

## 10.5.Operating Condition of EUT

10.5.1.Setup the EUT and simulator as shown as Section 10.1.

10.5.2.Turn on the power of all equipment.

10.5.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

## 10.6.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2009 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The worst-case data rate for this channel to be 1Mbps for 802.11b mode and 6Mbps for 802.11g mode and 150Mbps for 802.11n mode, based on previous with 802.11 WLAN product design architectures.

The frequency range from 30MHz to 25000MHz is checked.

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

During the radiated emission test, the spectrum analyzer was set with the following configurations:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

## 10.7.The Field Strength of Radiation Emission Measurement Results

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. \*: Denotes restricted band of operation.

3. The fundamental radiated emissions were reduced by Band Reject Filter in the attached plots.

4. The EUT is tested radiation emission at each test mode (802.11 b/g/n) in three axes. The worst emissions are reported in all test mode and channels.

5. The radiation emissions from 18-25GHz are not reported, because the test values lower than the limits of 20dB.

## Below 1G



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Job No.: STAR2014 #1375

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2015-1-6

Temp.( C)/Hum.(%) 23 C / 48 %

Time: 17:42:29

EUT: Indoor Air Quality Sensor

Engineer Signature:

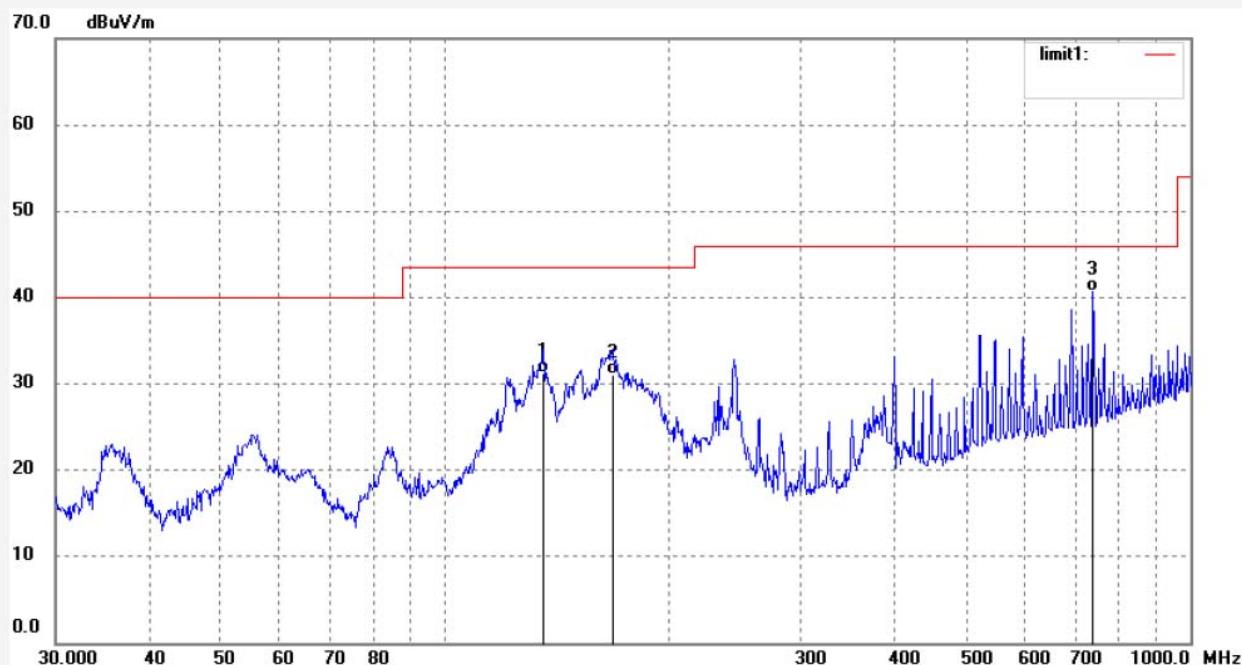
Mode: TX Channel 1(802.11b)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	135.5062	45.39	-14.19	31.20	43.50	-12.30	QP			
2	167.8243	45.14	-14.02	31.12	43.50	-12.38	QP			
3	739.6604	41.94	-1.21	40.73	46.00	-5.27	QP			

Job No.: STAR2014 #1376

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2015-1-6

Temp. ( C) / Hum. (%) 23 C / 48 %

Time: 17:43:28

EUT: Indoor Air Quality Sensor

Engineer Signature:

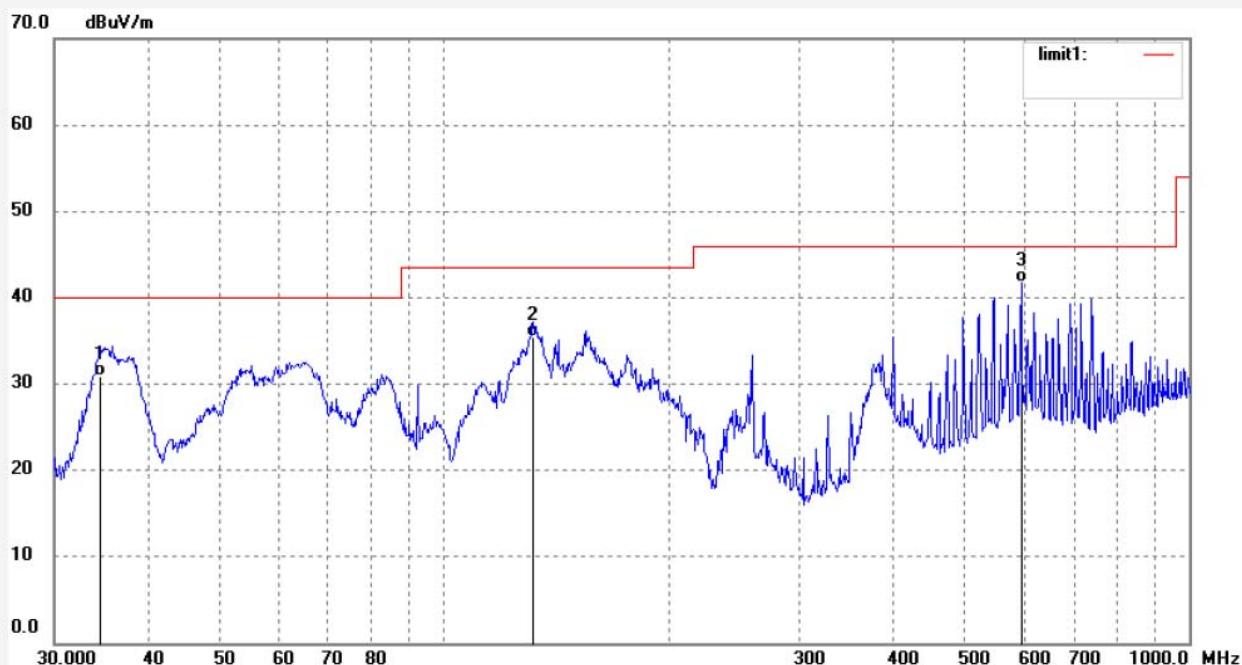
Mode: TX Channel 1(802.11b)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	34.6385	41.26	-10.39	30.87	40.00	-9.13	QP			
2	131.7577	49.42	-13.93	35.49	43.50	-8.01	QP			
3	595.1329	44.71	-3.02	41.69	46.00	-4.31	QP			

Job No.: STAR2014 #1378

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2015-1-6

Temp. ( C) / Hum. (%) 23 C / 48 %

Time: 17:45:54

EUT: Indoor Air Quality Sensor

Engineer Signature:

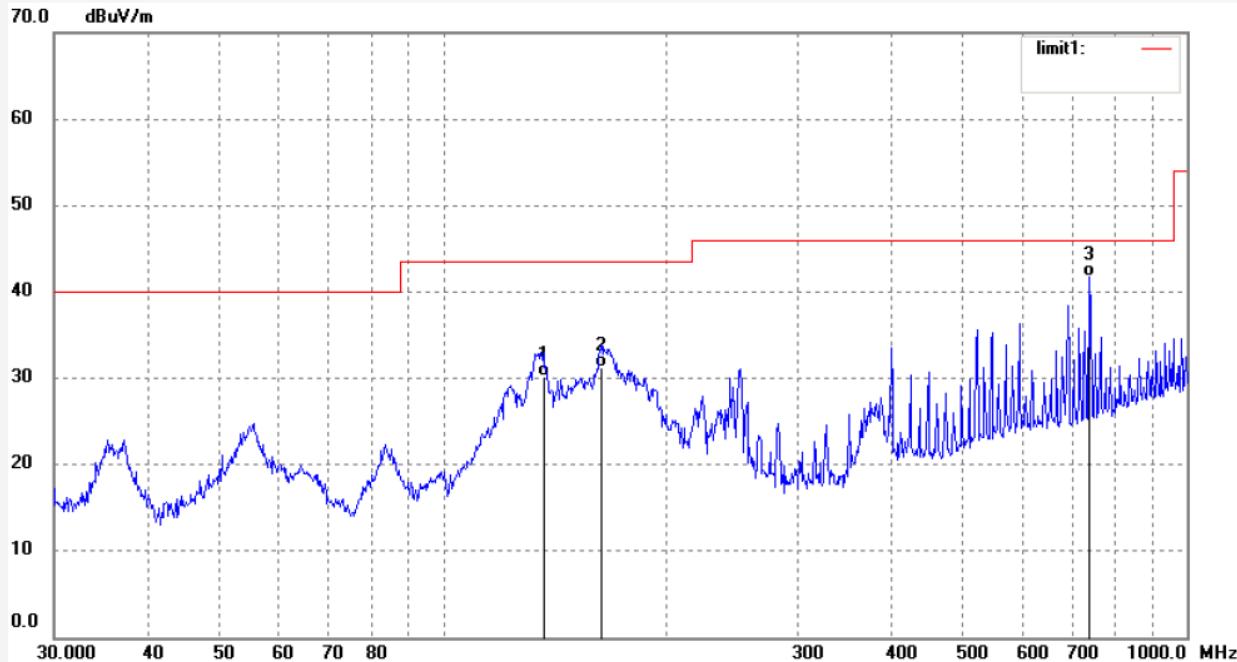
Mode: TX Channel 6(802.11b)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	136.4598	44.66	-14.41	30.25	43.50	-13.25	QP			
2	163.1818	45.71	-14.49	31.22	43.50	-12.28	QP			
3	739.6604	43.00	-1.21	41.79	46.00	-4.21	QP			



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Job No.: STAR2014 #1377

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2015-1-6

Temp.( C)/Hum.(%) 23 C / 48 %

Time: 17:44:10

EUT: Indoor Air Quality Sensor

Engineer Signature:

Mode: TX Channel 6(802.11b)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	34.7602	41.92	-10.39	31.53	40.00	-8.47	QP			
2	133.1511	48.79	-14.00	34.79	43.50	-8.71	QP			
3	595.1329	44.01	-3.02	40.99	46.00	-5.01	QP			

Job No.: STAR2014 #1379

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2015-1-6

Temp. (C)/Hum.(%) 23 C / 48 %

Time: 17:47:46

EUT: Indoor Air Quality Sensor

Engineer Signature:

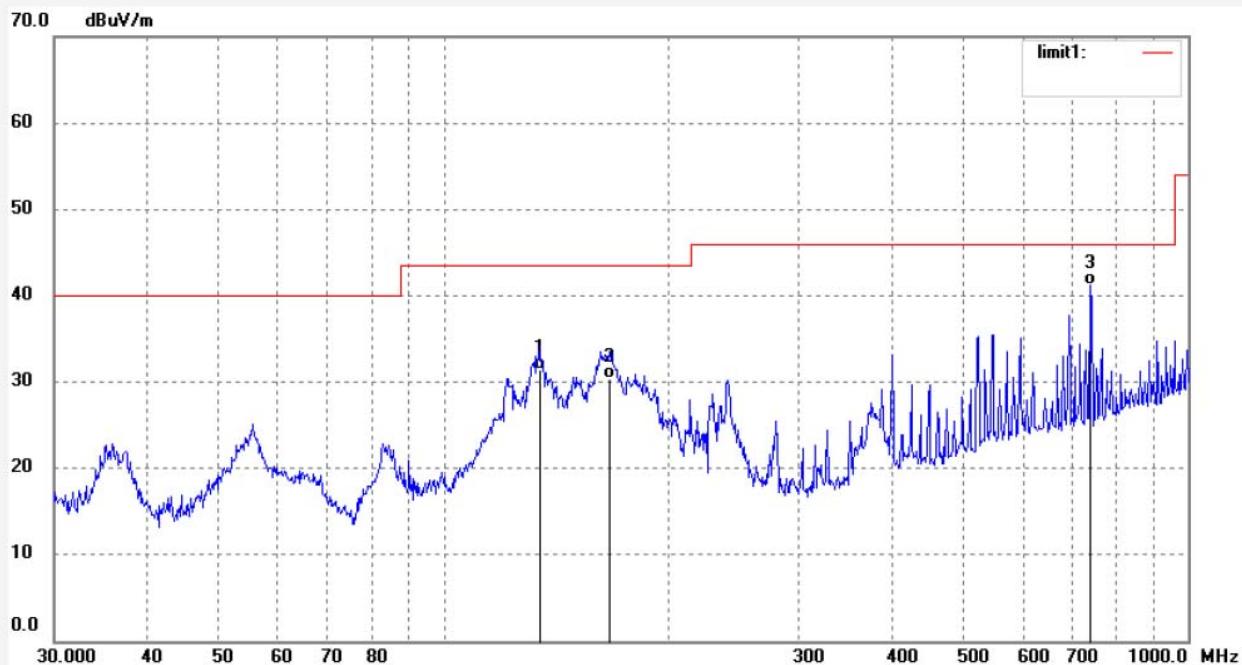
Mode: TX Channel 11(802.11b)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	134.5592	45.55	-14.06	31.49	43.50	-12.01	QP			
2	167.2368	44.39	-14.11	30.28	43.50	-13.22	QP			
3	739.6604	42.38	-1.21	41.17	46.00	-4.83	QP			

Job No.: STAR2014 #1380

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2015-1-6

Temp. ( C) / Hum. (%) 23 C / 48 %

Time: 17:48:27

EUT: Indoor Air Quality Sensor

Engineer Signature:

Mode: TX Channel 11(802.11b)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.: ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	35.8746	41.97	-10.62	31.35	40.00	-8.65	QP			
2	134.5592	48.10	-14.06	34.04	43.50	-9.46	QP			
3	547.0977	44.37	-3.70	40.67	46.00	-5.33	QP			

## Above 1G



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Job No.: star2014 #1984

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp. ( C)/Hum.(%) 25 C / 55 %

Time: 11/01/58

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

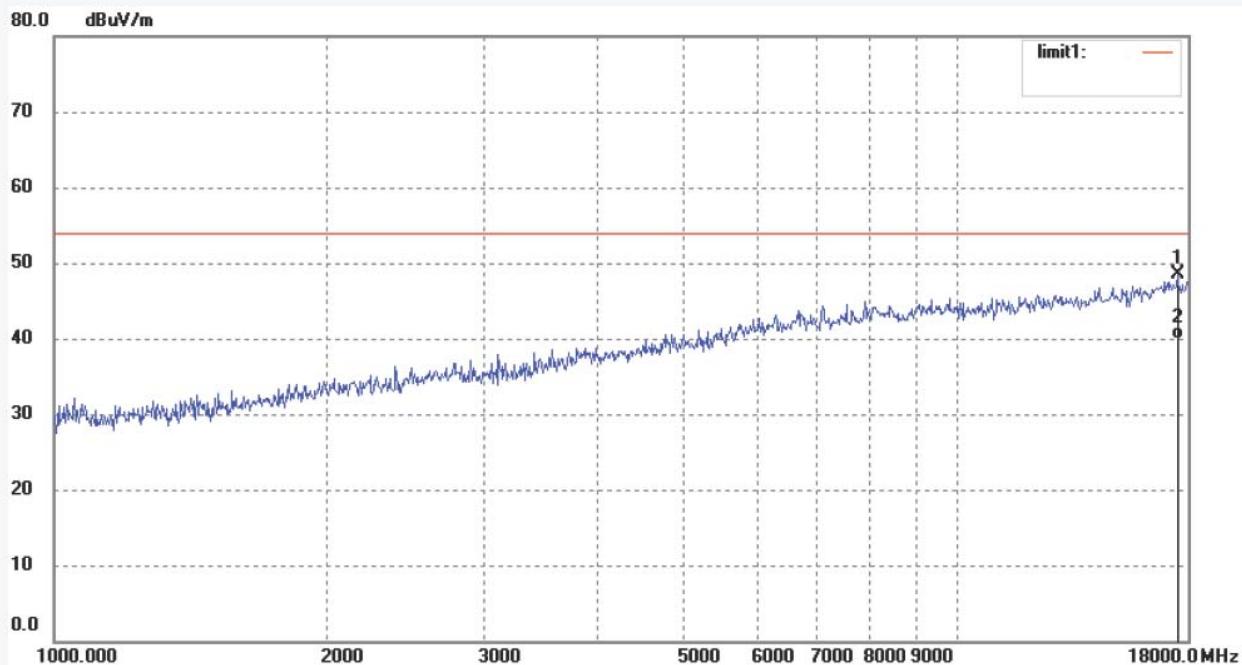
Mode: TX Channel 1(802.11b)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	17534.582	30.78	17.68	48.46	74.00	-25.54	peak			
2	17534.582	22.17	17.68	39.85	54.00	-14.15	peak			



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Job No.: star2014 #1983

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp.( C)/Hum.(%) 25 C / 55 %

Time: 11/01/10

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

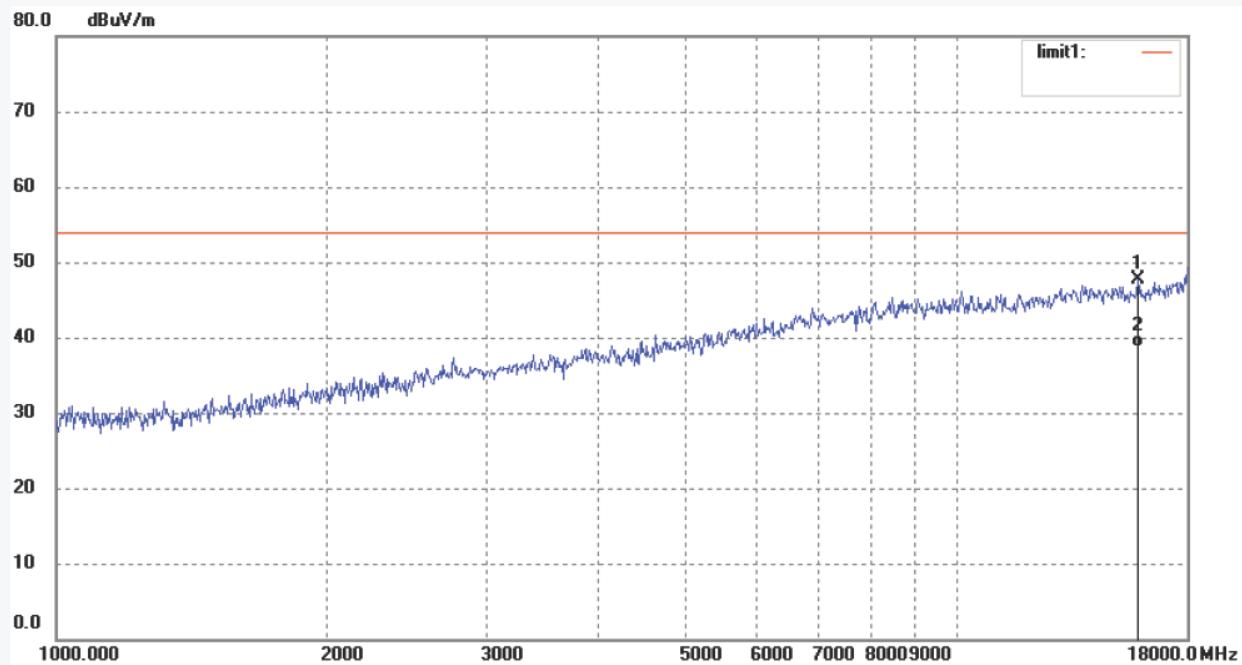
Mode: TX Channel 1(802.11b)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	15882.369	34.49	13.17	47.66	74.00	-26.34	peak			
2	15882.369	25.63	13.17	38.80	54.00	-15.20	peak			



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Job No.: star2014 #1985

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp. ( C)/Hum.(%) 25 C / 55 %

EUT: Indoor Air Quality Sensor

Mode: TX Channel 6(802.11b)

Model: FBT0002000

Manufacturer: Mixwell

Polarization: Horizontal

Power Source: AC 120V/60Hz

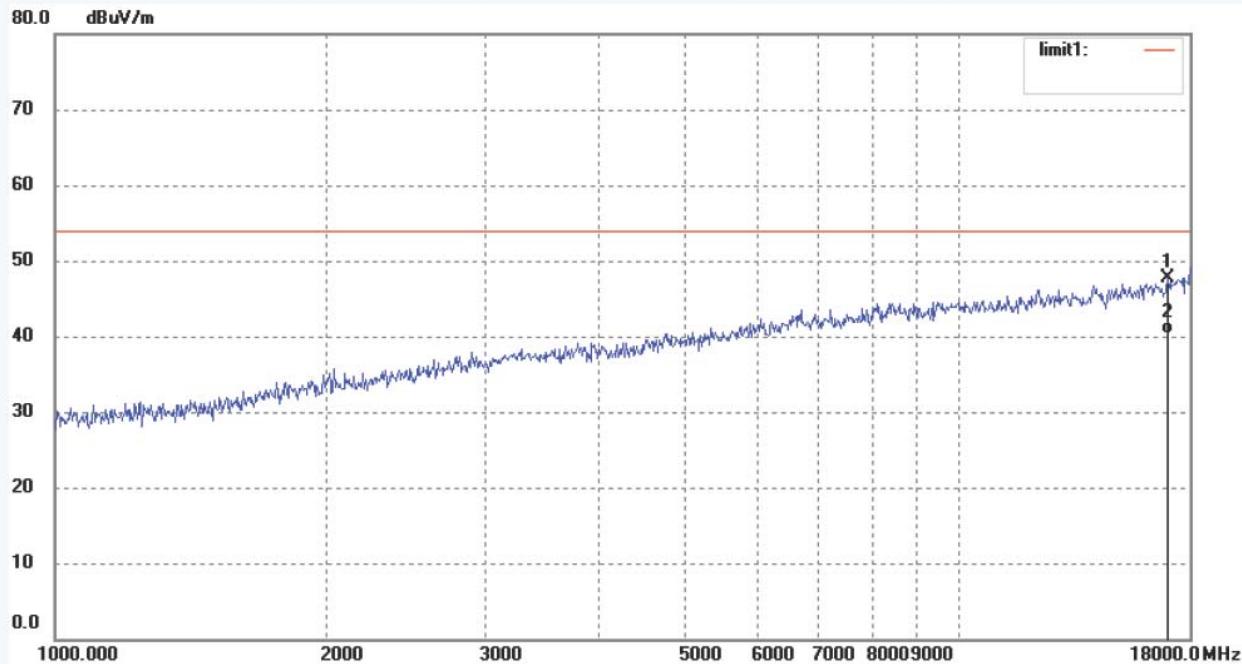
Date: 14/12/08/

Time: 11/03/37

Engineer Signature: STAR

Distance: 3m

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	17031.551	32.35	15.34	47.69	74.00	-26.31	peak			
2	17031.551	24.91	15.34	40.25	54.00	-13.75	peak			



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Job No.: star2014 #1986

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp.( C)/Hum.(%) 25 C / 55 %

Time: 11/04/27

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

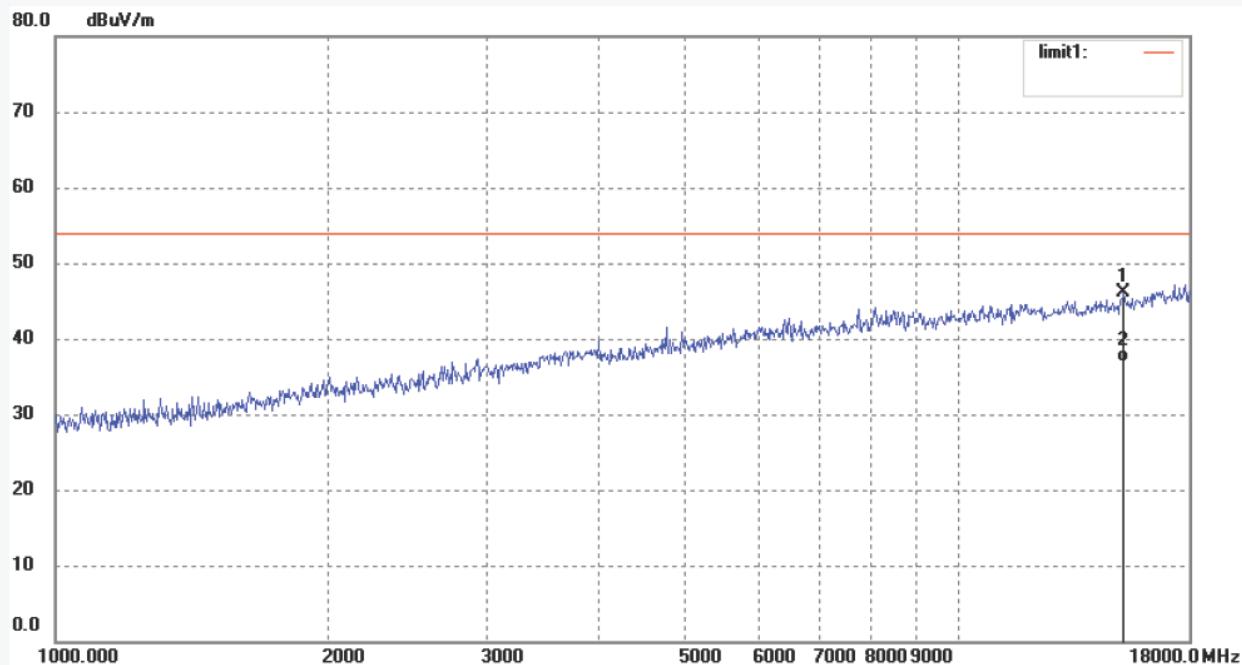
Mode: TX Channel 6(802.11b)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	15248.165	32.69	13.50	46.19	74.00	-27.81	peak			
2	15248.165	23.50	13.50	37.00	54.00	-17.00	peak			



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Job No.: star2014 #1988

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp.( C)/Hum.(%) 25 C / 55 %

Time: 11/06/35

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

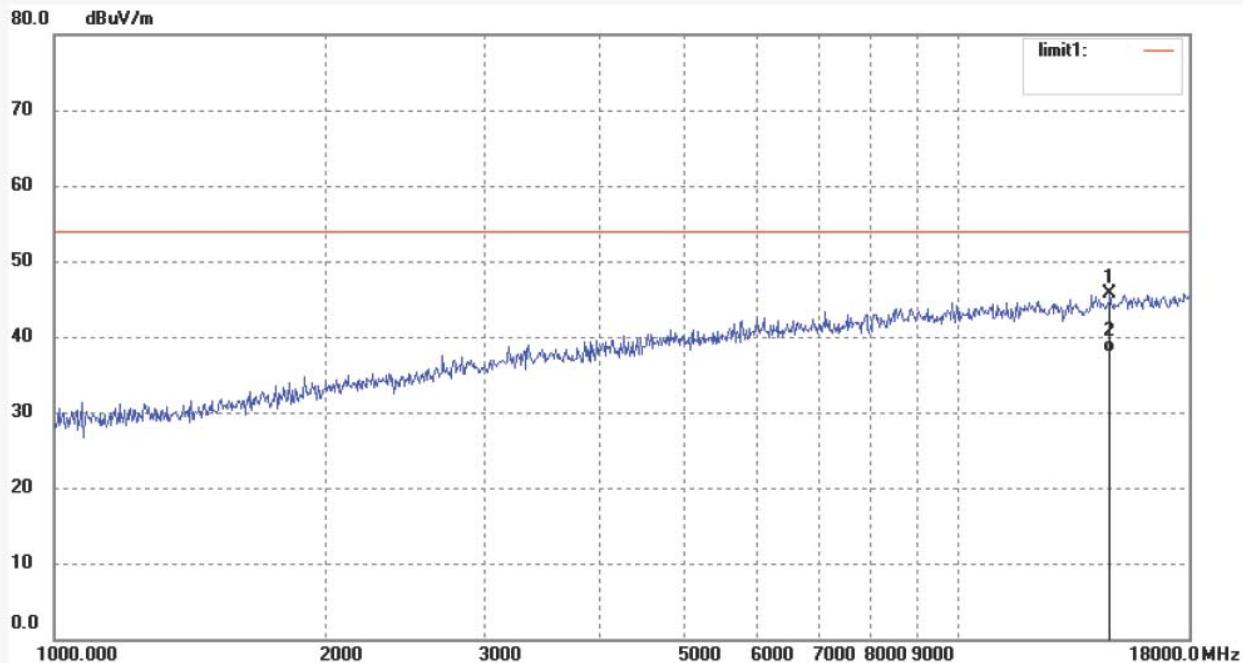
Mode: TX Channel 11(802.11b)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	14724.757	31.49	14.23	45.72	74.00	-28.28	peak			
2	14724.757	23.61	14.23	37.84	54.00	-16.16	peak			



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Job No.: star2014 #1987

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp. ( C)/Hum.(%) 25 C / 55 %

Time: 11/04/27

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

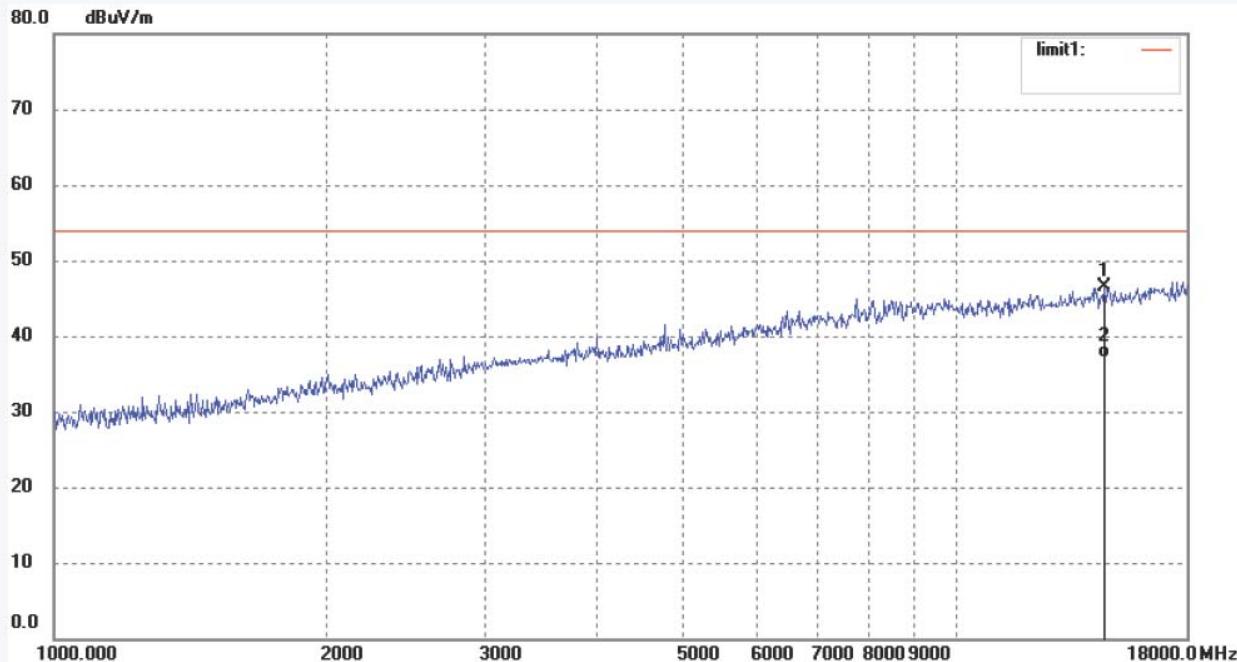
Mode: TX Channel 11(802.11b)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	14596.737	32.14	14.42	46.56	74.00	-27.44	peak			
2	14596.737	22.69	14.42	37.11	54.00	-16.89	peak			



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Job No.: star2014 #1989

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp. ( C )/Hum. (%) 25 C / 55 %

EUT: Indoor Air Quality Sensor

Mode: TX Channel 1(802.11g)

Model: FBT0002000

Manufacturer: Mixwell

Polarization: Horizontal

Power Source: AC 120V/60Hz

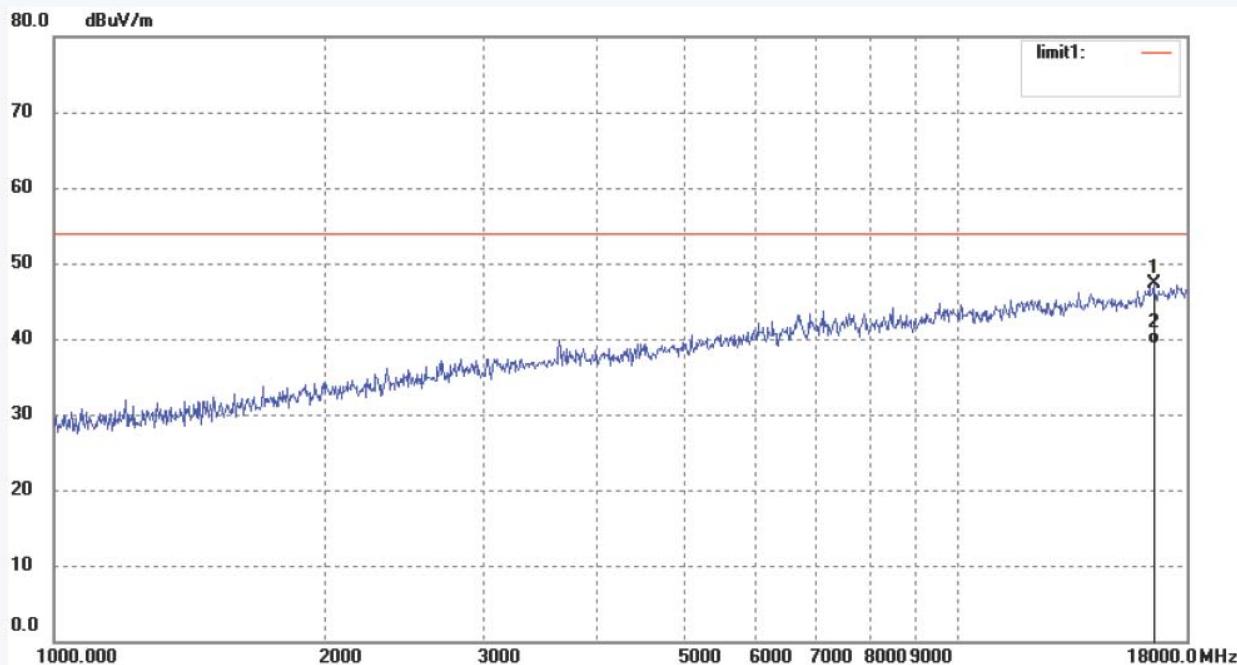
Date: 14/12/08/

Time: 11/07/26

Engineer Signature: STAR

Distance: 3m

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	16542.951	33.42	13.80	47.22	74.00	-26.78	peak			
2	16542.951	25.54	13.80	39.34	54.00	-14.66	peak			



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Job No.: star2014 #1990

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp. ( C)/Hum.(%) 25 C / 55 %

Time: 11/08/29

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

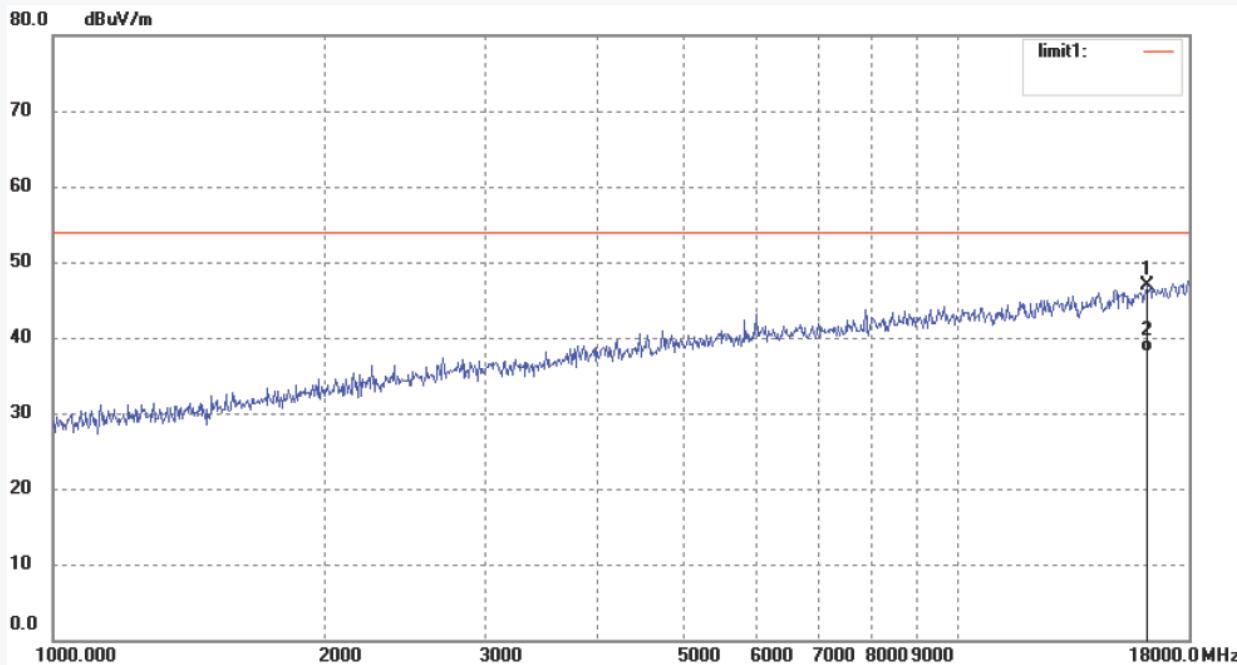
Mode: TX Channel 1(802.11g)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	16209.295	33.49	13.41	46.90	74.00	-27.10	peak			
2	16209.295	24.64	13.41	38.05	54.00	-15.95	peak			



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Job No.: star2014 #1992

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp.( C)/Hum.(%) 25 C / 55 %

Time: 11/09/57

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

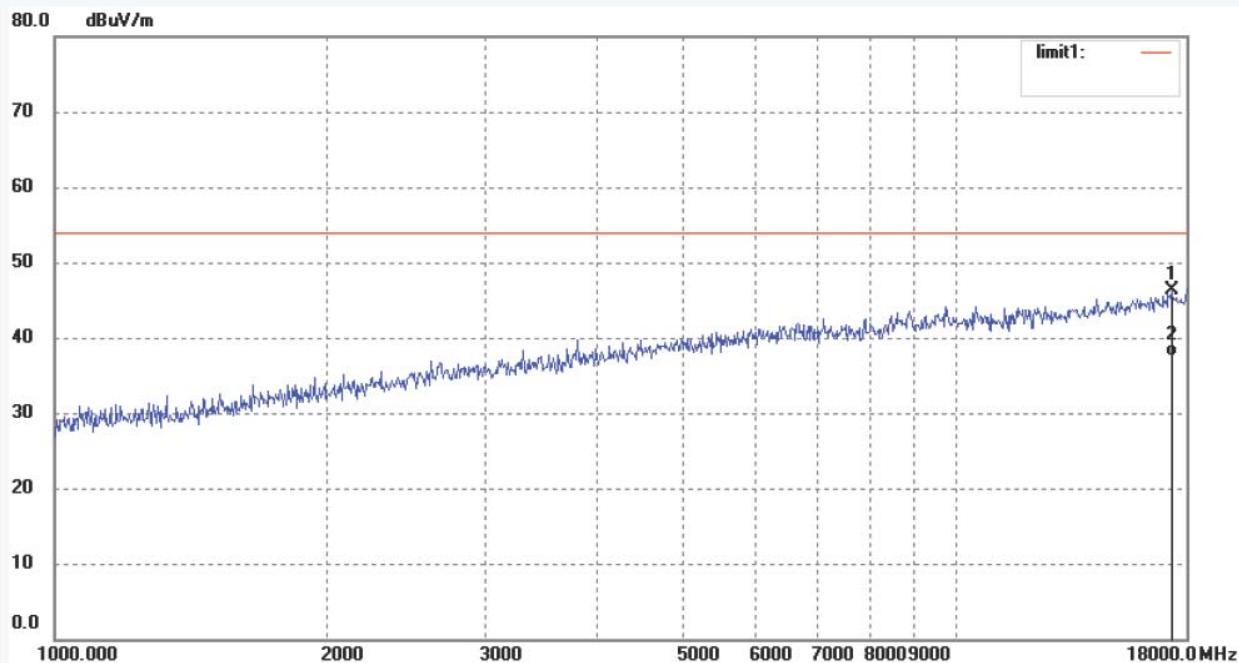
Mode: TX Channel 6(802.11g)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	17331.611	29.50	16.72	46.22	74.00	-27.78	peak			
2	17331.611	20.88	16.72	37.60	54.00	-16.40	peak			



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Job No.: star2014 #1991

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp. ( C)/Hum.(%) 25 C / 55 %

Time: 11/09/12

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

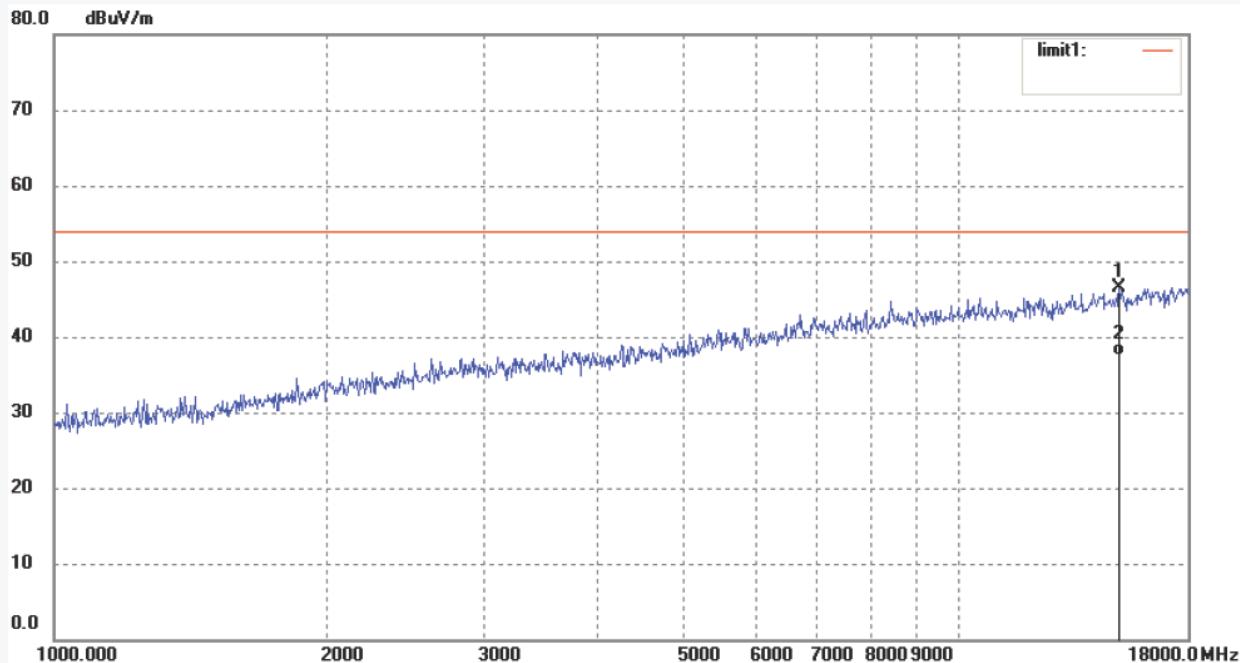
Mode: TX Channel 6(802.11g)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	15115.594	32.76	13.71	46.47	74.00	-27.53	peak			
2	15115.594	23.89	13.71	37.60	54.00	-16.40	peak			

Job No.: star2014 #1993

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp. ( C)/Hum.(%) 25 C / 55 %

Time: 11/10/51

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

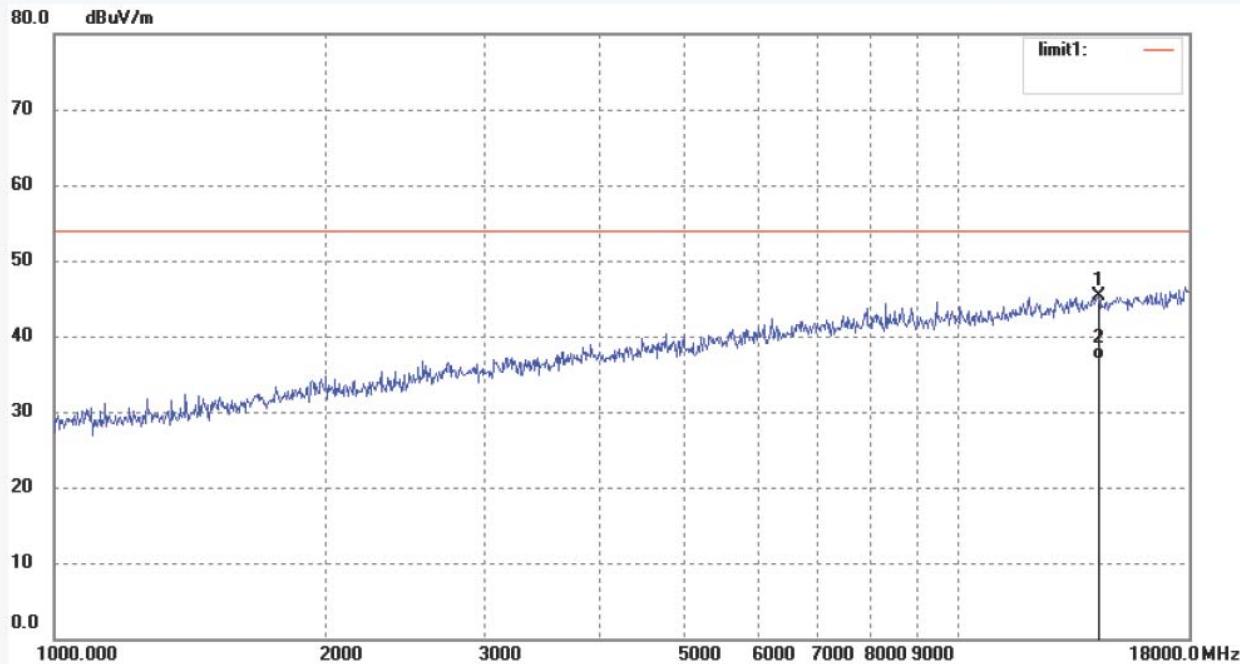
Mode: TX Channel 11(802.11g)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	14302.334	31.99	13.40	45.39	74.00	-28.61	peak			
2	14302.334	23.47	13.40	36.87	54.00	-17.13	peak			

Job No.: star2014 #1994

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp. ( C) / Hum. (%) 25 C / 55 %

EUT: Indoor Air Quality Sensor

Mode: TX Channel 11(802.11g)

Model: FBT0002000

Manufacturer: Mixwell

Polarization: Vertical

Power Source: AC 120V/60Hz

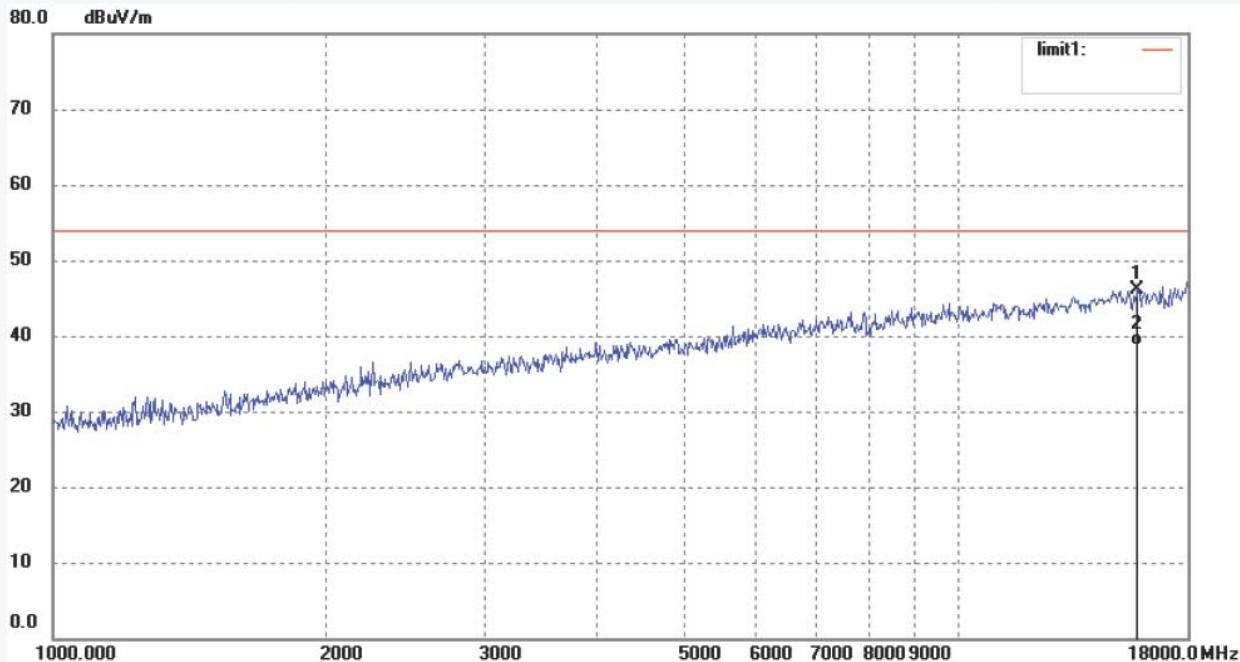
Date: 14/12/08/

Time: 11/11/32

Engineer Signature: STAR

Distance: 3m

Note: Report No.: ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	15836.207	33.04	13.16	46.20	74.00	-27.80	peak			
2	15836.207	25.45	13.16	38.61	54.00	-15.39	peak			

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Job No.: star2014 #1996

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp. ( C)/Hum.(%) 25 C / 55 %

Time: 11/13/19

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

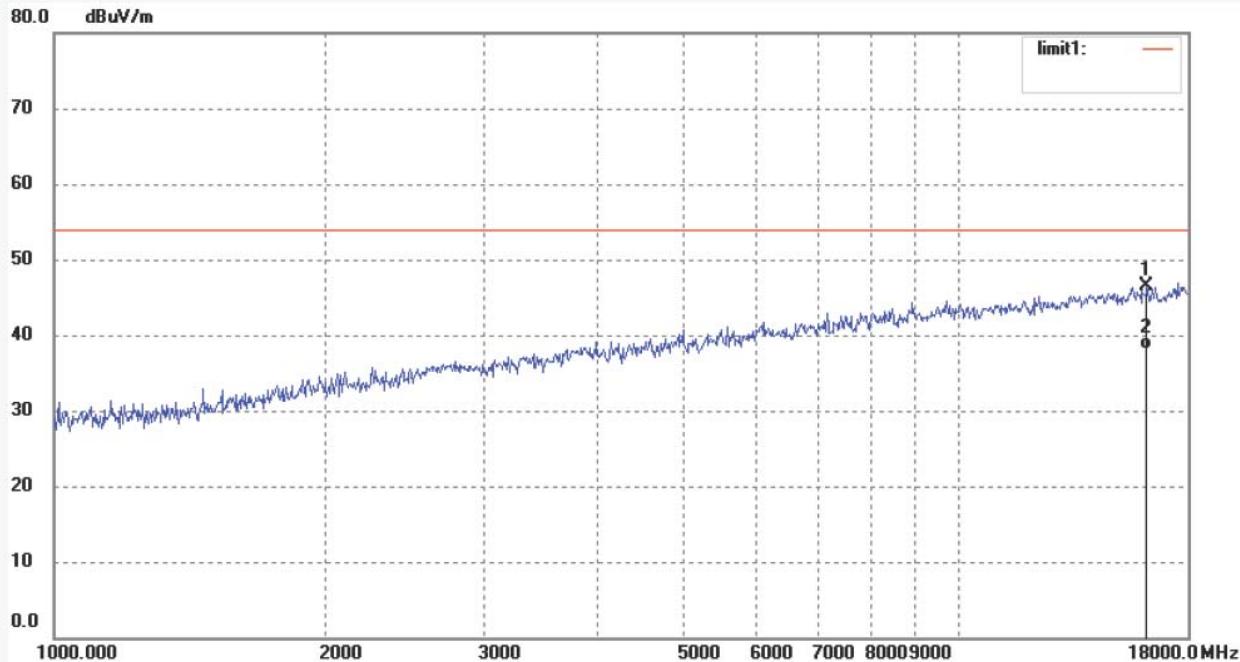
Mode: TX Channel 1(802.11n20)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	16209.295	33.01	13.41	46.42	74.00	-27.58	peak			
2	16209.295	24.72	13.41	38.13	54.00	-15.87	peak			

Job No.: star2014 #1995

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp. (C)/Hum.(%) 25 C / 55 %

Time: 11/12/31

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

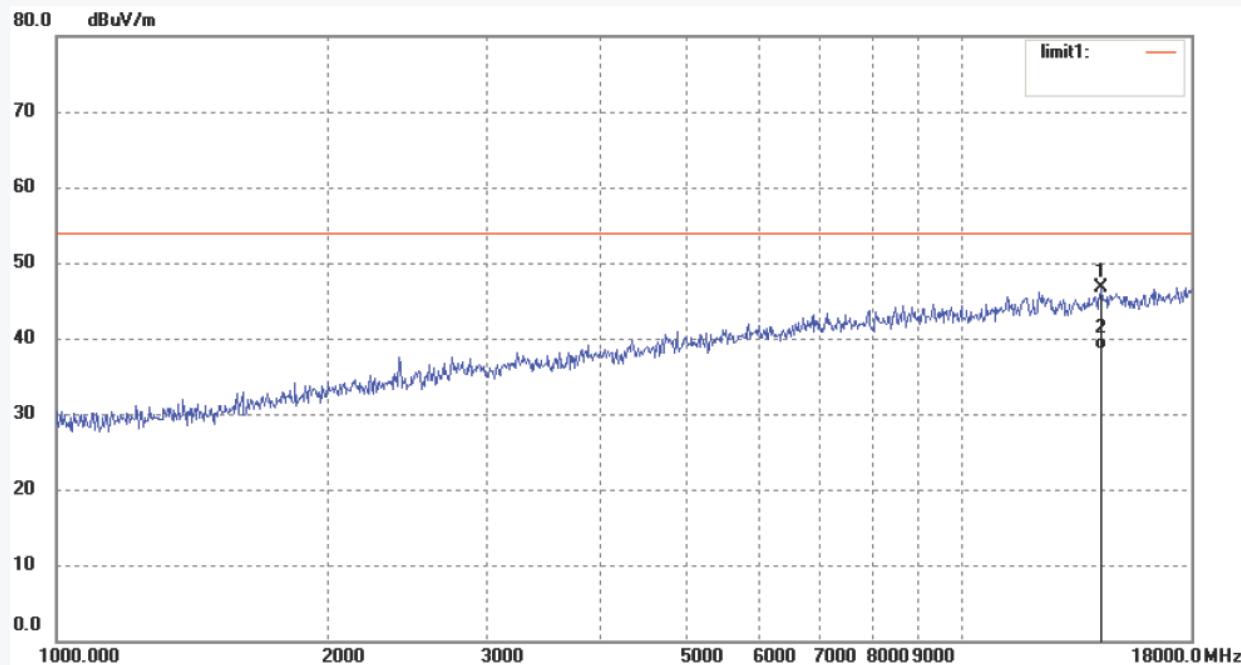
Mode: TX Channel 1(802.11n20)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	14302.334	33.33	13.40	46.73	74.00	-27.27	peak			
2	14302.334	25.14	13.40	38.54	54.00	-15.46	peak			

Job No.: star2014 #1997

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp. ( C )/Hum.(%) 25 C / 55 %

Time: 11/14/18

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

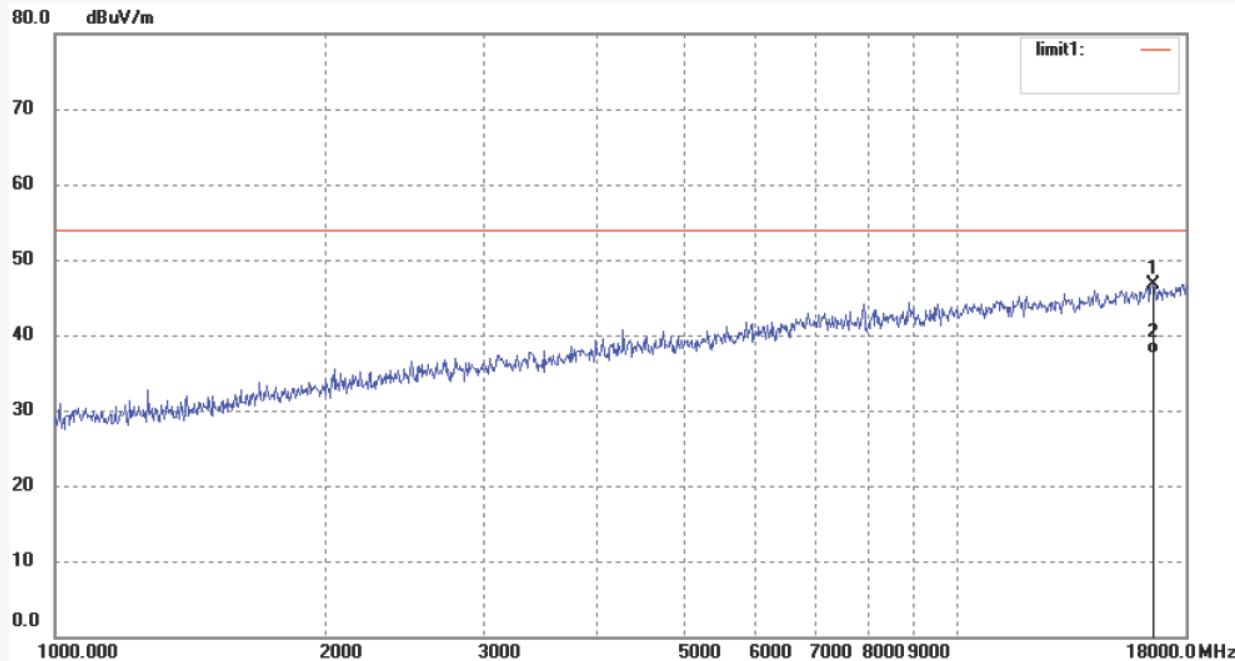
Mode: TX Channel 6(802.11n20)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	16591.174	32.70	13.95	46.65	74.00	-27.35	peak			
2	16591.174	23.58	13.95	37.53	54.00	-16.47	peak			

Job No.: star2014 #1998

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp.( C)/Hum.(%) 25 C / 55 %

Time: 11/15/24

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

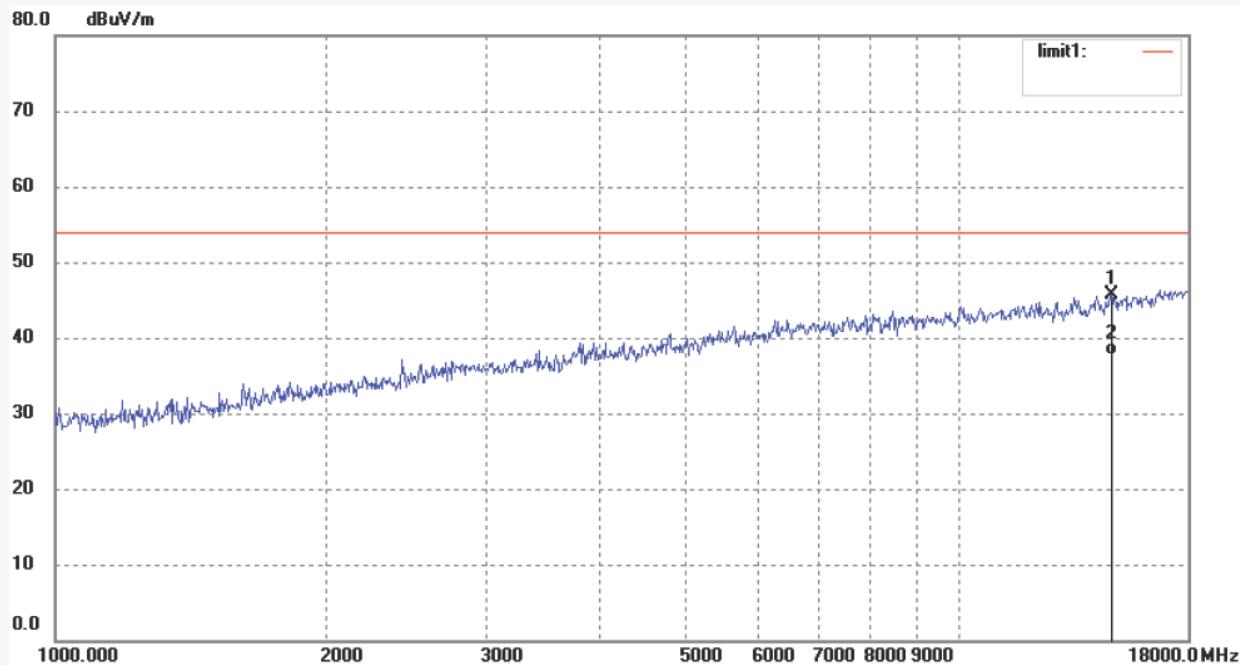
Mode: TX Channel 6(802.11n20)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	14810.727	31.70	14.09	45.79	74.00	-28.21	peak			
2	14810.727	23.64	14.09	37.73	54.00	-16.27	peak			



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Job No.: star2014 #2000

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp.( C)/Hum.(%) 25 C / 55 %

Time: 11/17/14

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

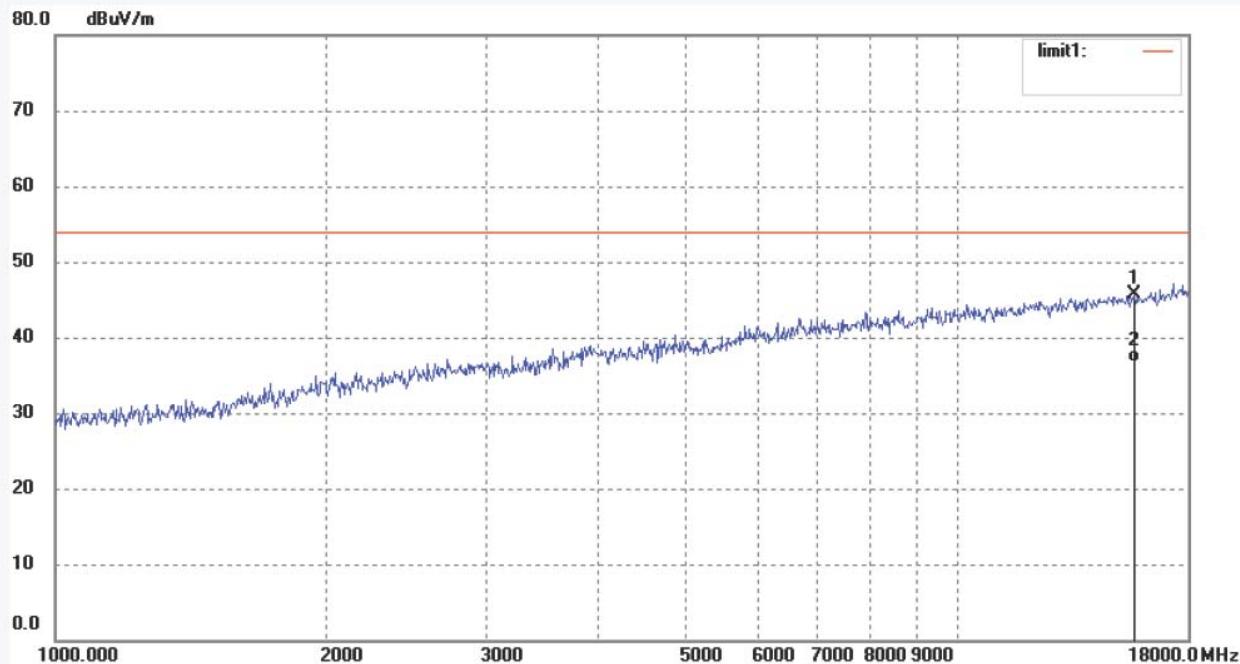
Mode: TX Channel 11(802.11n20)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	15698.523	32.49	13.14	45.63	74.00	-28.37	peak			
2	15698.523	23.59	13.14	36.73	54.00	-17.27	peak			



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Job No.: star2014 #1999

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp. ( C)/Hum.(%) 25 C / 55 %

Time: 11/16/14

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

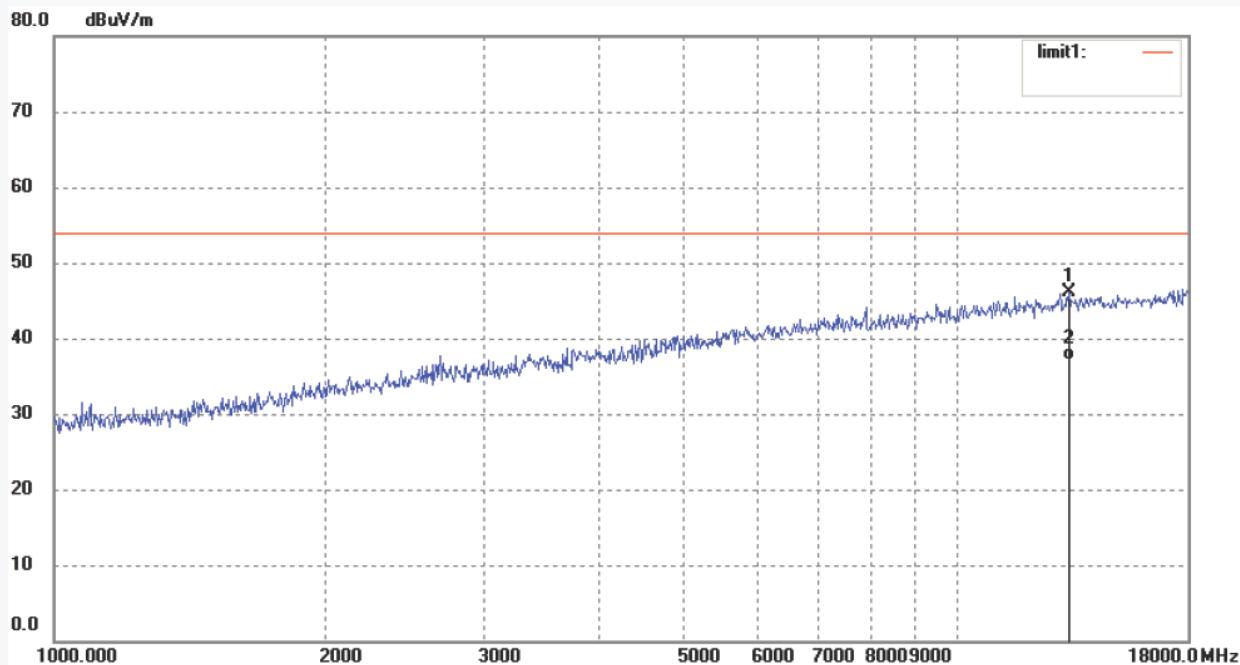
Mode: TX Channel 11(802.11n20)

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	13298.538	35.83	10.28	46.11	74.00	-27.89	peak			
2	13298.538	26.78	10.28	37.06	54.00	-16.94	peak			

Job No.: star2014 #2001

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp.( C)/Hum.(%) 25 C / 55 %

Time: 11/18/10

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

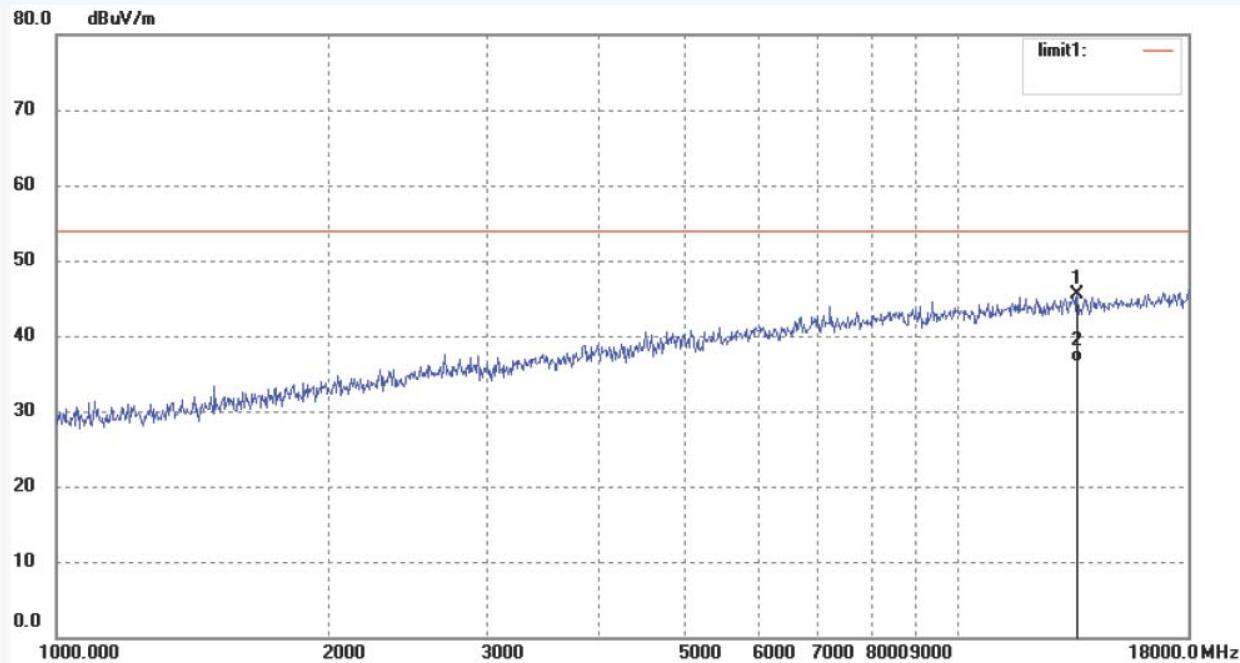
Mode: TX Channel 3(802.11n)40MHz

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	13572.278	34.81	10.75	45.56	74.00	-28.44	peak			
2	13572.278	25.78	10.75	36.53	54.00	-17.47	peak			

Job No.: star2014 #2002

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp. ( C )/Hum.(%) 25 C / 55 %

Time: 11/19/00

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

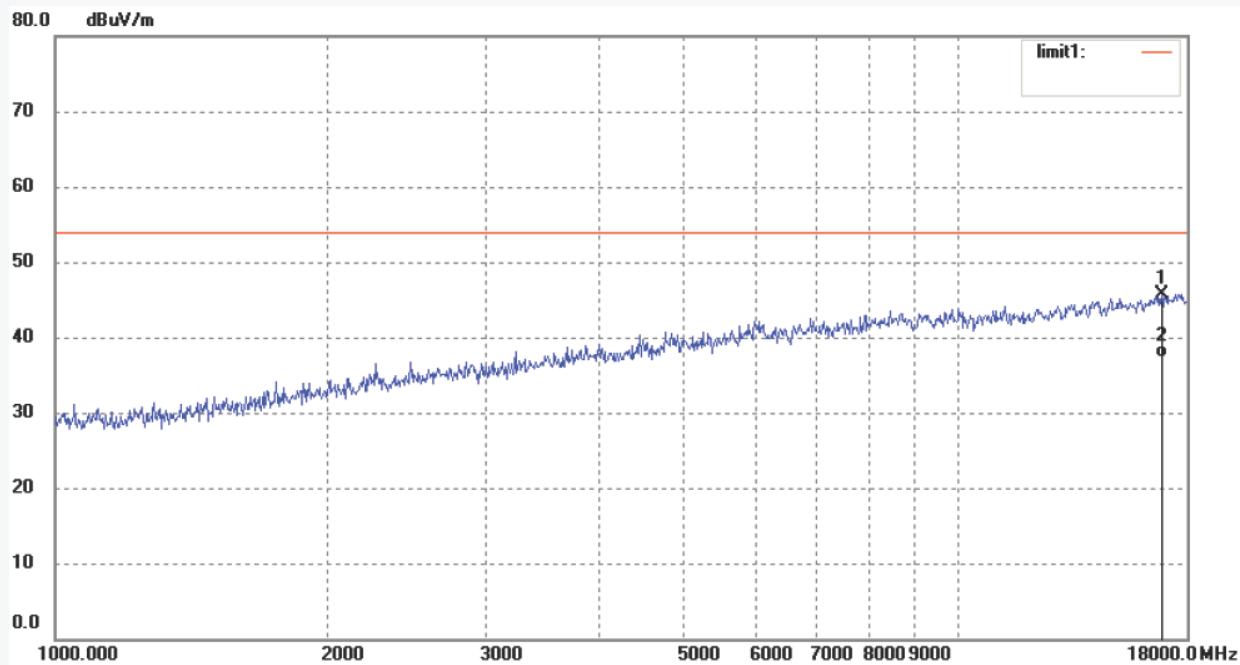
Mode: TX Channel 3(802.11n)40MHz

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	16883.475	30.76	14.85	45.61	74.00	-28.39	peak			
2	16883.475	22.45	14.85	37.30	54.00	-16.70	peak			



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Job No.: star2014 #2004

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp.( C)/Hum.(%) 25 C / 55 %

Time: 11/20/36

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

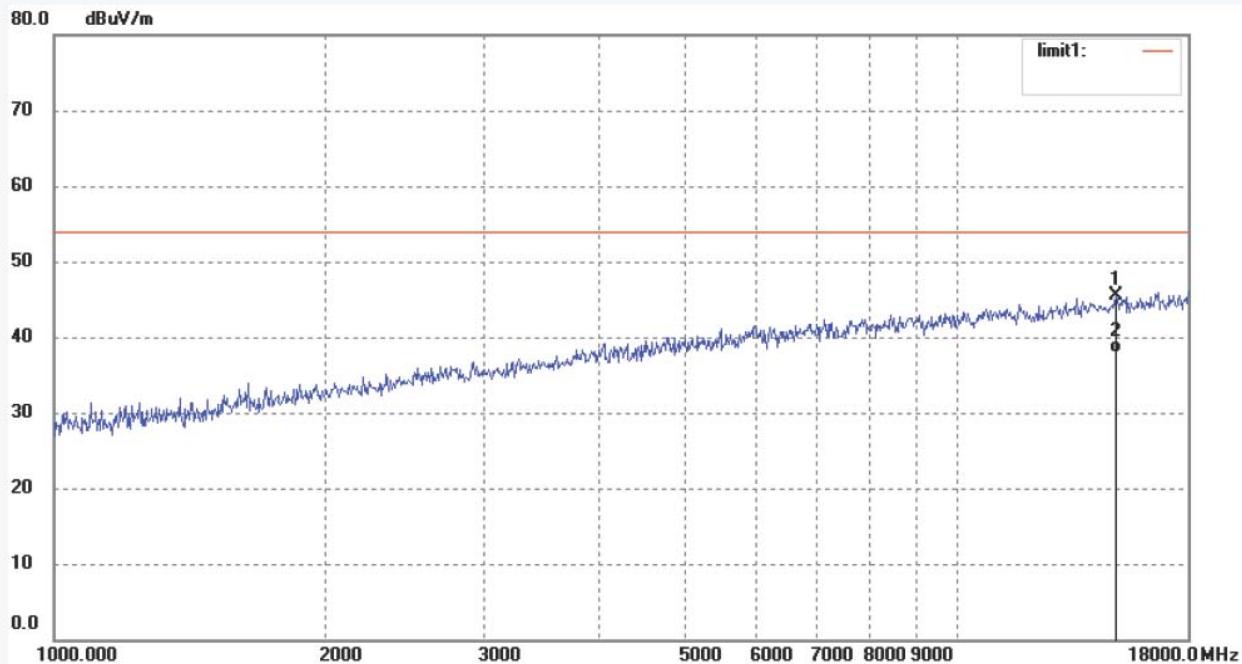
Mode: TX Channel 6(802.11n)40MHz

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	14984.176	31.72	13.83	45.55	74.00	-28.45	peak			
2	14984.176	24.05	13.83	37.88	54.00	-16.12	peak			

Job No.: star2014 #2003

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp. ( C)/Hum.(%) 25 C / 55 %

Time: 11/19/53

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

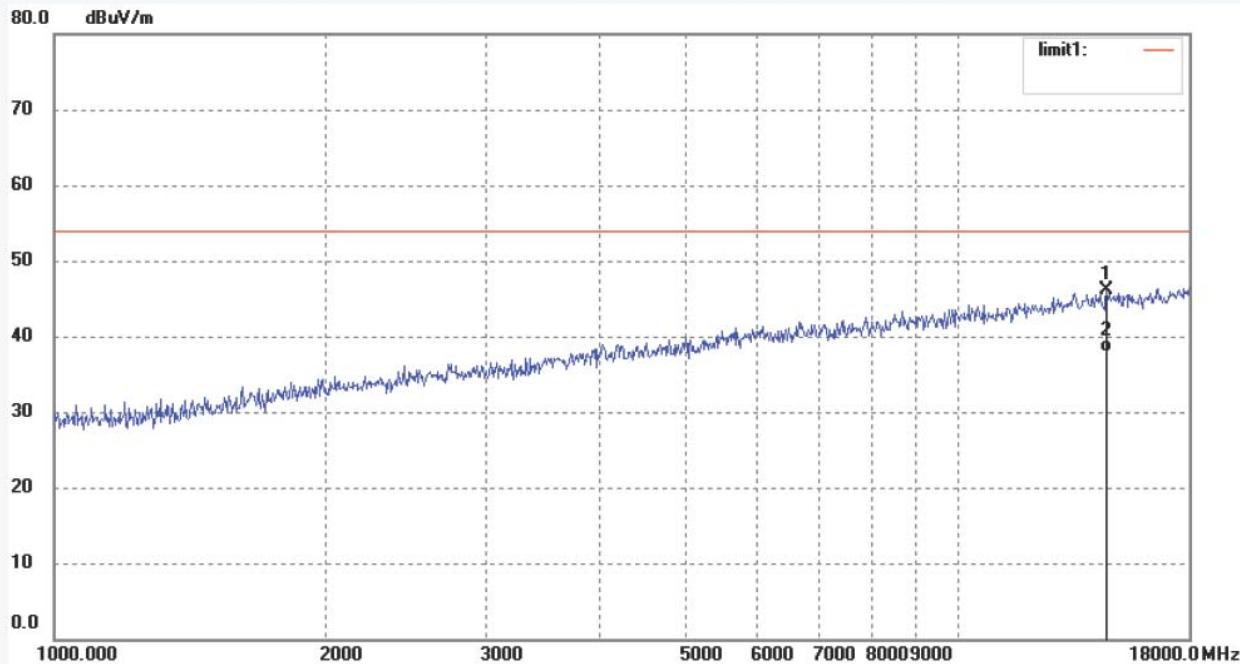
Mode: TX Channel 6(802.11n)40MHz

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	14596.737	31.63	14.42	46.05	74.00	-27.95	peak			
2	14596.737	23.45	14.42	37.87	54.00	-16.13	peak			



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Job No.: star2014 #2005

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp. ( C)/Hum.(%) 25 C / 55 %

EUT: Indoor Air Quality Sensor

Mode: TX Channel 9(802.11n)40MHz

Model: FBT0002000

Manufacturer: Mixwell

Polarization: Horizontal

Power Source: AC 120V/60Hz

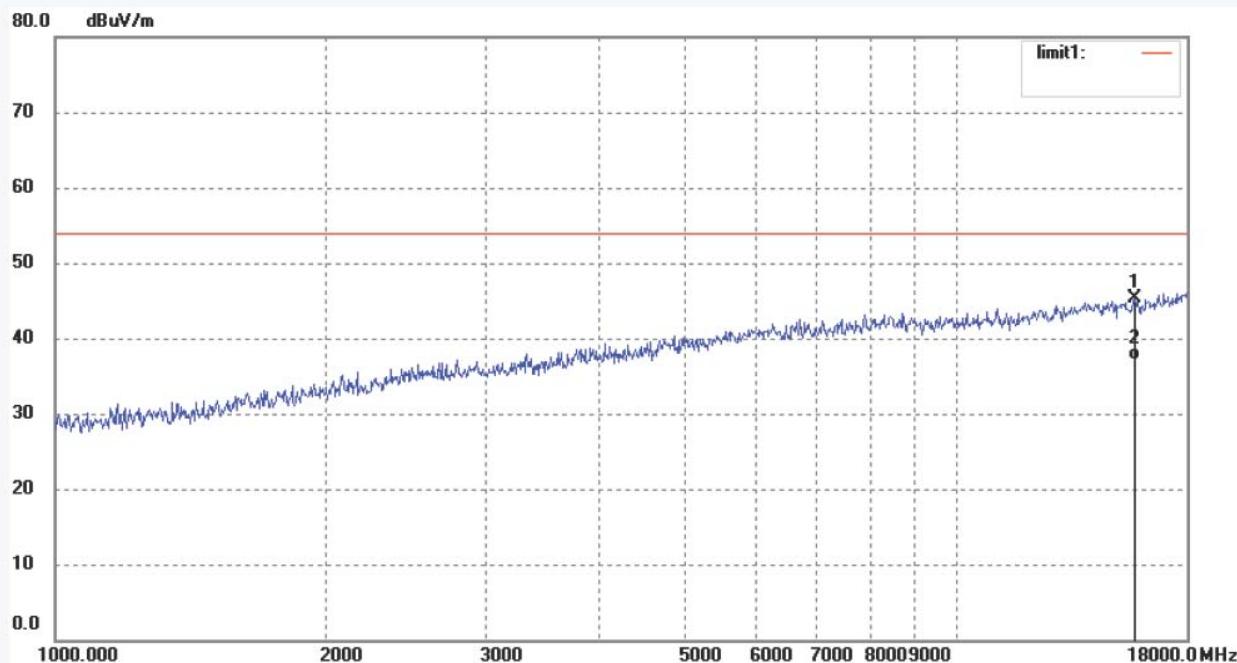
Date: 14/12/08/

Time: 11/21/32

Engineer Signature: STAR

Distance: 3m

Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	15744.284	32.16	13.15	45.31	74.00	-28.69	peak			
2	15744.284	23.93	13.15	37.08	54.00	-16.92	peak			



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Job No.: star2014 #2006

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 14/12/08/

Temp.( C)/Hum.(%) 25 C / 55 %

Time: 11/24/07

EUT: Indoor Air Quality Sensor

Engineer Signature: STAR

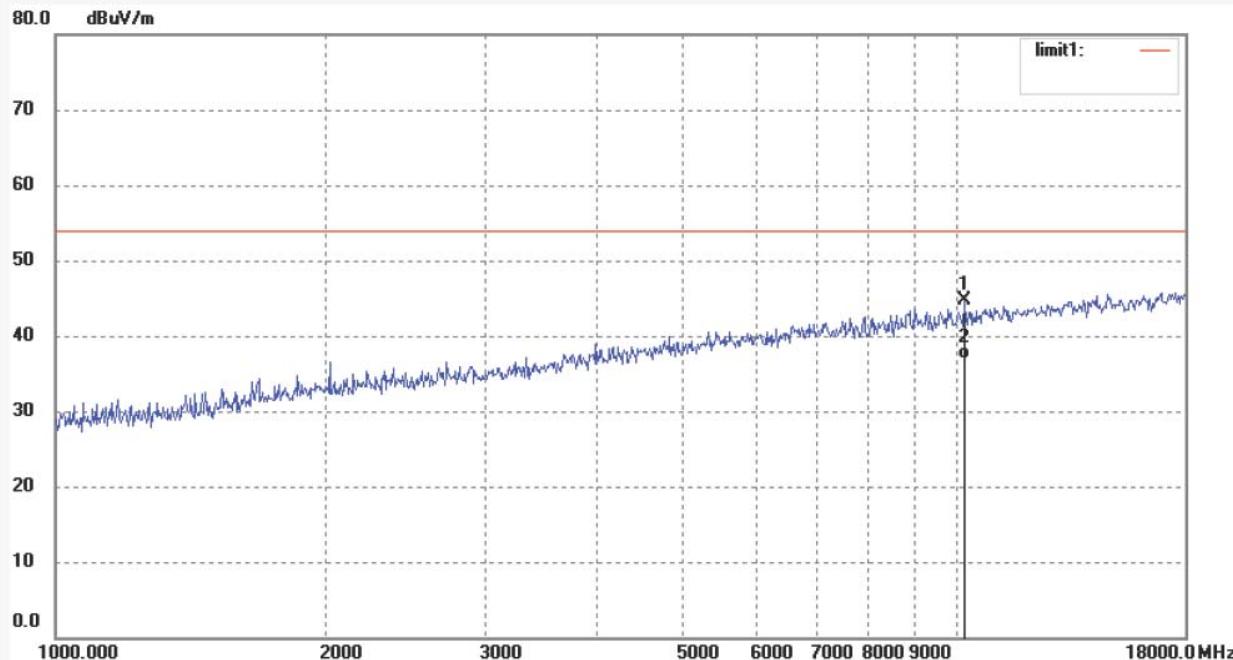
Mode: TX Channel 9(802.11n)40MHz

Distance: 3m

Model: FBT0002000

Manufacturer: Mixwell

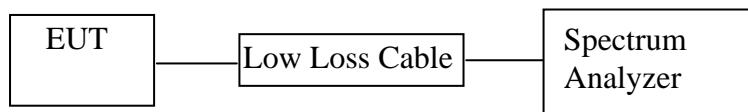
Note: Report No.:ATE20142421



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	10233.707	37.82	6.84	44.66	74.00	-29.34	peak			
2	10233.707	30.10	6.84	36.94	54.00	-17.06	peak			

## 11. CONDUCTED SPURIOUS EMISSION COMPLIANCE TEST

### 11.1. Block Diagram of Test Setup



### 11.2. The Requirement For Section 15.247(d)

Section 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

### 11.3. EUT Configuration on Measurement

The equipment is installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 11.4. Operating Condition of EUT

11.4.1. Setup the EUT and simulator as shown as Section 11.1.

11.4.2. Turn on the power of all equipment.

11.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

## 11.5. Test Procedure

11.5.1. The transmitter output was connected to the spectrum analyzer via a low loss cable.

11.5.2. Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz.

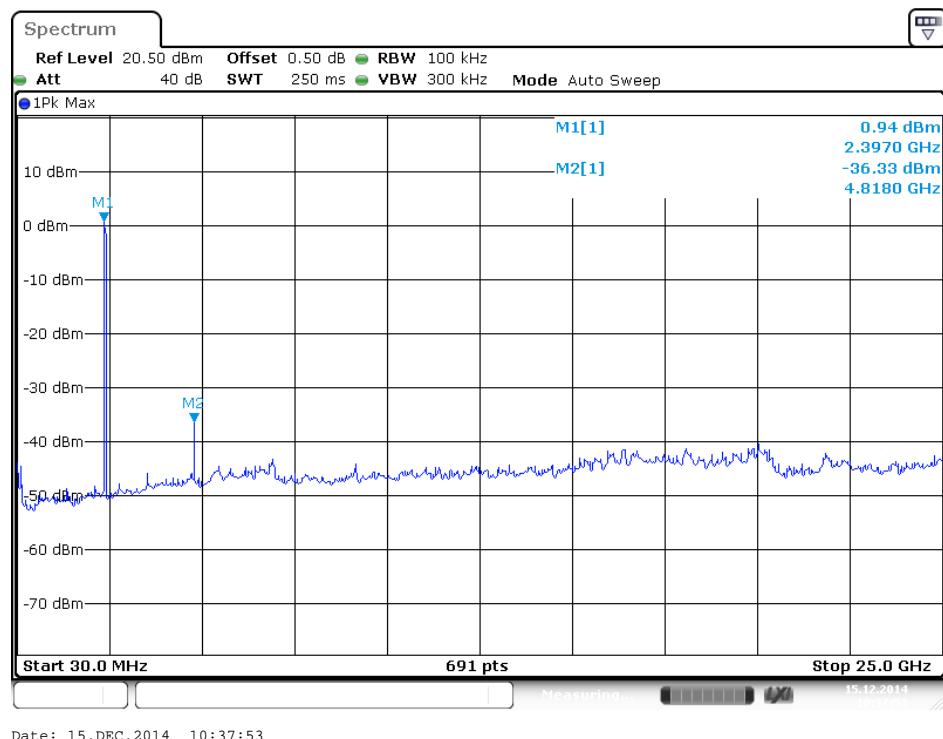
11.5.3. The Conducted Spurious Emission was measured and recorded.

## 11.6. Test Result

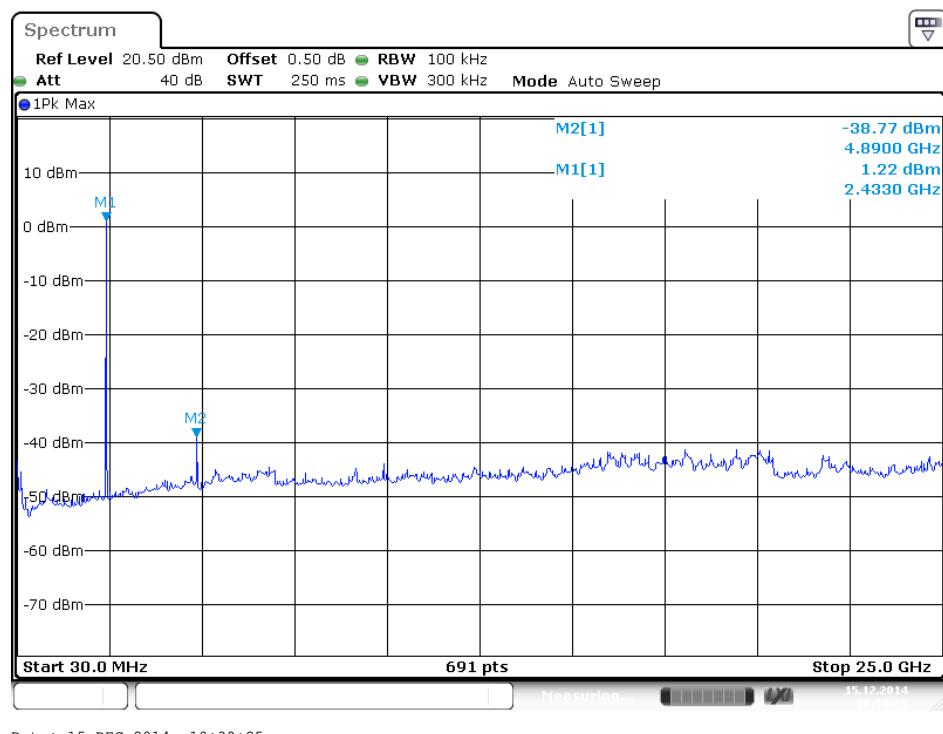
**Pass.**

The spectrum analyzer plots are attached as below.

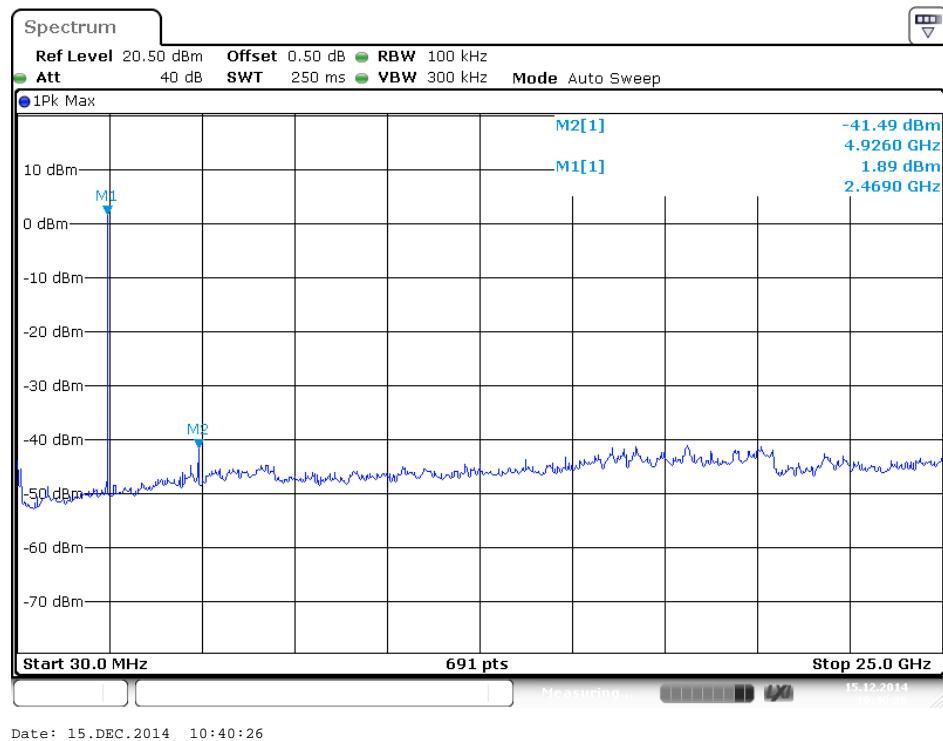
## TX 802.11b Channel Low 2412MHz



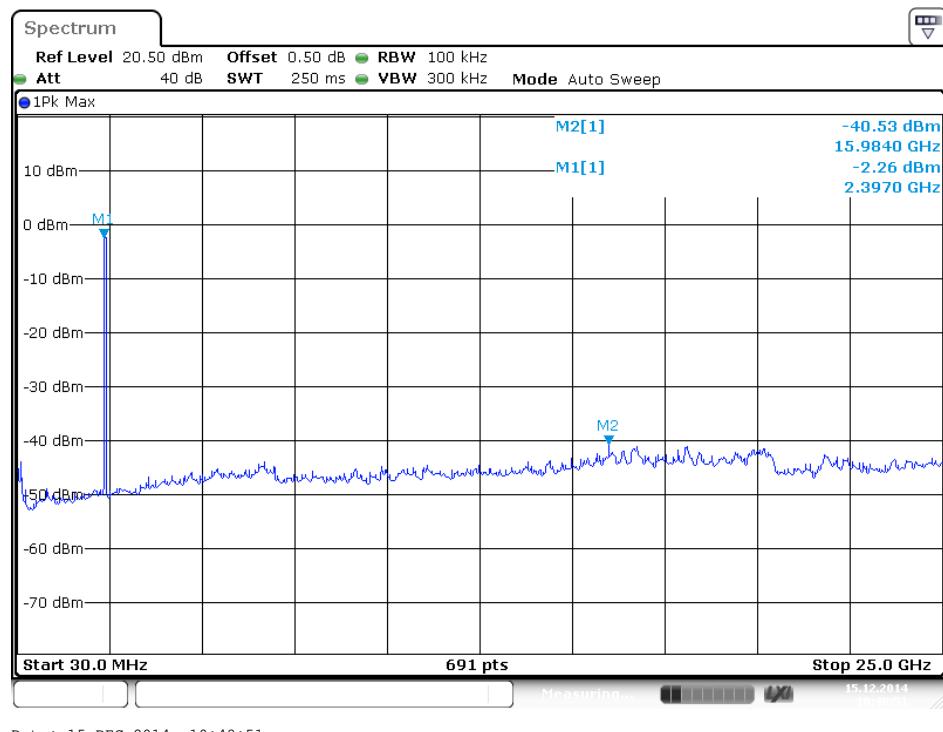
## TX 802.11b Channel Middle 2437MHz



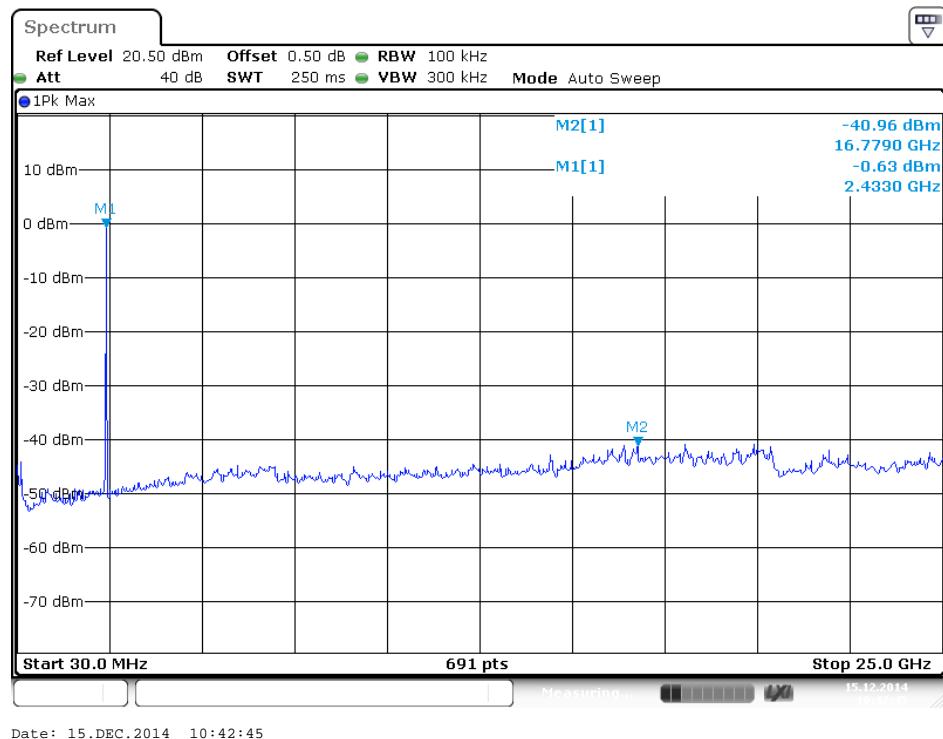
## TX 802.11b Channel High 2462MHz



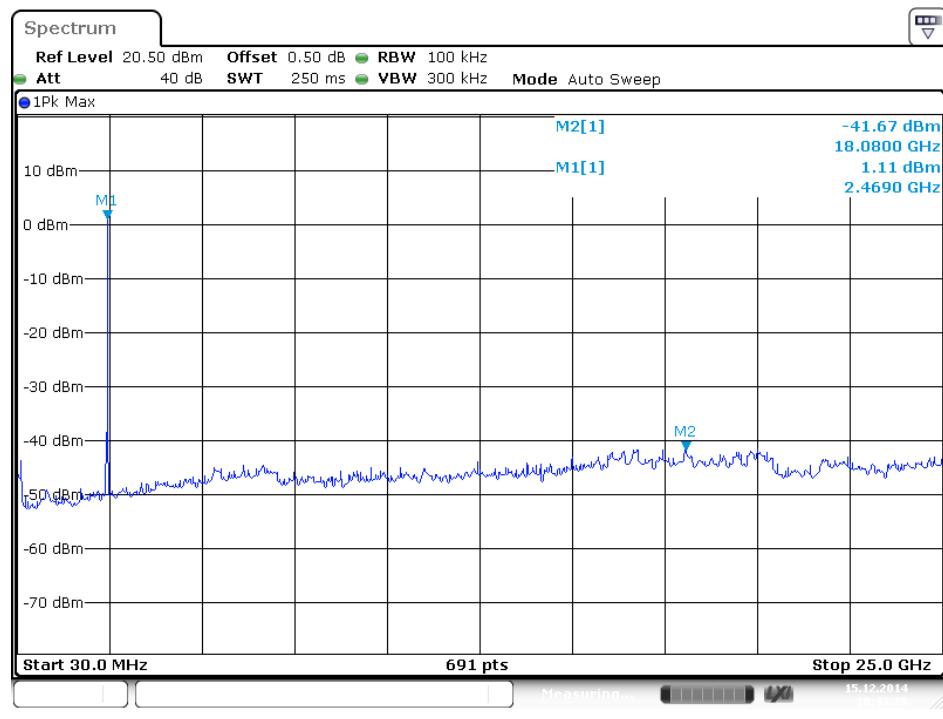
## TX 802.11g Channel Low 2412MHz



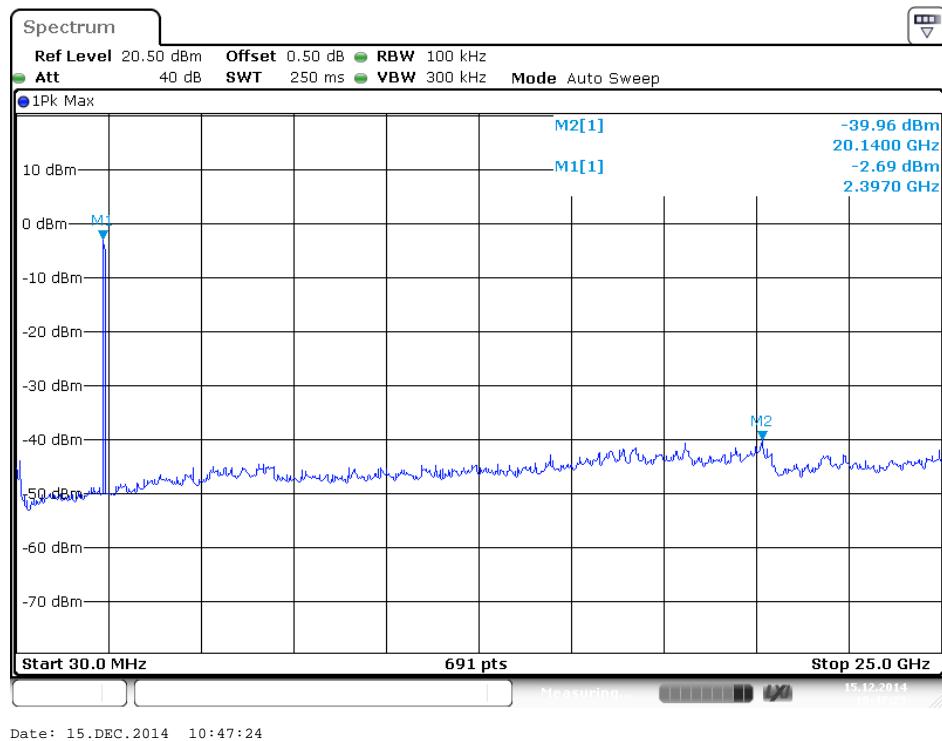
## TX 802.11g Channel Middle 2437MHz



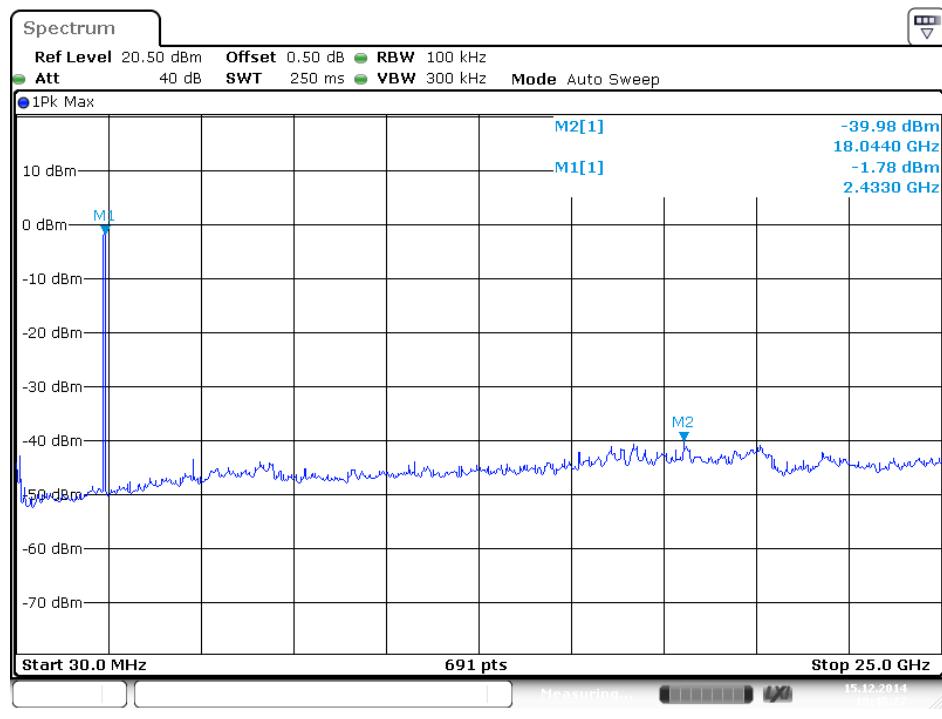
## TX 802.11g Channel High 2462MHz



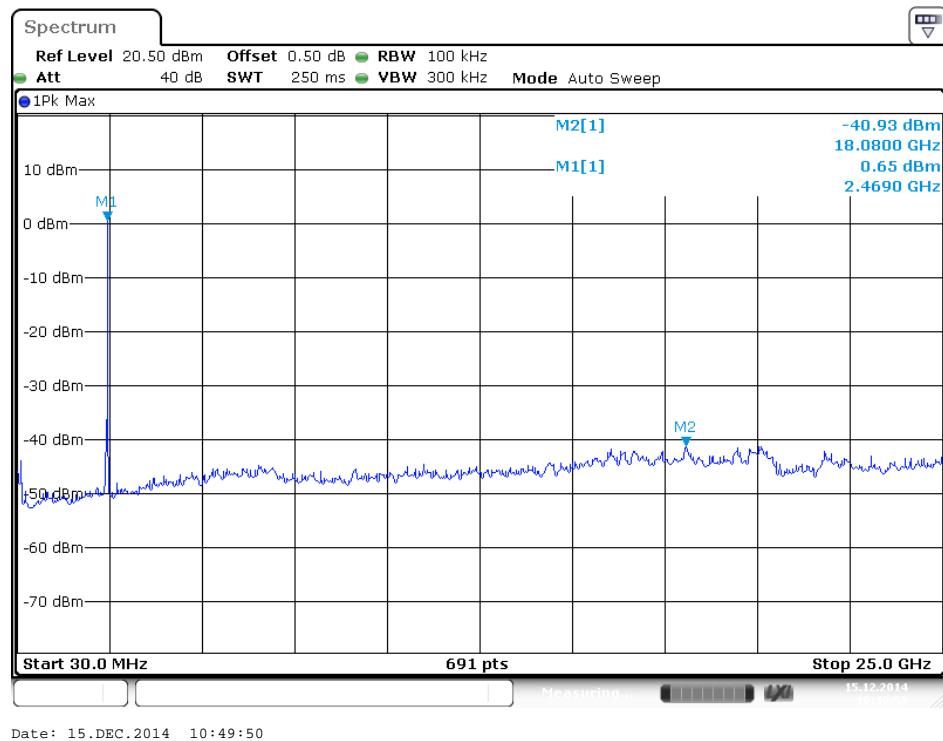
## TX 802.11n Channel Low 2412MHz (20MHz)



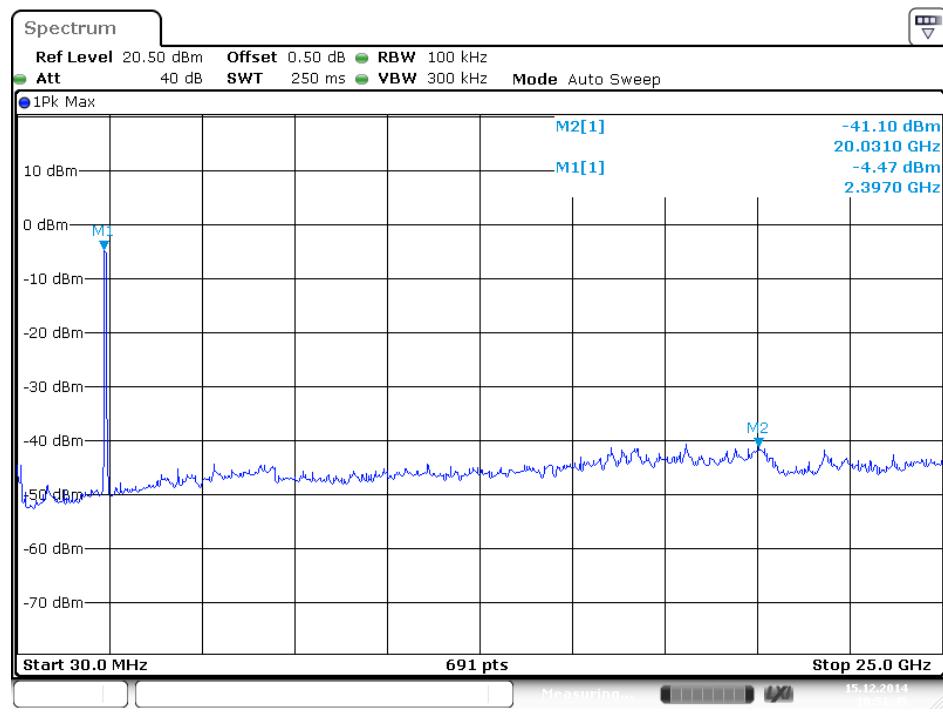
## TX 802.11n Channel Middle 2437MHz (20MHz)



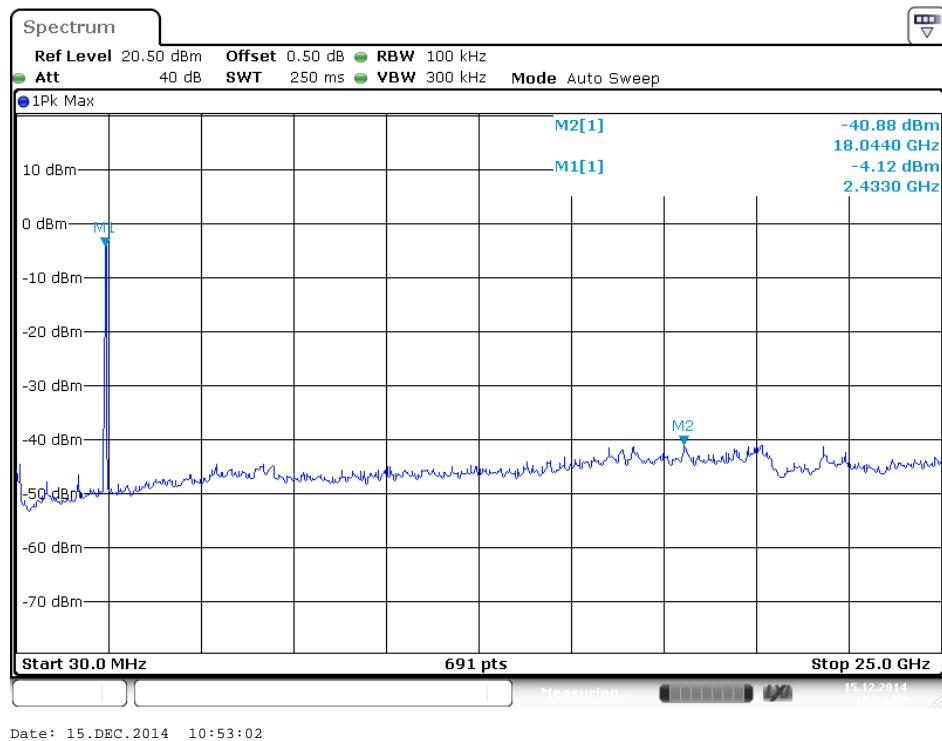
## TX 802.11n Channel High 2462MHz (20MHz)



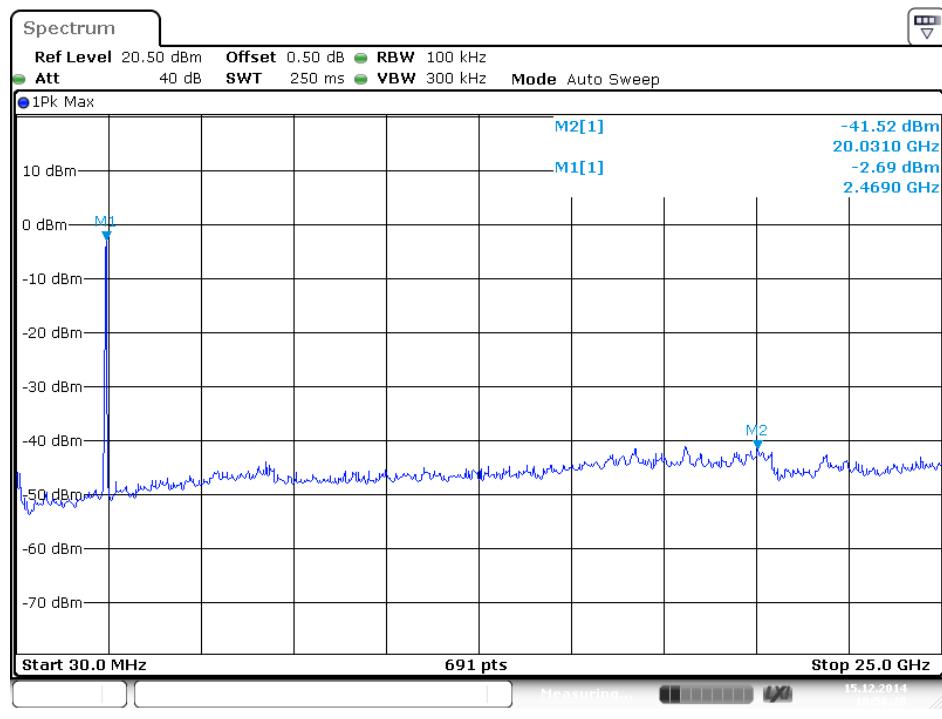
## TX 802.11n Channel Low 2422MHz (40MHz)



## TX 802.11n Channel Middle 2437MHz (40MHz)



## TX 802.11n Channel High 2452MHz (40MHz)



## 12. ANTENNA REQUIREMENT

### 12.1. The Requirement

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

### 12.2. Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. Therefore, the equipment complies with the antenna requirement of Section 15.203.

