



Neutron Engineering Inc.

Radio Test Report

FCC ID: HLEMT800BTNF

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

Issued Date : Jul. 18, 2013
Project No. : 1306087
Equipment : Master Controller
Model Name : MT800

Applicant : unitech electronics co., ltd.
Address : 5F, No. 136, Lane 235, Pao-Chiao Rd.,
Hsin-Tien Dist., New Taipei City, Taiwan

Tested by: Neutron Engineering Inc. EMC Laboratory
Date of Receipt: Jun. 19, 2013
Date of Test: Jun. 19, 2013 ~ Jul. 12, 2013

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Declaration

Neutron represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C.**, or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

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REPORT ISSUED HISTORY

Revised Version No.	Description	Issued Date
-	Initial Issue.	Jul. 18, 2013



1 CERTIFICATION

Equipment : Master Controller
Brand Name : unitech; TASHI
Model Name : MT800
Applicant : unitech electronics co., ltd.
Date of Test : Jun. 19, 2013 ~ Jul. 12, 2013
Standards : FCC Part 15, Subpart C: 2012
ANSI C63.4: 2009

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-1-1306087) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

**2. SUMMARY OF TEST RESULTS**

Standard Clause	Test Item	Result
15.207	Conducted Emission	PASS
15.247 (c)	Antenna conducted Spurious Emission	PASS
15.247 (a)(2)	6dB Bandwidth	PASS
15.247 (b)	Maximum Peak Conducted Output Power	PASS
15.247 (c)	Radiated Spurious Emission	PASS
15.247 (d)(e)	Power Spectral Density	PASS
15.205	Restricted Bands	PASS
15.203	Antenna Requirement	PASS
1.1307 1.1310 2.1091 2.1093	RF Exposure Compliance	PASS

NOTE:

- (1) N/A: denotes test is not applicable in this Test Report
- (2) Portable device; SAR report is required.
- (3) The EUT include WiFi & Bluetooth function and RFID function, this report covers EUT WiFi function only. Its Bluetooth & RFID function testing is covered in another test report: NEI-FCCP-2-1306087(Bluetooth), NEI-FCCP-3-1306087(RFID).



2.1 TEST FACILITY

The test facilities used to collect the test data in this report:

Conducted emission Test:

C01: (VCCI RN: C-2918; FCC RN: 95335; FCC DN: TW1010)

No.132-1, Ln. 329, Sec. 2, Balian Rd., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)

Radiated emission Test (Below 1 GHz):

CB08: (FCC RN: 614388; FCC DN: TW1054; IC Assigned Code: 4428C-1)

1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

Radiated emission Test (Above 1 GHz):

CB08: (VCCI RN: G-91; FCC RN: 614388; FCC DN: TW1054; IC Assigned Code: 4428C-1)

1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)



2.2 MEASUREMENT UNCERTAINTY

The measurement uncertainty is not specified by FCC/Industry Canada rules and for reference only.

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2.

A. Conducted emission test:

Test Site	Measurement Frequency Range	U , (dB)	NOTE
C01	150 kHz ~ 30 MHz	1.94	

B. Radiated emission test:

Test Site	Item	Measurement Frequency Range	Uncertainty	NOTE
CB08	Radiated emission at 3m	Horizontal Polarization	30 - 200MHz	3.35 dB
			200 - 1000MHz	3.11 dB
			1 - 18GHz	3.97 dB
			18 - 40GHz	4.01 dB
		Vertical Polarization	30 - 200MHz	3.22 dB
			200 - 1000MHz	3.24 dB
			1 - 18GHz	4.05 dB
			18 - 40GHz	4.04 dB

Our calculated Measurement Instrumentation Uncertainty is shown in the tables above. These are our U_{lab} values in CISPR 16-4-2 terminology.

Since Table 1 of CISPR 16-4-2 has values of measurement instrumentation uncertainty, called U_{CISPR} , as follows:

Conducted Disturbance (mains port) – 150 kHz – 30 MHz: 3.6 dB

Radiated Disturbance (electric field strength on an open area test site or alternative test site) – 30 MHz – 1000 MHz: 5.2 dB

It can be seen that our U_{lab} values are smaller than U_{CISPR} .

If U_{lab} is less than or equal to U_{CISPR} , then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than U_{CISPR} , then:

- compliance is deemed to occur if no measured disturbance level, increased by $(U_{lab} - U_{CISPR})$, exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{CISPR})$, exceeds the disturbance limit.



3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Master Controller	
Brand Name	unitech; TASHI	
Model Name	MT800	
OEM Brand/Model Name	N/A	
Model Difference	N/A	
Product Description	The EUT is a Master Controller.	
	Operation Frequency	2412 MHz to 2462 MHz
	Modulation Type	DBPSK, DQPSK, CCK, BPSK, QPSK, 16QAM, 64QAM, MIMO IEEE 802.11b: DSSS IEEE 802.11g: OFDM IEEE 802.11n: OFDM (1 TX & 1 RX)
	Bit Rate of Transmitter	IEEE 802.11b: 1, 2, 5.5 and 11 Mbps IEEE 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps IEEE 802.11n: HT20: 130 Mbps (max.) IEEE 802.11n: HT40: 300 Mbps (max.)
	Number Of Channel	Please refer to the Note 2.
	Antenna Designation	Please refer to the Note 3.
	Antenna Gain(Peak)	Please refer to the Note 3.
	Maximum Conducted Output Power	Peak Output Power: IEEE 802.11b: 15.48 dBm IEEE 802.11g: 21.28 dBm IEEE 802.11n (20 MHz): 21.58 dBm
	The EUT has three appearances. All are identical in electrically schematic the only difference is the appearance. More details of EUT technical specification, please refer to the User's Manual.	
Power Source	Voltage supplied from External Power Supply.	
Power Rating	1. EUT: I/P: DC 12V 2A 2. External Power Supply: I/P: AC 100-240V 1.0A MAX 50-60Hz / O/P: DC +12V 2.0A 24W MAX.	
Connecting I/O Port(s)	Please refer to the User's Manual	
Products Covered	1 * Wi-Fi & Bluetooth Module: SDC-SSD40NBT 1 * RFID Module 1 * Panel: LG Display, LD070WS2(SL)(01) 1 * Li-ion battery: 204562G 3.7V 900mA 3.33Wh 1 * SWITCHING ADAPTER with an additional ferrite core: Sunny, SYS1319-2412-T3	
EUT Modification(s)	N/A	



NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. Channel List:

2412-2462 MHz Band (IEEE 802.11b/g/n (20MHz))					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	05	2432	09	2452
02	2417	06	2437	10	2457
03	2422	07	2442	11	2462
04	2427	08	2447		

3. Table for Filed Antenna

Ant.*	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Joymax Electronics Co., Ltd.	202462	PIFA	I-PEX	2.00

4. The EUT incorporates MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R).

2412-2462 MHz Band	
Modulated type	TX Function
IEEE 802.11b	1 TX
IEEE 802.11g	1 TX
IEEE 802.11n (20MHz)	1 TX



3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Test Items	IEEE	Mode	Data Rate	Channel	Note
Conducted Emission	802.11b	DSSS	1 Mbps	06	
Antenna conducted Spurious Emission	802.11b	DSSS	1 Mbps	01/06/11	
	802.11g	OFDM	6 Mbps	01/06/11	
	802.11n (20 MHz)	BPSK	MCS8	01/06/11	
6 dB Bandwidth	802.11b	DSSS	1 Mbps	01/06/11	
	802.11g	OFDM	6 Mbps	01/06/11	
	802.11n (20 MHz)	BPSK	MCS8	01/06/11	
Maximum Peak Conducted Output Power	802.11b	DSSS	1 Mbps	01/06/11	
	802.11g	OFDM	6 Mbps	01/06/11	
	802.11n (20 MHz)	BPSK	MCS8	01/06/11	
Radiated Spurious Emission (30 MHz to 1 GHz)	802.11n (20 MHz)	OFDM	MCS8	06	
Radiated Spurious Emission (above 1 GHz)	802.11b	DSSS	1 Mbps	01/06/11	
	802.11g	OFDM	6 Mbps	01/06/11	
	802.11n (20 MHz)	BPSK	MCS8	01/06/11	
Restricted Bands	802.11b	DSSS	1 Mbps	01/06/11	
	802.11g	OFDM	6 Mbps	01/06/11	
	802.11n (20 MHz)	BPSK	MCS8	01/06/11	
Antenna Requirement	---		---	---	
RF Exposure Compliance	---		---	---	

NOTE: The measurements are performed at the highest, middle, lowest available channels.



3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

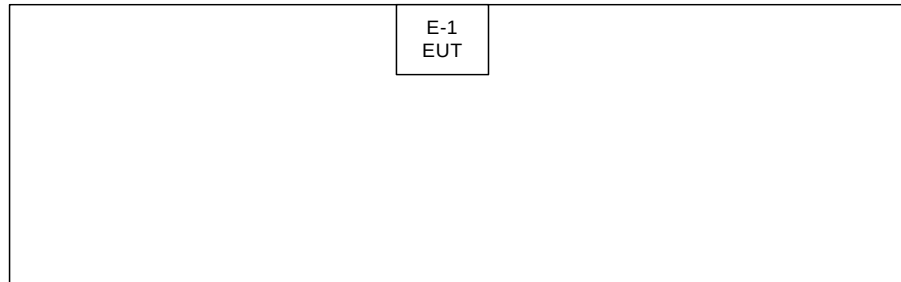
During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

2412-2462 MHz Band						
IEEE	802.11b			802.11g		
Test software Version	SRU V3.03.10.00			SRU V3.03.10.00		
Frequency	2412 MHz	2437 MHz	2462 MHz	2412 MHz	2437 MHz	2462 MHz
Parameter	Def.	Def.	Def.	Def.	Def.	Def.

2412-2462 MHz Band						
IEEE	802.11n (20 MHz)					
Test software Version	SRU V3.03.10.00					
Frequency	2412 MHz	2437 MHz	2462 MHz			
Parameter	Def.	Def.	Def.			



3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



**3.5 DESCRIPTION OF SUPPORT UNITS**

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	Master Controller	unitech; TASHI	MT800	HLEMT800BTNF	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note
N/A	-	-	-	-

NOTE: The support equipment was authorized by Declaration of Conformity (DOC).



4 CONDUCTED EMISSION

4.1 LIMIT

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 - 5.0	73.00	60.00	56.00	46.00
5.0 - 30.0	73.00	60.00	60.00	50.00

NOTE:

1. The tighter limit applies at the band edges.
2. The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.
3. The test result calculated as following:
 Measurement Value = Reading Level + Correct Factor
 Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)
 Margin Level = Measurement Value – Limit Value

4.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TWO-LINE V-NETWORK	R&S	ENV216	101050	Apr. 22, 2014
2	Test Cable	TIMES	CFD300-NL	C01	Jun. 16, 2014
3	EMI Test Receiver	R&S	ESCI	100082	Mar. 21, 2014
4	Measurement Software	EZ	EZ_EMG (Version NB-02A)	N/A	N/A

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.



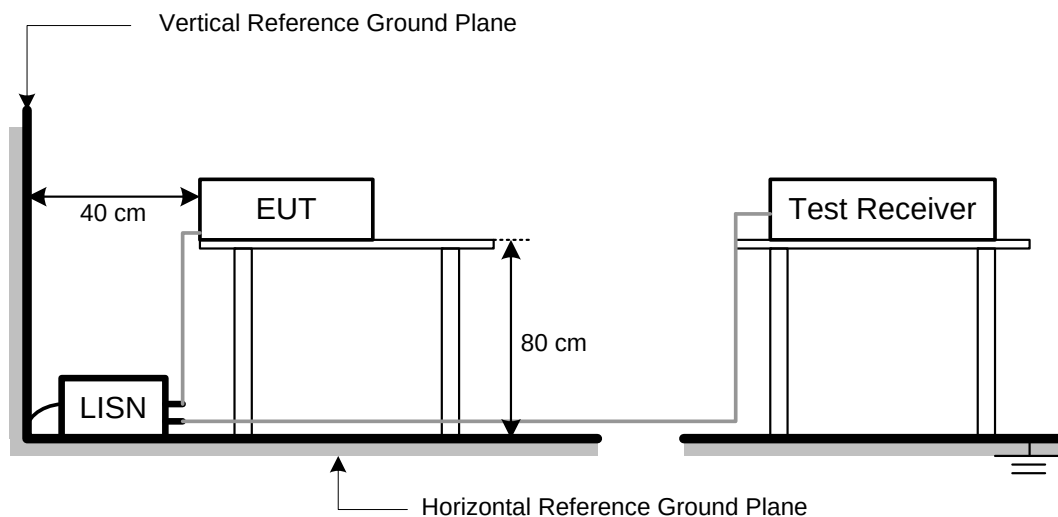
4.3 TEST PROCEDURES

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

NOTE:

- Reading in which marked as Peak, QP or AVG means measurements by using are Quasi-Peak or Average Mode with Detector BW=9 kHz (6 dB Bandwidth).
- All readings are Peak Mode value unless otherwise stated QP or AVG in column of Note. If the Peak or QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only Peak or QP Mode was measured, but AVG Mode didn't perform.

4.4 TEST SETUP LAYOUT



4.5 DEVIATION FROM TEST STANDARD

No deviation



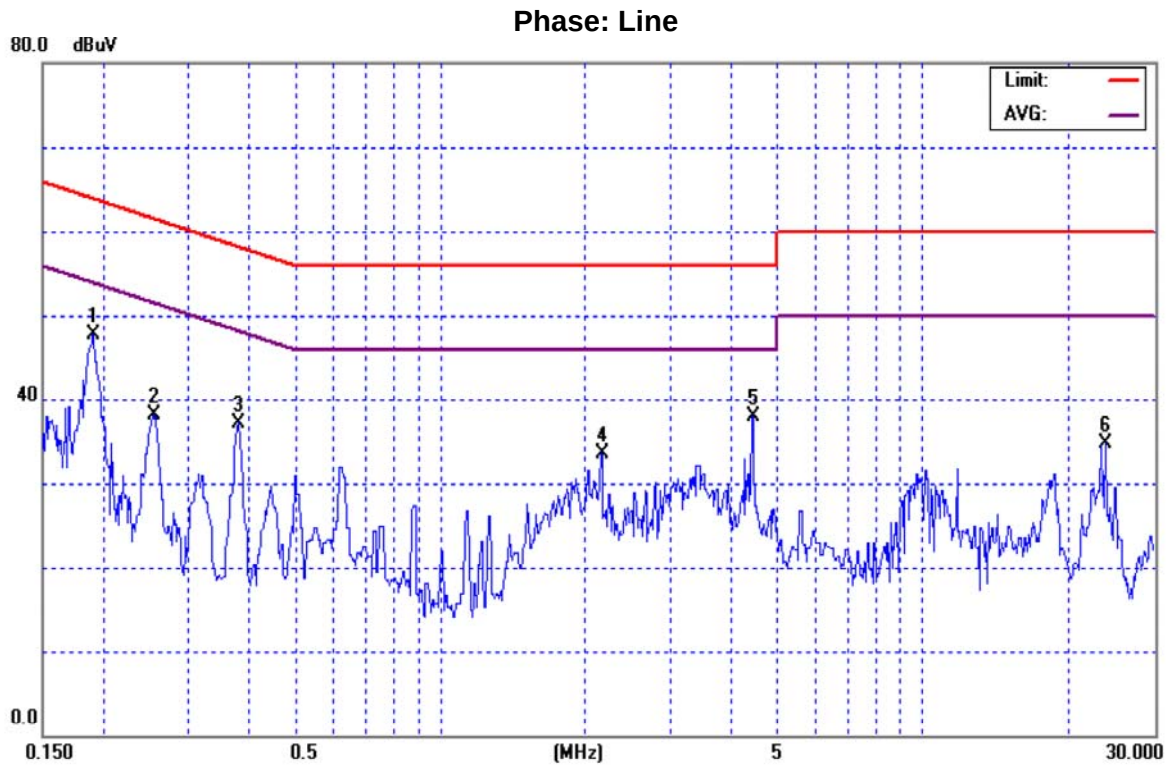
4.6 EUT OPERATING CONDITIONS

The EUT used during radiated and/or conducted emission measurement was designed to exercise in a manner similar to a typical use.



4.7 TEST RESULTS

E.U.T	Master Controller	Model Name	MT800
Temperature	30°C	Relative Humidity	65%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

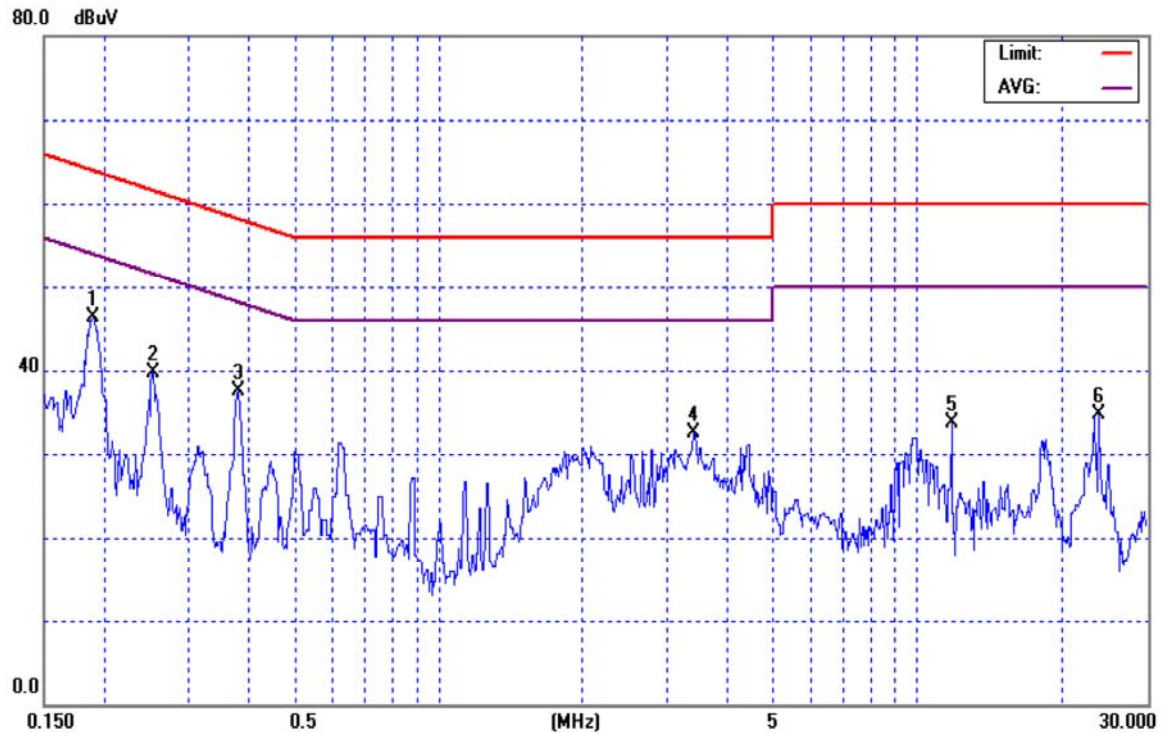


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1906	38.10	9.59	47.69	64.01	-16.32	peak	
2		0.2536	28.59	9.60	38.19	61.64	-23.45	peak	
3		0.3810	27.54	9.66	37.20	58.26	-21.06	peak	
4		2.1560	23.83	9.65	33.48	56.00	-22.52	peak	
5		4.4330	28.14	9.74	37.88	56.00	-18.12	peak	
6		24.0000	24.79	10.00	34.79	60.00	-25.21	peak	



E.U.T	Master Controller	Model Name	MT800
Temperature	30°C	Relative Humidity	65%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

Phase: Neutral



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1899	36.74	9.57	46.31	64.04	-17.73	peak	
2		0.2522	30.18	9.58	39.76	61.68	-21.92	peak	
3		0.3803	27.83	9.64	37.47	58.27	-20.80	peak	
4		3.4160	22.86	9.67	32.53	56.00	-23.47	peak	
5		11.8000	23.86	9.85	33.71	60.00	-26.29	peak	
6		24.0000	24.70	9.98	34.68	60.00	-25.32	peak	



5 ANTENNA CONDUCTED SPURIOUS EMISSION

5.1 LIMIT

Test Item	Frequency Range (MHz)	Limit
Antenna conducted Spurious Emission	30-25000	20 dB less than the peak value of fundamental frequency

5.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

5.3 TEST PROCEDURES

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting: RBW= 100KHz, VBW=100KHz, Sweep time = Auto.

5.4 TEST SETUP LAYOUT



5.5 DEVIATION FROM TEST STANDARD

No deviation

5.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

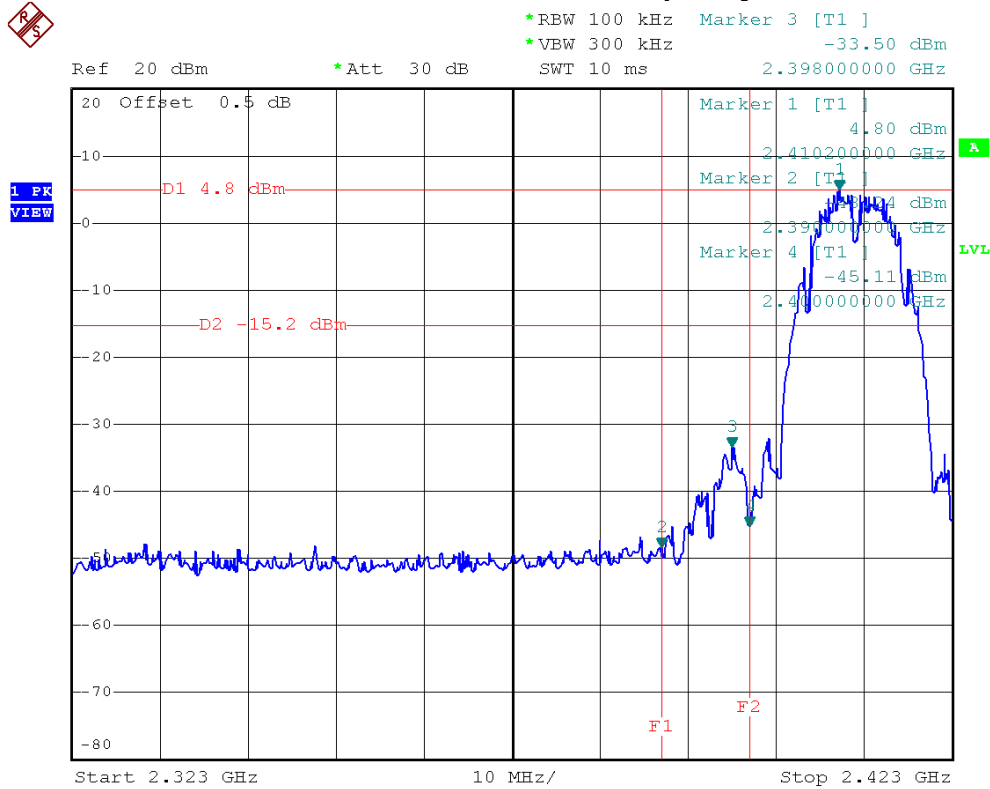


5.7 TEST RESULTS

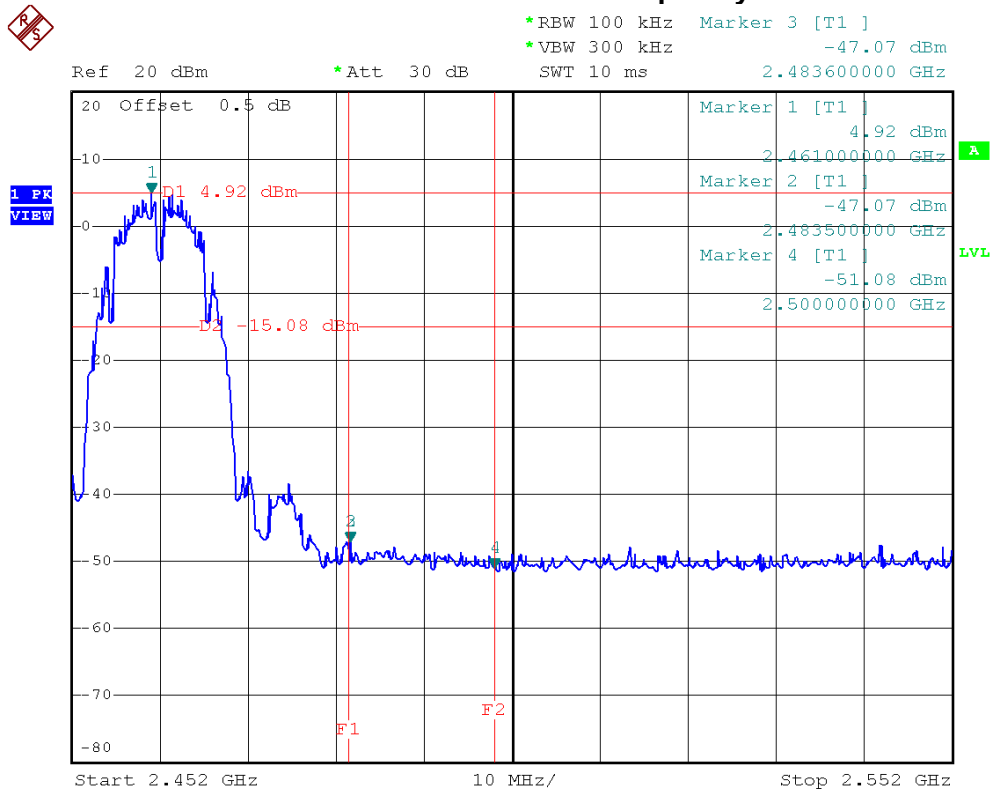
E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b		

Channel of Worst Data			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2398.00	-33.50	2483.60	-47.07
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.			

IEEE 802.11b/The max. radio frequency power in any 100kHz bandwidth outside the frequency band

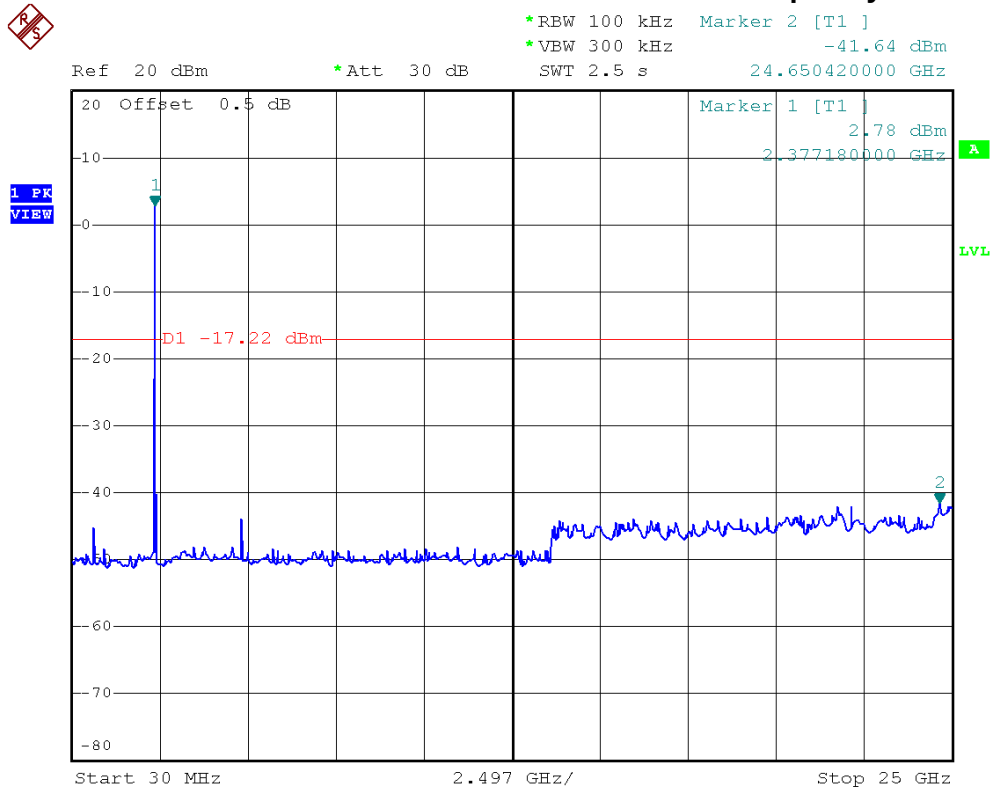


IEEE 802.11b/The max. radio frequency power in any 100 kHz bandwidth within the frequency band

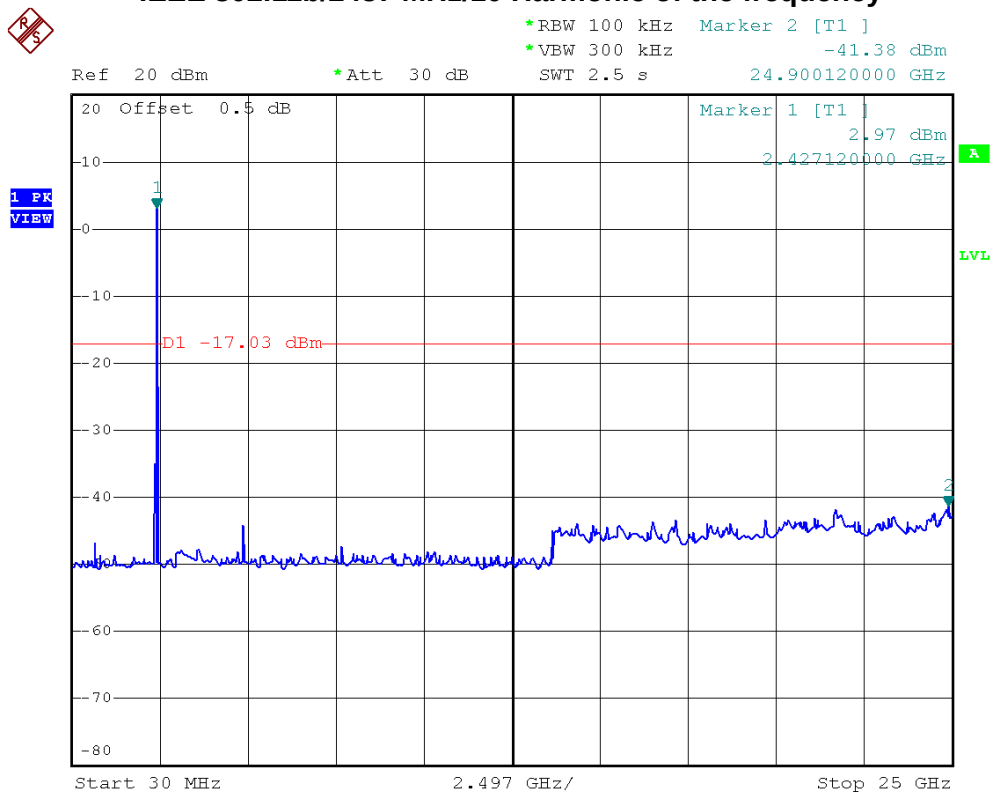




IEEE 802.11b/2412 MHz/10 Harmonic of the frequency



IEEE 802.11b/2437 MHz/10 Harmonic of the frequency

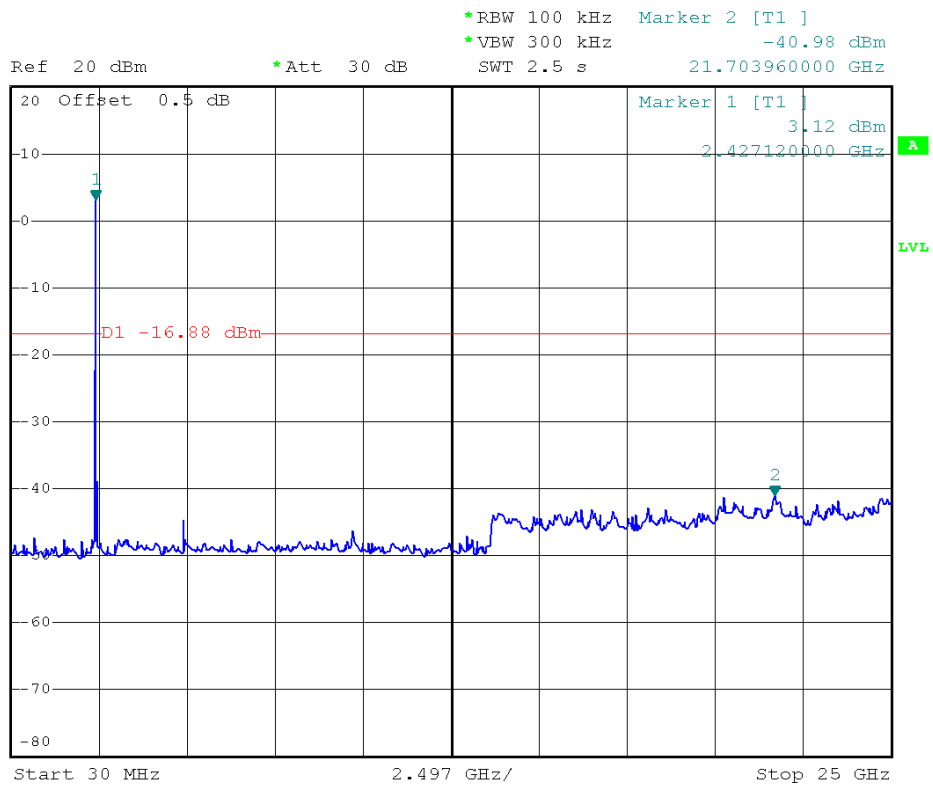




IEEE 802.11b/2462 MHz/10 Harmonic of the frequency



1 PK
VIEW



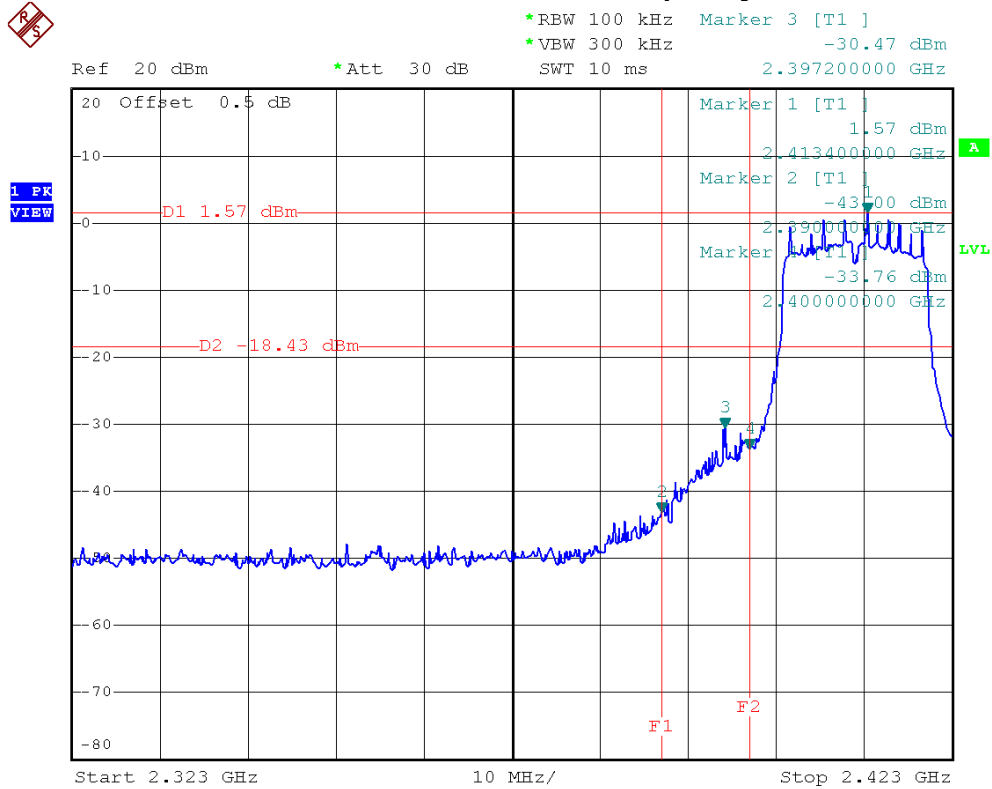


E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g		

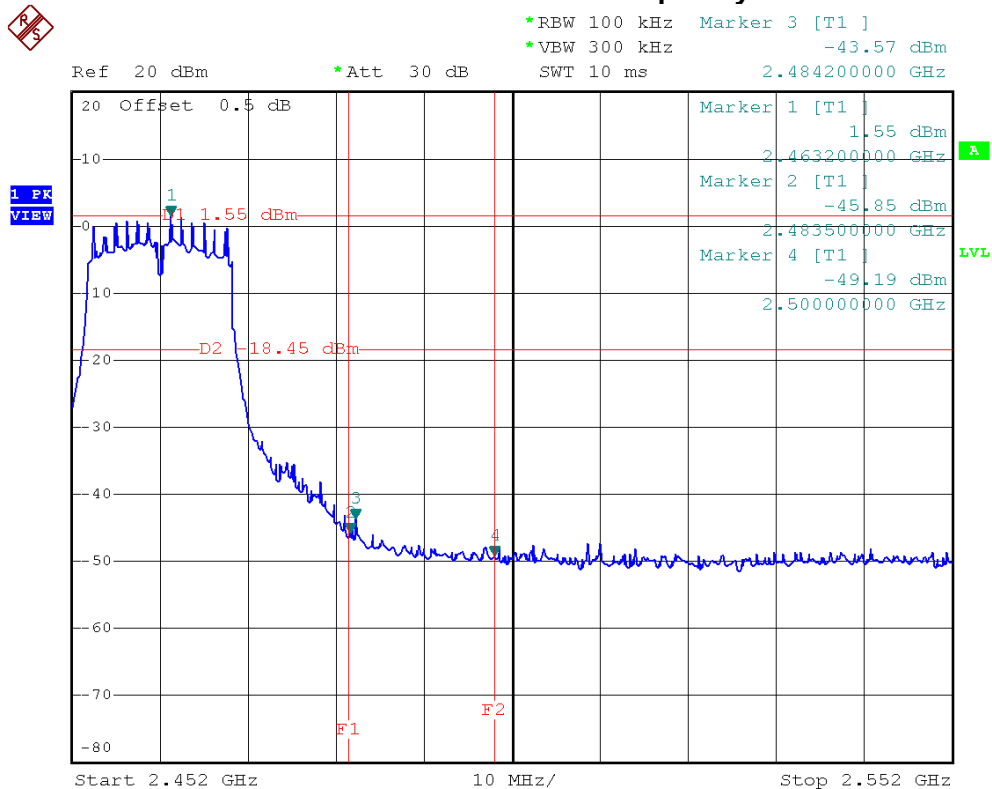
Channel of Worst Data			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2397.20	-30.47	2484.20	-43.57
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.			



IEEE 802.11g/The max. radio frequency power in any
100kHz bandwidth outside the frequency band

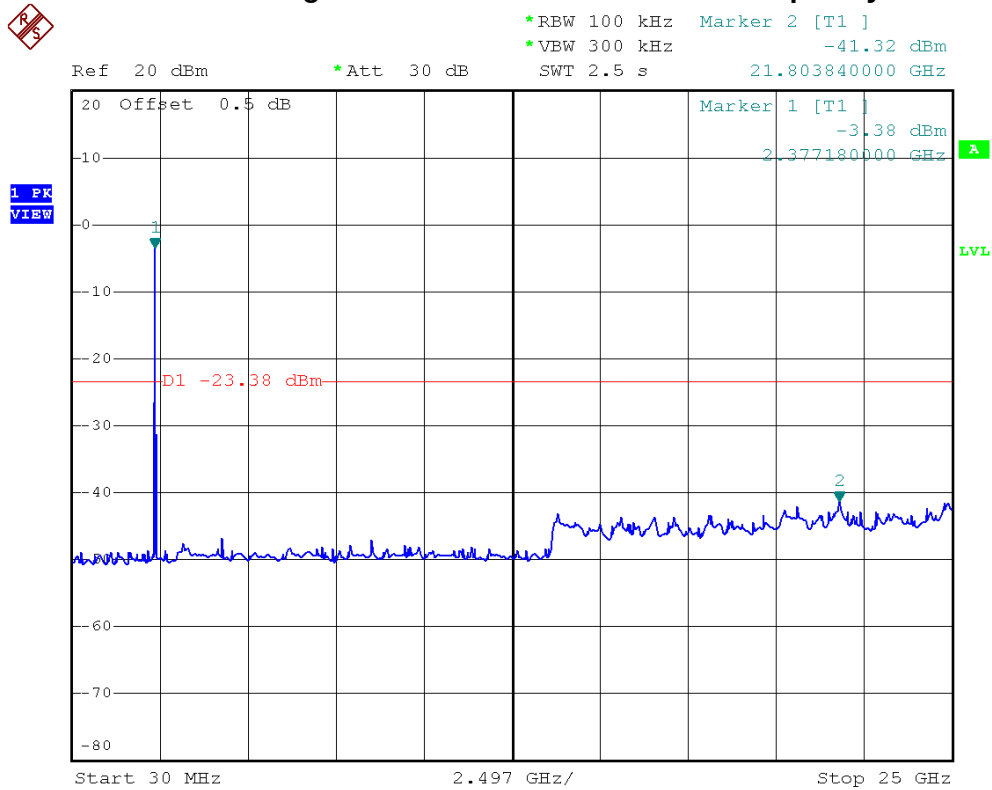


IEEE 802.11g/The max. radio frequency power in any
100 kHz bandwidth within the frequency band

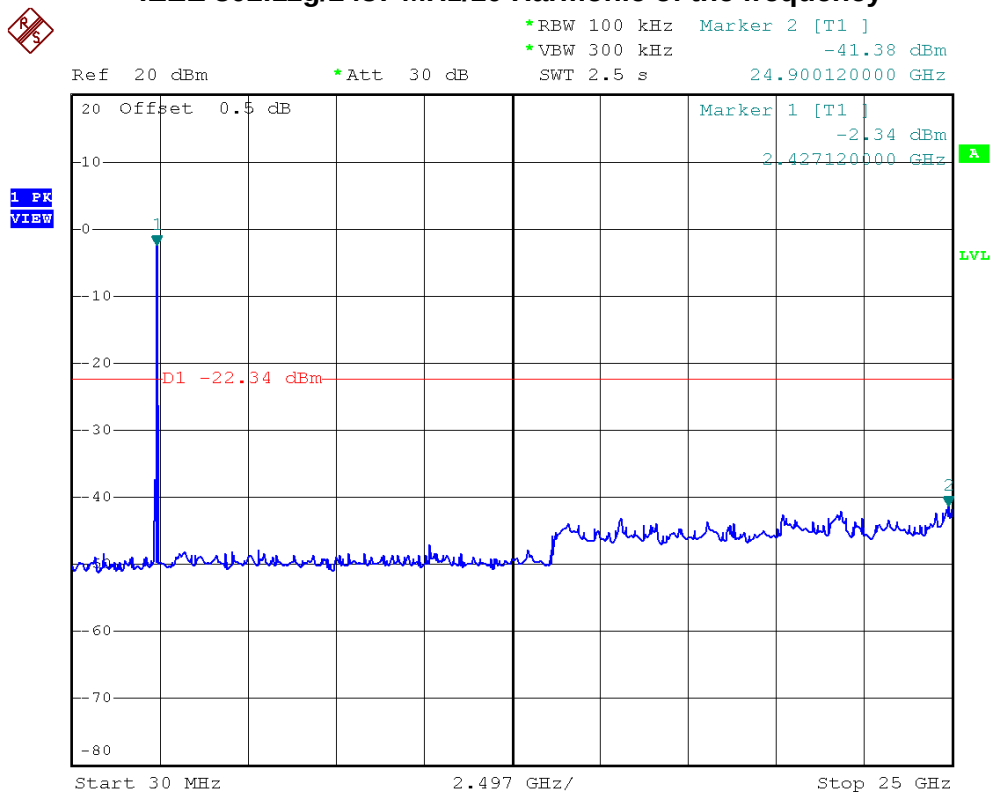




IEEE 802.11g/2412 MHz/10 Harmonic of the frequency



IEEE 802.11g/2437 MHz/10 Harmonic of the frequency

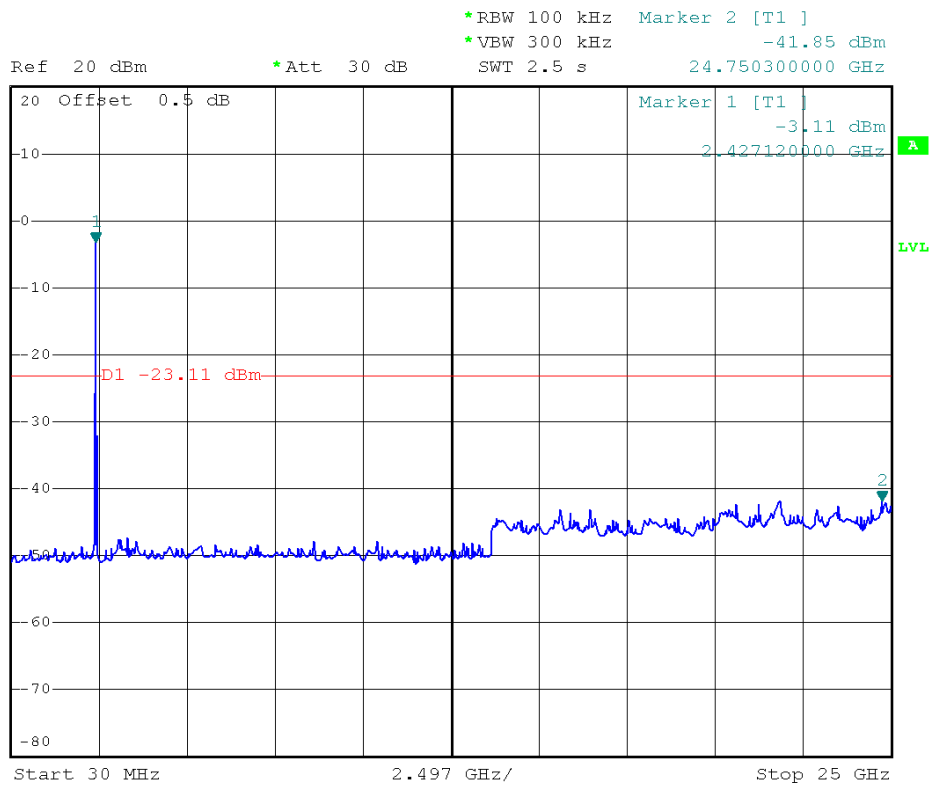




IEEE 802.11g/2462 MHz/10 Harmonic of the frequency



1 PK
VIEW



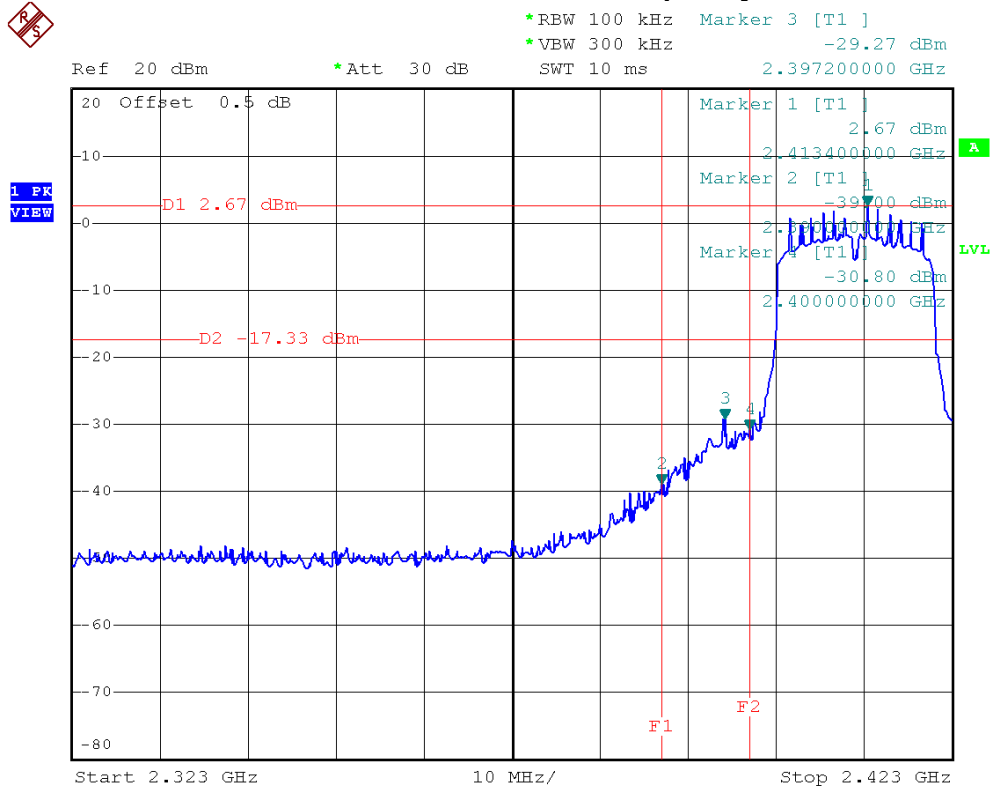


E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)		

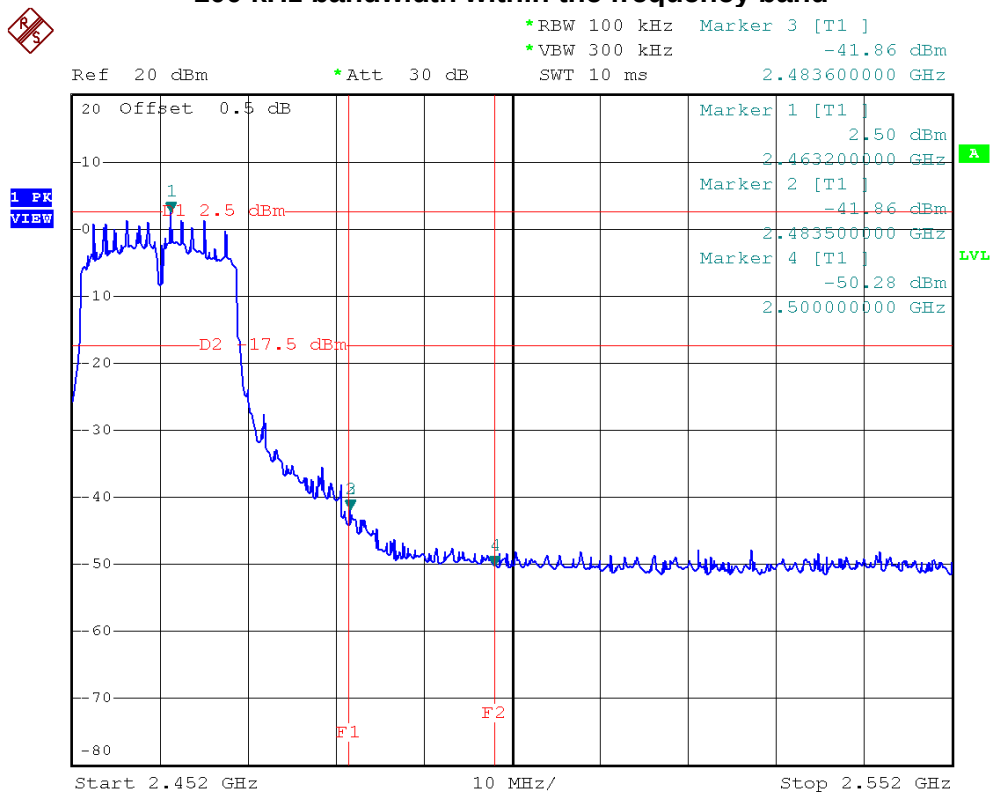
Channel of Worst Data			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2397.20	-29.27	2483.60	-41.86
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.			



IEEE 802.11n (20 MHz)/The max. radio frequency power in any 100kHz bandwidth outside the frequency band



IEEE 802.11n (20 MHz)/The max. radio frequency power in any 100 kHz bandwidth within the frequency band





IEEE 802.11n (20 MHz)/2412 MHz/10 Harmonic of the frequency



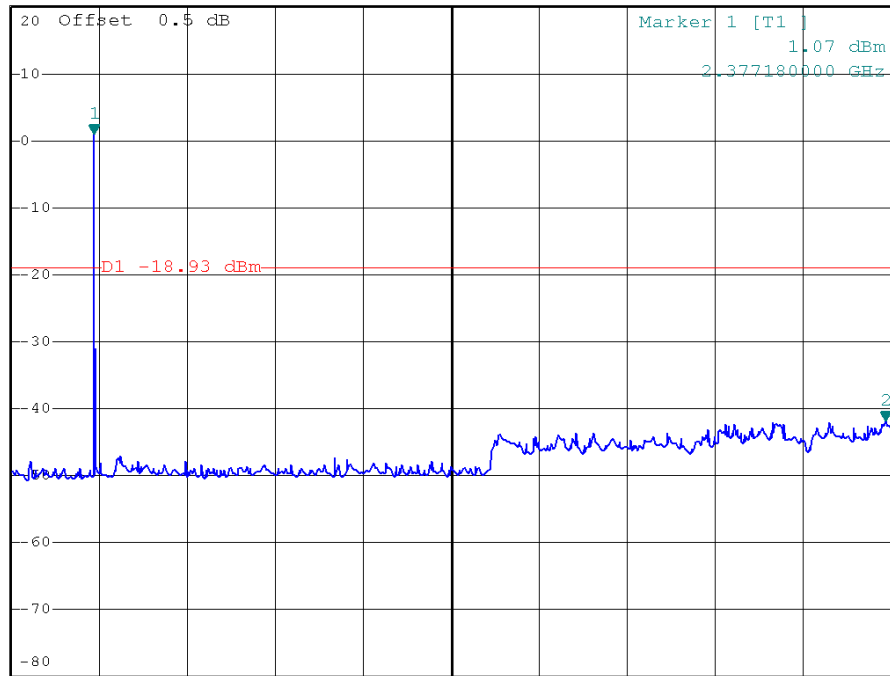
*RBW 100 kHz Marker 2 [T1]
*VBW 300 kHz -41.70 dBm
SWT 2.5 s 24.850180000 GHz

Ref 20 dBm

*Att 30 dB

24.850180000 GHz

1 PK
VIEW



Start 30 MHz

2.497 GHz/

Stop 25 GHz

IEEE 802.11n (20 MHz)/2437 MHz/10 Harmonic of the frequency



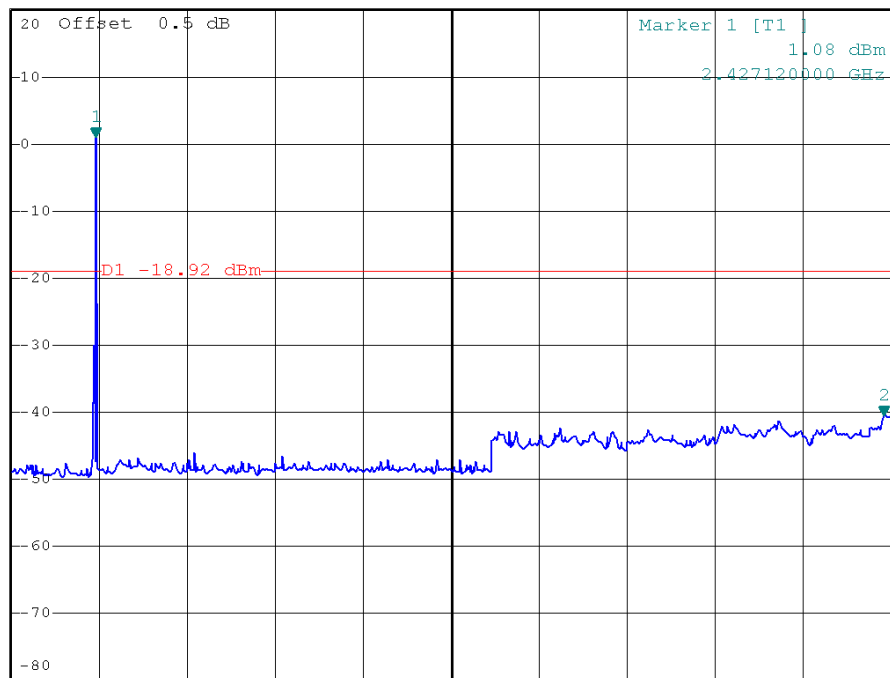
*RBW 100 kHz Marker 2 [T1]
*VBW 300 kHz -40.38 dBm
SWT 2.5 s 24.800240000 GHz

Ref 20 dBm

*Att 30 dB

24.800240000 GHz

1 PK
VIEW



Start 30 MHz

2.497 GHz/

Stop 25 GHz



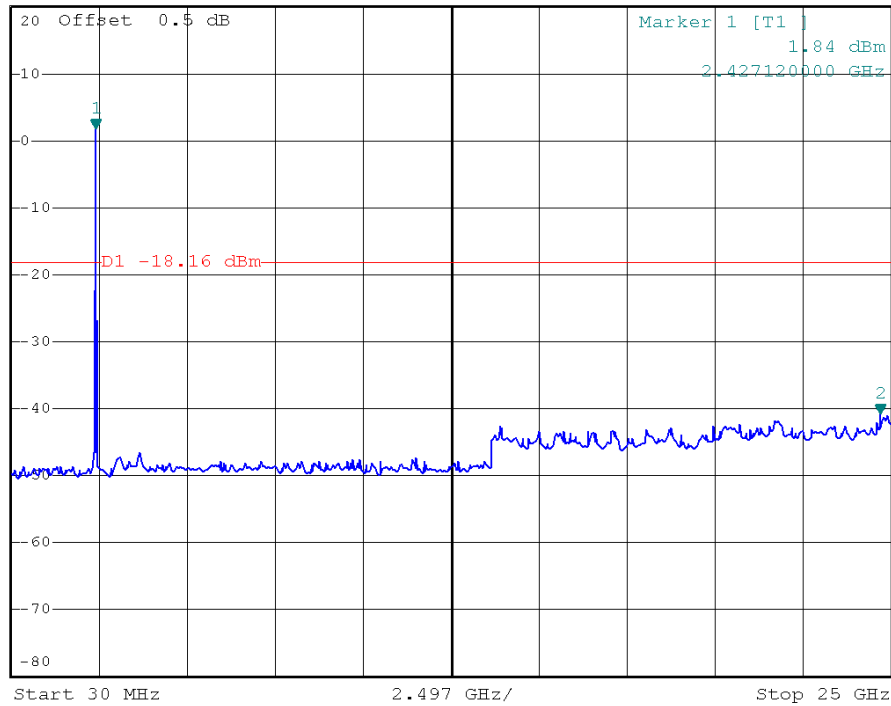
IEEE 802.11n (20 MHz)/2462 MHz/10 Harmonic of the frequency



*RBW 100 kHz Marker 2 [T1]
*VBW 300 kHz -40.82 dBm
SWT 2.5 s 24.700360000 GHz

Ref 20 dBm

*Att 30 dB





6.6 DB BANDWIDTH

6.1 LIMIT

Test Item	Frequency Range (MHz)	Limit
Bandwidth	2400-2483.5	$\geq 500\text{KHz}$ (6dB bandwidth)

6.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

6.3 TEST PROCEDURES

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- Spectrum Setting: RBW= 100KHz, VBW=100KHz, Sweep time = Auto.

6.4 TEST SETUP LAYOUT



6.5 DEVIATION FROM TEST STANDARD

No deviation

6.6 EUT OPERATING CONDITIONS

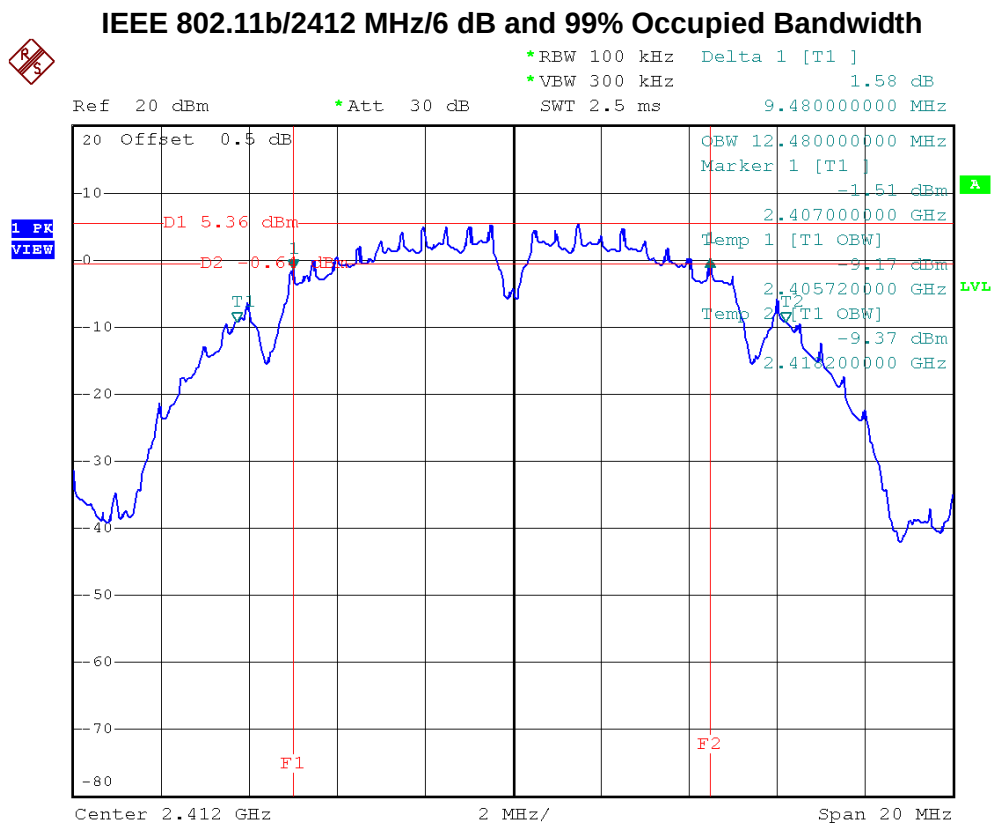
The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.



6.7 TEST RESULTS

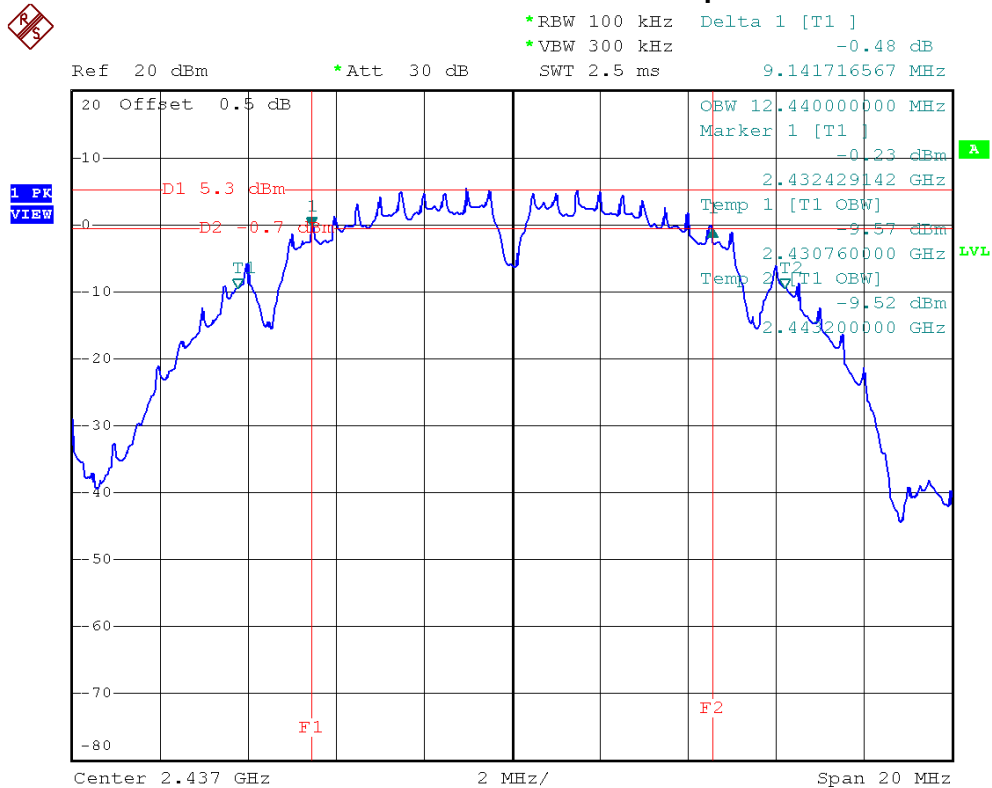
E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit	Result
2412 MHz	9.48	12.48	≥ 500 kHz	PASS
2437 MHz	9.14	12.44	≥ 500 kHz	PASS
2462 MHz	9.02	12.52	≥ 500 kHz	PASS

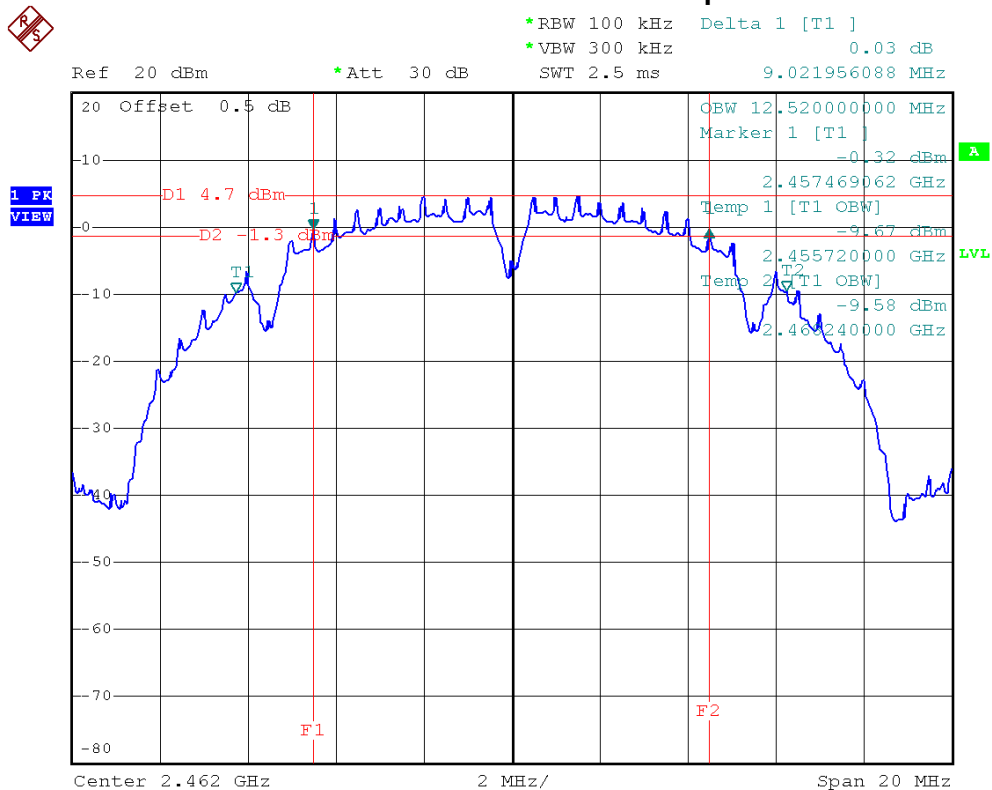




IEEE 802.11b/2437 MHz/6 dB and 99% Occupied Bandwidth



IEEE 802.11b/2462 MHz/6 dB and 99% Occupied Bandwidth

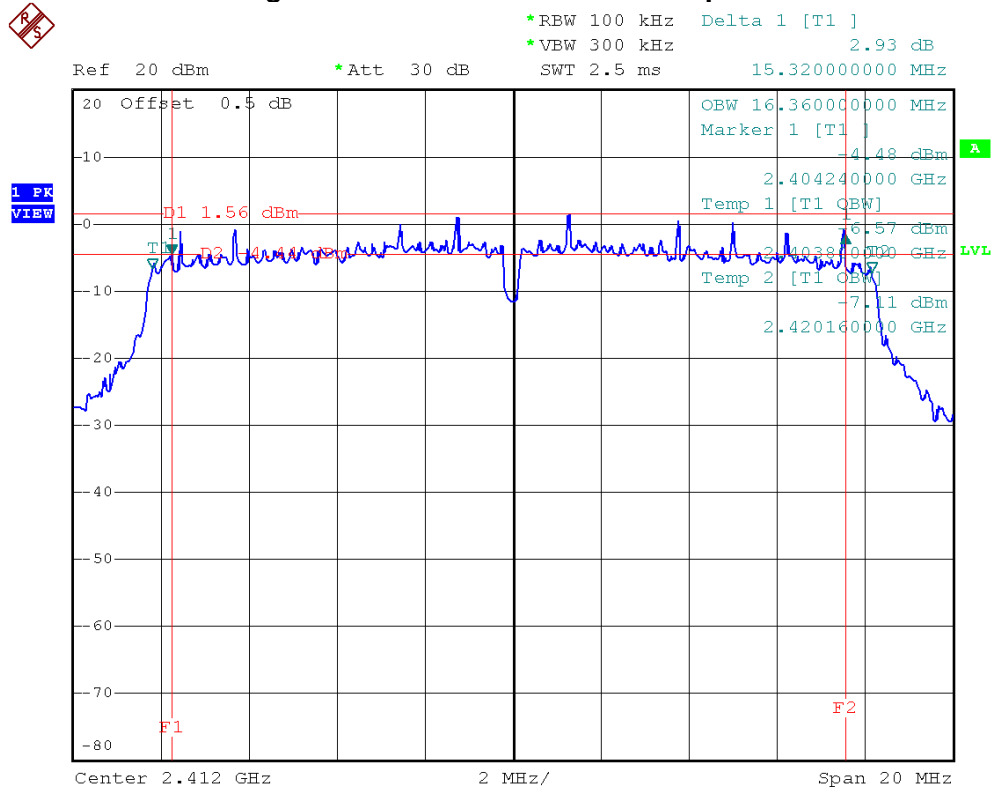




E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz, 2437 MHz, 2462 MHz		

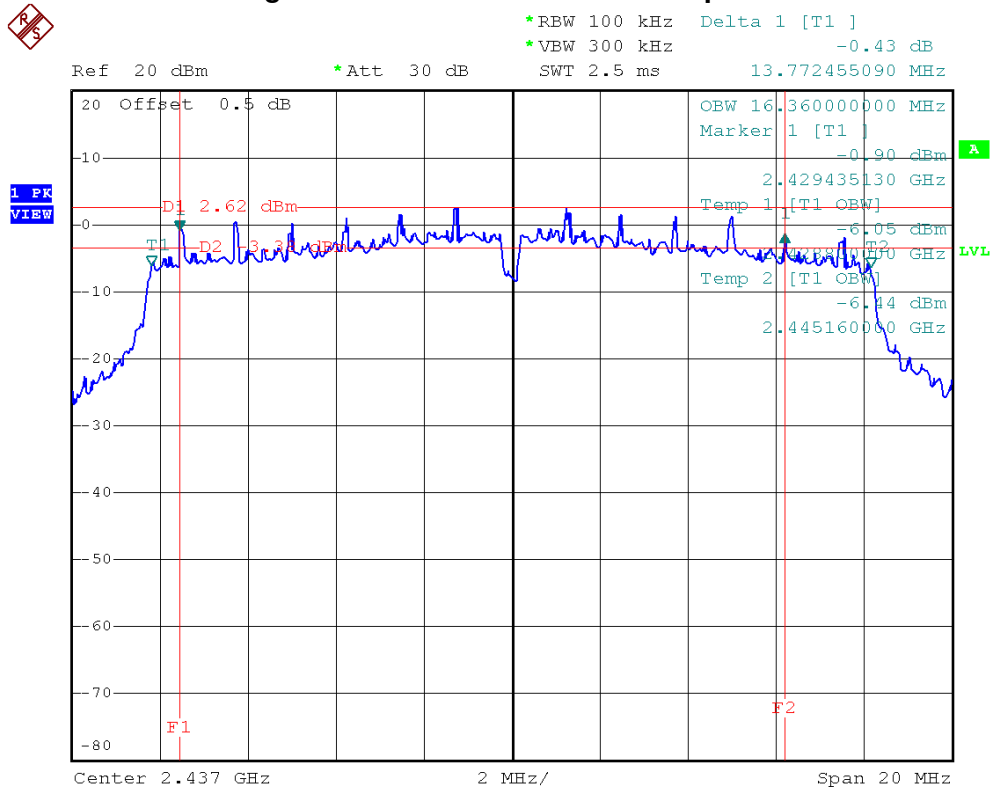
Frequency	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit	Result
2412 MHz	15.32	16.36	>=500 kHz	PASS
2437 MHz	13.77	16.36	>=500 kHz	PASS
2462 MHz	15.01	16.36	>=500 kHz	PASS

IEEE 802.11g/2412 MHz/6 dB and 99% Occupied Bandwidth

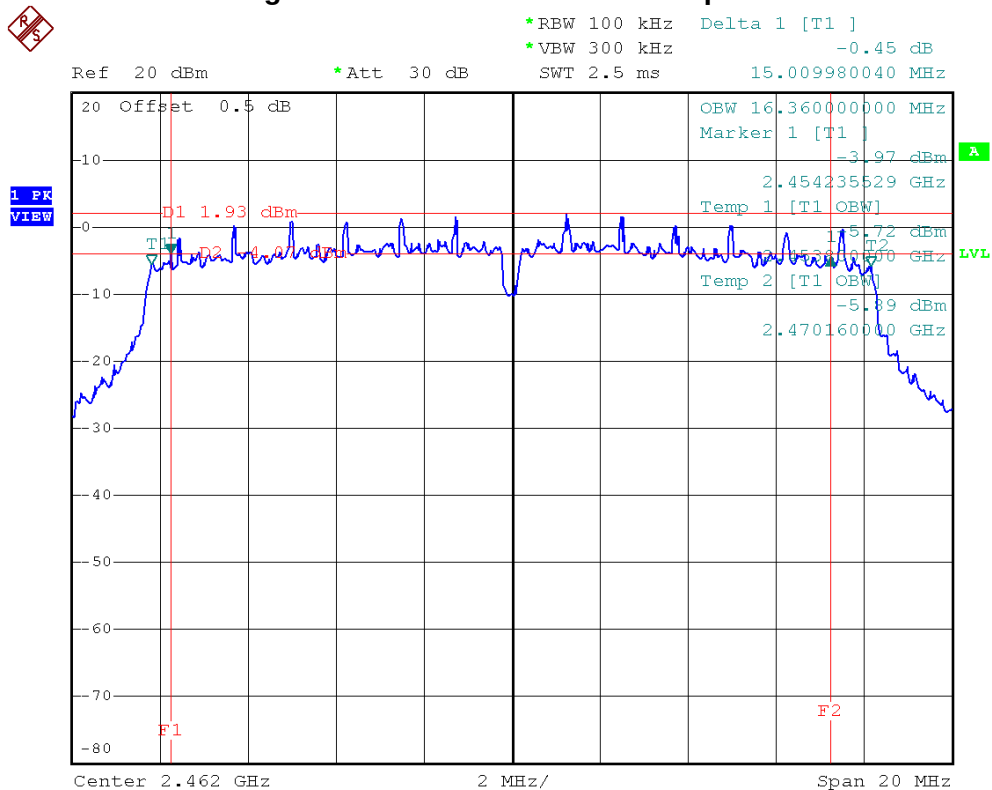




IEEE 802.11g/2437 MHz/6 dB and 99% Occupied Bandwidth



IEEE 802.11g/2462 MHz/6 dB and 99% Occupied Bandwidth

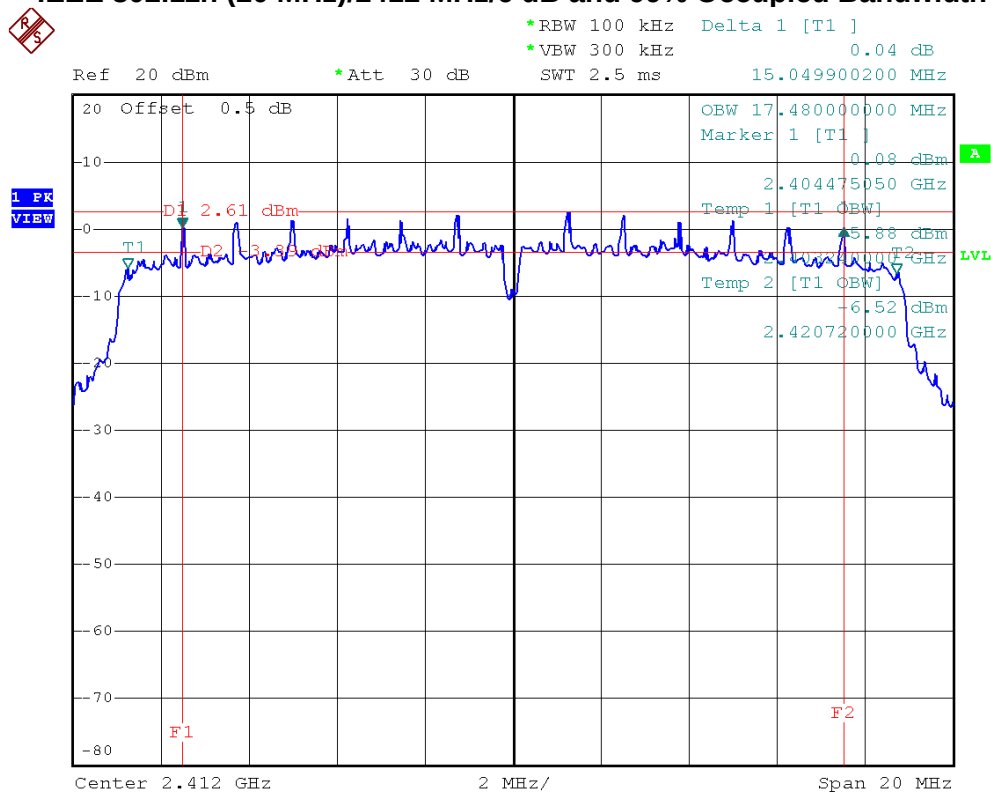




E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz, 2437 MHz, 2462 MHz		

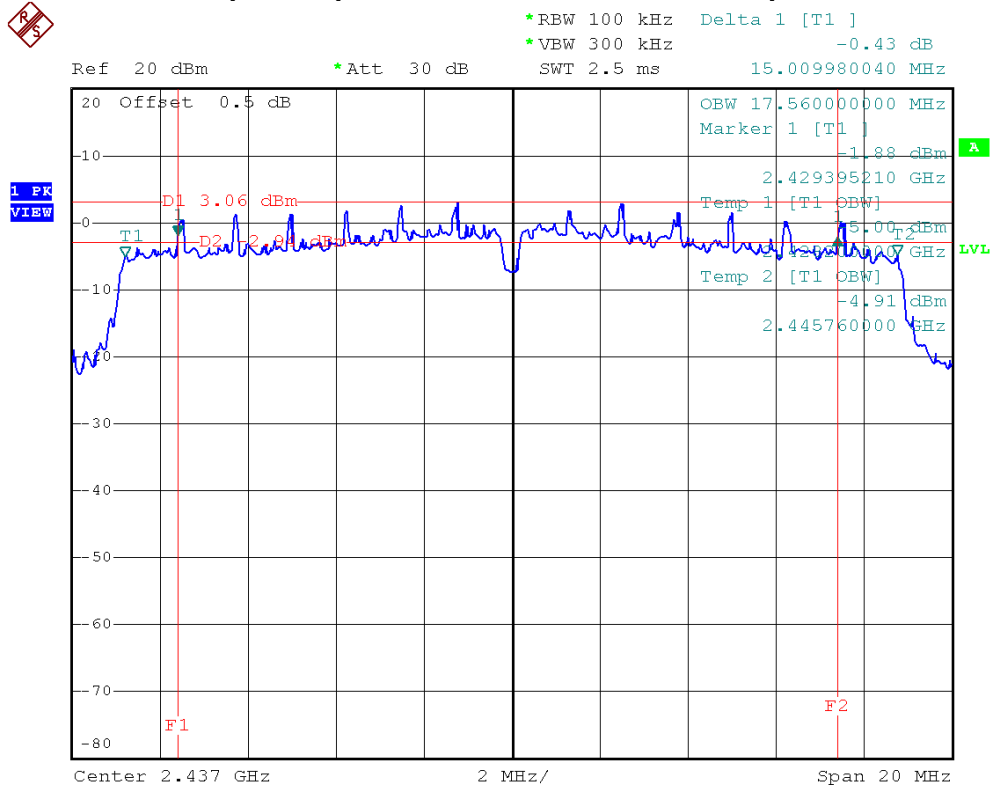
Frequency	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit	Result
2412 MHz	15.05	17.48	>=500 kHz	PASS
2437 MHz	15.01	17.56	>=500 kHz	PASS
2462 MHz	15.01	17.52	>=500 kHz	PASS

IEEE 802.11n (20 MHz)/2412 MHz/6 dB and 99% Occupied Bandwidth

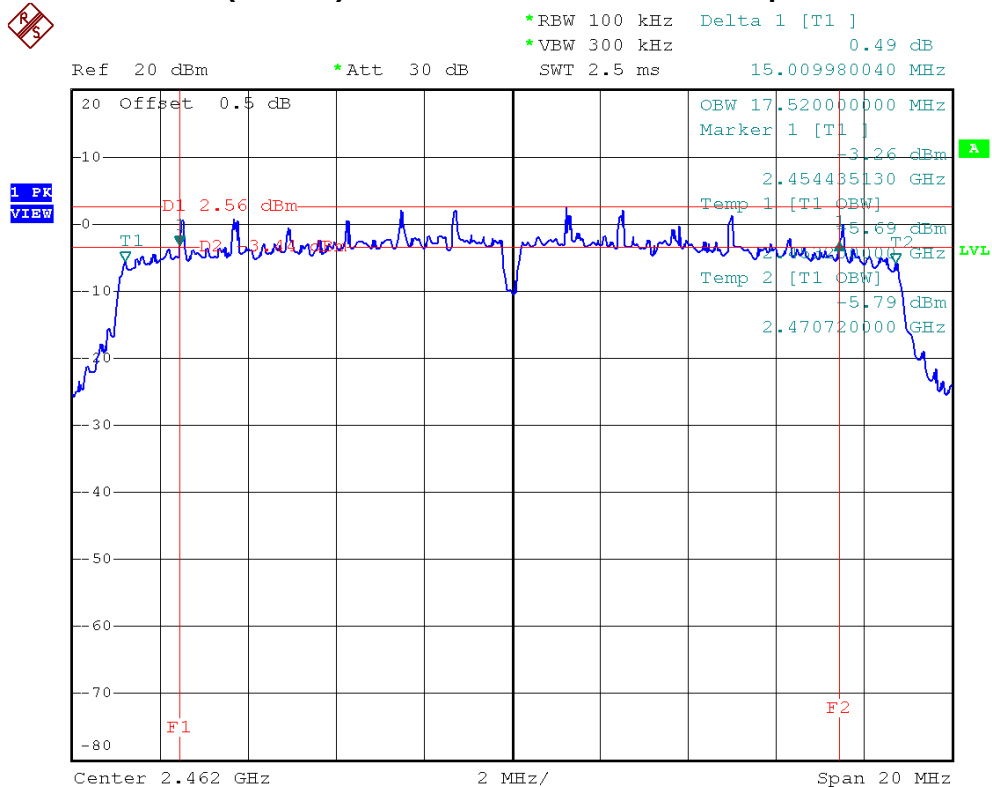




IEEE 802.11n (20 MHz)/2437 MHz/6 dB and 99% Occupied Bandwidth



IEEE 802.11n (20 MHz)/2462 MHz/6 dB and 99% Occupied Bandwidth





7 MAXIMUM PEAK CONDUCTED OUTPUT POWER

7.1 LIMIT

Test Item	Frequency Range (MHz)	Limit
Maximum Peak Conducted Output Power	2400-2483.5	1 watt or 30 dBm

7.2 MEASUREMENT INSTRUMENTS LIST

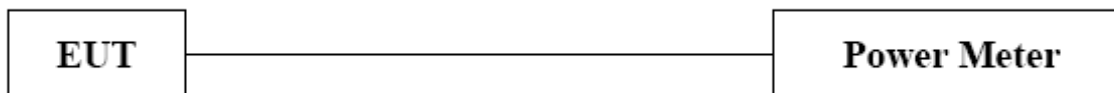
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	Anritsu	ML2495A	1128008	Jul. 22, 2013
2	Power Meter Sensor	Anritsu	MA2411B	1126001	Jul. 22, 2013

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

7.3 TEST PROCEDURES

The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.

7.4 TEST SETUP LAYOUT



7.5 DEVIATION FROM TEST STANDARD

No deviation

7.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.



7.7 TEST RESULTS

E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Peak Output Power (dBm)	LIMIT (dBm)	Result
2412 MHz	15.27	30	PASS
2437 MHz	14.95	30	PASS
2462 MHz	15.48	30	PASS



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Peak Output Power (dBm)	LIMIT (dBm)	Result
2412 MHz	20.07	30	PASS
2437 MHz	21.28	30	PASS
2462 MHz	20.37	30	PASS



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Peak Output Power (dBm)	LIMIT (dBm)	Result
2412 MHz	21.34	30	PASS
2437 MHz	21.58	30	PASS
2462 MHz	21.41	30	PASS



8 RADIATED SPURIOUS EMISSION (9 KHZ TO 1 GHZ)

8.1 LIMIT

20 dB in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequency Range: 9 kHz to 1 GHz		
FREQUENCY (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Frequency Range: above 1 GHz				
FREQUENCY (MHz)	Class A (dBuV/m) (at 3m)		Class B (dBuV/m) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
above 1 GHz	80	60	74	54

NOTE:

1. The limit for radiated test was performed according to FCC PART 15B.
2. The tighter limit applies at the band edges.
3. Emission level (dBuV/m)=20log Emission level (uV/m).
4. The test result calculated as following:
 Measurement Value = Reading Level + Correct Factor
 Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain(if use)
 Margin Level = Measurement Value – Limit Value



8.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013
2	Horn Antenna	Schwarzbeck	BBHA 9120	D-325	Apr. 15, 2014
3	Microwave Pre-amplifier	Agilent	8449B	3008A01714	Apr. 16, 2014
4	Microflex Cable	Harbour industries	27478LL142	1m	May. 13, 2014
5	Microflex Cable	EMC	S104-SMA	8m	May. 13, 2014
6	Microflex Cable	Harbour industries	27478LL142	3m	May. 13, 2014
7	Test Cable	LMR	LMR-400	12m	May. 14, 2014
8	Test Cable	LMR	LMR-400	3m	May. 14, 2014
9	Pre-Amplifier	Anritsu	MH648A	M92649	Jun. 18, 2014
10	Log-Bicon Antenna	Schwarzbeck	VULB9168-352	9168-352	Jun. 11, 2014
11	Preamplifier With Adaptor	EMC	EMC2654045	980030	Feb. 18, 2014
12	Horn Antenna	Schwarzbeck	BBHA 9170	187	Dec. 24, 2013

Remark: "N/A" denotes No Model Name, No Serial No. or No Calibration specified.

8.3 MEASURING INSTRUMENTS SETTING

EMI Test Receiver	Parameter Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP



8.4 TEST PROCEDURES

- The measuring distance of at 3 m shall be used for measurements at frequency up to 1 GHz. For frequencies above 1 GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m Semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.
- The testing follows the guidelines in ANSI C63.4 and FCC Public Notice DA 00-705 Measurement Guidelines. In case the emission is fail due to the used RBW/VBW is too wide, marker-delta method of FCC Public Notice DA 00-705 will be followed.

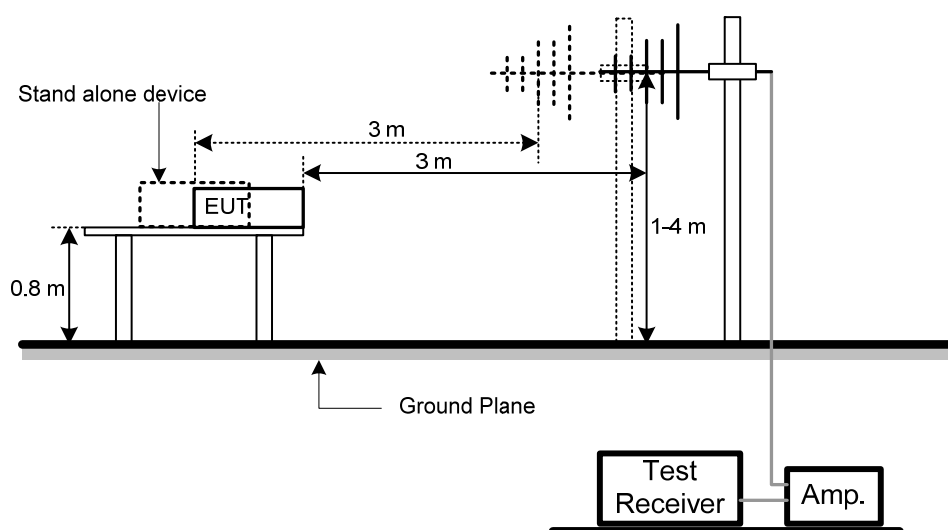
NOTE:

- Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode with Detector BW=120 kHz; SPA setting in RBW=100 kHz, VBW =100 kHz, Swp. Time = 0.3 sec./ MHz.
- All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

8.5 DEVIATION FROM TEST STANDARD

No deviation

8.6 TEST SETUP LAYOUT





8.7 EUT OPERATING CONDITIONS

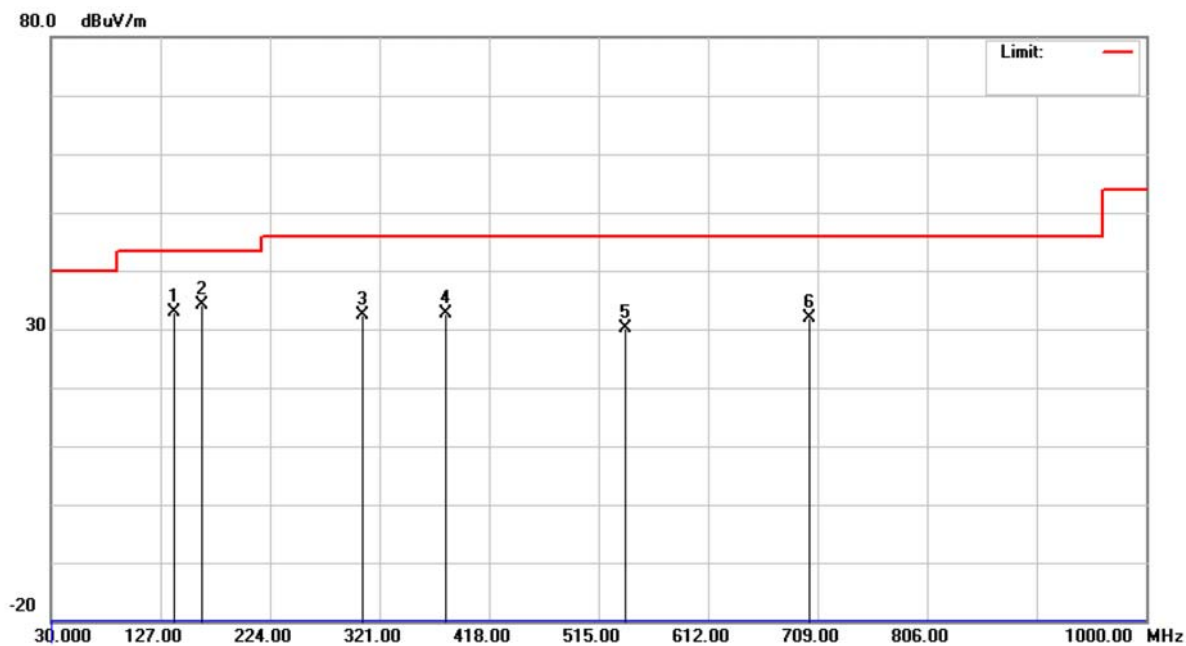
The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.



8.8 TEST RESULTS

E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

Polarization: Vertical

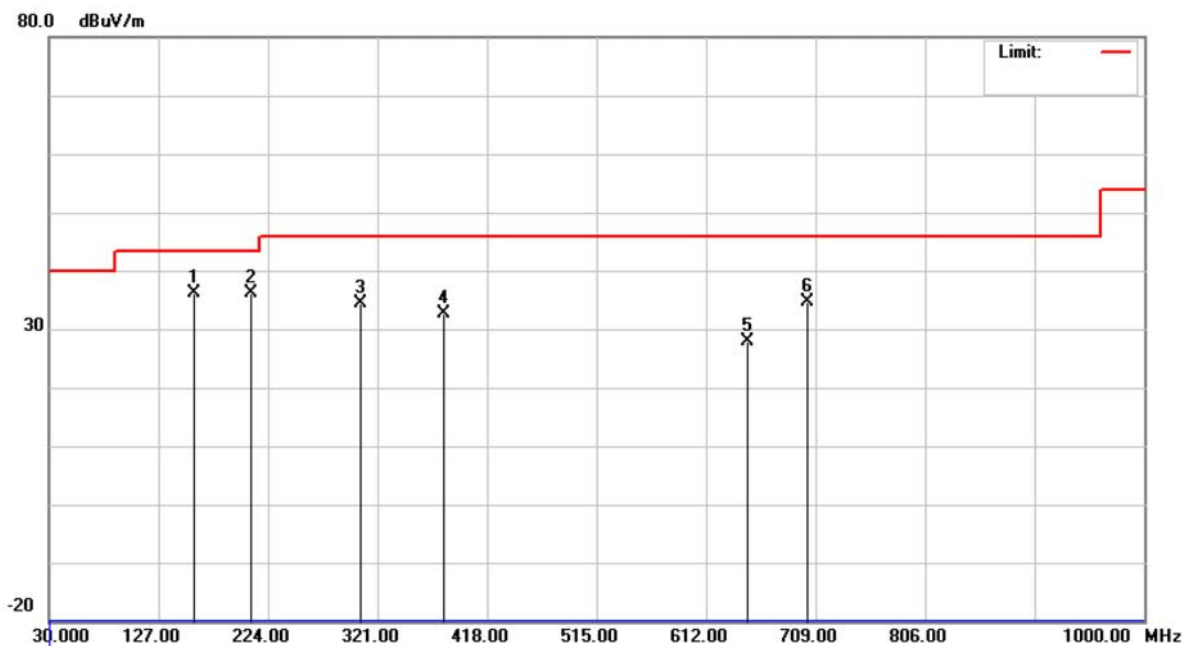


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		139.1250	48.16	-15.30	32.86	43.50	-10.64	peak	
2	*	163.3750	48.83	-14.59	34.24	43.50	-9.26	peak	
3		306.4500	46.68	-14.24	32.44	46.00	-13.56	peak	
4		379.2000	44.92	-12.28	32.64	46.00	-13.36	peak	
5		539.2500	38.74	-8.72	30.02	46.00	-15.98	peak	
6		701.7249	38.81	-6.82	31.99	46.00	-14.01	peak	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

Polarization: Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	158.5249	50.67	-14.54	36.13	43.50	-7.37	peak	
2		209.4499	53.83	-17.74	36.09	43.50	-7.41	peak	
3		306.4500	48.70	-14.24	34.46	46.00	-11.54	peak	
4		379.2000	44.99	-12.28	32.71	46.00	-13.29	peak	
5		648.3750	34.94	-6.95	27.99	46.00	-18.01	peak	
6		701.7249	41.47	-6.82	34.65	46.00	-11.35	peak	



9 RADIATED SPURIOUS EMISSION (ABOVE 1 GHz)

9.1 LIMIT

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequency Range: 9 kHz to 1 GHz		
FREQUENCY (MHz)	Field Strength (micровolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Frequency Range: above 1 GHz				
FREQUENCY (MHz)	Class A (dBuV/m) (at 3m)		Class B (dBuV/m) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
above 1 GHz	80	60	74	54

NOTE:

- (1) The limit for radiated test was performed according to FCC PART 15B.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).
- (4) The test result calculated as following:
 Measurement Value = Reading Level + Correct Factor
 Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain(if use)
 Margin Level = Measurement Value – Limit Value



9.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013
2	Horn Antenna	Schwarzbeck	BBHA 9120	D-325	Apr. 15, 2014
3	Microwave Pre-amplifier	Agilent	8449B	3008A01714	Apr. 16, 2014
4	Microflex Cable	Harbour industries	27478LL142	1m	May. 13, 2014
5	Microflex Cable	EMC	S104-SMA	8m	May. 13, 2014
6	Microflex Cable	Harbour industries	27478LL142	3m	May. 13, 2014
7	Test Cable	LMR	LMR-400	12m	May. 14, 2014
8	Test Cable	LMR	LMR-400	3m	May. 14, 2014
9	Pre-Amplifier	Anritsu	MH648A	M92649	Jun. 18, 2014
10	Log-Bicon Antenna	Schwarzbeck	VULB9168-352	9168-352	Jun. 11, 2014
11	Preamplifier With Adaptor	EMC	EMC2654045	980030	Feb. 18, 2014
12	Horn Antenna	Schwarzbeck	BBHA 9170	187	Dec. 24, 2013

Remark: "N/A" denotes No Model Name, No Serial No. or No Calibration specified.

9.3 MEASURING INSTRUMENTS SETTING

Spectrum Analyzer	Parameter Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (other emission)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average



9.4 TEST PROCEDURES

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m Semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.
- The testing follows the guidelines in ANSI C63.4 and FCC Public Notice DA 00-705 Measurement Guidelines. In case the emission is fail due to the used RBW/VBW is too wide, marker-delta method of FCC Public Notice DA 00-705 will be followed.

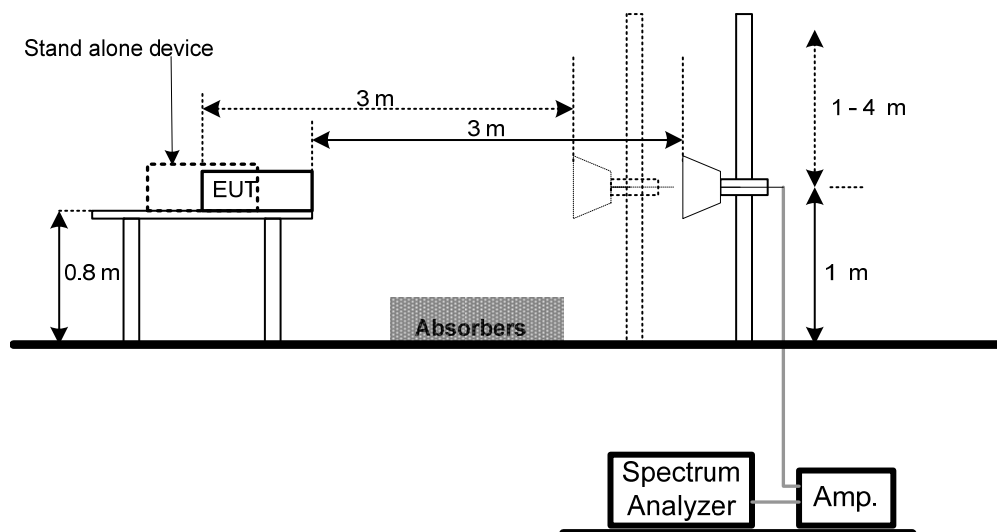
NOTE:

- Reading in which marked as Peak means measurements by using are Peak Mode with instrument setting in RBW= 1 MHz, VBW= 1 MHz, Swp. Time = Auto.
Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW= 1 MHz, VBW= 10 Hz, Swp. Time = Auto.
- All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform.

9.5 DEVIATION FROM TEST STANDARD

No deviation

9.6 TEST SETUP LAYOUT





9.7 EUT OPERATING CONDITIONS

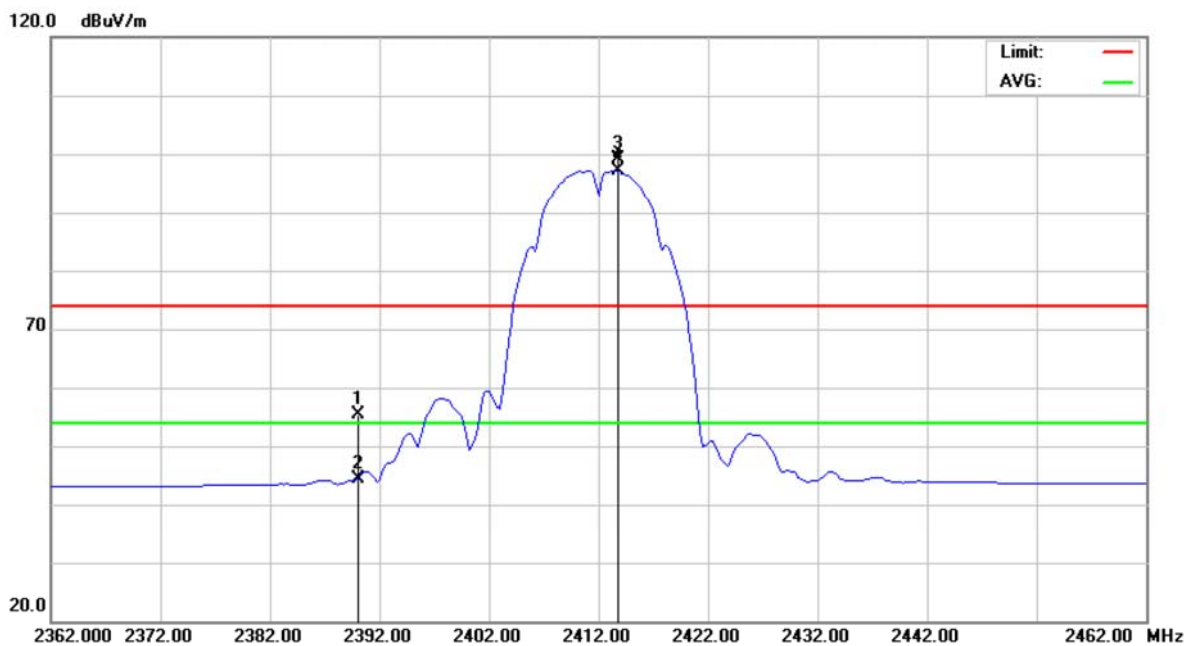
The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.



9.8 TEST RESULTS

E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz		

Polarization: Vertical

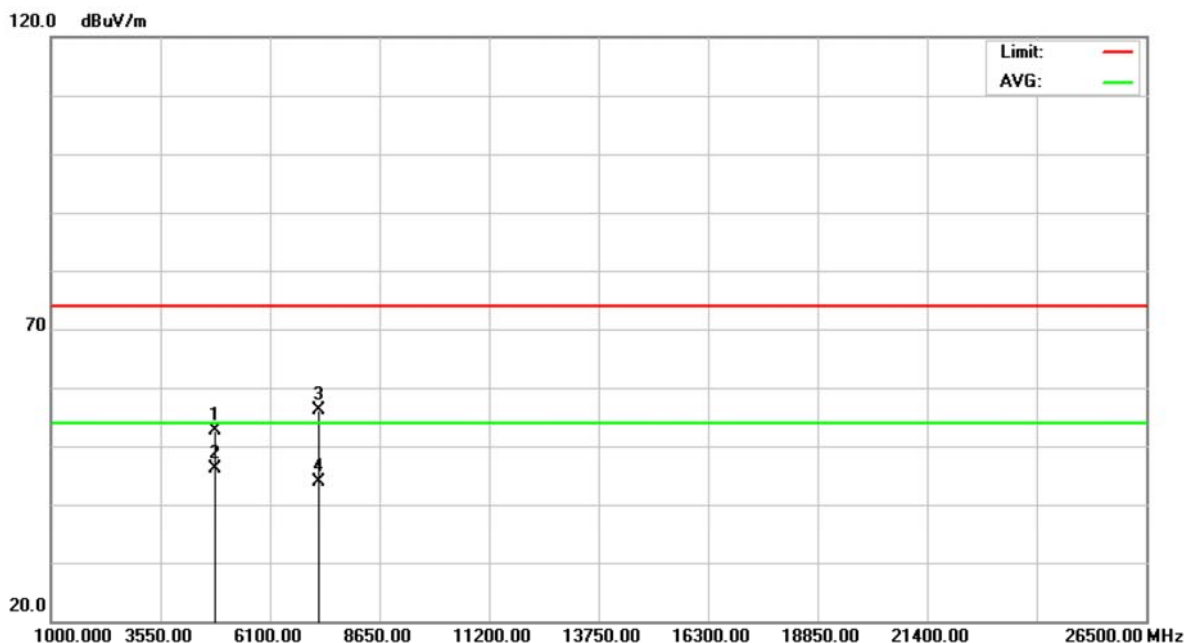


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	23.74	31.67	55.41	74.00	-18.59	peak	
2		2390.000	12.65	31.67	44.32	54.00	-9.68	AVG	
3	X	2413.750	67.32	31.77	99.09	74.00	25.09	peak	
4	*	2413.750	65.34	31.77	97.11	54.00	43.11	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz		

Polarization: Vertical

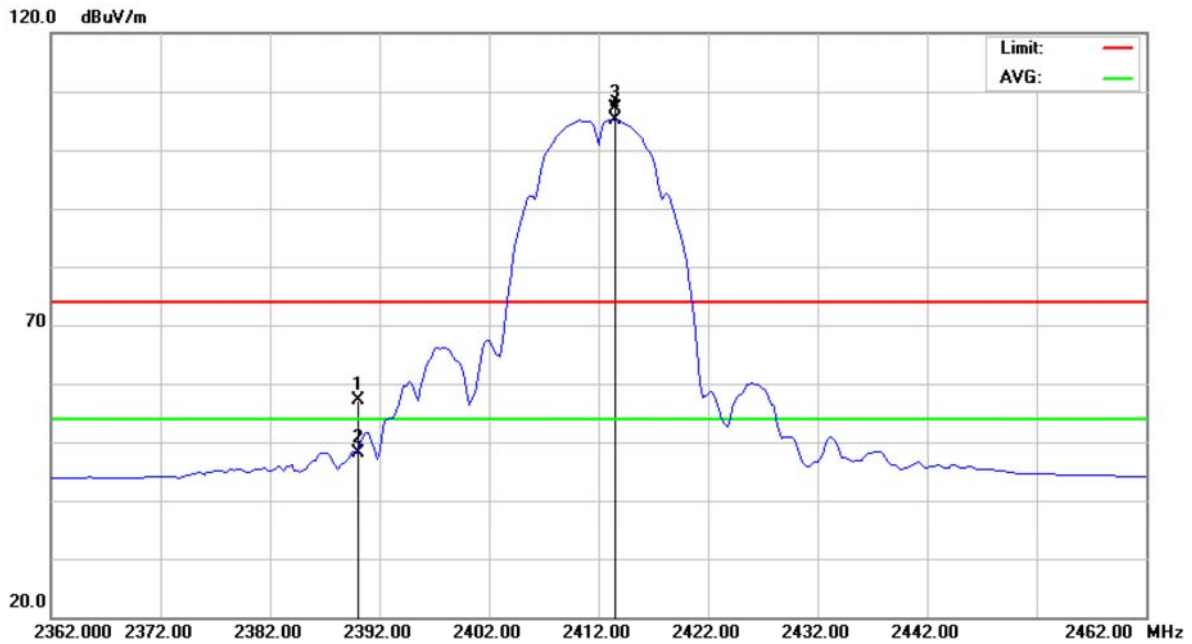


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.000	46.85	5.71	52.56	74.00	-21.44	peak	
2	*	4824.000	40.38	5.71	46.09	54.00	-7.91	AVG	
3		7235.960	43.84	12.29	56.13	74.00	-17.87	peak	
4		7235.960	31.59	12.29	43.88	54.00	-10.12	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz		

Polarization: Horizontal

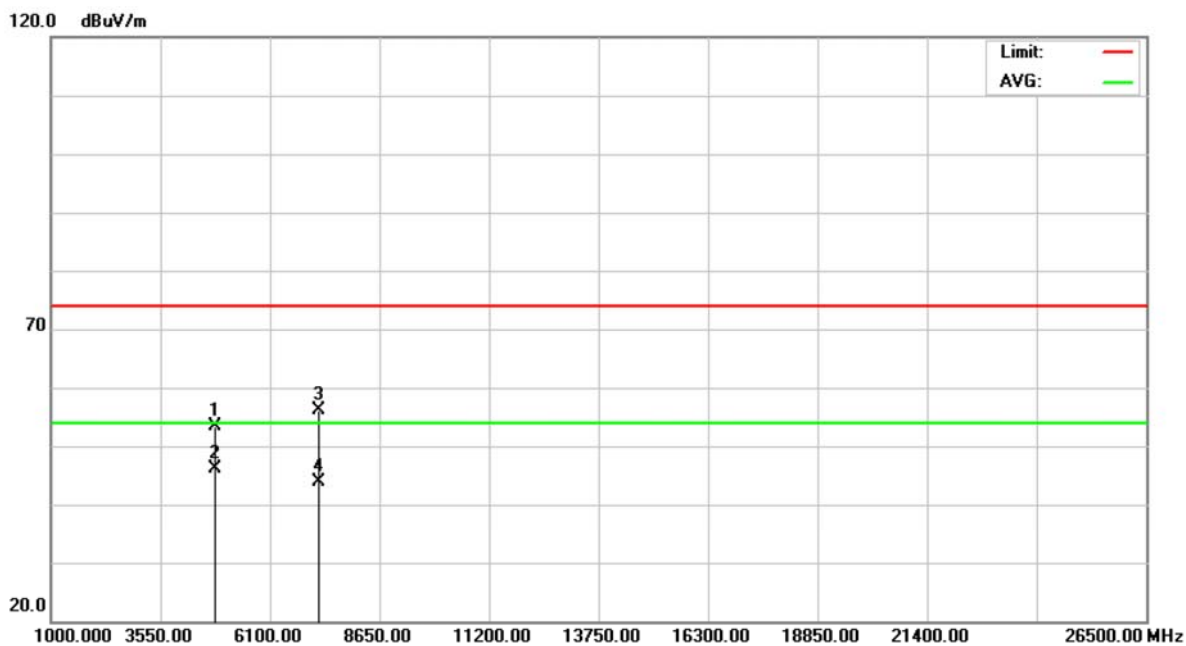


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	25.57	31.67	57.24	74.00	-16.76	peak	
2		2390.000	16.54	31.67	48.21	54.00	-5.79	AVG	
3	X	2413.500	75.47	31.77	107.24	74.00	33.24	peak	
4	*	2413.500	73.34	31.77	105.11	54.00	51.11	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz		

Polarization: Horizontal

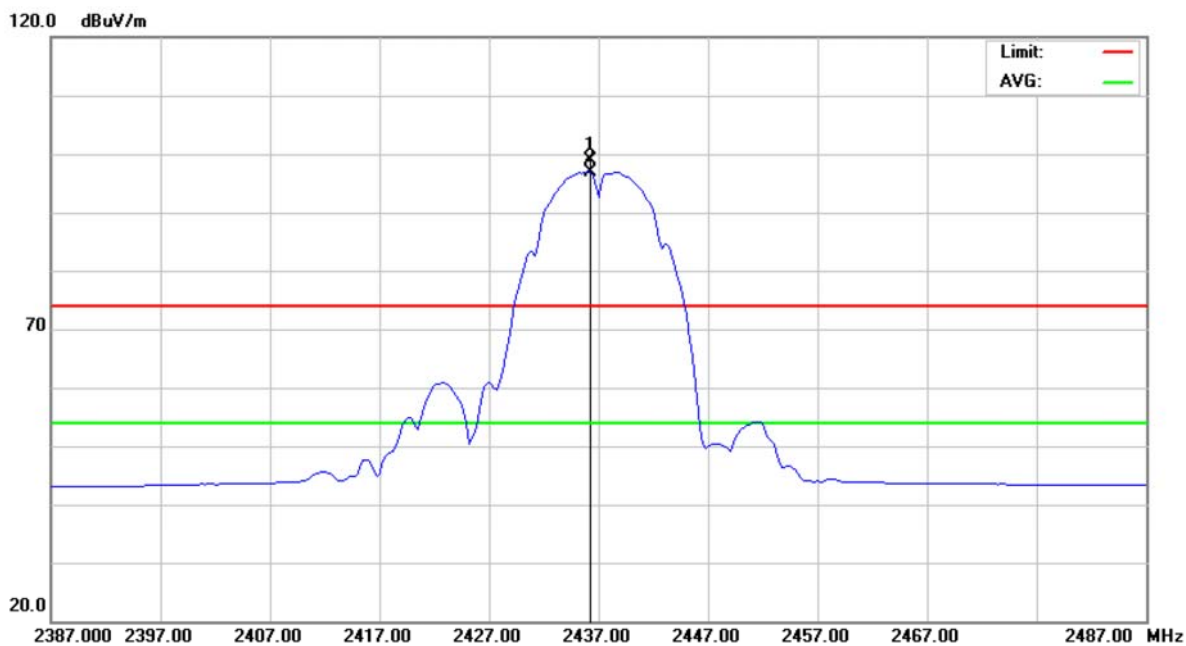


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4823.985	47.71	5.71	53.42	74.00	-20.58	peak	
2	*	4823.985	40.36	5.71	46.07	54.00	-7.93	AVG	
3		7236.230	43.86	12.29	56.15	74.00	-17.85	peak	
4		7236.230	31.54	12.29	43.83	54.00	-10.17	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

Polarization: Vertical

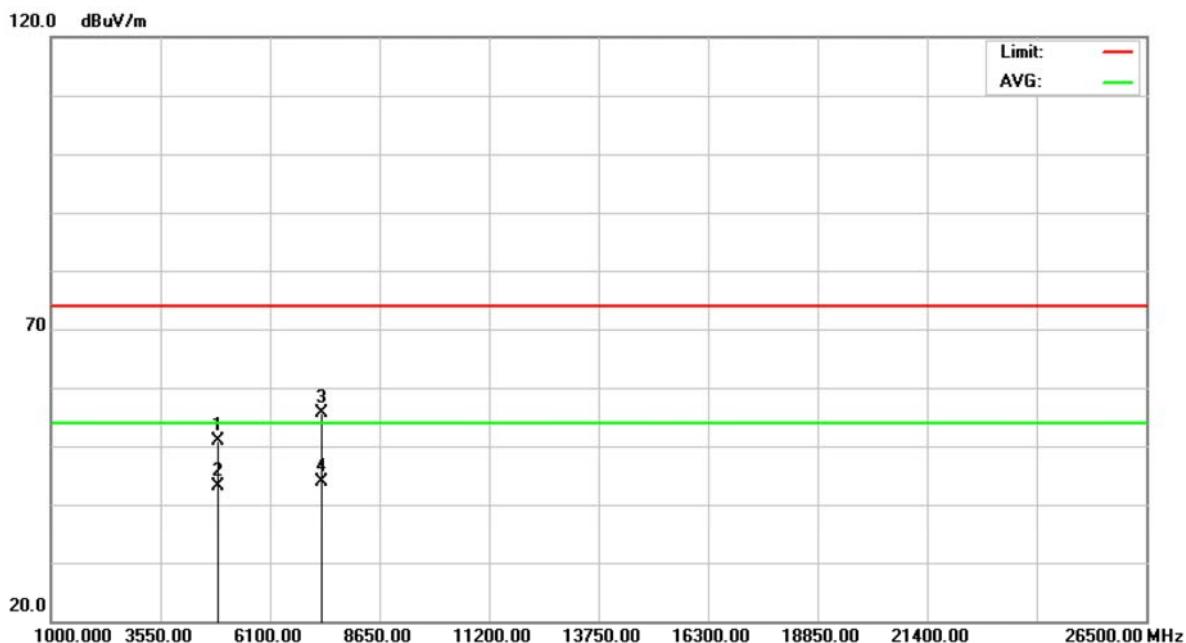


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2436.250	67.02	31.87	98.89	74.00	24.89	peak	
2	*	2436.250	64.98	31.87	96.85	54.00	42.85	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

Polarization: Vertical

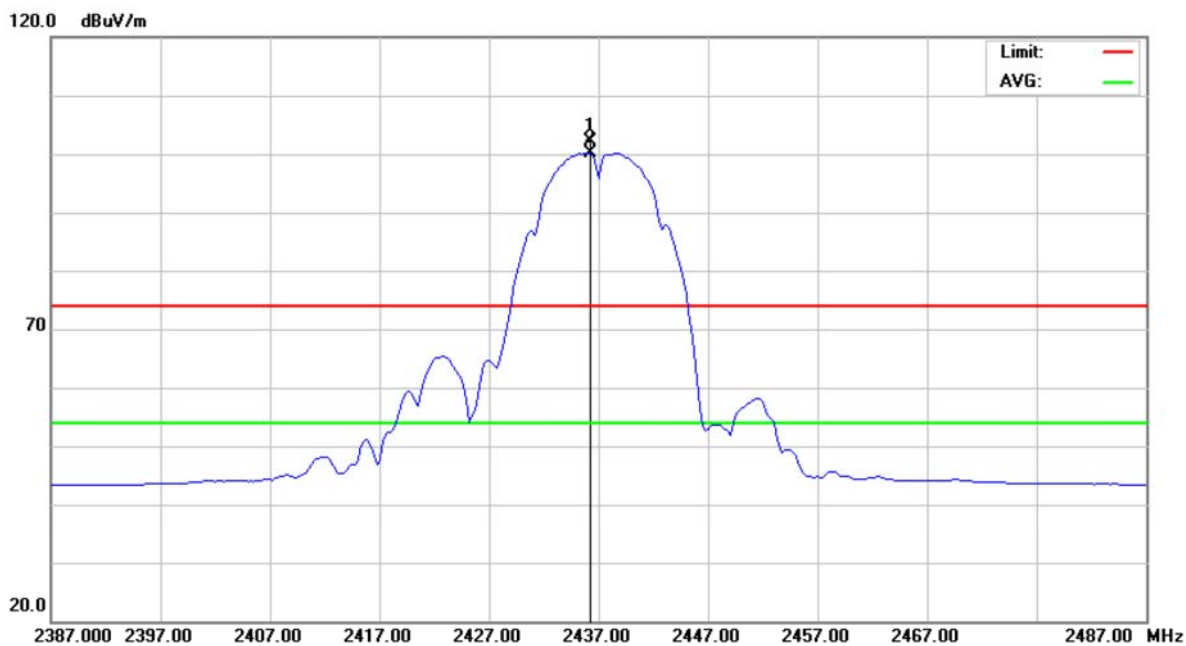


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4873.985	45.21	5.78	50.99	74.00	-23.01	peak	
2		4873.985	37.47	5.78	43.25	54.00	-10.75	AVG	
3		7311.035	43.00	12.57	55.57	74.00	-18.43	peak	
4	*	7311.035	31.29	12.57	43.86	54.00	-10.14	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

Polarization: Horizontal

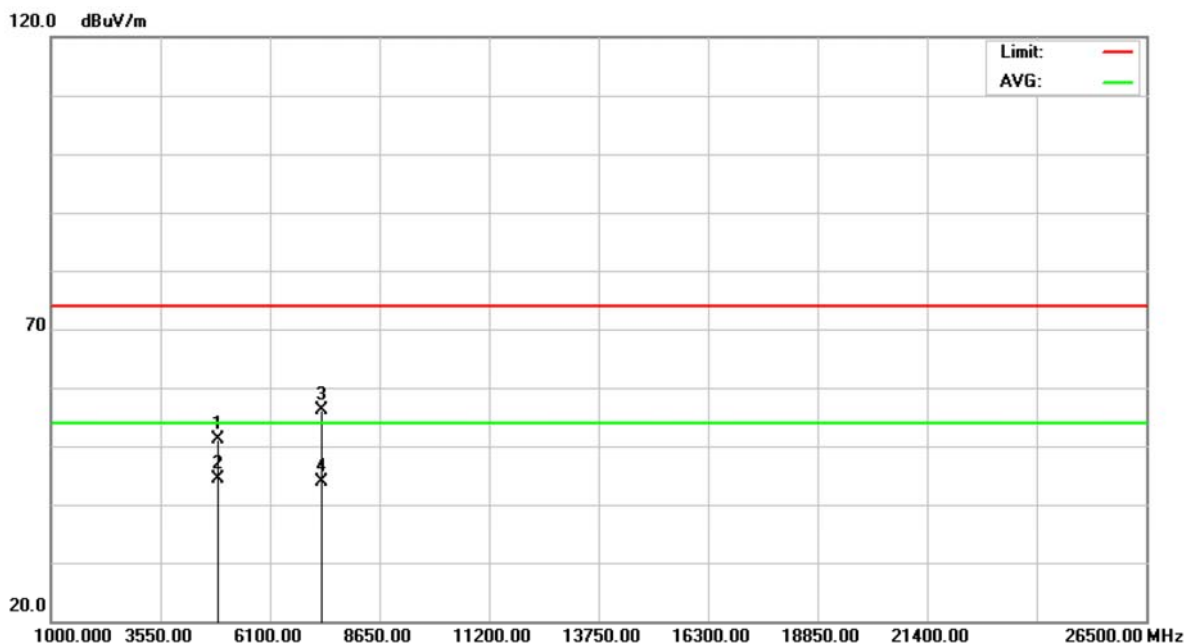


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2436.250	70.30	31.87	102.17	74.00	28.17	peak	
2	*	2436.250	68.26	31.87	100.13	54.00	46.13	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

Polarization: Horizontal

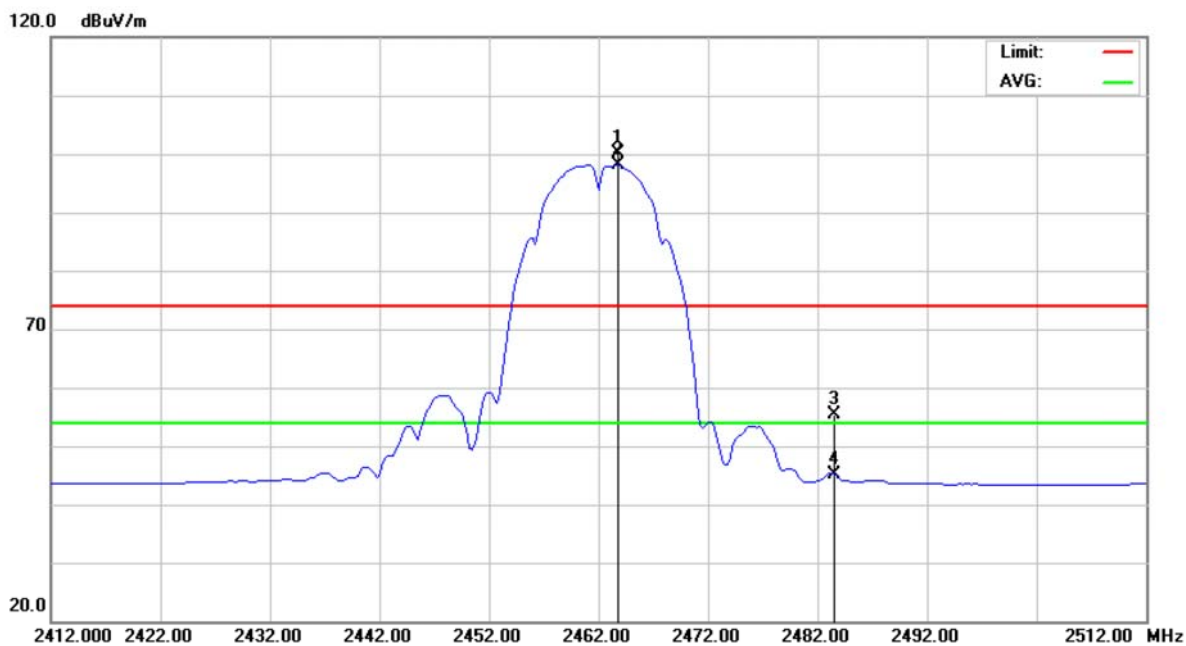


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4873.970	45.44	5.78	51.22	74.00	-22.78	peak	
2	*	4873.970	38.49	5.78	44.27	54.00	-9.73	AVG	
3		7310.950	43.58	12.57	56.15	74.00	-17.85	peak	
4		7310.950	31.32	12.57	43.89	54.00	-10.11	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2462 MHz		

Polarization: Vertical

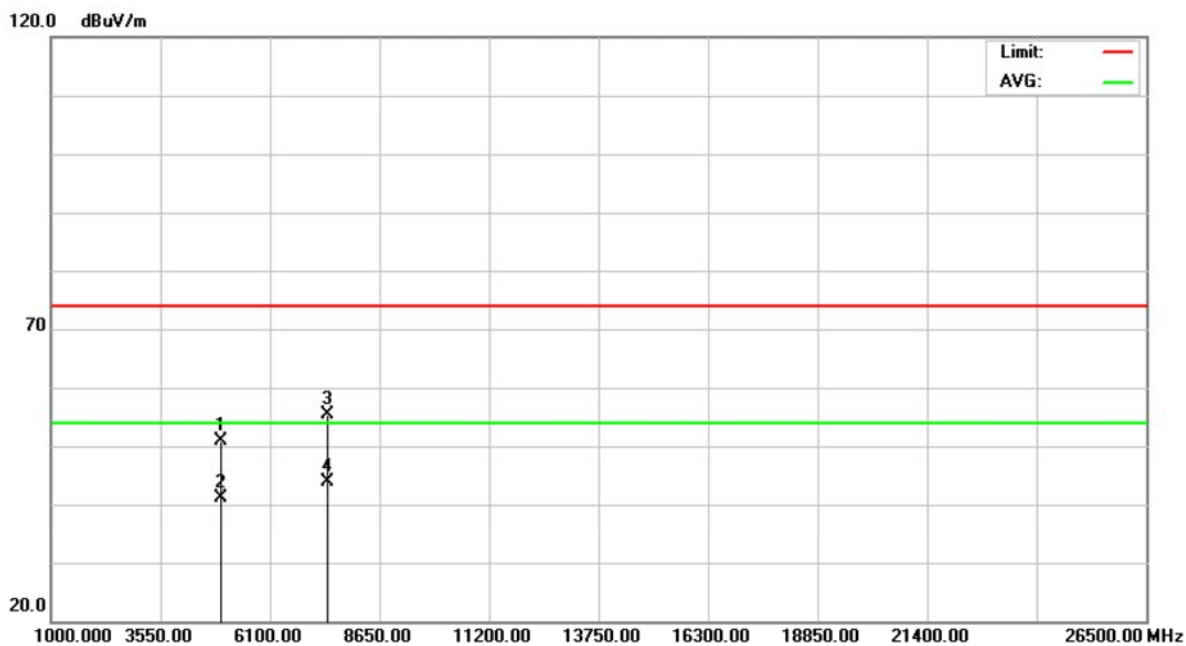


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2463.750	68.06	32.00	100.06	74.00	26.06	peak	
2	*	2463.750	66.05	32.00	98.05	54.00	44.05	AVG	
3		2483.500	23.17	32.09	55.26	74.00	-18.74	peak	
4		2483.500	13.13	32.09	45.22	54.00	-8.78	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2462 MHz		

Polarization: Vertical

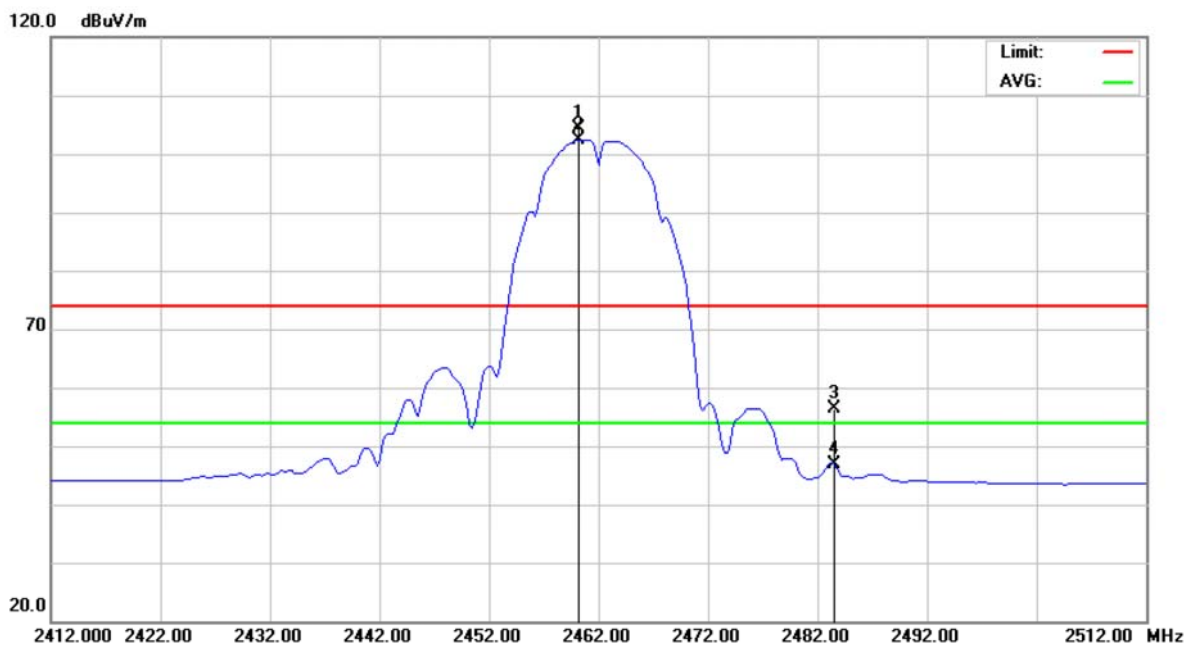


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4923.965	45.01	5.84	50.85	74.00	-23.15	peak	
2		4923.965	35.32	5.84	41.16	54.00	-12.84	AVG	
3		7385.950	42.63	12.85	55.48	74.00	-18.52	peak	
4	*	7385.950	31.00	12.85	43.85	54.00	-10.15	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2462 MHz		

Polarization: Horizontal

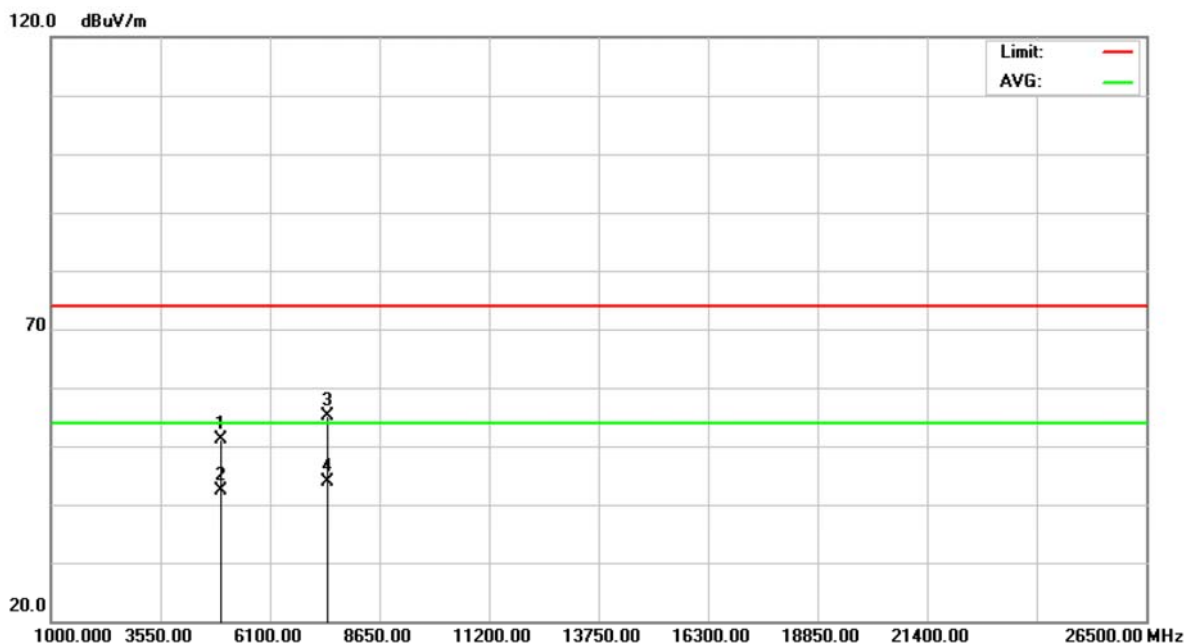


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2460.250	72.46	31.98	104.44	74.00	30.44	peak	
2	*	2460.250	70.49	31.98	102.47	54.00	48.47	AVG	
3		2483.500	24.32	32.09	56.41	74.00	-17.59	peak	
4		2483.500	14.85	32.09	46.94	54.00	-7.06	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2462 MHz		

Polarization: Horizontal

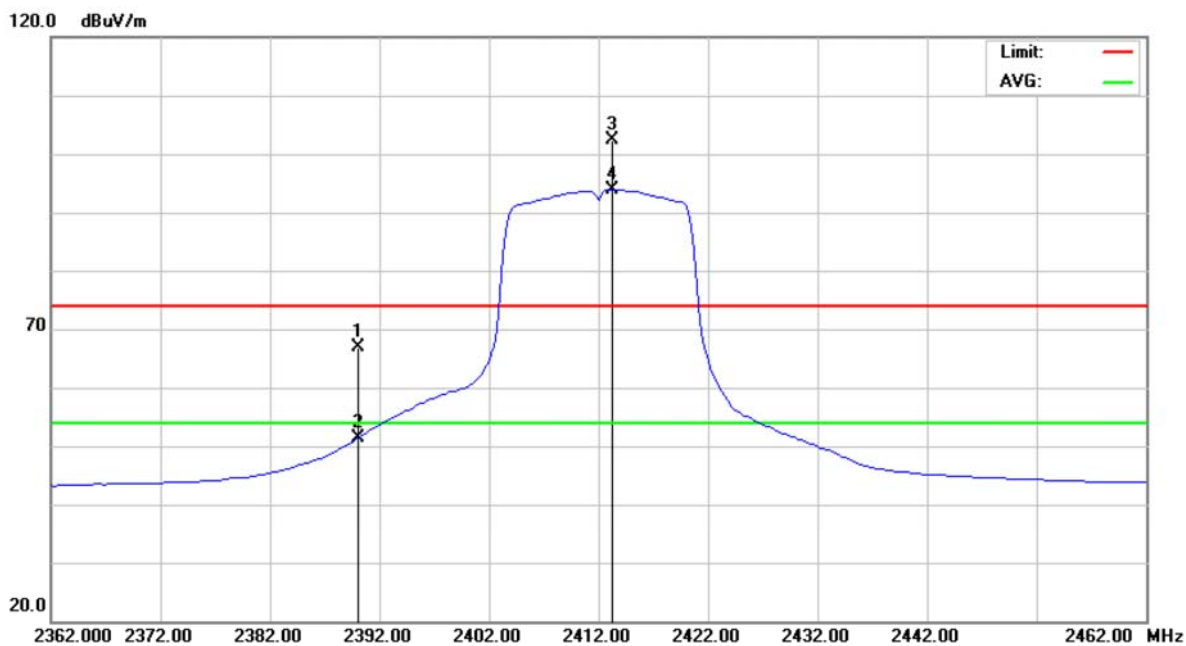


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4923.970	45.31	5.84	51.15	74.00	-22.85	peak	
2		4923.970	36.53	5.84	42.37	54.00	-11.63	AVG	
3		7386.045	42.18	12.85	55.03	74.00	-18.97	peak	
4	*	7386.045	31.03	12.85	43.88	54.00	-10.12	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz		

Polarization: Vertical

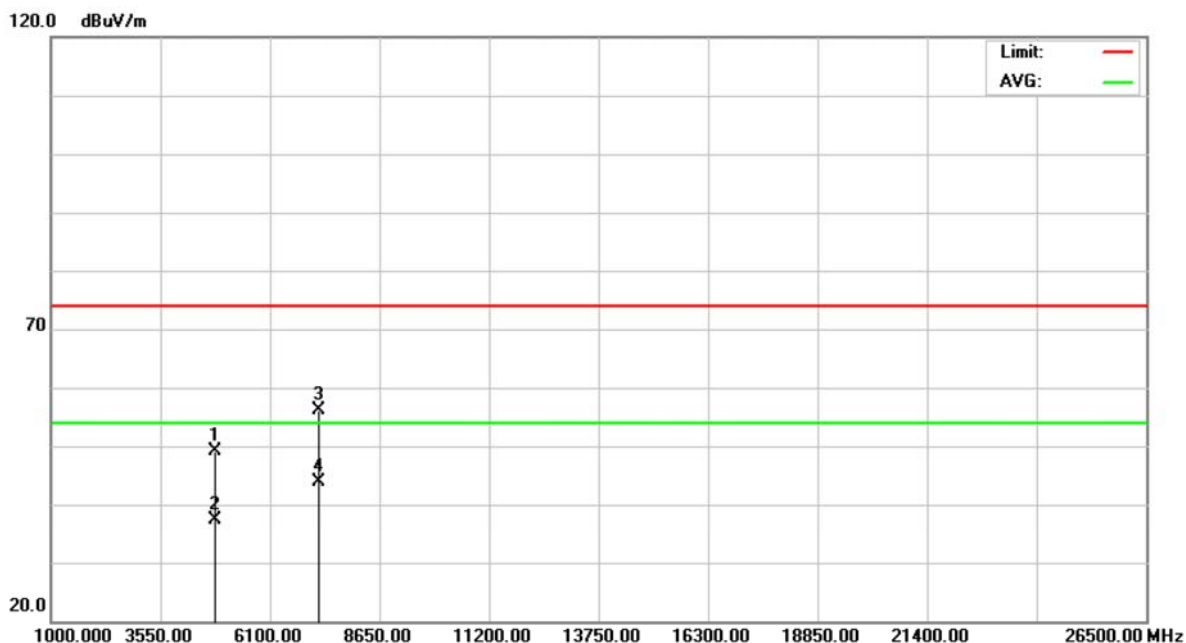


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	35.21	31.67	66.88	74.00	-7.12	peak	
2		2390.000	19.73	31.67	51.40	54.00	-2.60	AVG	
3	X	2413.250	70.71	31.77	102.48	74.00	28.48	peak	
4	*	2413.250	62.07	31.77	93.84	54.00	39.84	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz		

Polarization: Vertical

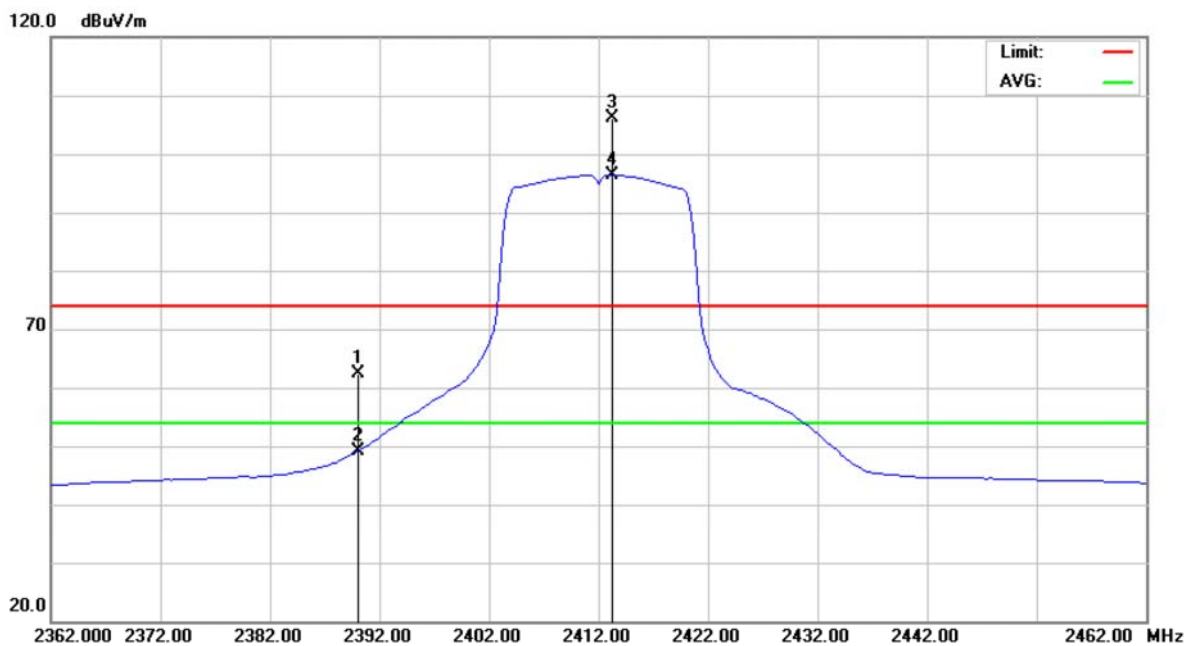


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.005	43.32	5.71	49.03	74.00	-24.97	peak	
2		4824.005	31.73	5.71	37.44	54.00	-16.56	AVG	
3		7235.955	43.93	12.29	56.22	74.00	-17.78	peak	
4	*	7235.955	31.57	12.29	43.86	54.00	-10.14	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz		

Polarization: Horizontal

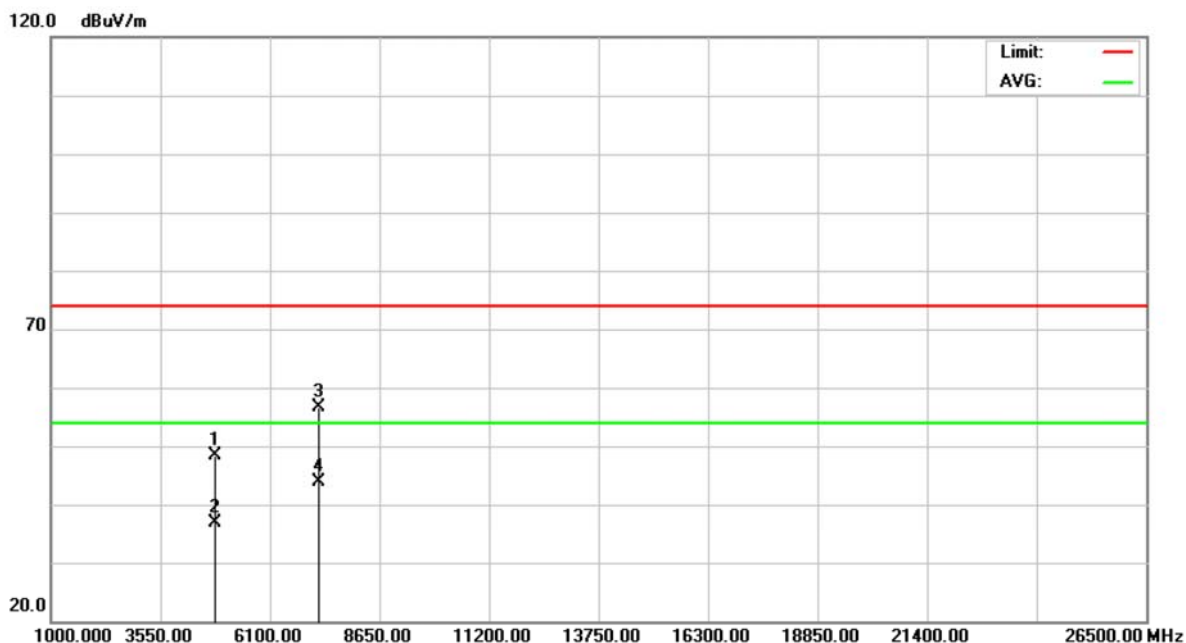


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	30.68	31.67	62.35	74.00	-11.65	peak	
2		2390.000	17.41	31.67	49.08	54.00	-4.92	AVG	
3	X	2413.250	74.41	31.77	106.18	74.00	32.18	peak	
4	*	2413.250	64.60	31.77	96.37	54.00	42.37	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz		

Polarization: Horizontal

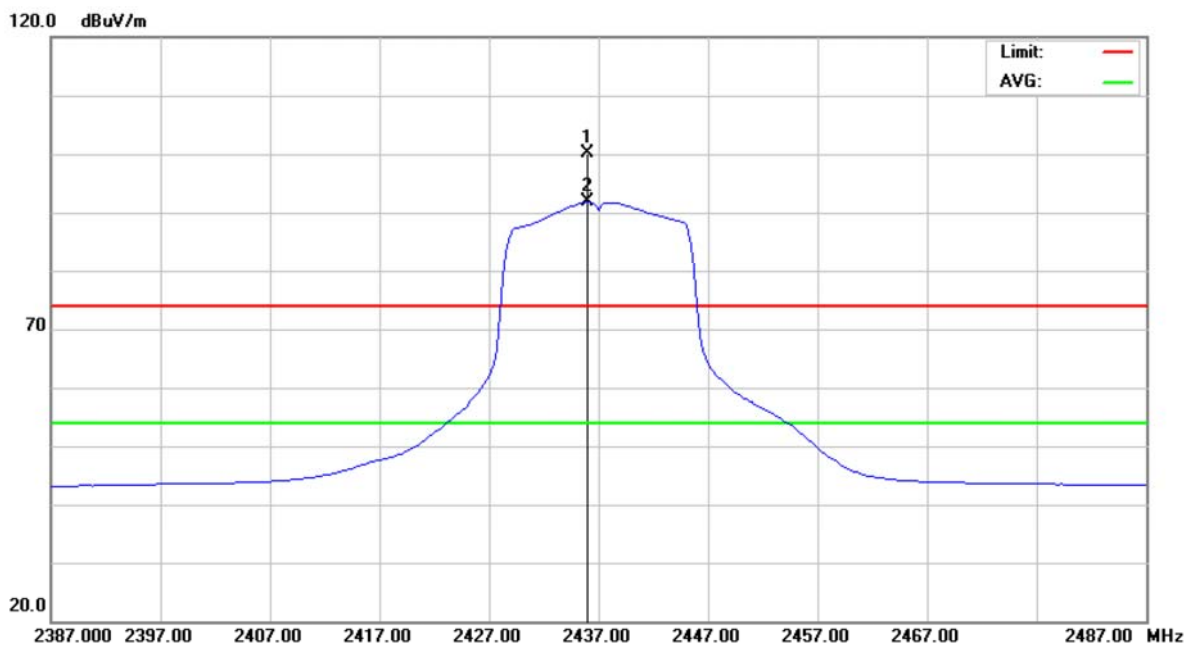


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4823.910	42.77	5.71	48.48	74.00	-25.52	peak	
2		4823.910	31.23	5.71	36.94	54.00	-17.06	AVG	
3		7236.120	44.30	12.29	56.59	74.00	-17.41	peak	
4	*	7236.120	31.61	12.29	43.90	54.00	-10.10	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2437 MHz		

Polarization: Vertical

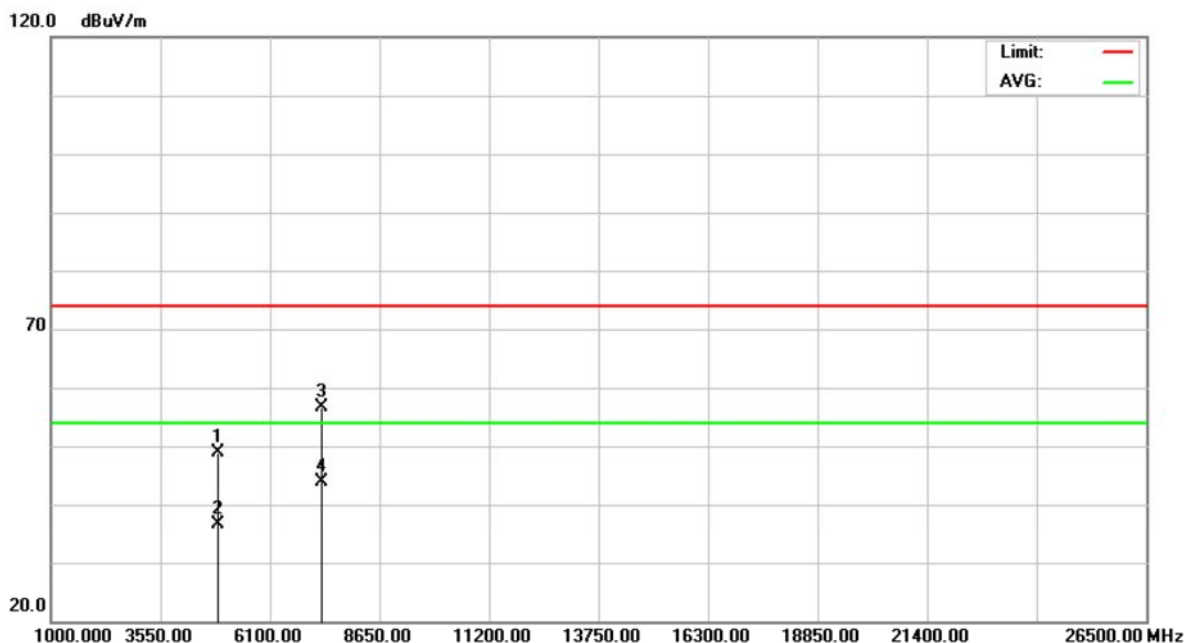


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2436.000	68.35	31.87	100.22	74.00	26.22	peak	
2	*	2436.000	59.89	31.87	91.76	54.00	37.76	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2437 MHz		

Polarization: Vertical

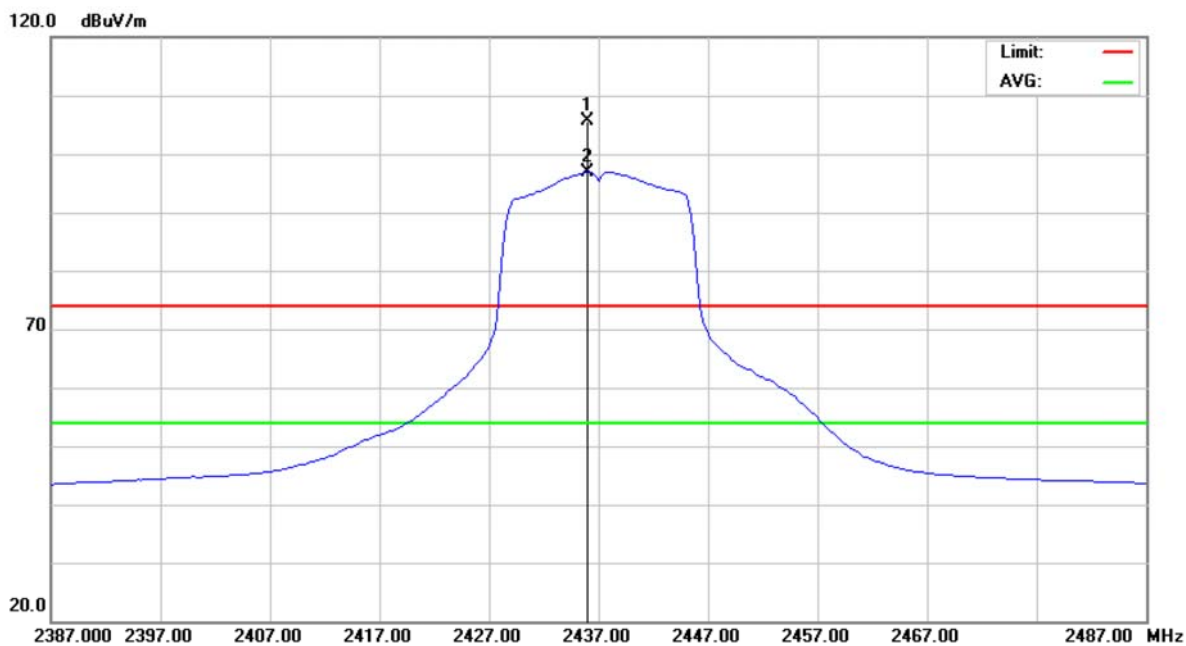


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.230	43.19	5.78	48.97	74.00	-25.03	peak	
2		4874.230	30.80	5.78	36.58	54.00	-17.42	AVG	
3		7310.210	43.97	12.56	56.53	74.00	-17.47	peak	
4	*	7310.210	31.30	12.56	43.86	54.00	-10.14	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2437 MHz		

Polarization: Horizontal

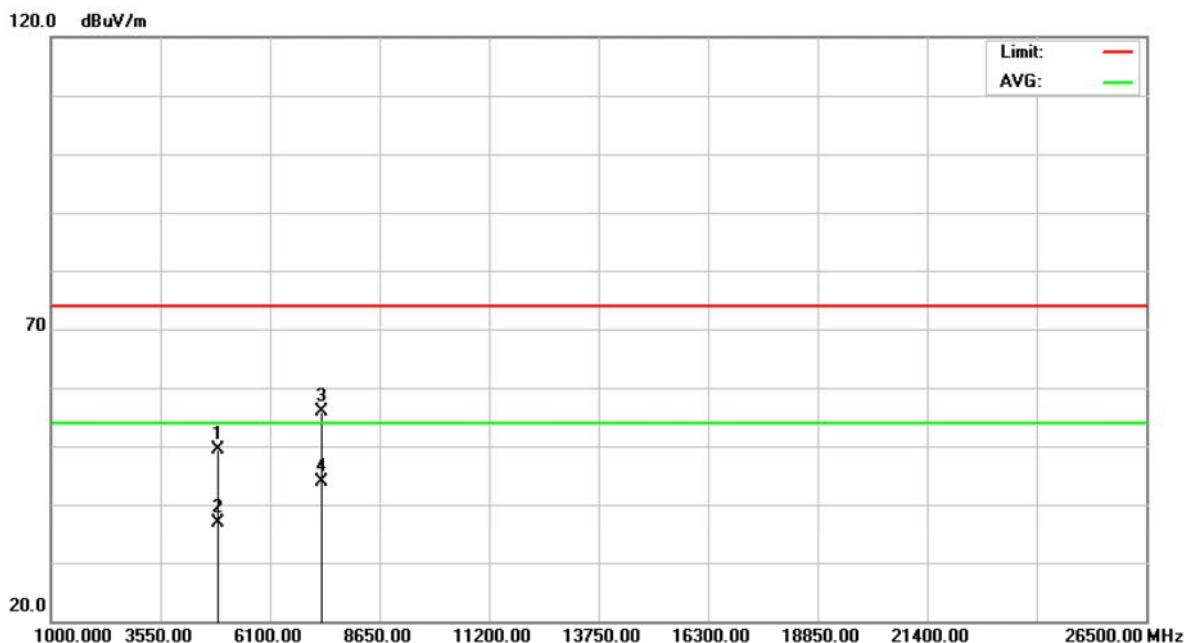


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2436.000	73.86	31.87	105.73	74.00	31.73	peak	
2	*	2436.000	64.98	31.87	96.85	54.00	42.85	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2437 MHz		

Polarization: Horizontal

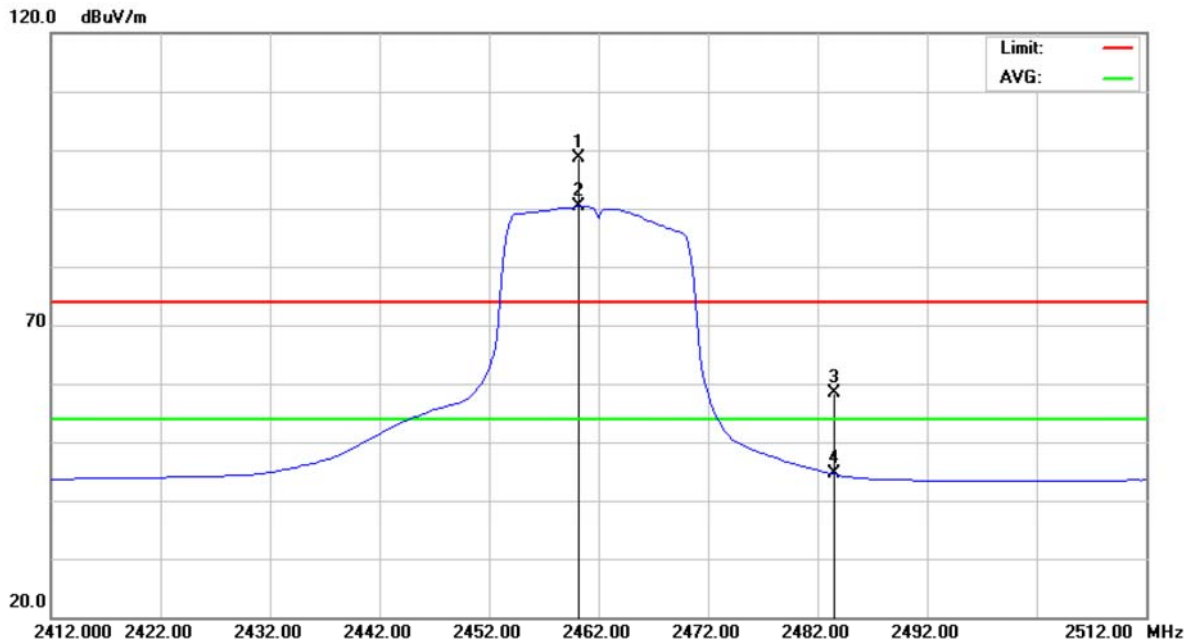


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4873.960	43.67	5.78	49.45	74.00	-24.55	peak	
2		4873.960	31.07	5.78	36.85	54.00	-17.15	AVG	
3		7311.010	43.20	12.57	55.77	74.00	-18.23	peak	
4	*	7311.010	31.31	12.57	43.88	54.00	-10.12	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2462 MHz		

Polarization: Vertical

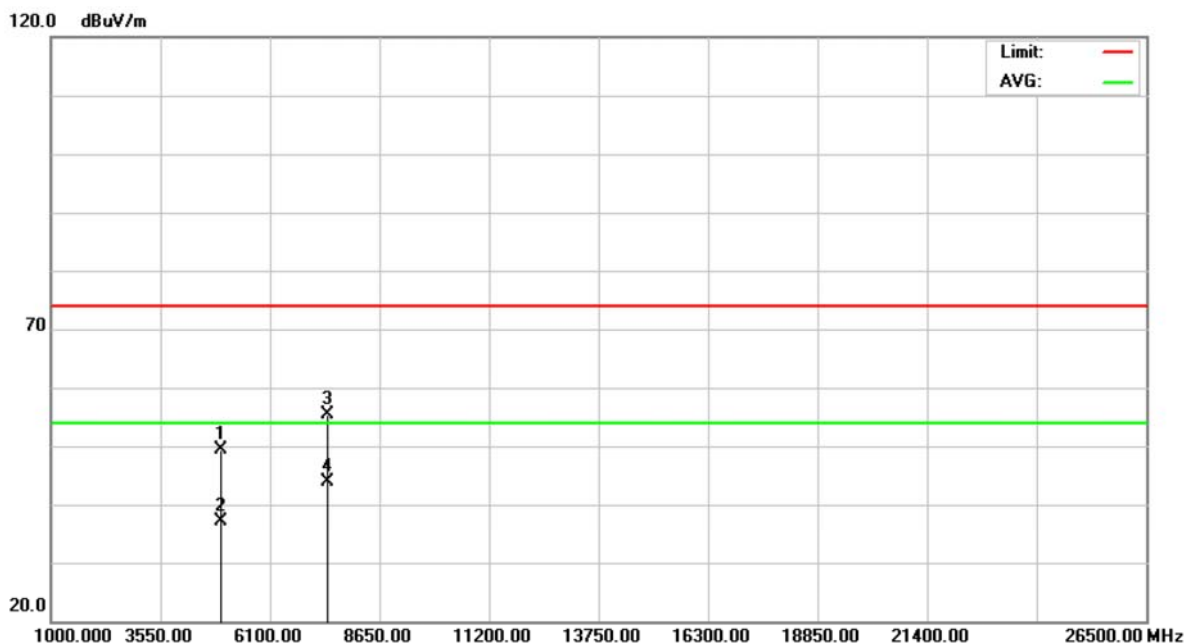


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2460.250	66.70	31.98	98.68	74.00	24.68	peak	
2	*	2460.250	58.32	31.98	90.30	54.00	36.30	AVG	
3		2483.500	26.33	32.09	58.42	74.00	-15.58	peak	
4		2483.500	12.44	32.09	44.53	54.00	-9.47	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2462 MHz		

Polarization: Vertical

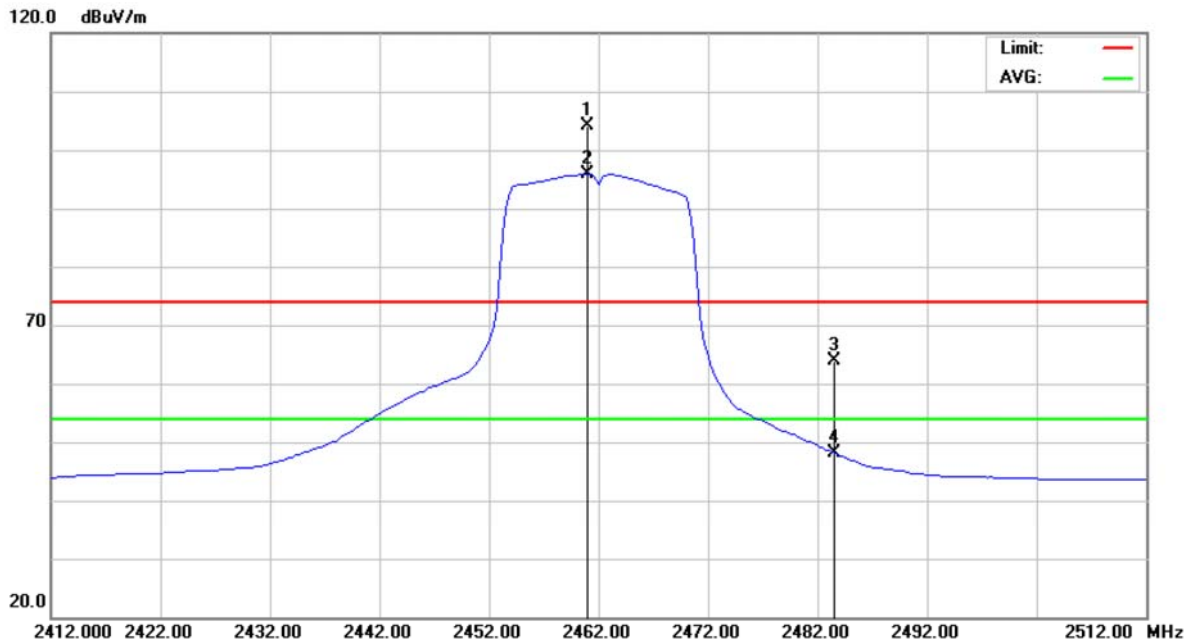


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.080	43.50	5.84	49.34	74.00	-24.66	peak	
2		4924.080	31.25	5.84	37.09	54.00	-16.91	AVG	
3		7386.005	42.54	12.85	55.39	74.00	-18.61	peak	
4	*	7386.005	31.06	12.85	43.91	54.00	-10.09	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2462 MHz		

Polarization: Horizontal

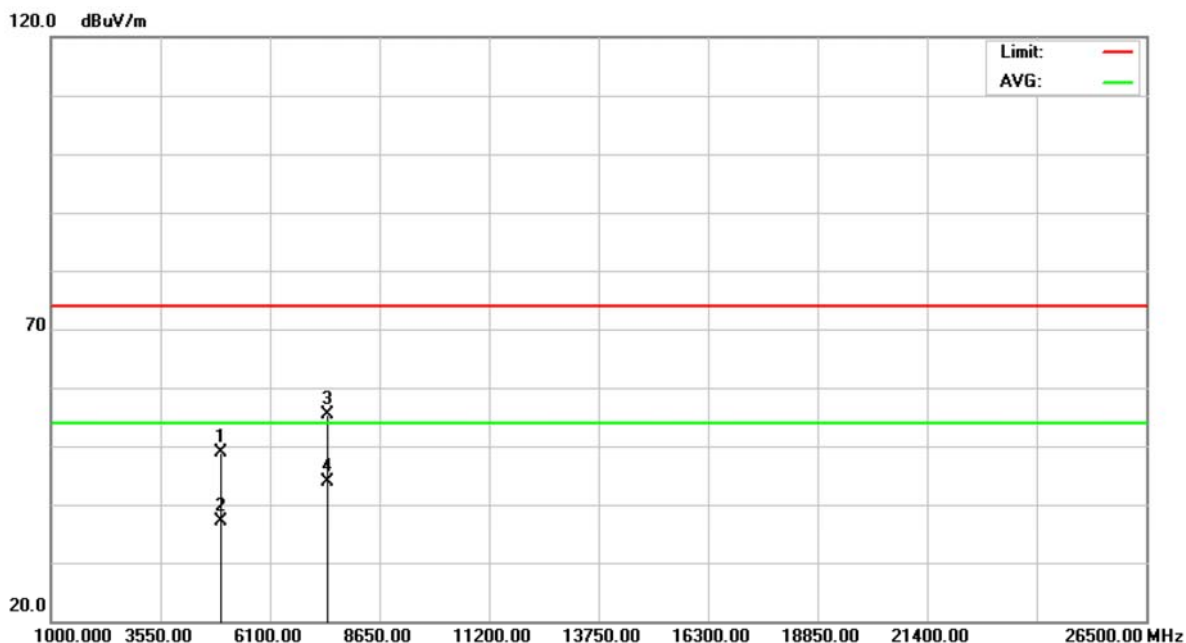


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2461.000	72.26	31.99	104.25	74.00	30.25	peak	
2	*	2461.000	63.90	31.99	95.89	54.00	41.89	AVG	
3		2483.500	31.87	32.09	63.96	74.00	-10.04	peak	
4		2483.500	16.05	32.09	48.14	54.00	-5.86	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2462 MHz		

Polarization: Horizontal

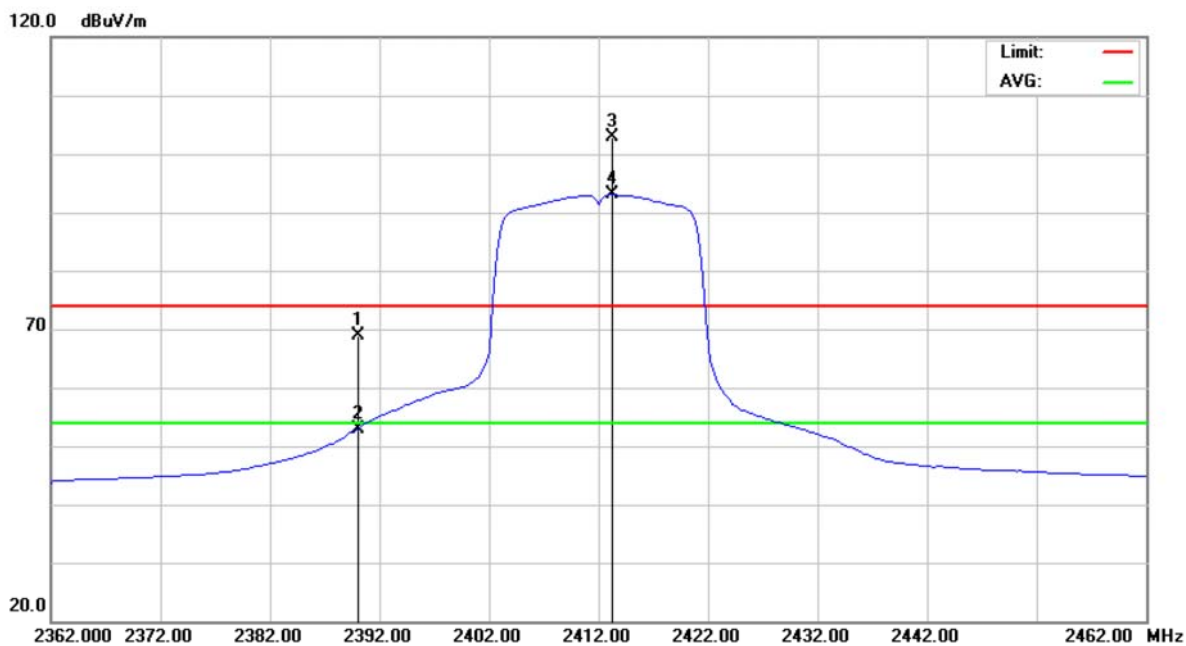


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4923.990	42.98	5.84	48.82	74.00	-25.18	peak	
2		4923.990	31.31	5.84	37.15	54.00	-16.85	AVG	
3		7385.960	42.64	12.85	55.49	74.00	-18.51	peak	
4	*	7385.960	31.02	12.85	43.87	54.00	-10.13	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz		

Polarization: Vertical

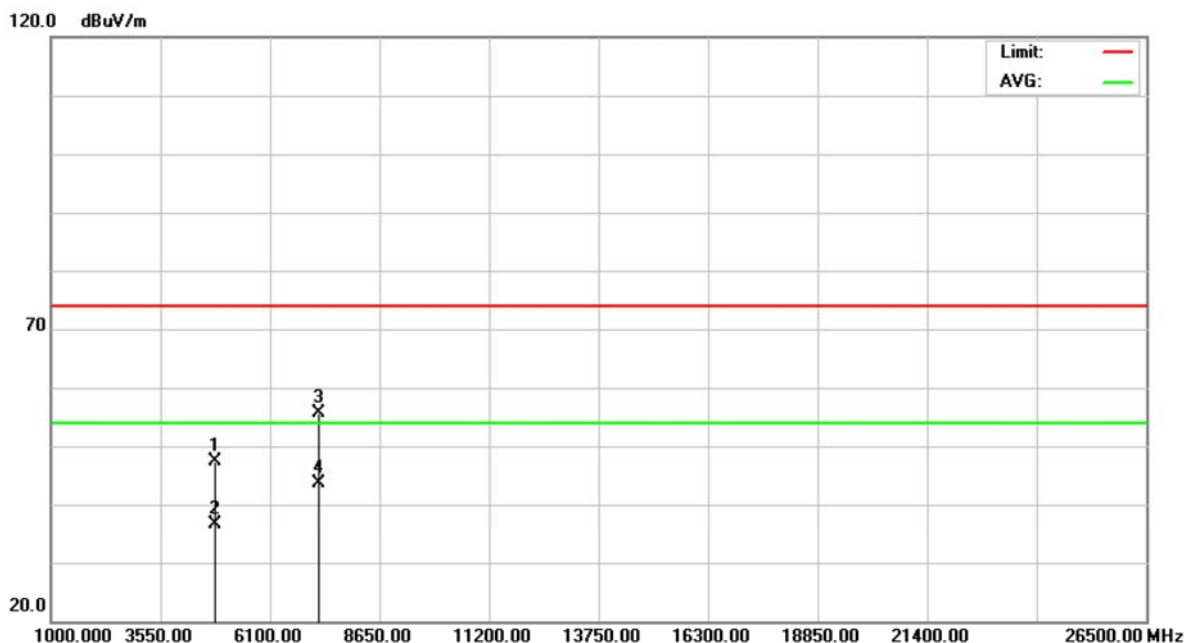


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	37.19	31.67	68.86	74.00	-5.14	peak	
2		2390.000	21.20	31.67	52.87	54.00	-1.13	AVG	
3	X	2413.250	71.19	31.77	102.96	74.00	28.96	peak	
4	*	2413.250	61.30	31.77	93.07	54.00	39.07	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz		

Polarization: Vertical

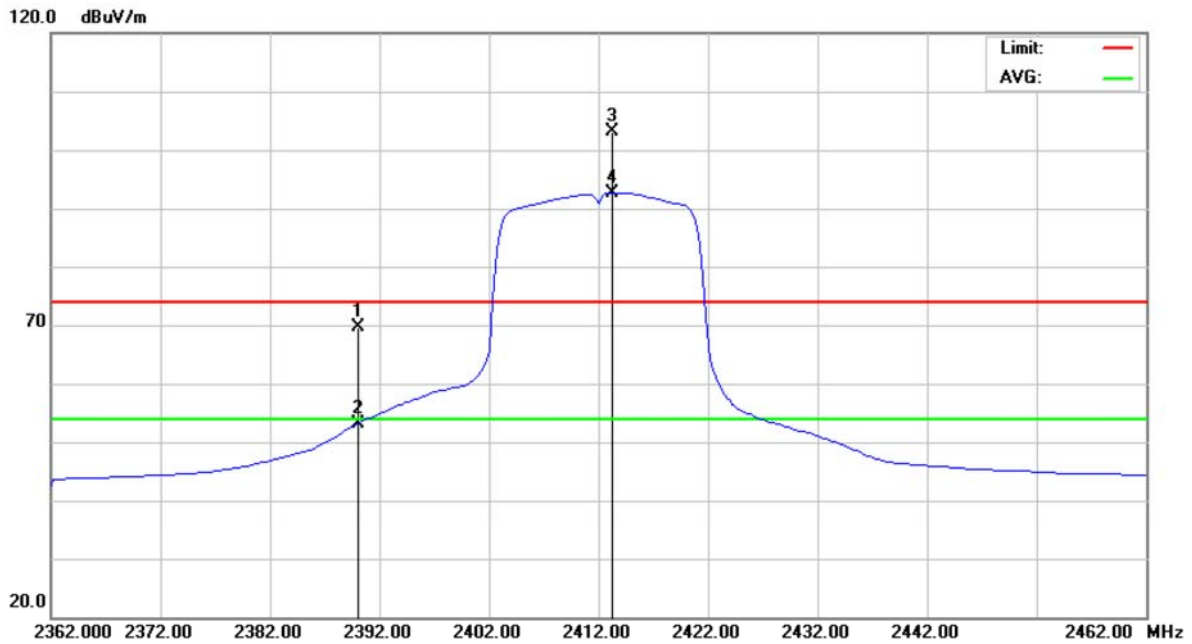


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.000	41.72	5.71	47.43	74.00	-26.57	peak	
2		4824.000	30.93	5.71	36.64	54.00	-17.36	AVG	
3		7236.025	43.45	12.29	55.74	74.00	-18.26	peak	
4	*	7236.025	31.33	12.29	43.62	54.00	-10.38	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz		

Polarization: Horizontal

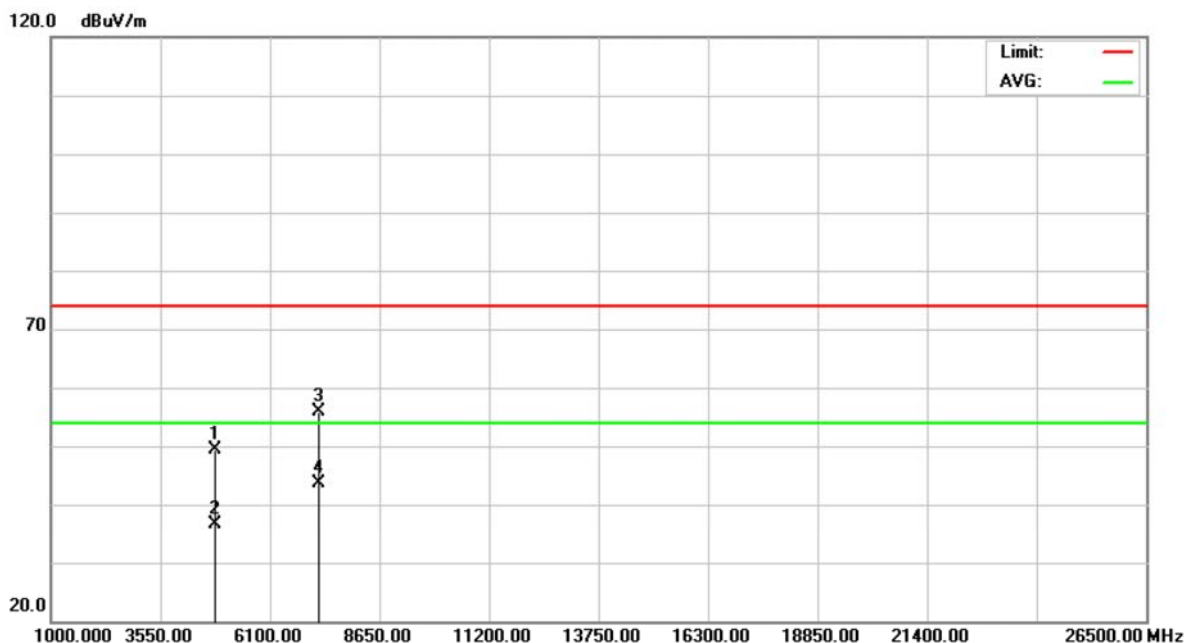


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	37.95	31.67	69.62	74.00	-4.38	peak	
2		2390.000	21.44	31.67	53.11	54.00	-0.89	AVG	
3	X	2413.250	71.47	31.77	103.24	74.00	29.24	peak	
4	*	2413.250	60.95	31.77	92.72	54.00	38.72	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz		

Polarization: Horizontal

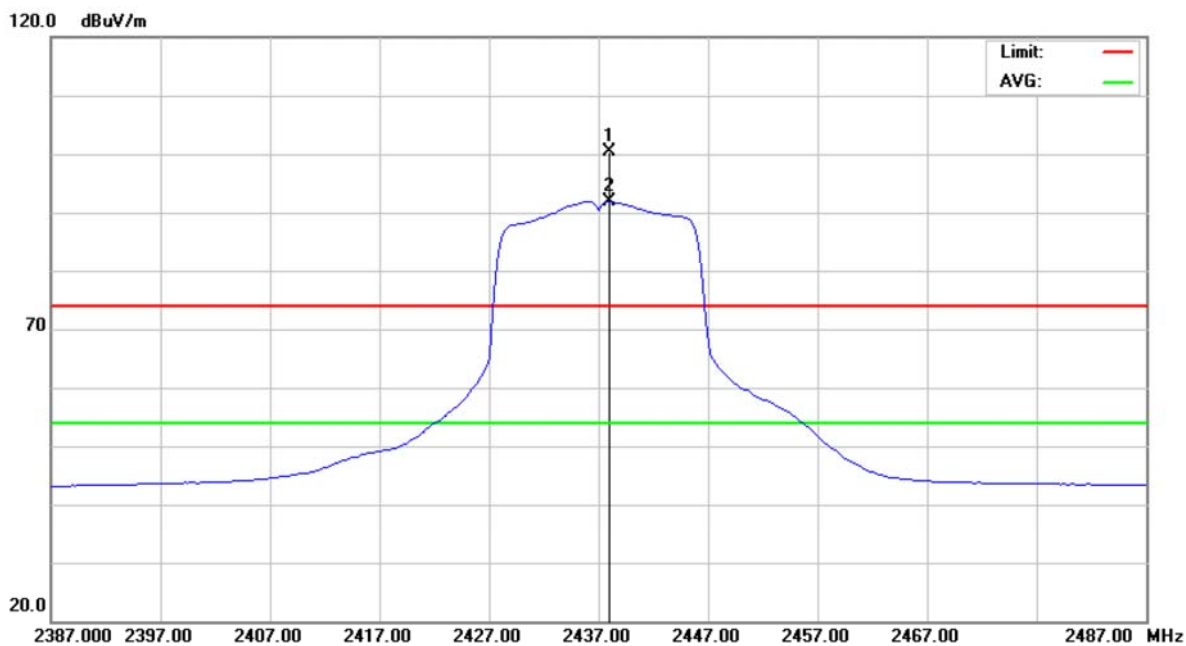


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4823.925	43.57	5.71	49.28	74.00	-24.72	peak	
2		4823.925	30.87	5.71	36.58	54.00	-17.42	AVG	
3		7235.775	43.68	12.29	55.97	74.00	-18.03	peak	
4	*	7235.775	31.29	12.29	43.58	54.00	-10.42	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2437 MHz		

Polarization: Vertical

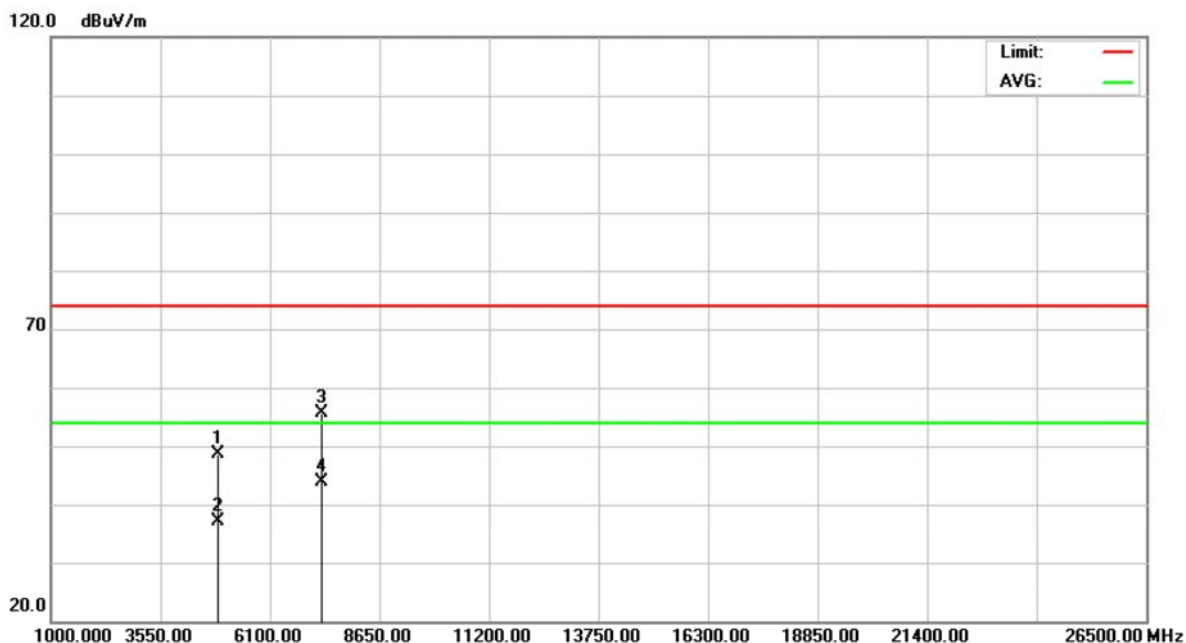


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2438.000	68.62	31.88	100.50	74.00	26.50	peak	
2	*	2438.000	59.92	31.88	91.80	54.00	37.80	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2437 MHz		

Polarization: Vertical

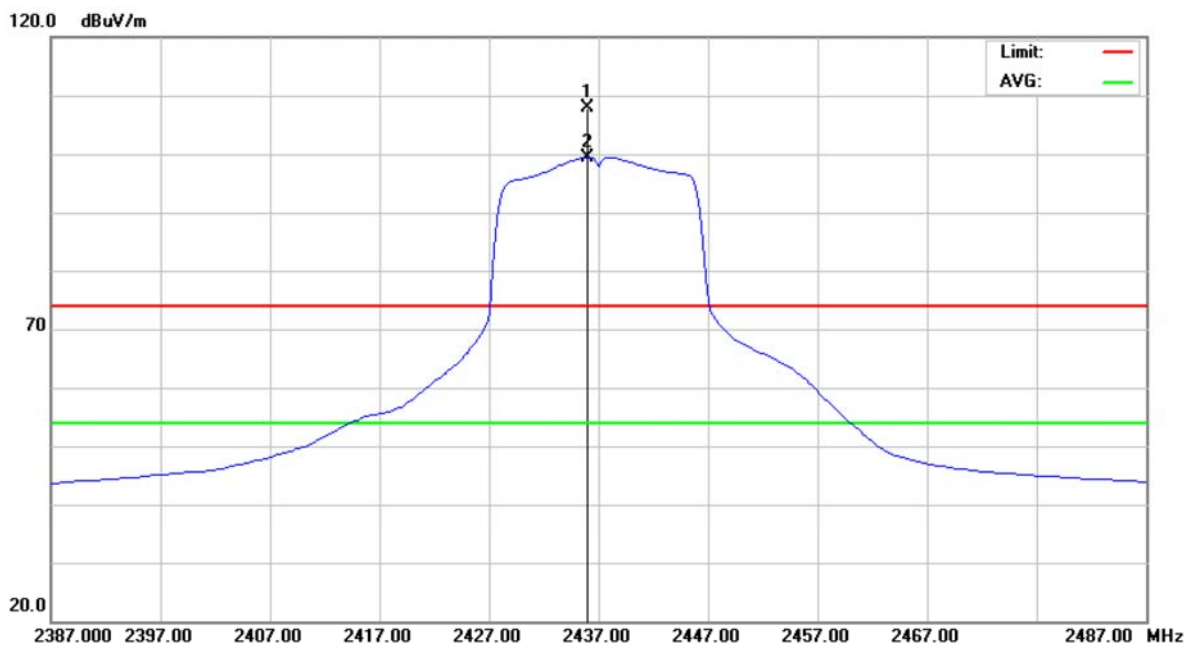


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.020	42.94	5.78	48.72	74.00	-25.28	peak	
2		4874.020	31.33	5.78	37.11	54.00	-16.89	AVG	
3		7311.060	43.03	12.57	55.60	74.00	-18.40	peak	
4	*	7311.060	31.39	12.57	43.96	54.00	-10.04	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2437 MHz		

Polarization: Horizontal

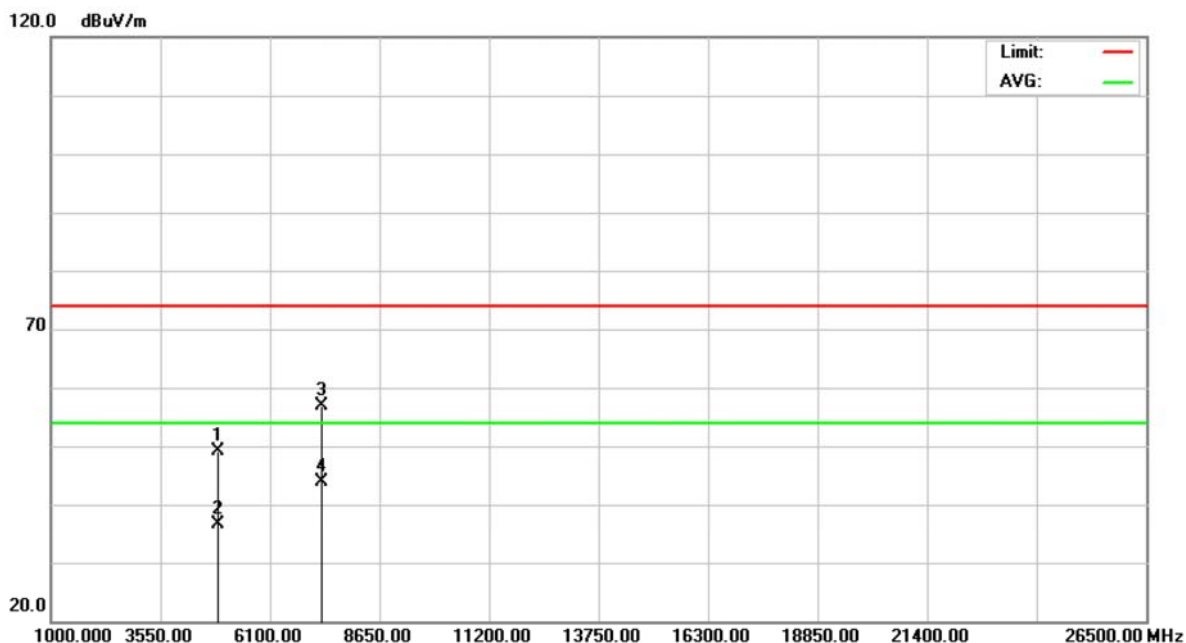


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2436.000	76.03	31.87	107.90	74.00	33.90	peak	
2	*	2436.000	67.63	31.87	99.50	54.00	45.50	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2437 MHz		

Polarization: Horizontal

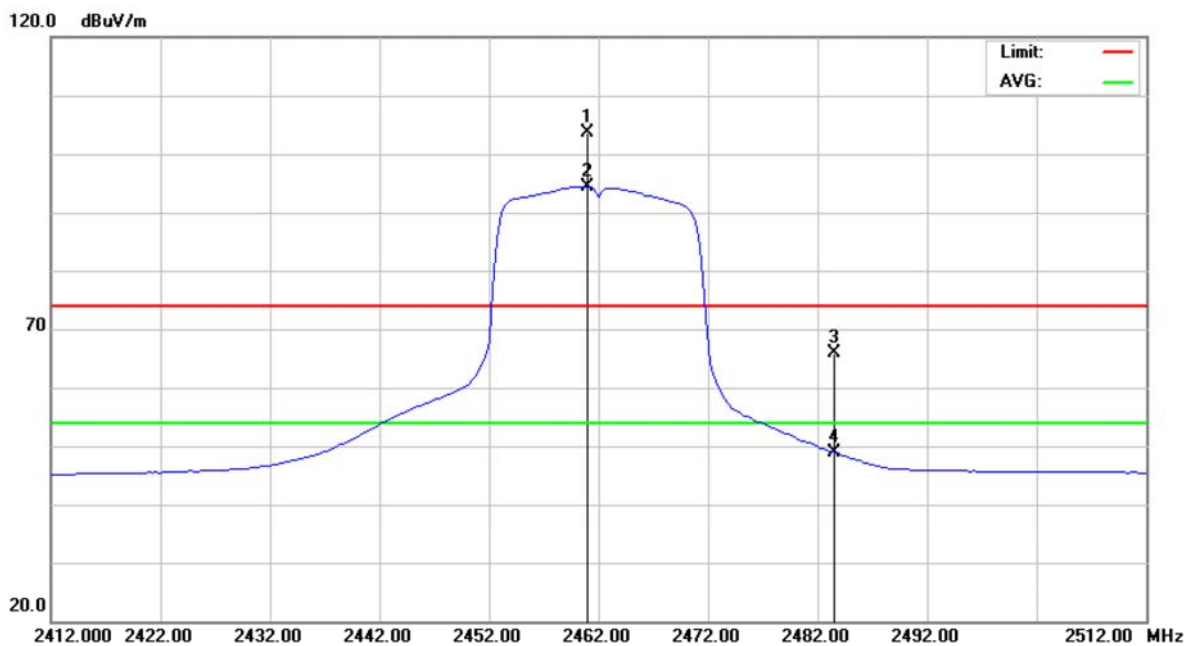


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.145	43.32	5.78	49.10	74.00	-24.90	peak	
2		4874.145	30.97	5.78	36.75	54.00	-17.25	AVG	
3		7311.105	44.31	12.57	56.88	74.00	-17.12	peak	
4	*	7311.105	31.37	12.57	43.94	54.00	-10.06	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2462 MHz		

Polarization: Vertical

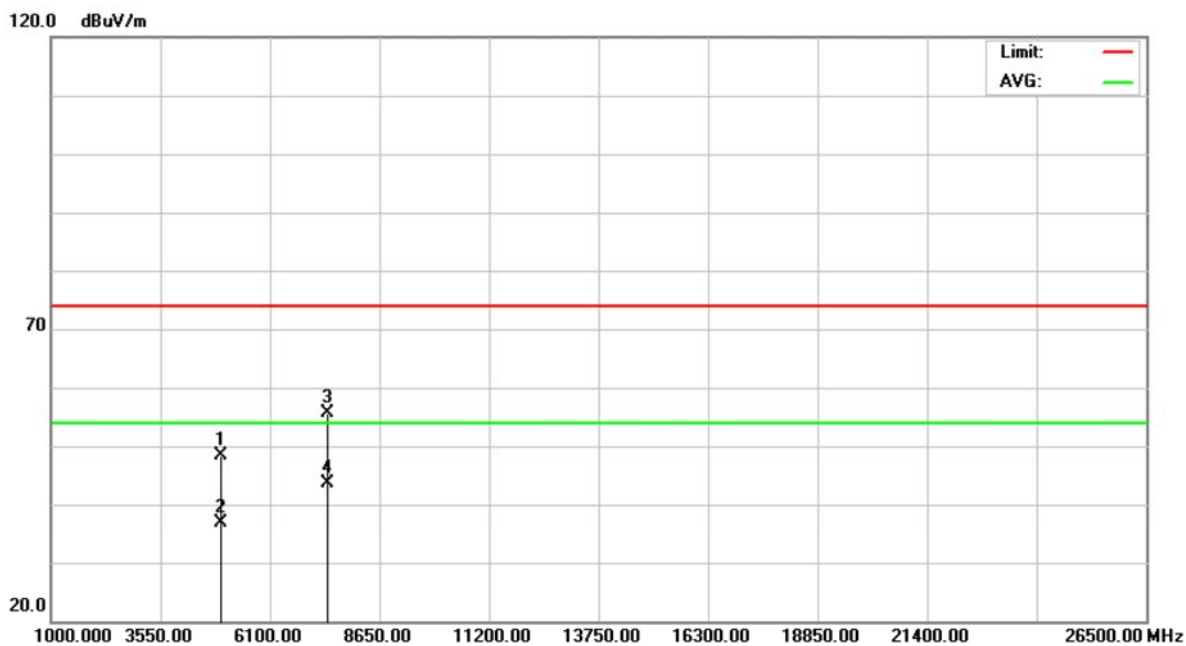


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2461.000	71.64	31.99	103.63	74.00	29.63	peak	
2	*	2461.000	62.41	31.99	94.40	54.00	40.40	AVG	
3		2483.500	33.74	32.09	65.83	74.00	-8.17	peak	
4		2483.500	16.83	32.09	48.92	54.00	-5.08	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2462 MHz		

Polarization: Vertical

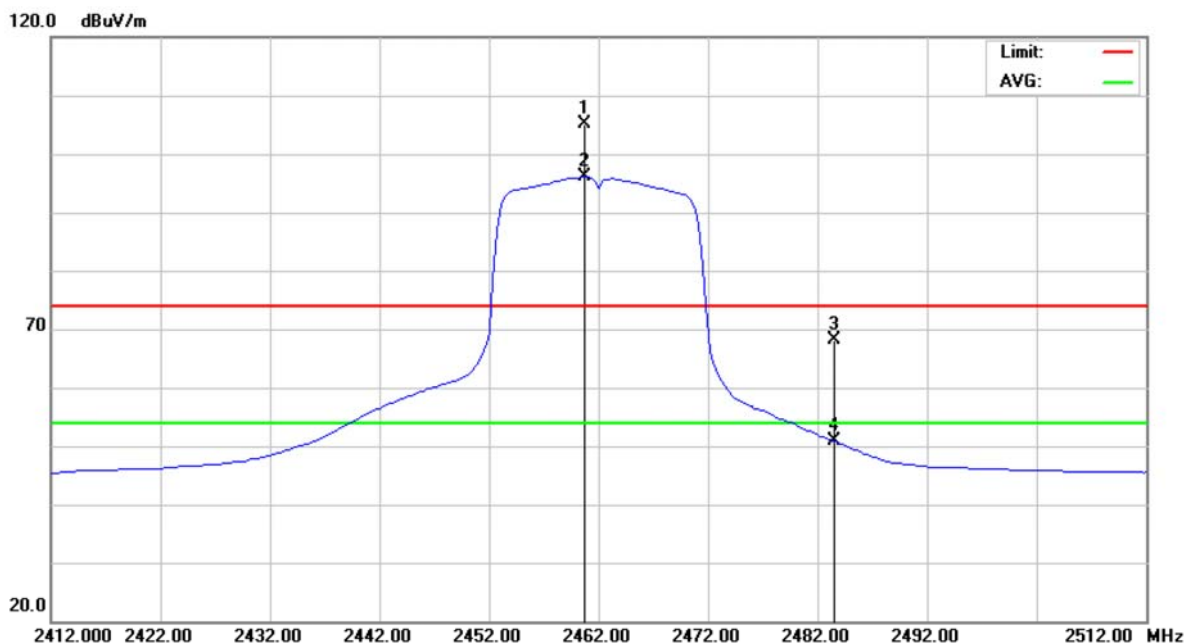


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.025	42.64	5.84	48.48	74.00	-25.52	peak	
2		4924.025	30.97	5.84	36.81	54.00	-17.19	AVG	
3		7386.087	42.73	12.85	55.58	74.00	-18.42	peak	
4	*	7386.087	30.86	12.85	43.71	54.00	-10.29	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2462 MHz		

Polarization: Horizontal

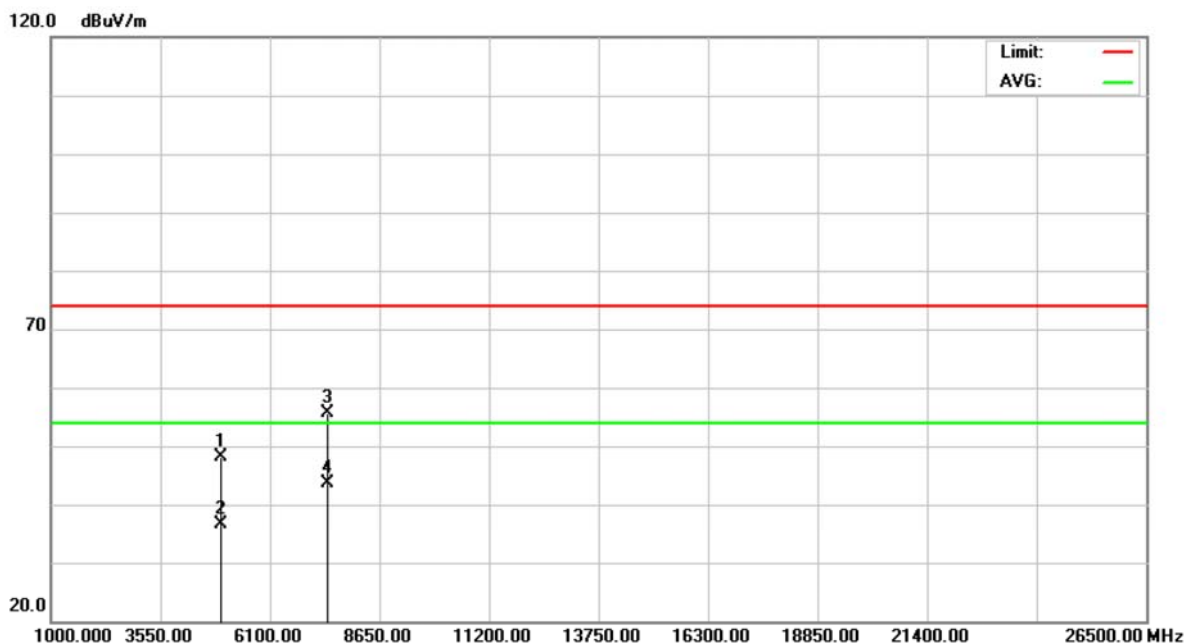


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2460.750	73.21	31.98	105.19	74.00	31.19	peak	
2	*	2460.750	64.06	31.98	96.04	54.00	42.04	AVG	
3		2483.500	36.03	32.09	68.12	74.00	-5.88	peak	
4		2483.500	18.72	32.09	50.81	54.00	-3.19	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2462 MHz		

Polarization: Horizontal



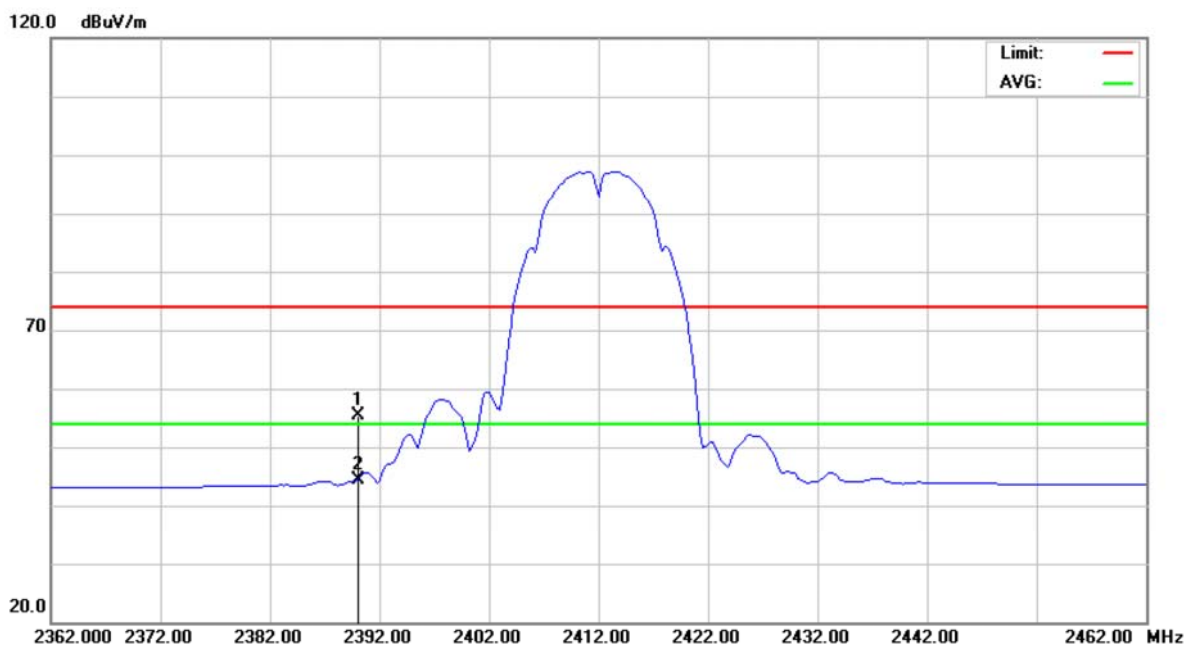
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4923.938	42.40	5.84	48.24	74.00	-25.76	peak	
2		4923.938	30.90	5.84	36.74	54.00	-17.26	AVG	
3		7385.888	42.79	12.85	55.64	74.00	-18.36	peak	
4	*	7385.888	30.84	12.85	43.69	54.00	-10.31	AVG	



9.9 TEST RESULTS (RESTRICTED BANDS)

E.U.T	Master Controller	Model Name	MT800
Temperature	30°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b		
NOTE	The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz.		

Polarization: Vertical

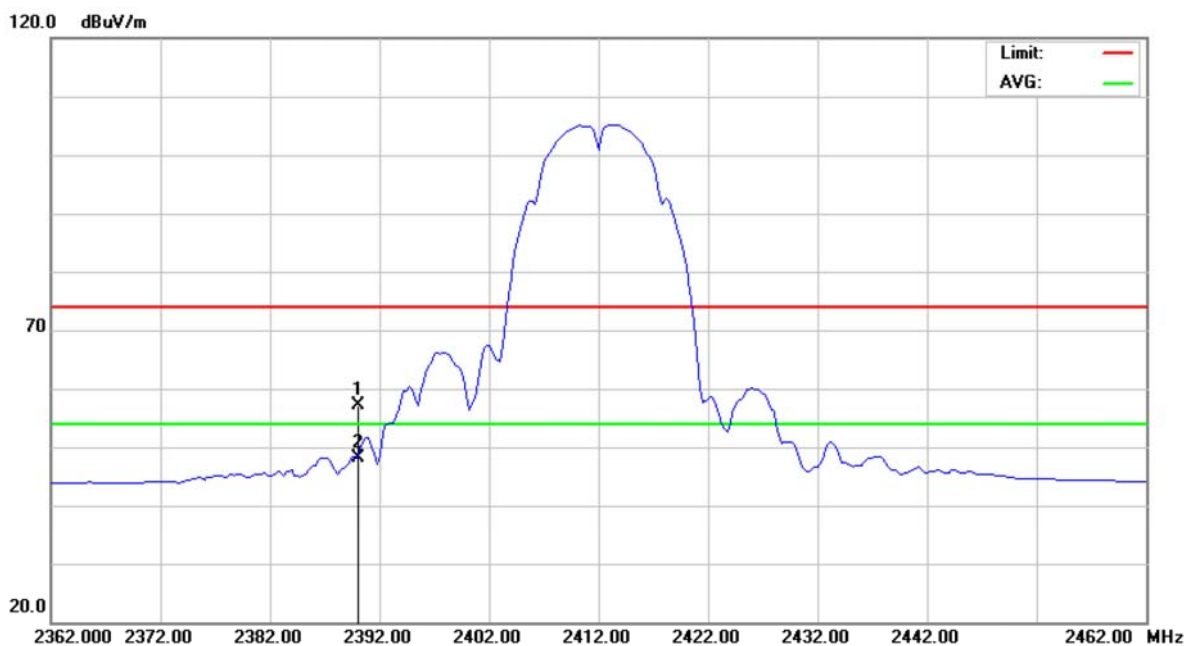


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	23.74	31.67	55.41	74.00	-18.59	peak	
2	*	2390.000	12.65	31.67	44.32	54.00	-9.68	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	30°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b		
NOTE	The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz.		

Polarization: Horizontal

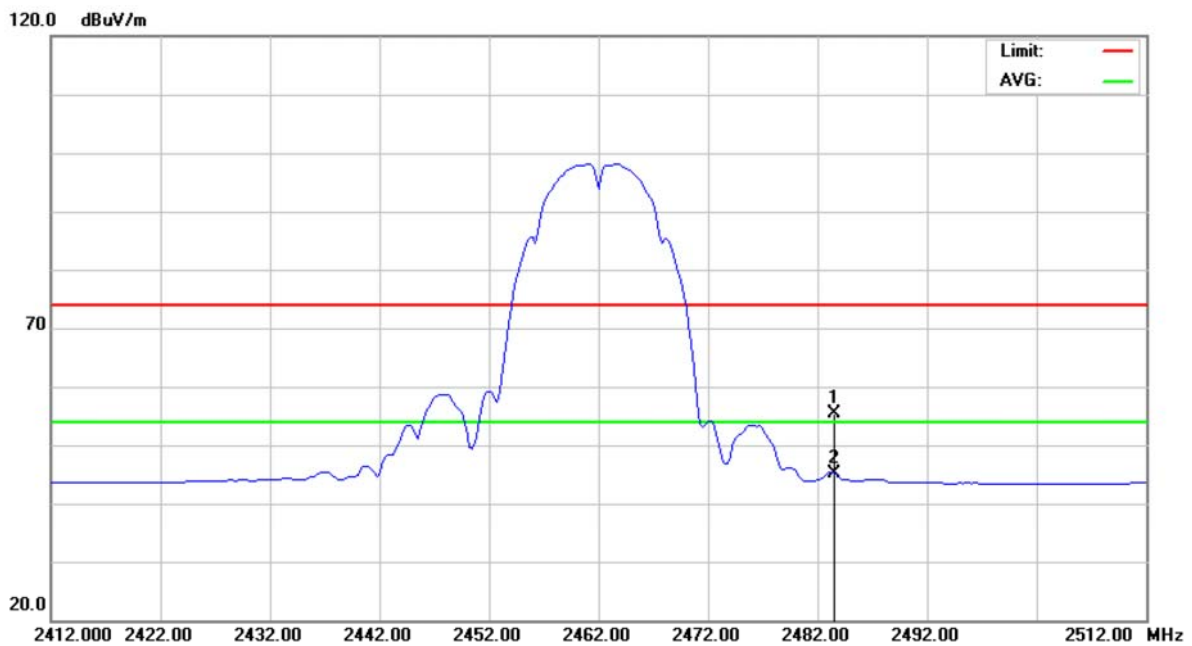


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	25.57	31.67	57.24	74.00	-16.76	peak	
2	*	2390.000	16.54	31.67	48.21	54.00	-5.79	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	30°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b		
NOTE	The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz.		

Polarization: Vertical

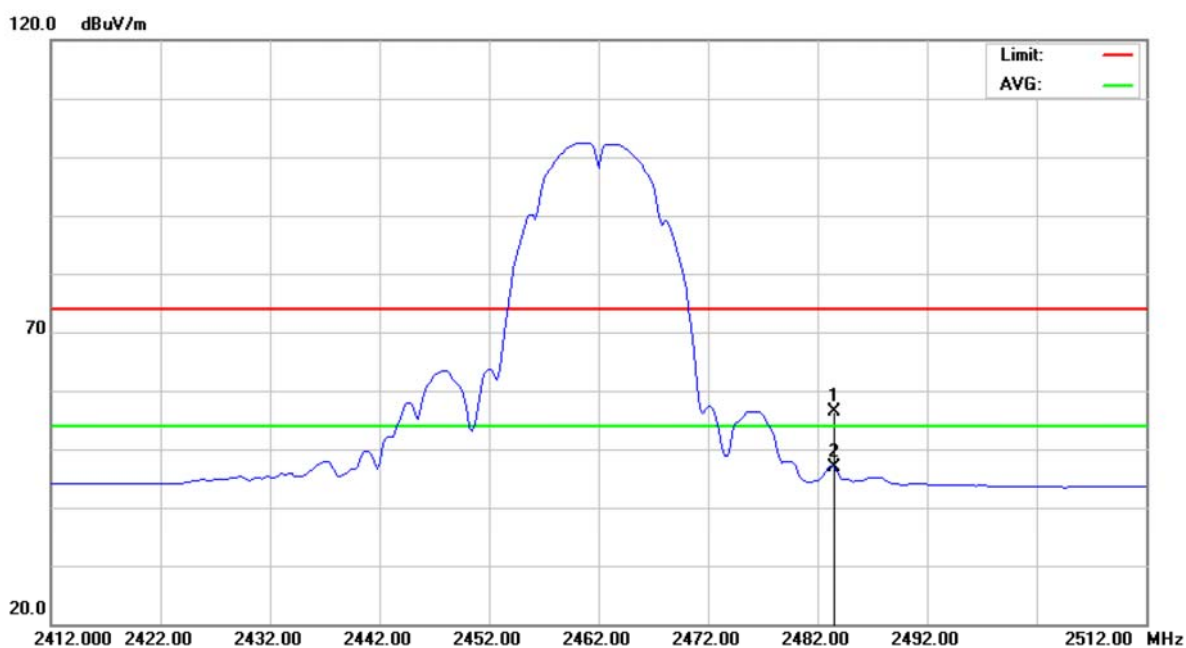


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2483.500	23.17	32.09	55.26	74.00	-18.74	peak	
2	*	2483.500	13.13	32.09	45.22	54.00	-8.78	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	30°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b		
NOTE	The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz.		

Polarization: Horizontal

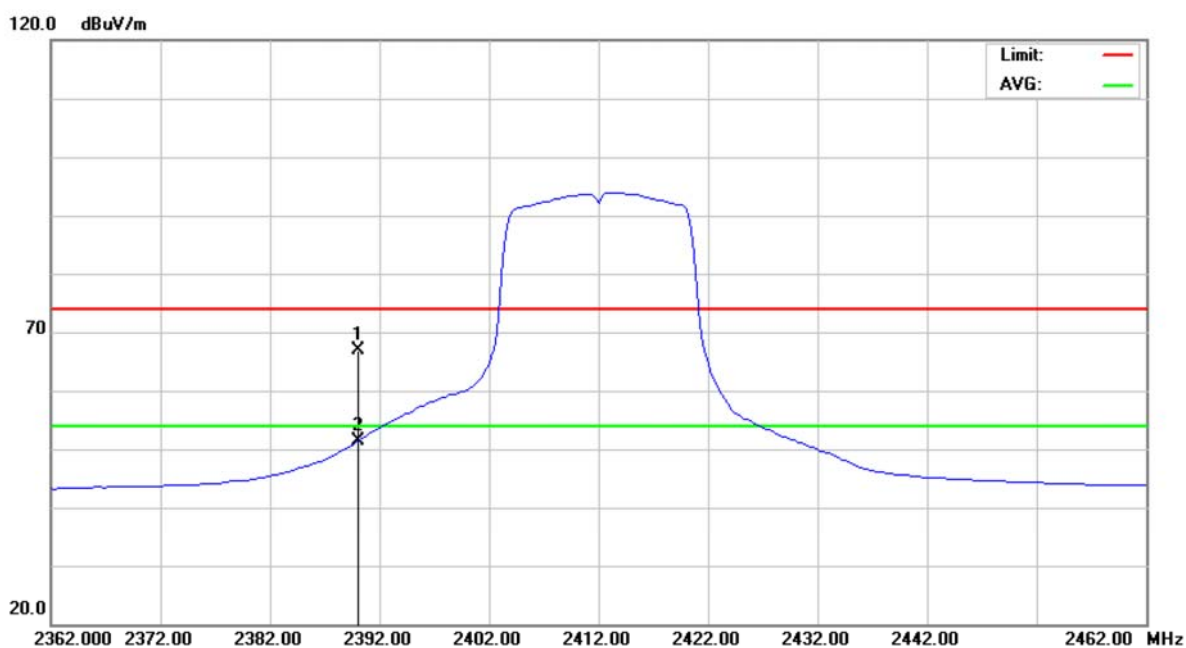


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2483.500	24.32	32.09	56.41	74.00	-17.59	peak	
2	*	2483.500	14.85	32.09	46.94	54.00	-7.06	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	30°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g		
NOTE	The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz.		

Polarization: Vertical

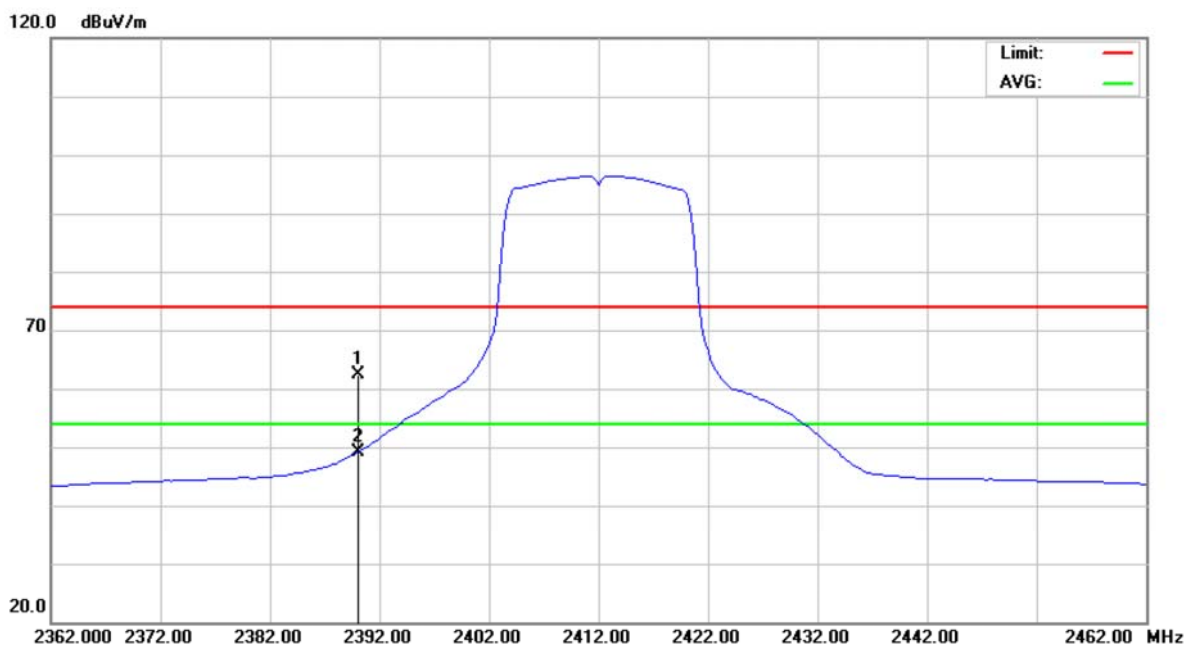


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	35.21	31.67	66.88	74.00	-7.12	peak	
2	*	2390.000	19.73	31.67	51.40	54.00	-2.60	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	30°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g		
NOTE	The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz.		

Polarization: Horizontal

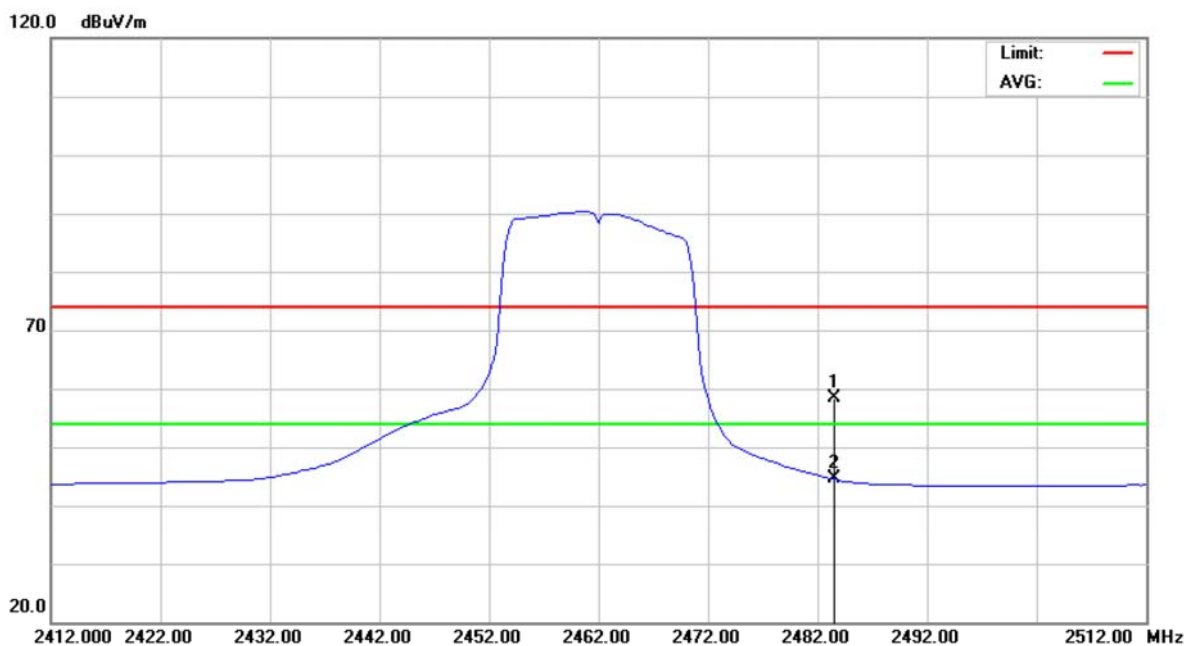


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	30.68	31.67	62.35	74.00	-11.65	peak	
2	*	2390.000	17.41	31.67	49.08	54.00	-4.92	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	30°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g		
NOTE	The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz.		

Polarization: Vertical

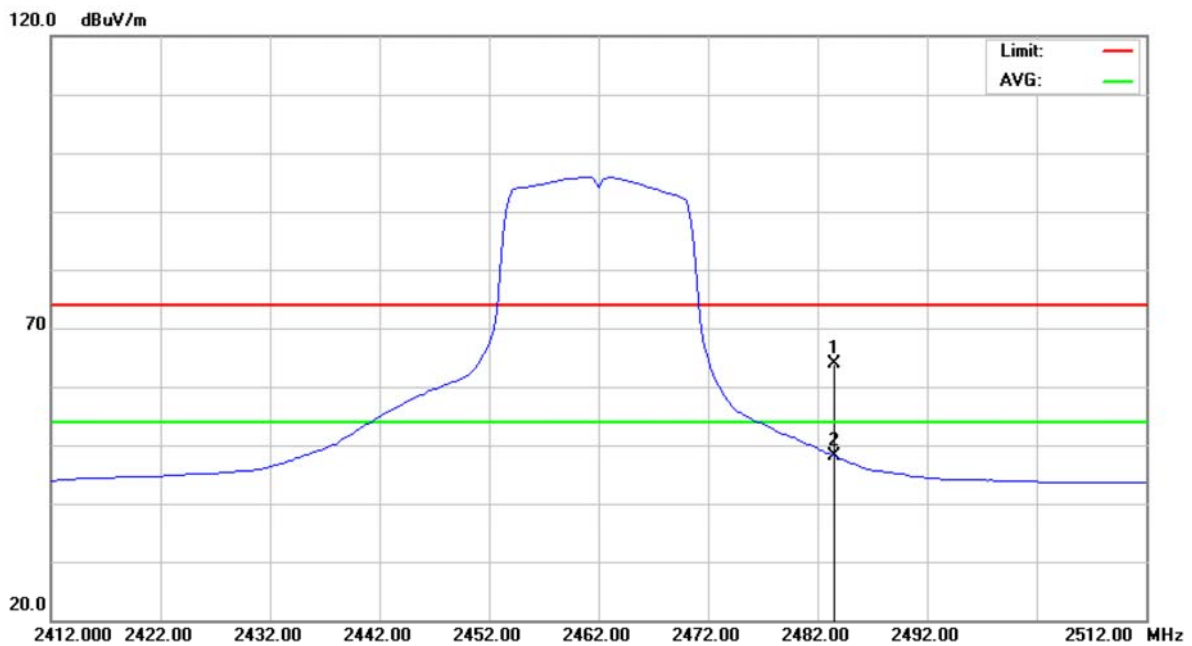


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2483.500	26.33	32.09	58.42	74.00	-15.58	peak	
2	*	2483.500	12.44	32.09	44.53	54.00	-9.47	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	30°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g		
NOTE	The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz.		

Polarization: Horizontal

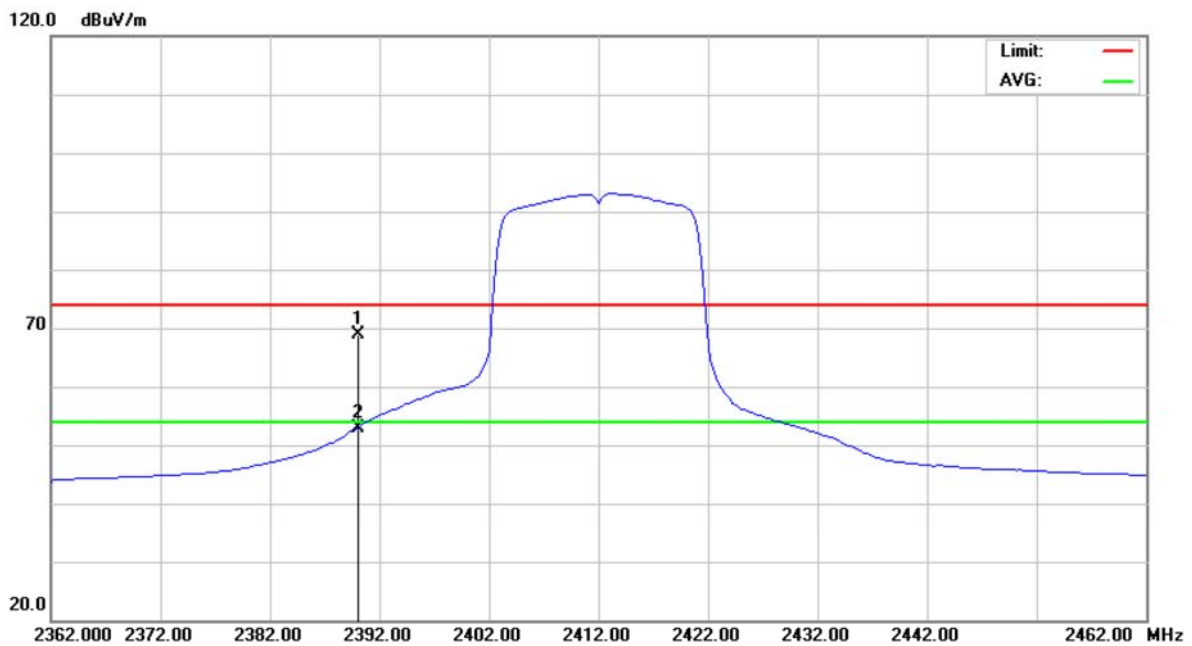


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2483.500	31.87	32.09	63.96	74.00	-10.04	peak	
2	*	2483.500	16.05	32.09	48.14	54.00	-5.86	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	30°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)		
NOTE	The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz.		

Polarization: Vertical

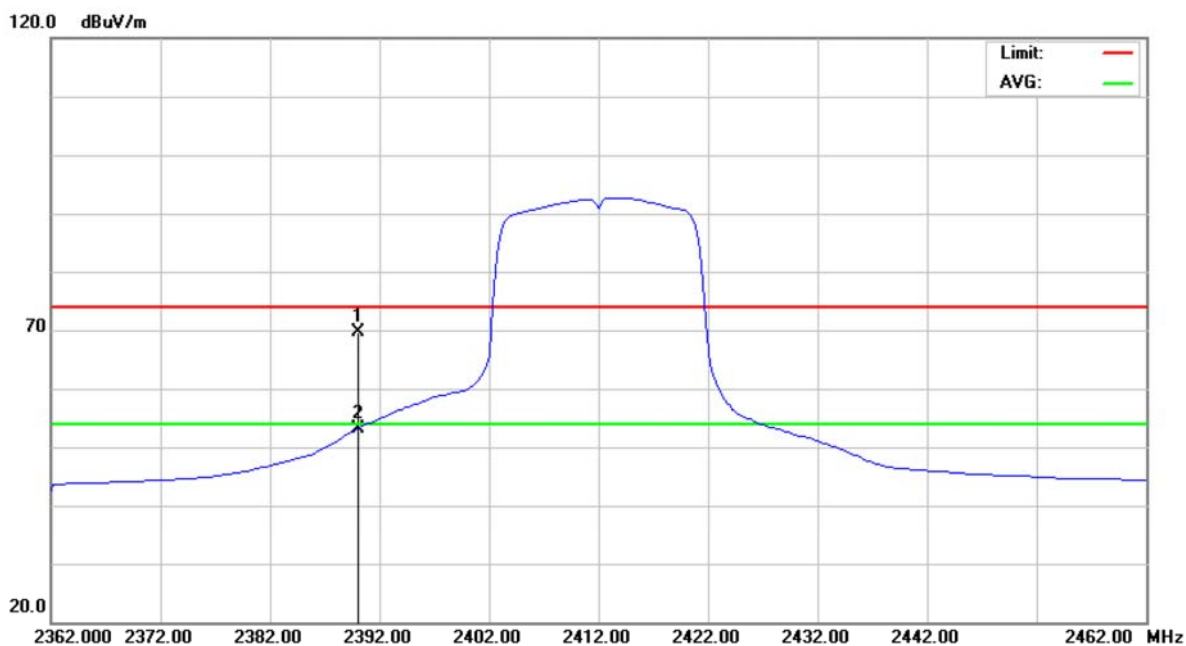


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	37.19	31.67	68.86	74.00	-5.14	peak	
2	*	2390.000	21.20	31.67	52.87	54.00	-1.13	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	30°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)		
NOTE	The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz.		

Polarization: Horizontal

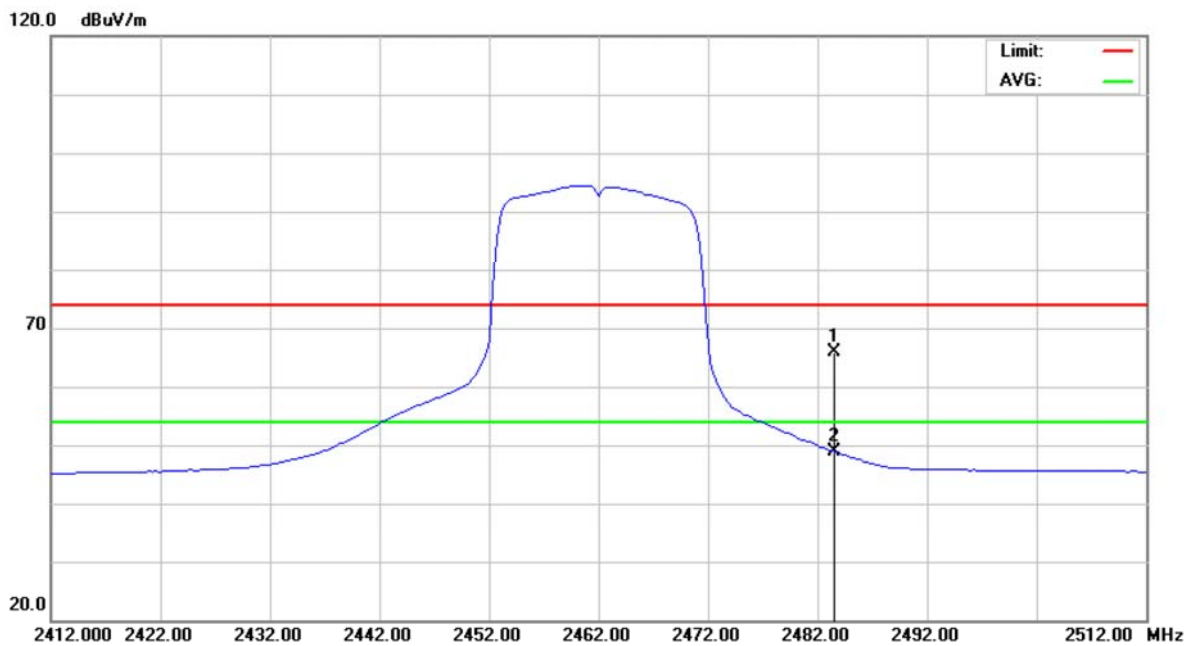


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	37.95	31.67	69.62	74.00	-4.38	peak	
2	*	2390.000	21.44	31.67	53.11	54.00	-0.89	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	30°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)		
NOTE	The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz.		

Polarization: Vertical

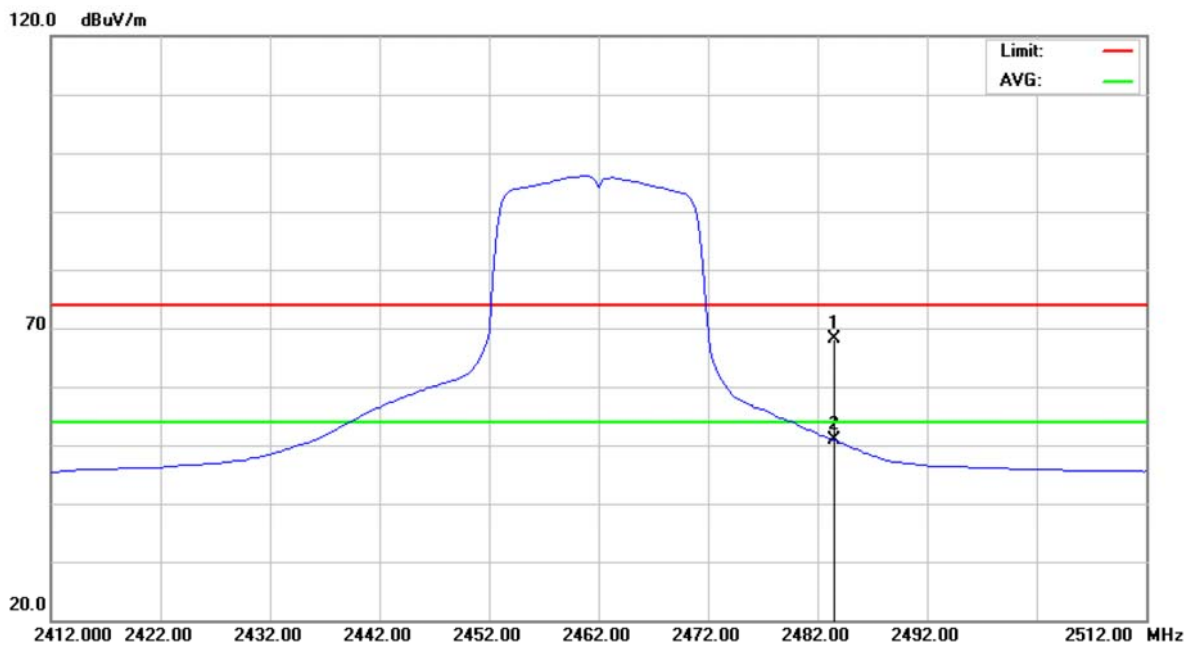


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2483.500	33.74	32.09	65.83	74.00	-8.17	peak	
2	*	2483.500	16.83	32.09	48.92	54.00	-5.08	AVG	



E.U.T	Master Controller	Model Name	MT800
Temperature	30°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)		
NOTE	The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz.		

Polarization: Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2483.500	36.03	32.09	68.12	74.00	-5.88	peak	
2	*	2483.500	18.72	32.09	50.81	54.00	-3.19	AVG	



10 POWER SPECTRAL DENSITY

10.1 LIMIT

Test Item	Frequency Range (MHz)	Limit
Power Spectral Density	2400-2483.5	8 dBm (in any 3 kHz)

10.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

10.3 TEST PROCEDURES

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- Spectrum Setting: RBW=3 kHz, VBW=30 kHz, Sweep time = 500s.

10.4 TEST SETUP LAYOUT



10.5 DEVIATION FROM TEST STANDARD

No deviation

10.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.

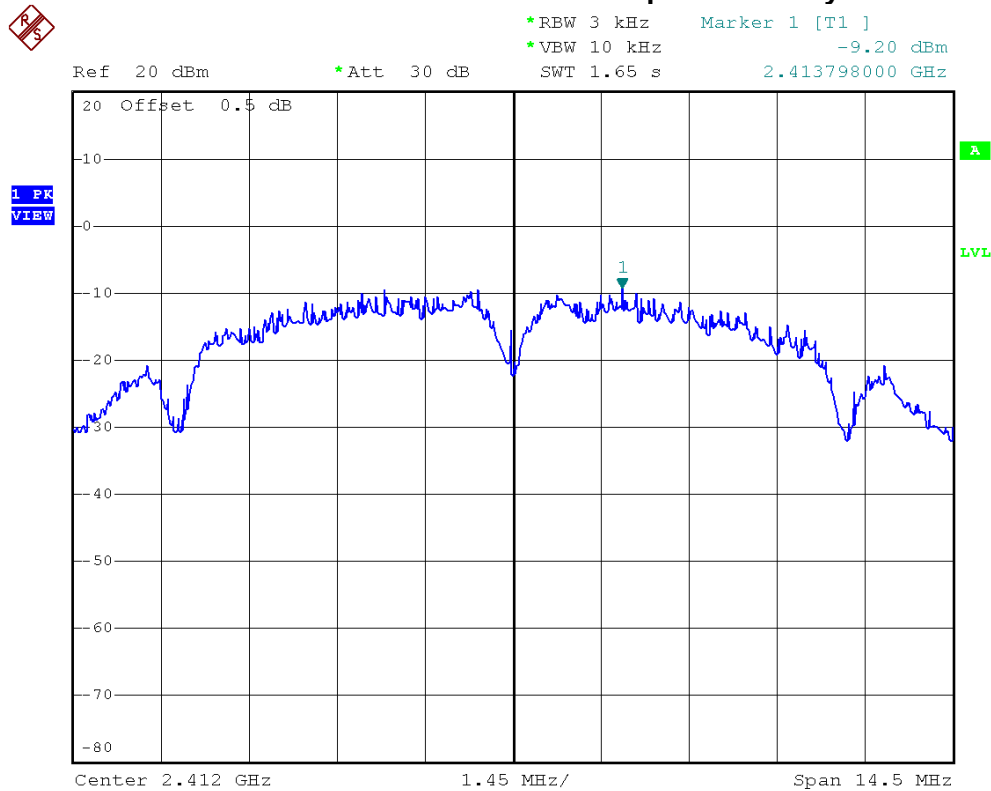


10.7 TEST RESULTS

E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-9.20	8	PASS
2437 MHz	-8.98	8	PASS
2462 MHz	-9.61	8	PASS

IEEE 802.11b/2412 MHz/Power Sepctral Density





IEEE 802.11b/2437 MHz/Power Sepctral Density



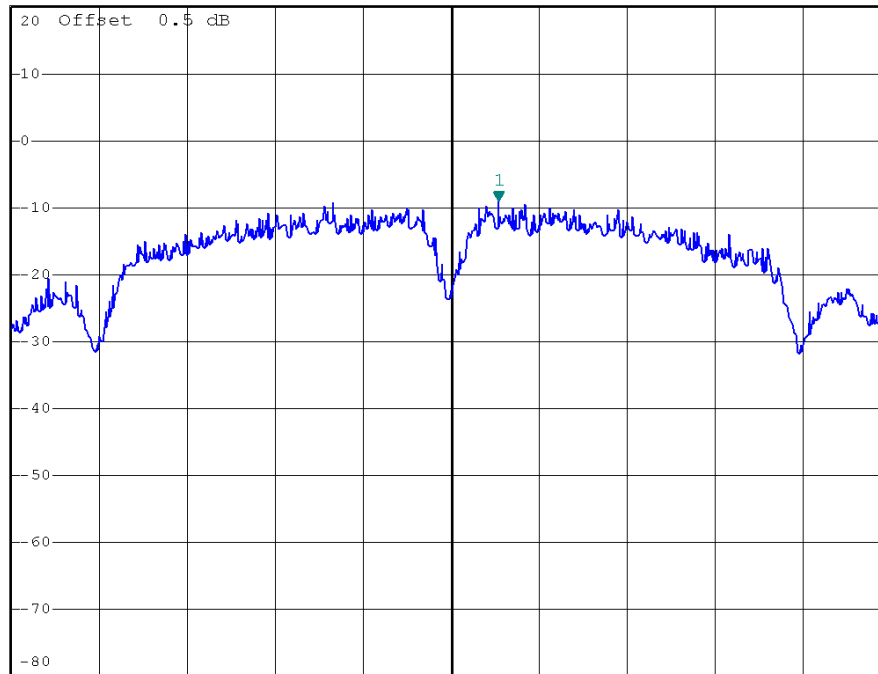
*RBW 3 kHz Marker 1 [T1]
*VBW 10 kHz -8.98 dBm
SWT 1.55 s 2.437742500 GHz

Ref 20 dBm

*Att 30 dB

2.437742500 GHz

1 PK
VIEW



Center 2.437 GHz

1.375 MHz/

Span 13.75 MHz

IEEE 802.11b/2462 MHz/Power Sepctral Density



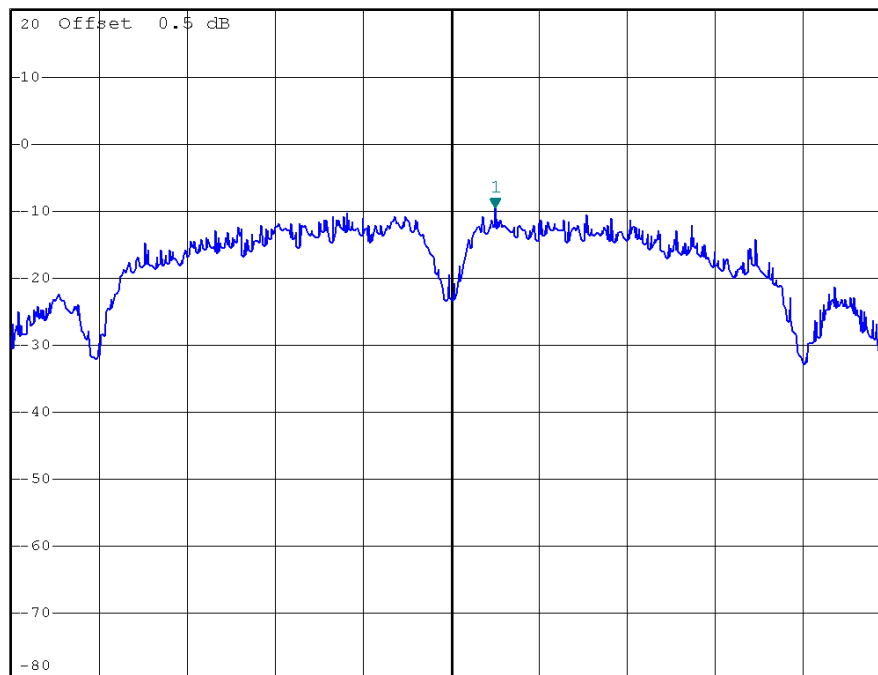
*RBW 3 kHz Marker 1 [T1]
*VBW 10 kHz -9.61 dBm
SWT 1.55 s 2.462685000 GHz

Ref 20 dBm

*Att 30 dB

2.462685000 GHz

1 PK
VIEW



Center 2.462 GHz

1.37 MHz/

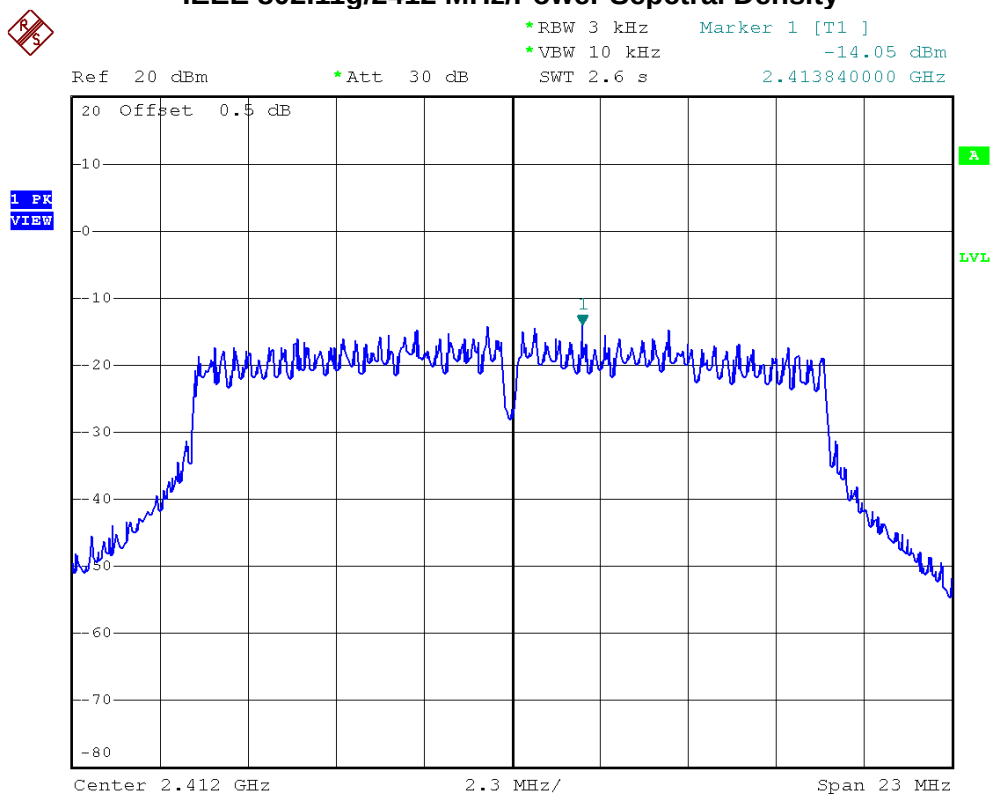
Span 13.7 MHz



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-14.05	8	PASS
2437 MHz	-12.62	8	PASS
2462 MHz	-14.45	8	PASS

IEEE 802.11g/2412 MHz/Power Sepctral Density





IEEE 802.11g/2437 MHz/Power Sepctral Density

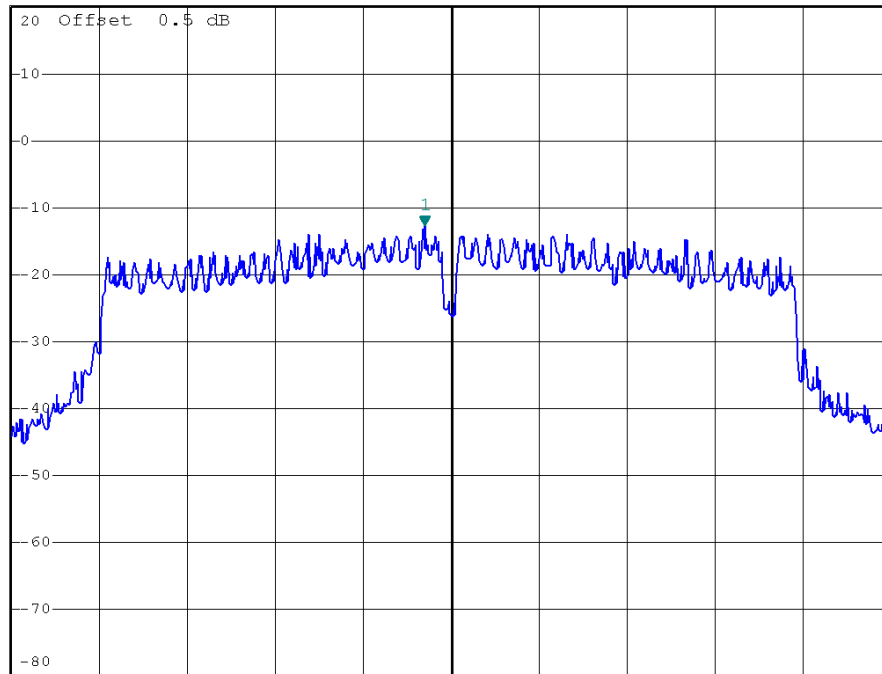


*RBW 3 kHz Marker 1 [T1]
*VBW 10 kHz -12.62 dBm
SWT 2.35 s 2.436370000 GHz

Ref 20 dBm

*Att 30 dB

1 PK
VIEW



Center 2.437 GHz

2.1 MHz/

Span 21 MHz

IEEE 802.11g/2462 MHz/Power Sepctral Density

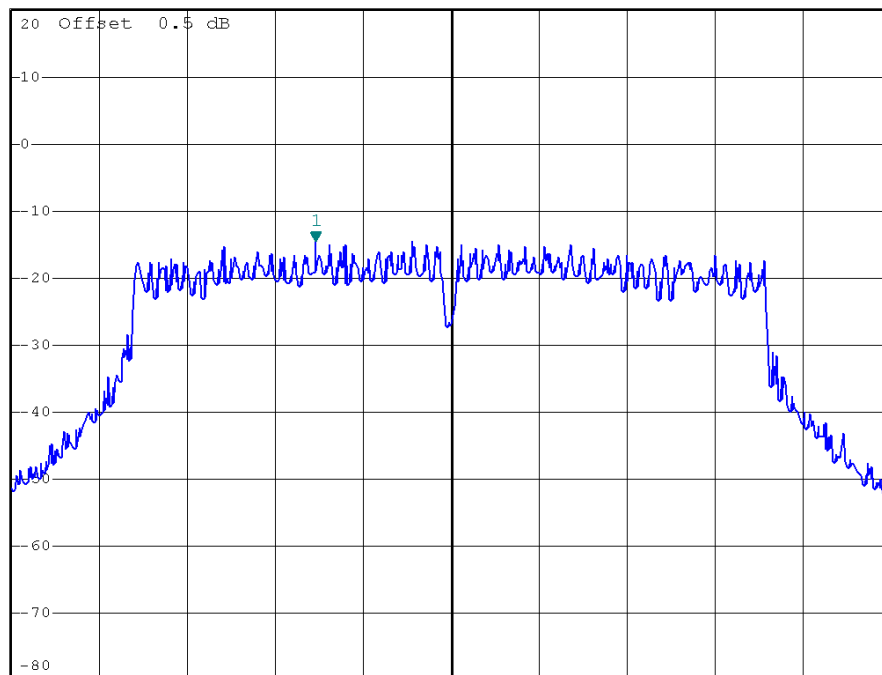


*RBW 3 kHz Marker 1 [T1]
*VBW 10 kHz -14.45 dBm
SWT 2.6 s 2.458458000 GHz

Ref 20 dBm

*Att 30 dB

1 PK
VIEW



Center 2.462 GHz

2.3 MHz/

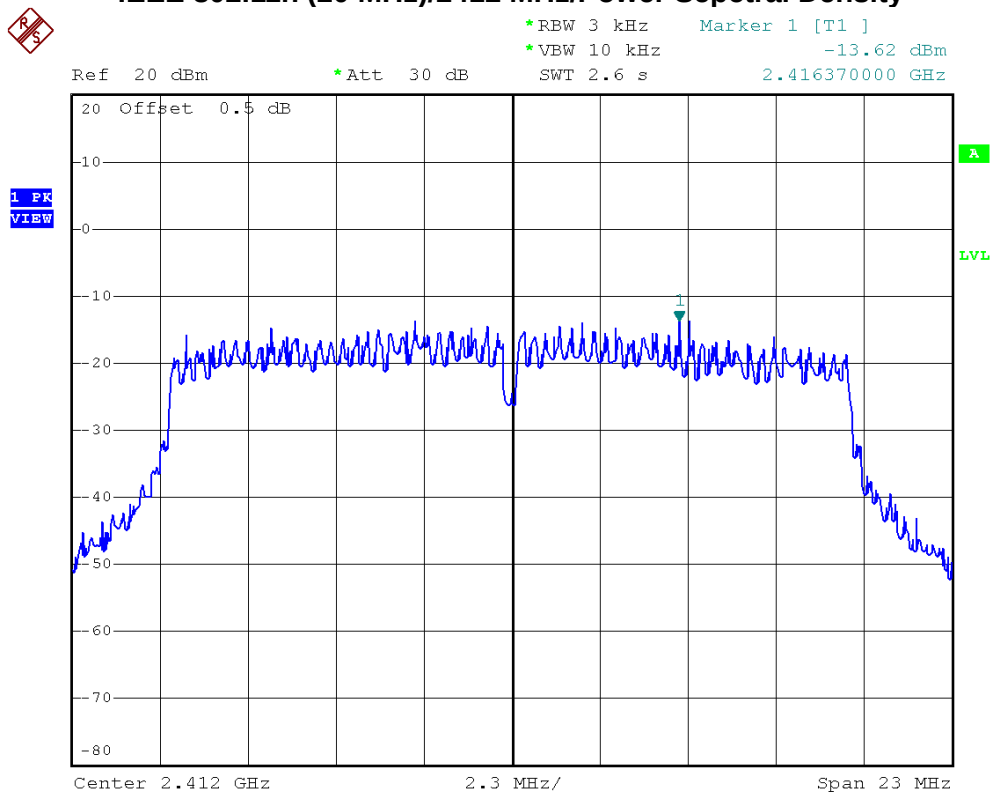
Span 23 MHz



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-13.62	8	PASS
2437 MHz	-11.55	8	PASS
2462 MHz	-13.31	8	PASS

IEEE 802.11n (20 MHz)/2412 MHz/Power Sepctral Density





IEEE 802.11n (20 MHz)/2437 MHz/Power Sepctral Density



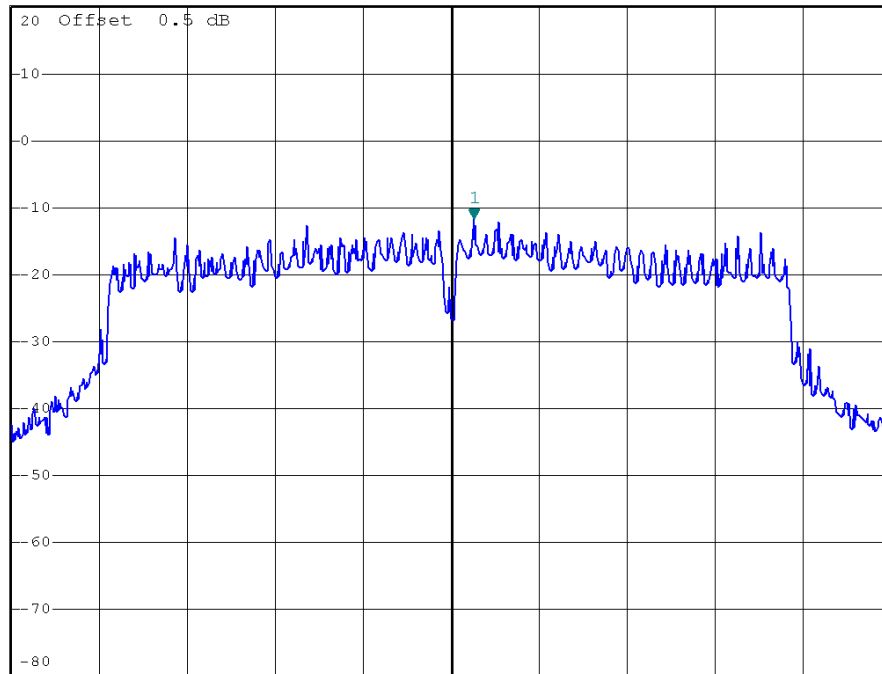
*RBW 3 kHz Marker 1 [T1]
*VBW 10 kHz -11.55 dBm
SWT 2.6 s 2.437598000 GHz

Ref 20 dBm

*Att 30 dB

2.437598000 GHz

1 PK
VIEW



Center 2.437 GHz

2.3 MHz/

Span 23 MHz

IEEE 802.11n (20 MHz)/2462 MHz/Power Sepctral Density



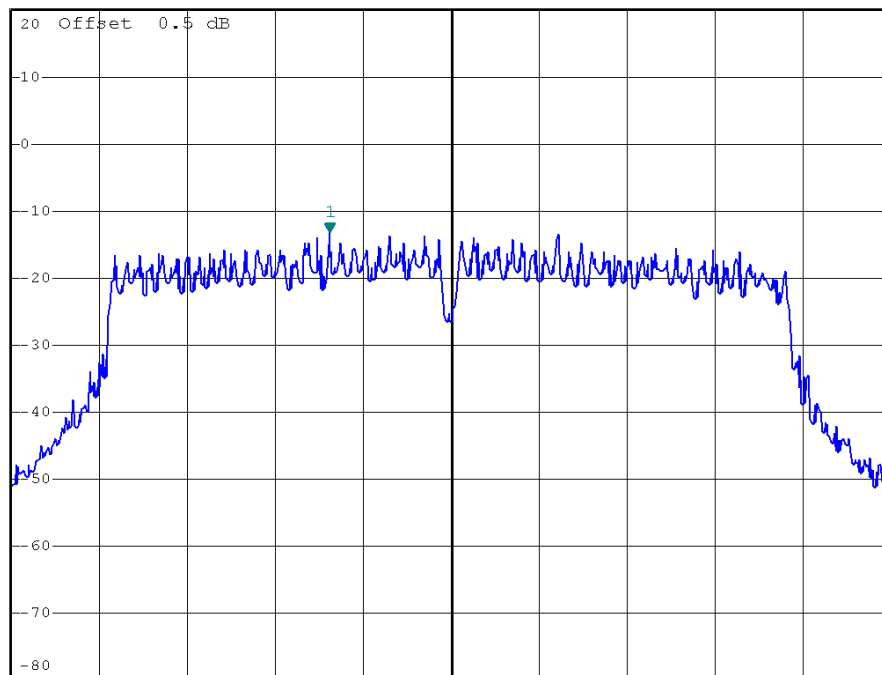
*RBW 3 kHz Marker 1 [T1]
*VBW 10 kHz -13.31 dBm
SWT 2.6 s 2.458826000 GHz

Ref 20 dBm

*Att 30 dB

2.458826000 GHz

1 PK
VIEW



Center 2.462 GHz

2.3 MHz/

Span 23 MHz



11 RF EXPOSURE COMPLIANCE

11.1 LIMIT

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

NOTE: f = frequency in MHz ; *Plane-wave equivalent power density.

11.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	Anritsu	ML2495A	1128008	Jul. 22, 2013
2	Power Meter Sensor	Anritsu	MA2411B	1126001	Jul. 22, 2013

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

11.3 MPE CALCULATION METHOD

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d}$$

$$\text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = Peak RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

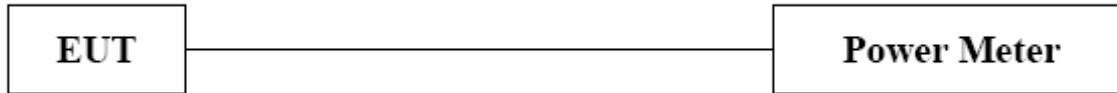
The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained



11.4 TEST SETUP LAYOUT



11.5 DEVIATION FROM TEST STANDARD

No deviation

11.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.

**11.7 TEST RESULTS**

E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Result
2412 MHz	2.00	1.5849	15.2700	33.6512	0.010616	1	PASS
2437 MHz	2.00	1.5849	14.9500	31.2608	0.009862	1	PASS
2462 MHz	2.00	1.5849	15.4800	35.3183	0.011142	1	PASS



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Result
2412 MHz	2.00	1.5849	20.0700	101.6249	0.032059	1	PASS
2437 MHz	2.00	1.5849	21.2800	134.2765	0.042359	1	PASS
2462 MHz	2.00	1.5849	20.3700	108.8930	0.034352	1	PASS



E.U.T	Master Controller	Model Name	MT800
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz, 2437 MHz, 2462 MHz		

Frequency	Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Result
2412 MHz	2.00	1.9907	21.3400	310.4560	0.123013	1	PASS
2437 MHz	2.00	1.9907	21.5800	322.1069	0.127629	1	PASS
2462 MHz	2.00	1.9907	21.4100	255.8586	0.101380	1	PASS