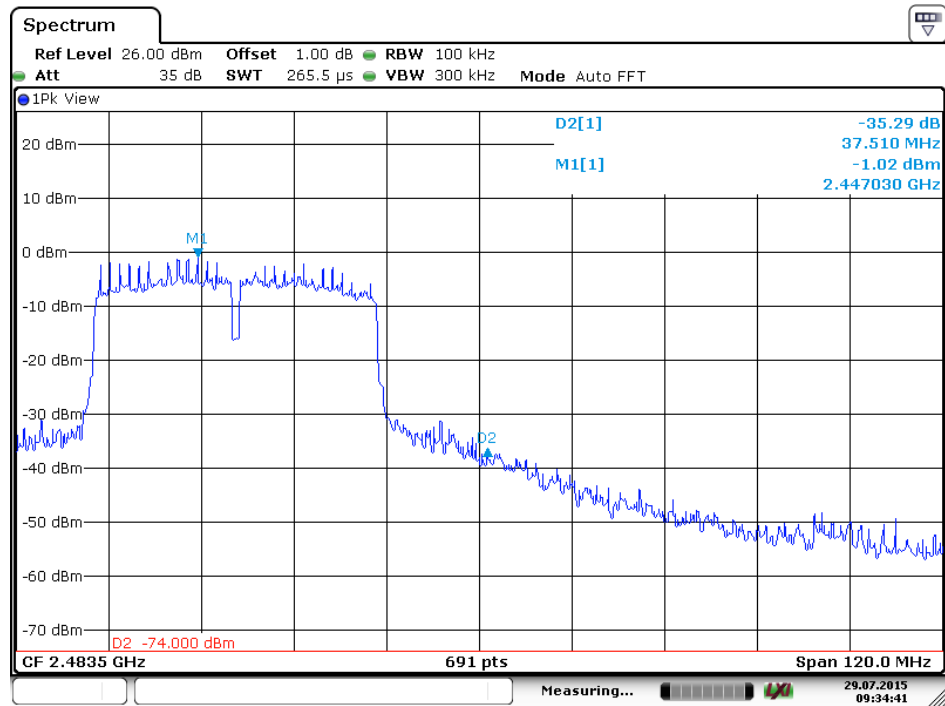
Date: 29 JUL 2015 09:37:22



Date: 29 JUL 2015 09:36:54

TRF no.: FCC 15C_TX_b
FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES



Date: 29 JUL 2015 09:34:41

TRF no.: FCC 15C_TX_b
FCC ID: RBD-M710GZ
Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

4.5 Out of Band Radiated Emissions (for emissions in 4.4 above that are less than 20dB below carrier), FCC Rule 15.247(d):

For out of band emissions that are close to or that exceed the 20dB attenuation requirement described in the specification, radiated measurements were performed at a 3m separation distance to determine whether these emissions complied with the general radiated emission requirement.

☒ Not required, since all emissions are more than 20dB below fundamental

☐ See attached data sheet

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

4.6 Transmitter Radiated Emissions in Restricted Bands, FCC Rule 15.35(b), (c):

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included. All measurements were performed with peak detection unless otherwise specified.

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

4.7 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

$$FS = RA + AF + CF - AG + PD$$

Where FS = Field Strength in dB μ V/m

RA = Receiver Amplitude (including preamplifier) in dB μ V

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB

AG = Amplifier Gain in dB

PD = Pulse Desensitization in dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

$$FS = RA + AF + CF - AG + PD$$

Example

Assume a receiver reading of 62.0 dB μ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB. The net field strength for comparison to the appropriate emission limit is 42 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

$$RA = 62.0 \text{ dB}\mu\text{V}$$

$$AF = 7.4 \text{ dB}$$

$$CF = 1.6 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$PD = 0 \text{ dB}$$

$$FS = 62 + 7.4 + 1.6 - 29 + 0 = 42 \text{ dB}\mu\text{V/m}$$

$$\text{Level in mV/m} = \text{Common Antilogarithm} [(42 \text{ dB}\mu\text{V/m})/20] = 125.9 \mu\text{V/m}$$

TRF no.: FCC 15C_TX_b

FCC ID: RBD-M710GZ

Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd
Date of Test: July 29, 2015
Model: M710GZ

4.8 Radiated Spurious Emission

Worst Case Radiated Spurious Emission (802.11 b) at 368.634MHz and 2368.510MHz is passed by 2.1dB margin.

For the electronic filing, the worst case radiated emission configuration photographs are saved with filename: radiated photos.pdf.

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

Worst Case Operating Mode: 802.11b (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	98.870	28.9	20.0	10.0	18.9	43.5	-24.6
Horizontal	368.613	44.6	20.0	17.6	42.2	46.0	-3.8
Horizontal	737.130	35.1	20.0	24.3	39.4	46.0	-6.6
Vertical	47.460	30.7	20.0	10.7	21.4	40.0	-18.6
Vertical	368.634	46.3	20.0	17.6	43.9	46.0	-2.1
Vertical	737.615	35.6	20.0	24.3	39.9	46.0	-6.1

- NOTES:
1. Quasi-Peak detector is used except for others stated.
 2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. All emissions are below the QP limit.

TRF no.: FCC 15C_TX_b

FCC ID: RBD-M710GZ

Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

Worst Case Operating Mode: 802.11b (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4824.000	54.2	36.1	34.2	52.3	74.0	-21.7
Vertical	*7326.000	64.2	35.6	28.2	56.8	74.0	-17.2
Vertical	*9648.000	67.2	36.2	28.2	59.2	74.0	-14.8
Vertical	*2368.510	53.9	35.6	39.5	57.8	74.0	-16.2

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4824.000	38.6	36.1	34.2	36.7	54.0	-17.3
Vertical	*7326.000	49.1	35.6	28.0	41.5	54.0	-12.5
Vertical	*9648.000	52.4	36.2	28.2	44.4	54.0	-9.6
Vertical	*2368.510	48.0	35.6	39.5	51.9	54.0	-2.1

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

TRF no.: FCC 15C_TX_b

FCC ID: RBD-M710GZ

Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

Worst Case Operating Mode: 802.11b (TX-Channel 06)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4874.000	53.4	36.1	34.6	51.9	74.0	-22.1
Vertical	*7311.000	55.8	35.6	37.1	57.3	74.0	-16.7

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4874.000	37.8	36.1	34.6	36.3	54.0	-17.7
Vertical	*7311.000	40.3	35.6	37.1	41.8	54.0	-12.2

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

TRF no.: FCC 15C_TX_b

FCC ID: RBD-M710GZ

Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

Worst Case Operating Mode: 802.11b (TX-Channel 11)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4924.000	53.9	36.1	34.6	52.4	74.0	-21.6
Vertical	*7386.000	55.4	35.6	37.2	57.0	74.0	-17.0
Vertical	*2487.340	66.4	36.3	28.0	58.1	74.0	-15.9
Vertical	*2483.670	60.6	36.3	28.0	52.3	74.0	-21.7

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4924.000	38.5	36.1	34.6	37.0	54.0	-17.0
Vertical	*7386.000	40.1	35.6	37.2	41.7	54.0	-12.3
Vertical	*2487.340	57.3	36.3	28.0	49.0	54.0	-5.0
Vertical	*2483.670	53.3	36.3	28.0	45.0	54.0	-9.0

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

TRF no.: FCC 15C_TX_b

FCC ID: RBD-M710GZ

Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

Worst Case Operating Mode: 802.11g (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4824.000	52.8	36.1	34.2	50.9	74.0	-23.1
Vertical	*7326.000	64.3	36.2	28.2	56.3	74.0	-17.7
Vertical	*9648.060	67.2	36.2	28.2	59.2	74.0	-14.8
Vertical	*2386.060	64.5	35.6	39.5	68.4	74.0	-5.6

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4824.000	37.7	36.1	34.2	35.8	54.0	-18.2
Vertical	*7326.000	49.1	36.2	28.2	41.1	54.0	-12.9
Vertical	*9648.060	52.1	36.2	28.2	44.1	54.0	-9.9
Vertical	*2386.060	45.4	35.6	39.5	49.3	54.0	-4.7

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

TRF no.: FCC 15C_TX_b

FCC ID: RBD-M710GZ

Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

Worst Case Operating Mode: 802.11g (TX-Channel 06)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4874.000	52.8	36.1	34.6	51.3	74.0	-22.7
Vertical	*7311.000	55.6	35.6	37.1	57.1	74.0	-16.9

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4874.000	37.5	36.1	34.6	36.0	54.0	-18.0
Vertical	*7311.000	40.3	35.6	37.1	41.8	54.0	-12.2

- NOTES:
1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

TRF no.: FCC 15C_TX_b

FCC ID: RBD-M710GZ

Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

Worst Case Operating Mode: 802.11g (TX-Channel 11)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4924.000	52.5	36.1	34.6	51.0	74.0	-23.0
Vertical	*7386.000	55.8	35.6	37.2	57.4	74.0	-16.6
Vertical	*2491.900	73.0	35.6	28.0	65.4	74.0	-8.6
Vertical	*2483.900	69.9	35.6	28.0	62.3	74.0	-11.7

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4924.000	37.5	36.1	34.6	36.0	54.0	-18.0
Vertical	*7386.000	40.3	35.6	37.2	41.9	54.0	-12.1
Vertical	*2491.900	52.8	35.6	28.0	45.2	54.0	-8.8
Vertical	*2483.900	55.8	35.6	28.0	48.2	54.0	-5.8

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

TRF no.: FCC 15C_TX_b

FCC ID: RBD-M710GZ

Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Vertical	*4824.000	51.8	36.1	34.2	49.9	74.0	-24.1
Vertical	*2389.890	69.9	35.6	28.0	62.3	74.0	-11.7

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Vertical	*4824.000	37.3	36.1	34.2	35.4	54.0	-18.6
Vertical	*2389.890	50.1	35.6	28.0	42.5	54.0	-11.5

- NOTES:
1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

TRF no.: FCC 15C_TX_b

FCC ID: RBD-M710GZ

Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 06)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Vertical	*4874.000	52.2	36.1	34.2	50.3	74.0	-23.7
Vertical	*7311.000	54.8	35.6	37.1	56.3	74.0	-17.7

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Vertical	*4874.000	37.3	36.1	34.2	35.4	54.0	-18.6
Vertical	*7311.000	39.7	35.6	37.1	41.2	54.0	-12.8

- NOTES:
1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

TRF no.: FCC 15C_TX_b

FCC ID: RBD-M710GZ

Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 11)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4924.000	50.9	36.1	34.6	49.4	74.0	-24.6
Vertical	*7386.000	55.1	35.6	37.2	56.7	74.0	-17.3
Vertical	*2483.820	65.7	35.6	28.0	58.1	74.0	-15.9

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4924.000	36.8	36.1	34.6	35.3	54.0	-18.7
Vertical	*7386.000	40.2	35.6	37.2	41.8	54.0	-12.2
Vertical	*2483.820	51.1	35.6	28.0	43.5	54.0	-10.5

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

TRF no.: FCC 15C_TX_b

FCC ID: RBD-M710GZ

Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

Worst Case Operating Mode: 802.11n-HT40 (TX-Channel 03)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4844.000	51.8	36.1	34.2	49.9	74.0	-24.1
Vertical	*7266.000	55.8	36.8	37.1	56.1	74.0	-17.9
Vertical	*2389.860	66.6	35.6	28.0	59.0	74.0	-15.0

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4844.000	37.1	36.1	34.2	35.2	54.0	-18.8
Vertical	*7266.000	41.1	36.8	37.1	41.4	54.0	-12.6
Vertical	*2389.860	51.2	35.6	28.0	43.6	54.0	-10.4

- NOTES:
1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

TRF no.: FCC 15C_TX_b

FCC ID: RBD-M710GZ

Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

Worst Case Operating Mode: 802.11n-HT40 (TX-Channel 06)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4874.000	52.3	36.1	34.2	50.4	74.0	-23.6
Vertical	*7311.000	55.2	35.6	37.1	56.7	74.0	-17.3

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4874.000	37.8	36.1	34.2	35.9	54.0	-18.1
Vertical	*7311.000	40.1	35.6	37.1	41.6	54.0	-12.4

- NOTES:
1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
 2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

TRF no.: FCC 15C_TX_b

FCC ID: RBD-M710GZ

Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

Worst Case Operating Mode: 802.11n-HT40 (TX-Channel 9)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4904.000	54.5	36.1	34.6	53.0	74.0	-21.0
Vertical	*7356.000	55.6	35.6	37.0	57.0	74.0	-17.0
Vertical	*2485.380	72.1	35.6	28.0	64.5	74.0	-9.5

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Vertical	*4904.000	45.0	36.1	34.6	43.5	54.0	-10.5
Vertical	*7356.000	41.9	35.6	37.0	43.3	54.0	-10.7
Vertical	*2485.380	55.9	35.6	28.0	48.3	54.0	-5.7

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

TRF no.: FCC 15C_TX_b

FCC ID: RBD-M710GZ

Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

4.9 Conducted Emission

Worst Case Conducted emission at 0.159MHz is Passed by 5.8dB margin

For electronic filing, the worst case conducted emission configuration photograph is saved with filename: conducted photos.pdf.

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

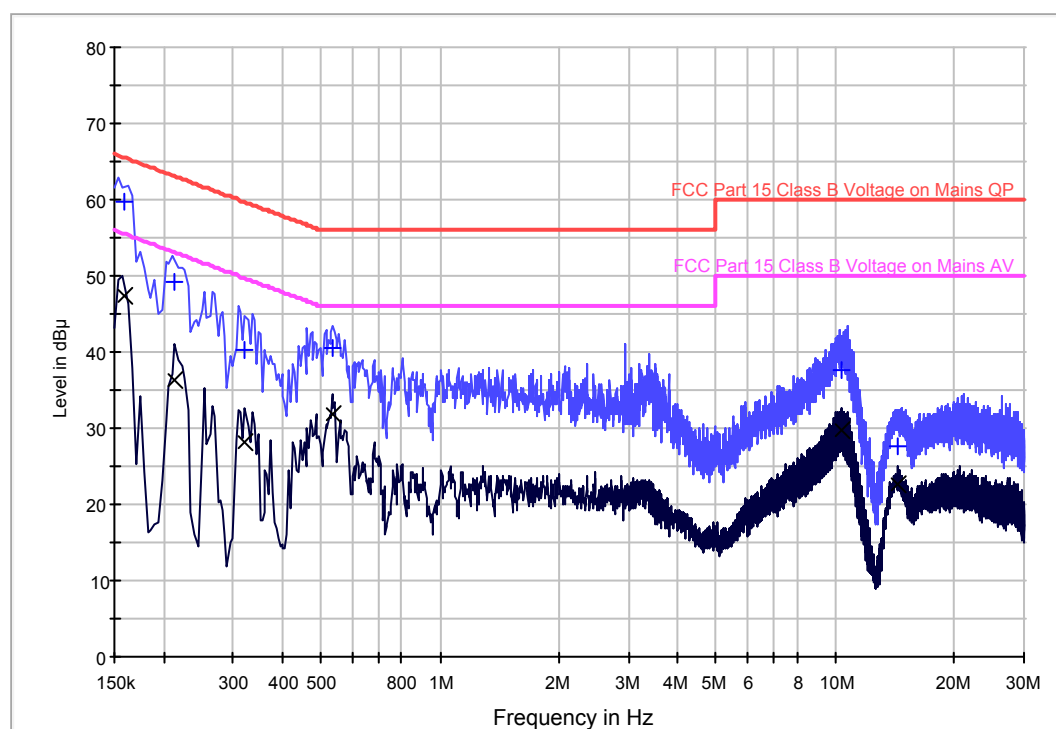
Date of Test: July 29, 2015

Model: M710GZ

Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)

Line: Live

Conducted Emission Test - FCC



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dB μV)	Line	Corr. (dB)	Margin (dB)	Limit (dB μV)
0.159000	59.7	L1	9.8	5.8	65.5
0.214000	49.3	L1	9.8	13.7	63.0
0.322000	40.2	L1	9.9	19.5	59.7
0.534000	40.6	L1	9.9	15.4	56.0
10.394000	37.5	L1	10.1	22.5	60.0
14.398000	27.6	L1	10.1	32.4	60.0

Limit and Margin AV

Frequency (MHz)	Average (dB μV)	Line	Corr. (dB)	Margin (dB)	Limit (dB μV)
0.159000	47.4	L1	9.8	8.1	55.5
0.214000	36.2	L1	9.8	16.8	53.0
0.322000	28.2	L1	9.9	21.5	49.7
0.534000	31.9	L1	9.9	14.1	46.0
10.394000	29.9	L1	10.1	20.1	50.0
14.398000	22.6	L1	10.1	27.4	50.0

TRF no.: FCC 15C_TX_b

FCC ID: RBD-M710GZ

Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

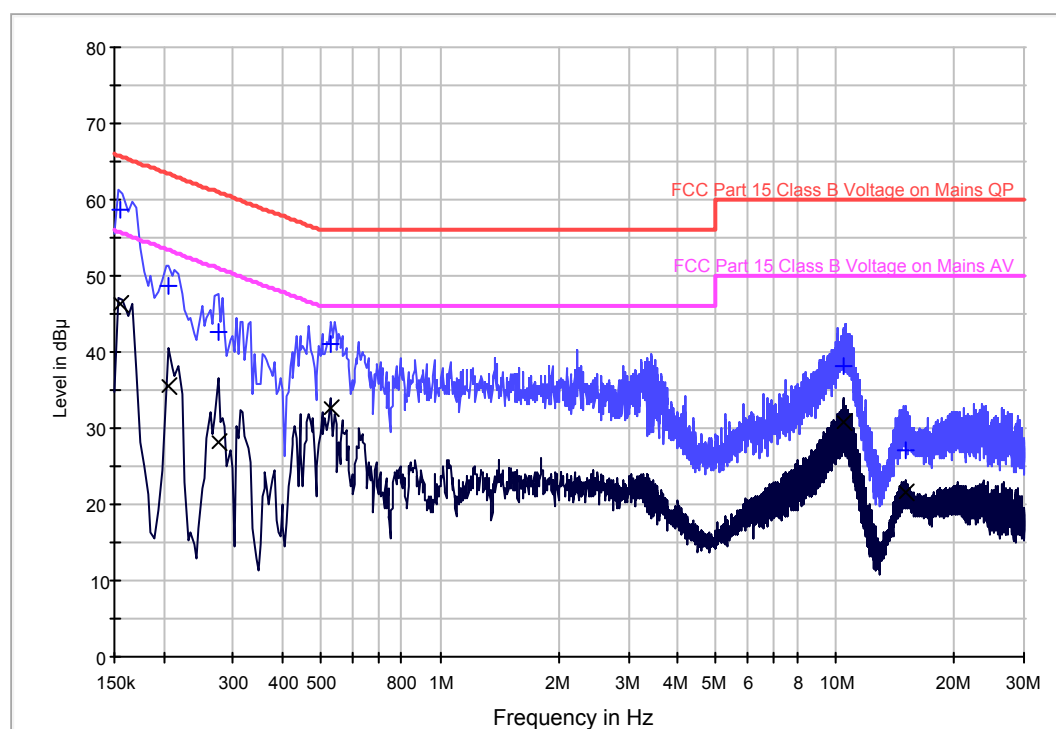
Date of Test: July 29, 2015

Model: M710GZ

Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)

Line: Neutral

Conducted Emission Test - FCC



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.154500	58.7	N	10.2	7.1	65.8
0.206000	48.7	N	10.1	14.7	63.4
0.274000	42.7	N	10.2	18.3	61.0
0.526000	40.9	N	10.2	15.1	56.0
10.538000	38.2	N	10.4	21.8	60.0
15.010000	27.2	N	10.3	32.8	60.0

Limit and Margin AV

Frequency (MHz)	Average (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.154500	46.3	N	10.2	9.5	55.8
0.206000	35.6	N	10.1	17.8	53.4
0.274000	28.1	N	10.2	22.9	51.0
0.526000	32.6	N	10.2	13.4	46.0
10.538000	30.8	N	10.4	19.2	50.0
15.010000	21.5	N	10.3	28.5	50.0

TRF no.: FCC 15C_TX_b

FCC ID: RBD-M710GZ

Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

4.10 Radiated Emissions from Digital Section of Transceiver, FCC Ref: 15.109

☐ Not required - No digital part

☐ Test results are attached

☒ Included in the separated report.

TRF no.: FCC 15C_TX_b

FCC ID: RBD-M710GZ

Report No.: 150717001SZN-001

INTERTEK TESTING SERVICES

Applicant: Shenzhen Jingwah Information Technology Co., Ltd

Date of Test: July 29, 2015

Model: M710GZ

4.11 Transmitter Duty Cycle Calculation and Measurements, FCC Rule 15.35(b), (c)

The EUT antenna output port was connected to the input of the spectrum analyzer. The analyzer center frequency was set to EUT RF channel carrier. The SWEP function on the analyzer was set to ZERO SPAN. The Transmitter ON time was determined from the resultant time-amplitude display:

	See attached spectrum analyzer chart (s) for Transmitter timing
	See Transmitter timing diagram provided by manufacturer
x	Not applicable, duty cycle was not used.

INTERTEK TESTING SERVICES

EXHIBIT 5

EQUIPMENT PHOTOGRAPHS

INTERTEK TESTING SERVICES

5.0 **Equipment Photographs**

For electronic filing, the photographs are saved with filename: external photos.pdf & internal photos.pdf.

EXHIBIT 6

PRODUCT LABELLING

INTERTEK TESTING SERVICES

6.0 **Product Labeling**

For electronic filing, the FCC ID label artwork and location is saved with filename: label.pdf.

EXHIBIT 7
TECHNICAL SPECIFICATIONS

INTERTEK TESTING SERVICES

7.0 Technical Specifications

For electronic filing, the block diagram and circuit diagram are saved with filename: block.pdf and circuit.pdf respectively.

EXHIBIT 8
INSTRUCTION MANUAL

INTERTEK TESTING SERVICES

8.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

INTERTEK TESTING SERVICES

EXHIBIT 9

CONFIDENTIALITY REQUEST

INTERTEK TESTING SERVICES

9.0 Confidentiality Request

For electronic filing, the confidentiality request of the tested EUT is saved with filename: request.pdf.

INTERTEK TESTING SERVICES

EXHIBIT 10

MISCELLANEOUS INFORMATION

INTERTEK TESTING SERVICES

10.0 **Discussion of Pulse Desensitization**

The determination of pulse desensitization was made in accordance with Hewlett Packard Application Note 150-2, *Spectrum Analysis ... Pulsed RF*.

Pulse desensitization is not applicable for this device since the transmitter transmits the RF signal continuously.

INTERTEK TESTING SERVICES

EXHIBIT 11

TEST EQUIPMENT LIST

INTERTEK TESTING SERVICES

11.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-03	BiConiLog Antenna	ETS	3142C	00066460	14-Jun-15	14-Jun-16
SZ061-07	Pyramidal Horn Antenna	ETS	3160-09	00083067	3-Sep-14	3-Sep-15
SZ061-08	Horn Antenna	ETS	3115	00092346	19-Oct-14	19-Oct-15
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	29-Apr-15	29-Apr-16
SZ056-03	Spectrum Analyzer	R&S	FSP30	101148	8-Jun-15	8-Jun-16
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	7-Feb-15	7-Feb-16
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	19-Apr-14	19-Apr-16
SZ062-02	RF Cable	RADIAL	RG 213U	--	30-Jun-15	30-Dec-15
SZ062-06	RF Cable	RADIAL	0.04-26.5 GHz	--	30-Jun-15	30-Dec-15
SZ062-12	RF Cable	RADIAL	0.04-26.5 GHz	--	7-Apr-15	7-Oct-15
SZ067-04	Notch Filter	Micro-Tronics	BRM5070 2-02	--	20-May-15	20-May-16
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	1-Nov-14	1-Nov-15
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	1-Nov-14	1-Nov-15
SZ187-02	Two-Line V-Network	R&S	ENV216	100073	1-Nov-14	1-Nov-15
SZ188-03	Shielding Room	ETS	RFD-100	4100	23-Aug-14	23-Aug-15