



# Radio Test Report

**FCC ID: HLEHT682BTN**

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

**Issued Date** : Apr. 08, 2013

**Project No.** : 1301036

**Equipment** : PDA Scanner

**Model Name** : HT682

**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:** Jan. 10, 2013

**Date of Test:** Jan. 10, 2013 ~ Apr. 01, 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.	Apr. 08, 2013



## **1 CERTIFICATION**

Equipment : PDA Scanner

Brand Name : unitech

Model Name : HT682

Applicant : unitech electronics co., ltd.

Date of Test : Jan. 10, 2013 ~ Apr. 01, 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-2-1301036) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP and TAF according to the ISO-17025 quality assessment standard and technical standard(s).



## **2. SUMMARY OF TEST RESULTS**

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

**NOTE:**

- (1) N/A: denotes test is not applicable in this Test Report
- (2) Portable device; SAR report is required.



## 2.1 TEST FACILITY

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

### Conducted emission Test:

**C02:** (VCCI RN: C-3477; FCC RN: 614388; FCC DN: TW1054)  
1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, 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 expended 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
C02	150 kHz ~ 30 MHz	2.59	

### B. Radiated emission test:

Test Site	Item	Measurement Frequency Range	Uncertainty	NOTE
CB08	Radiated emission at 3m	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	PDA Scanner																									
Brand Name	unitech																									
Model Name	HT682																									
OEM Brand/Model Name	N/A																									
Model Difference	N/A																									
Product Description	The EUT is a PDA Scanner.																									
	<table border="1"><tr><td>Operation Frequency</td><td>2412 MHz - 2462 MHz</td></tr><tr><td>Modulation Type</td><td>BPSK, QPSK, CCK16-QAM, 64QAM IEEE 802.11b: DSSS IEEE 802.11g: OFDM IEEE 802.11n: OFDM</td></tr><tr><td>Bit Rate of Transmitter</td><td>IEEE 802.11b: 11/5.5/2/1 Mbps IEEE 802.11g: 54/48/36/24/18/12/9/6 Mbps IEEE 802.11n: 72.2/65.0/58.5/57.8/52.0/43.3/39.0/28.9/26.0/ 21.7/19.5/14.4/13.0/7.2/6.5 Mbps</td></tr><tr><td>Number Of Channel</td><td>Please refer to the Note 2.</td></tr><tr><td>Antenna Designation</td><td>Please refer to the Note 3.</td></tr><tr><td>Antenna Gain(Peak)</td><td>Please refer to the Note 3.</td></tr><tr><td>Maximum Conducted Output Power</td><td>Peak Output Power: IEEE 802.11b: 16.94 dBm IEEE 802.11g: 20.72 dBm IEEE 802.11n (20 MHz): 20.92 dBm Avg Output Power: IEEE 802.11b: 13.85 dBm IEEE 802.11g: 11.53 dBm IEEE 802.11n (20 MHz): 11.67 dBm</td></tr><tr><td colspan="2">Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.</td></tr><tr><td>Power Source</td><td>1. Battery supplied. 2. DC Voltage supplied from External Power Supply.</td></tr><tr><td>Power Rating</td><td>1. Battery: I/P: DC 3.7V 2200mAh 8.14Wh 2. External Power Supply: I/P: AC 100-240V 50-60Hz 0.6A / O/P: DC 5V 3.0A</td></tr><tr><td>Connecting I/O Port(s)</td><td>Please refer to the User's Manual</td></tr><tr><td>Products Covered</td><td>1 * LITHIUM-ION BATTERY PACK 1 * Connecting Cable 1 * SWITCH-MODE POWER SUPPLY: ENG, 3A-182WP05 1 * Stylus</td></tr><tr><td>EUT Modification(s)</td><td>N/A</td></tr></table>	Operation Frequency	2412 MHz - 2462 MHz	Modulation Type	BPSK, QPSK, CCK16-QAM, 64QAM IEEE 802.11b: DSSS IEEE 802.11g: OFDM IEEE 802.11n: OFDM	Bit Rate of Transmitter	IEEE 802.11b: 11/5.5/2/1 Mbps IEEE 802.11g: 54/48/36/24/18/12/9/6 Mbps IEEE 802.11n: 72.2/65.0/58.5/57.8/52.0/43.3/39.0/28.9/26.0/ 21.7/19.5/14.4/13.0/7.2/6.5 Mbps	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: 16.94 dBm IEEE 802.11g: 20.72 dBm IEEE 802.11n (20 MHz): 20.92 dBm Avg Output Power: IEEE 802.11b: 13.85 dBm IEEE 802.11g: 11.53 dBm IEEE 802.11n (20 MHz): 11.67 dBm	Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.		Power Source	1. Battery supplied. 2. DC Voltage supplied from External Power Supply.	Power Rating	1. Battery: I/P: DC 3.7V 2200mAh 8.14Wh 2. External Power Supply: I/P: AC 100-240V 50-60Hz 0.6A / O/P: DC 5V 3.0A	Connecting I/O Port(s)	Please refer to the User's Manual	Products Covered	1 * LITHIUM-ION BATTERY PACK 1 * Connecting Cable 1 * SWITCH-MODE POWER SUPPLY: ENG, 3A-182WP05 1 * Stylus	EUT Modification(s)
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Number Of Channel	Please refer to the Note 2.																									
Antenna Designation	Please refer to the Note 3.																									
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Maximum Conducted Output Power	Peak Output Power: IEEE 802.11b: 16.94 dBm IEEE 802.11g: 20.72 dBm IEEE 802.11n (20 MHz): 20.92 dBm Avg Output Power: IEEE 802.11b: 13.85 dBm IEEE 802.11g: 11.53 dBm IEEE 802.11n (20 MHz): 11.67 dBm																									
Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.																										
Power Source	1. Battery supplied. 2. DC Voltage supplied from External Power Supply.																									
Power Rating	1. Battery: I/P: DC 3.7V 2200mAh 8.14Wh 2. External Power Supply: I/P: AC 100-240V 50-60Hz 0.6A / O/P: DC 5V 3.0A																									
Connecting I/O Port(s)	Please refer to the User's Manual																									
Products Covered	1 * LITHIUM-ION BATTERY PACK 1 * Connecting Cable 1 * SWITCH-MODE POWER SUPPLY: ENG, 3A-182WP05 1 * Stylus																									
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:

IEEE 802.11b					
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		

IEEE 802.11g					
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		

IEEE 802.11n(20 MHz)					
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	Ethertronics	5000971	PIFA	N/A	2.43



### 3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible 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)	802.11b	DSSS	1 Mbps	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**

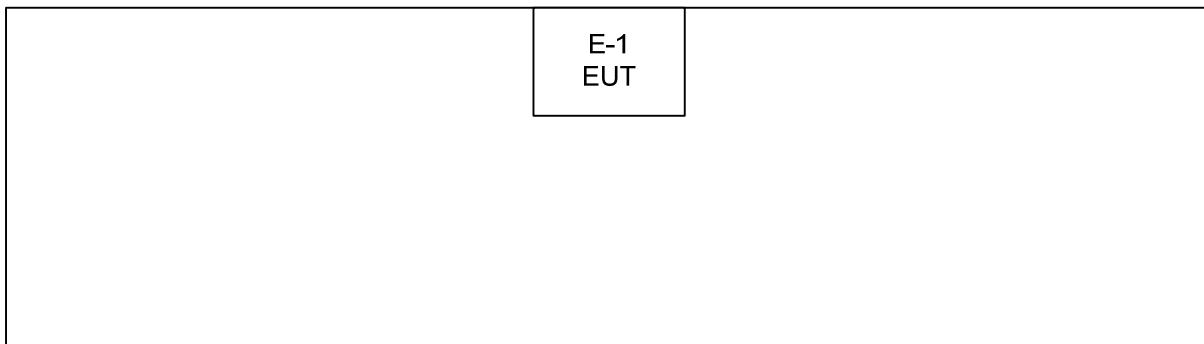
During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final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

IEEE	802.11b			802.11g		
Test software Version						
Frequency	2412 MHz	2437 MHz	2462 MHz	2412 MHz	2437 MHz	2462 MHz
Parameter	DEF	DEF	DEF	DEF	DEF	DEF

IEEE	802.11n (20 MHz)		
Test software Version			
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	PDA Scanner	unitech	HT682	HLEHT682BTN	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	101051	Jun. 13, 2013
2	Test Cable	TIMES	LMR-400	C01	Jun. 14, 2013
3	EMI Test Receiver	Agilent	N9038A	MY51210215	Feb. 24, 2014
4	Measurement Software	EZ	EZ_EMCA (Version NB-02A)	N/A	N/A

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

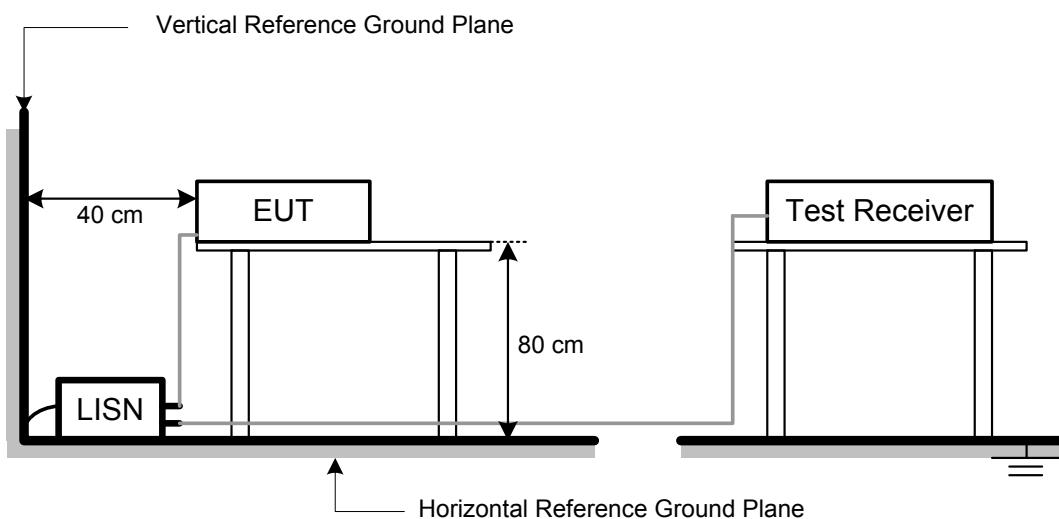
#### 4.3 TEST PROCEDURES

- a. 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.
- b. 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.
- c. 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.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

**NOTE:**

- a. 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).
- b. 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**

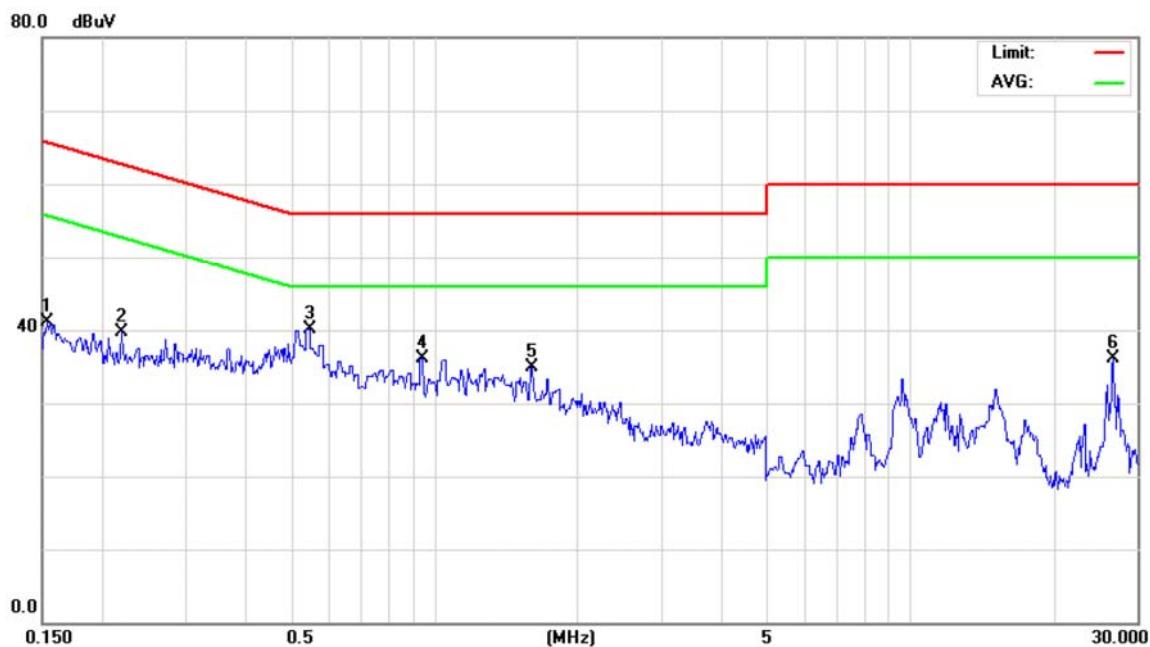
The EUT used during radiated and/or conducted emission measurement was designed to exercise in a manner similar to a typical use.



## 4.7 TEST RESULTS

E.U.T	PDA Scanner	Model Name	HT682
Temperature	24°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

Phase: Line

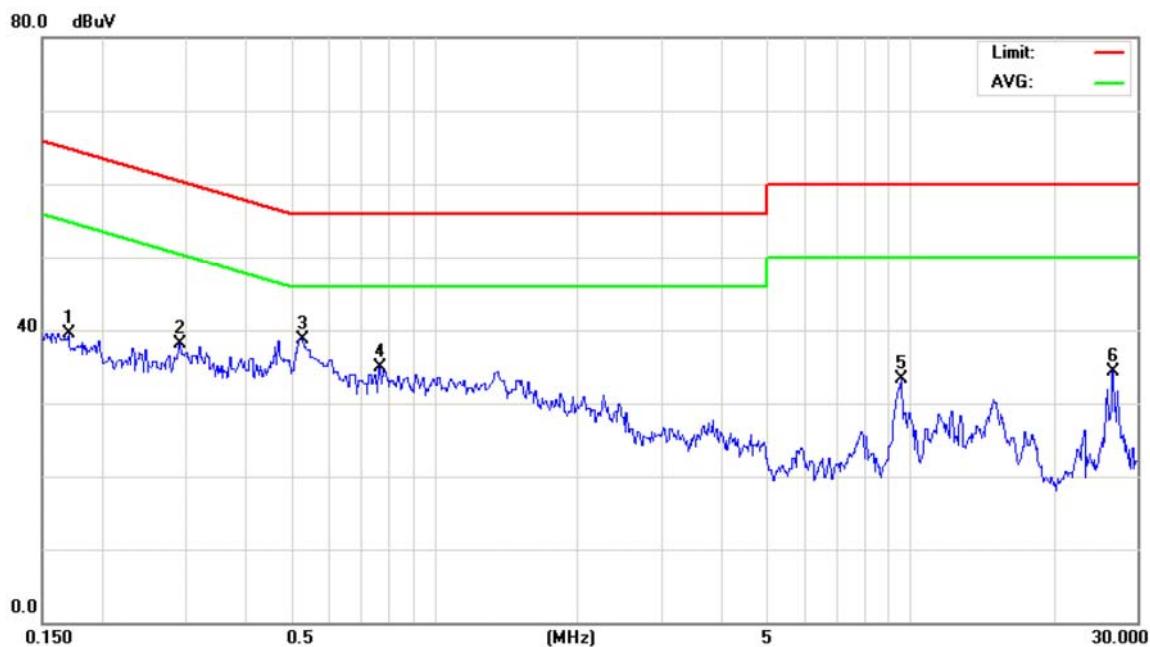


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dB	Over	
						Detector	Comment
1	0.1534	31.26	9.78	41.04	65.81	-24.77	peak
2	0.2192	30.05	9.75	39.80	62.85	-23.05	peak
3 *	0.5450	30.36	9.70	40.06	56.00	-15.94	peak
4	0.9409	26.44	9.71	36.15	56.00	-19.85	peak
5	1.5979	25.30	9.69	34.99	56.00	-21.01	peak
6	26.6497	26.25	9.89	36.14	60.00	-23.86	peak



E.U.T	PDA Scanner	Model Name	HT682
Temperature	24°C	Relative Humidity	46%
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 dB	Over	
						Detector	Comment
1	0.1702	29.79	9.77	39.56	64.95	-25.39	peak
2	0.2912	28.45	9.72	38.17	60.49	-22.32	peak
3 *	0.5270	28.98	9.69	38.67	56.00	-17.33	peak
4	0.7699	25.21	9.70	34.91	56.00	-21.09	peak
5	9.6000	23.52	9.82	33.34	60.00	-26.66	peak
6	26.6497	24.39	9.95	34.34	60.00	-25.66	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

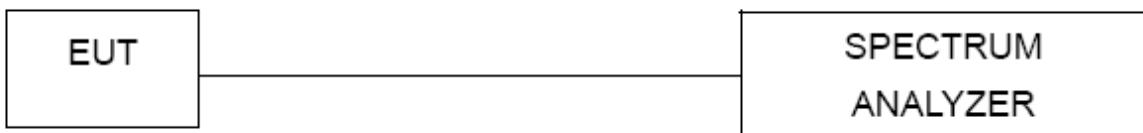
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013

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.



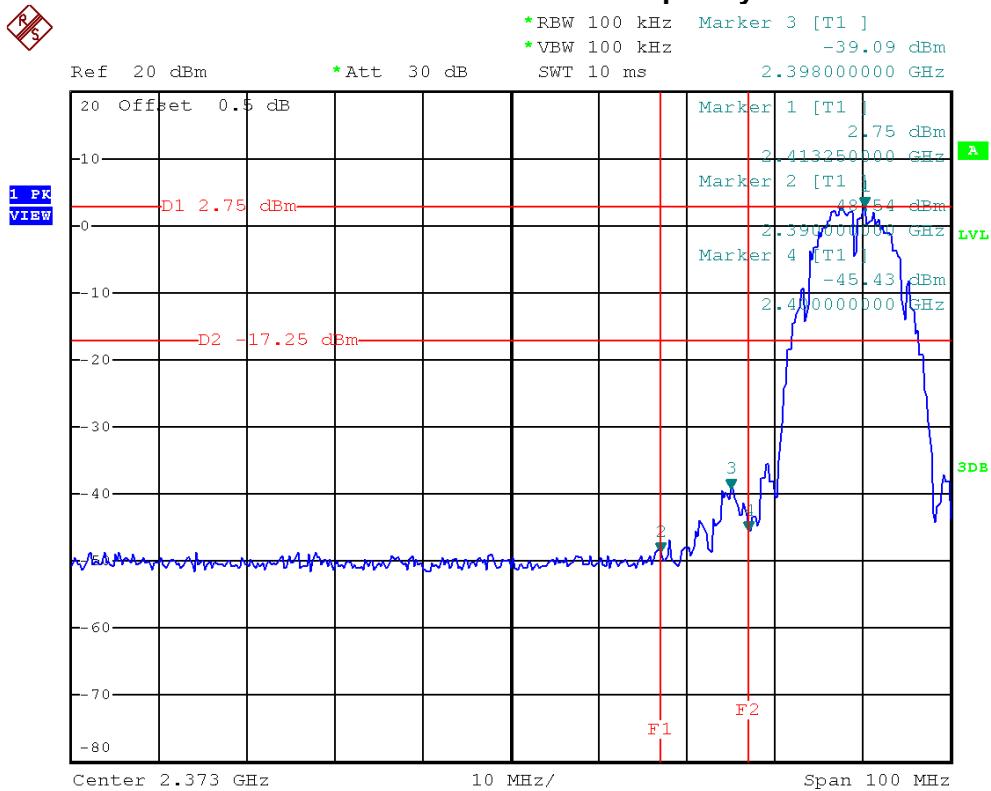
## 5.7 TEST RESULTS

E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b		

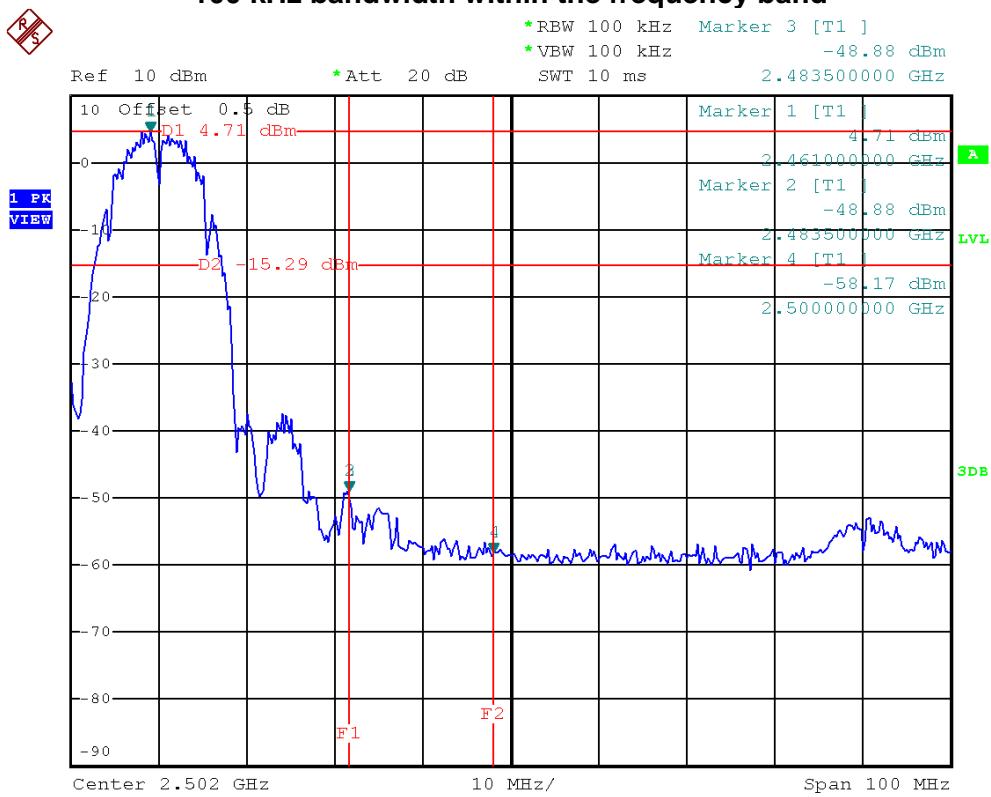
Channel of Worst Data			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2398.00	-39.09	2483.50	-48.88
Result			
In any 100kHz bandwidth 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 lever of the desired power.			



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

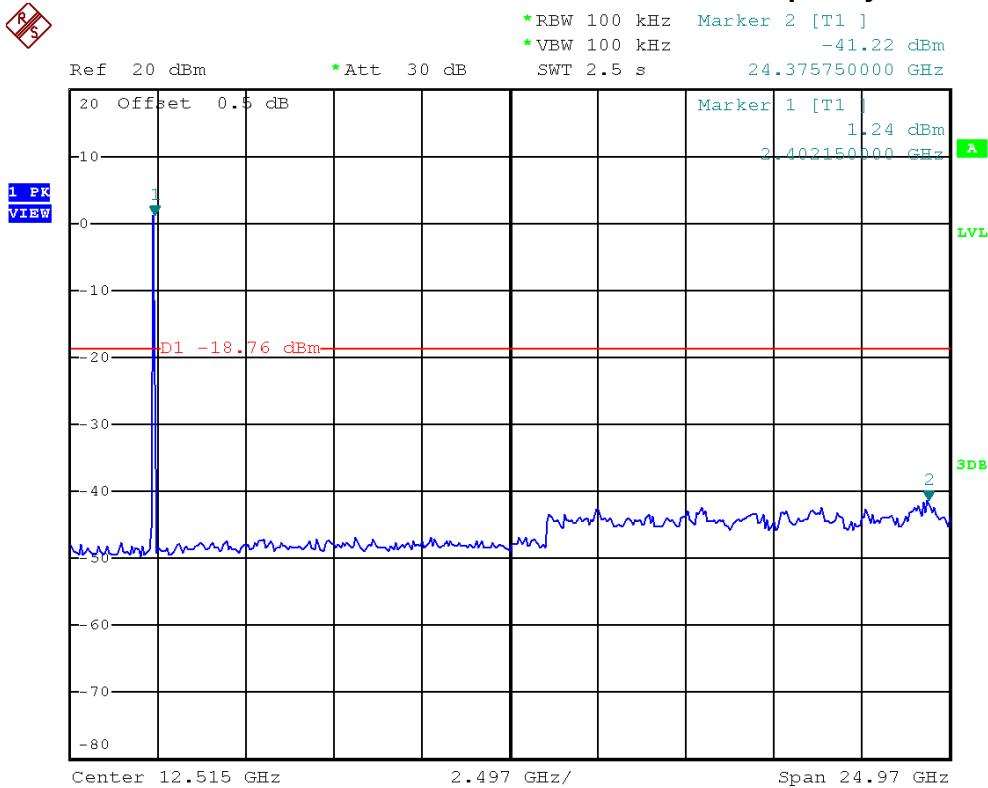


**IEEE 802.11b/The max. radio frequency power in any 100 kHz bandwidth within the frequency band**

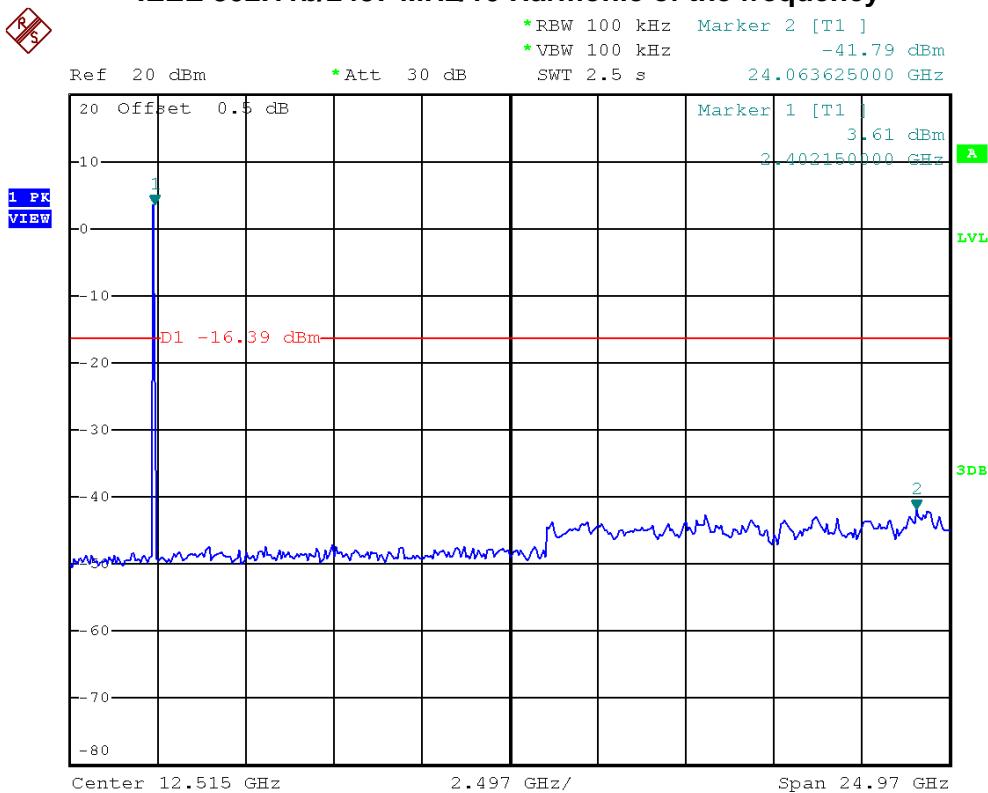




IEEE 802.11b/2412 MHz/10 Harmonic of the frequency

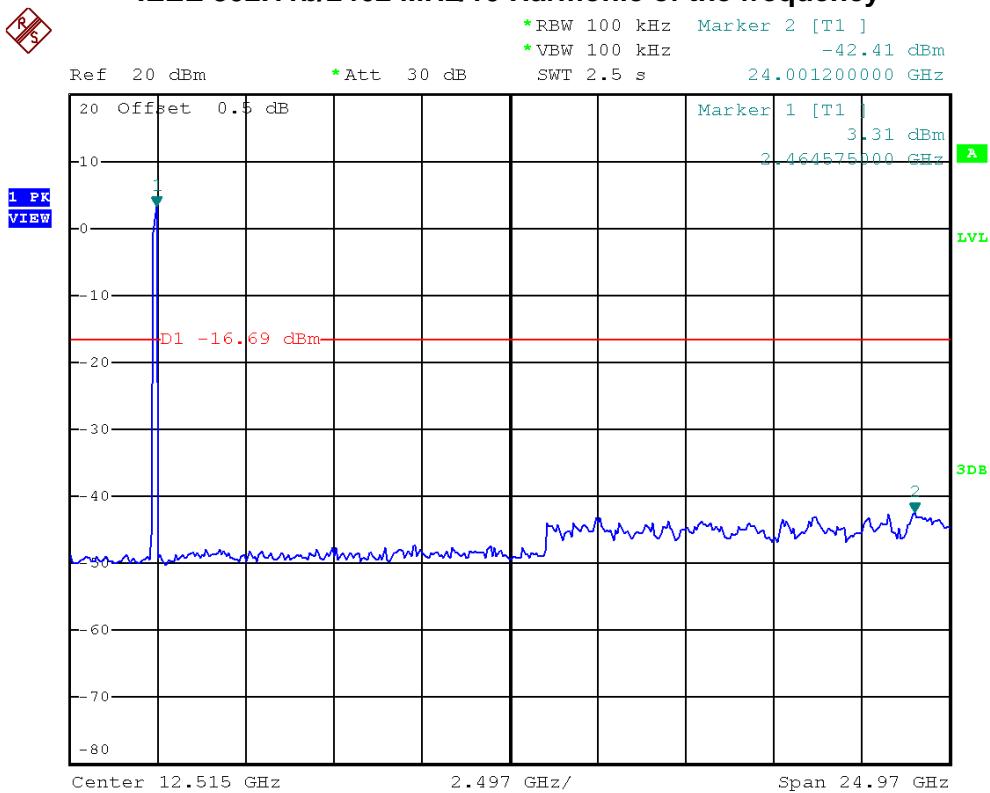


IEEE 802.11b/2437 MHz/10 Harmonic of the frequency





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





E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g		

**Channel of Worst Data**

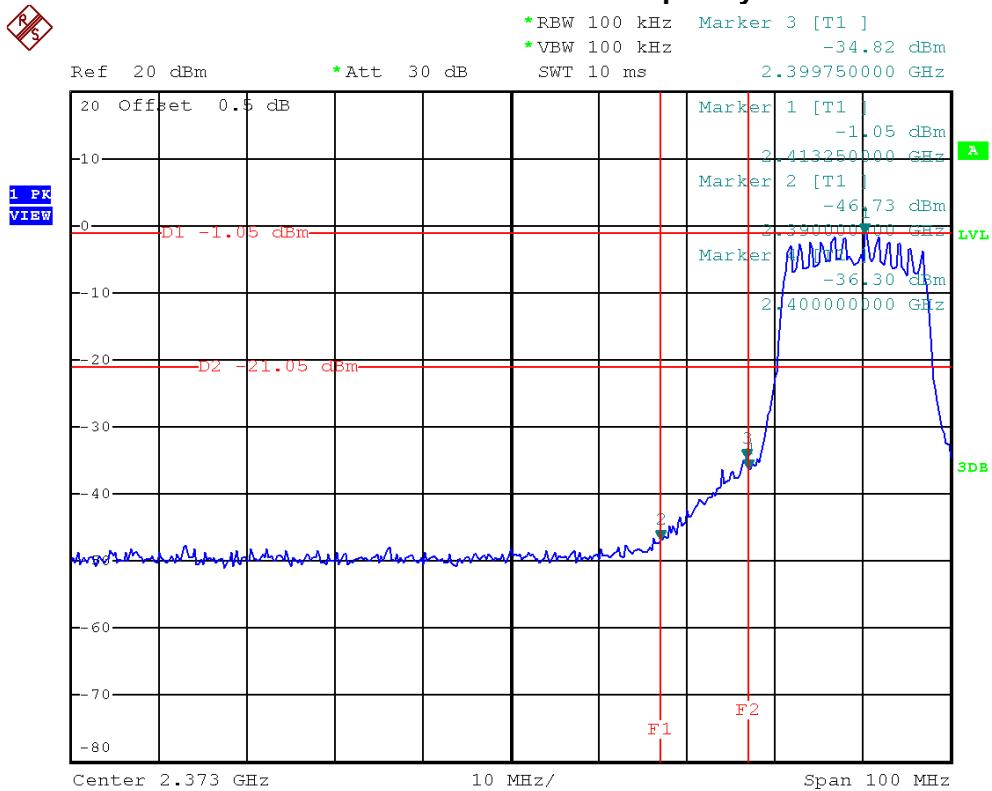
The max. radio frequency power in any 100kHz bandwidth outside the frequency band	The max. radio frequency power in any 100 kHz bandwidth within the frequency band.
FREQUENCY(MHz)	POWER(dBm)
2399.75	-34.82

**Result**

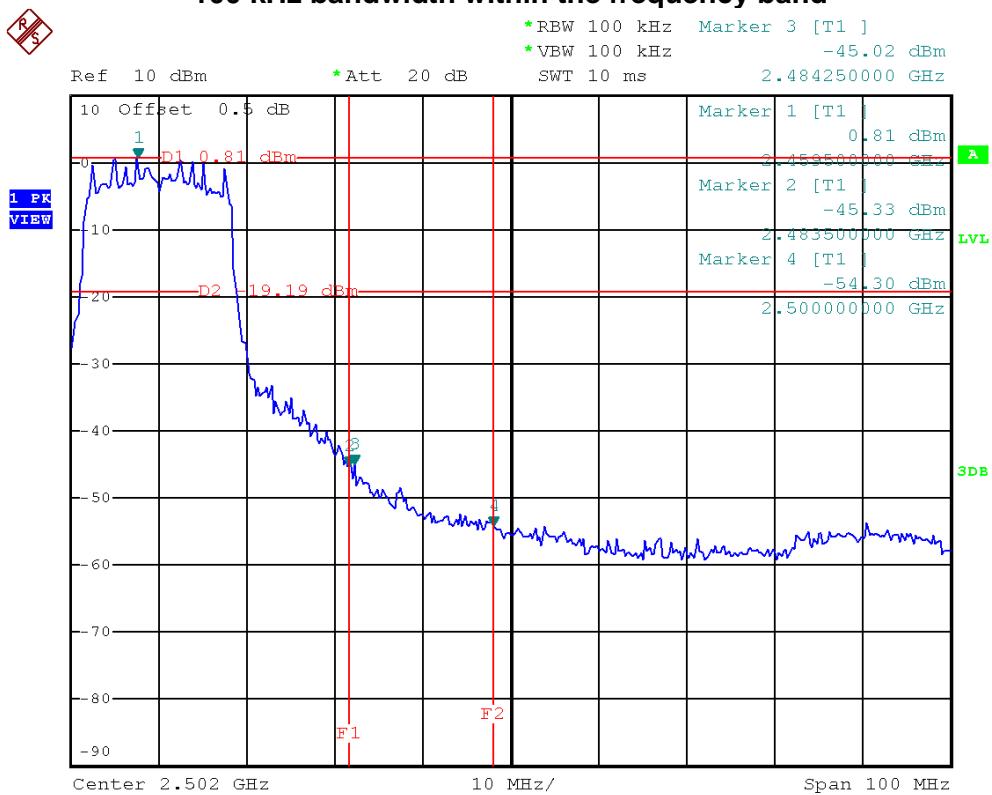
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.



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

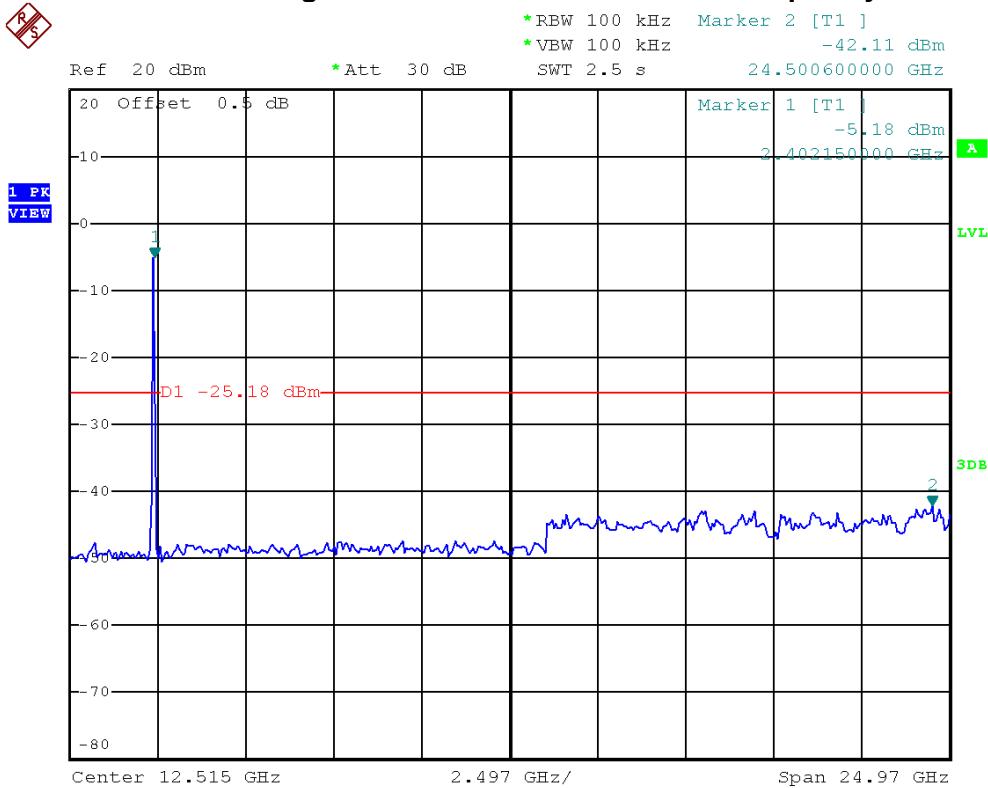


**IEEE 802.11g/The max. radio frequency power in any 100 kHz bandwidth within the frequency band**

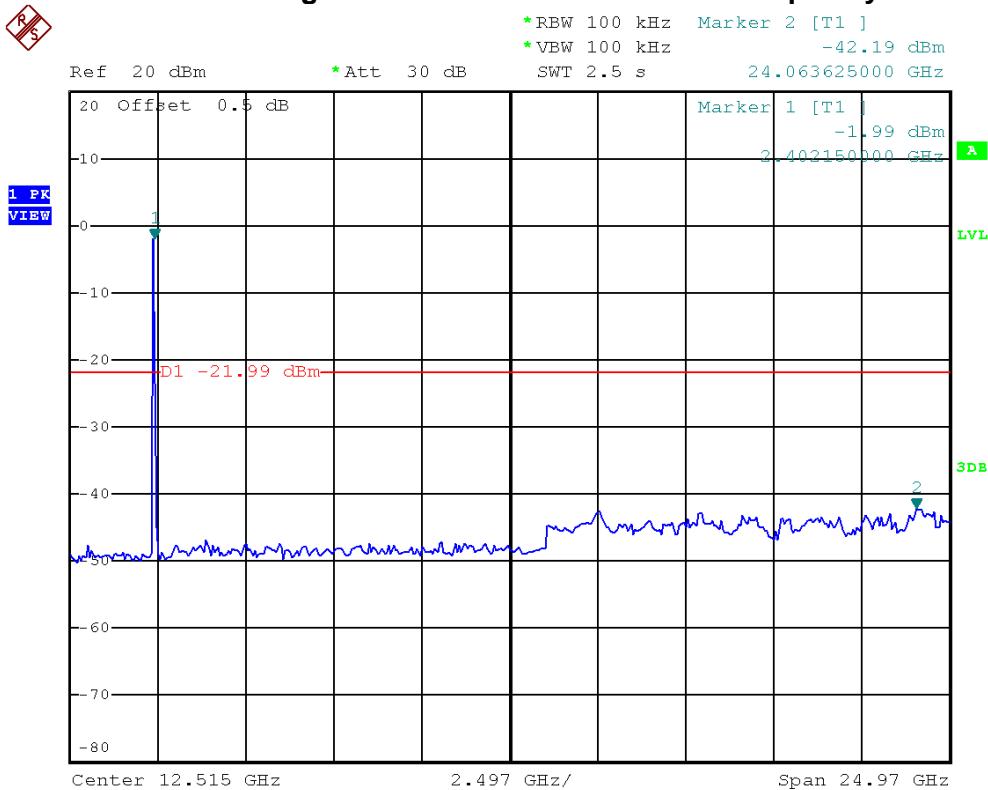




IEEE 802.11g/2412 MHz/10 Harmonic of the frequency

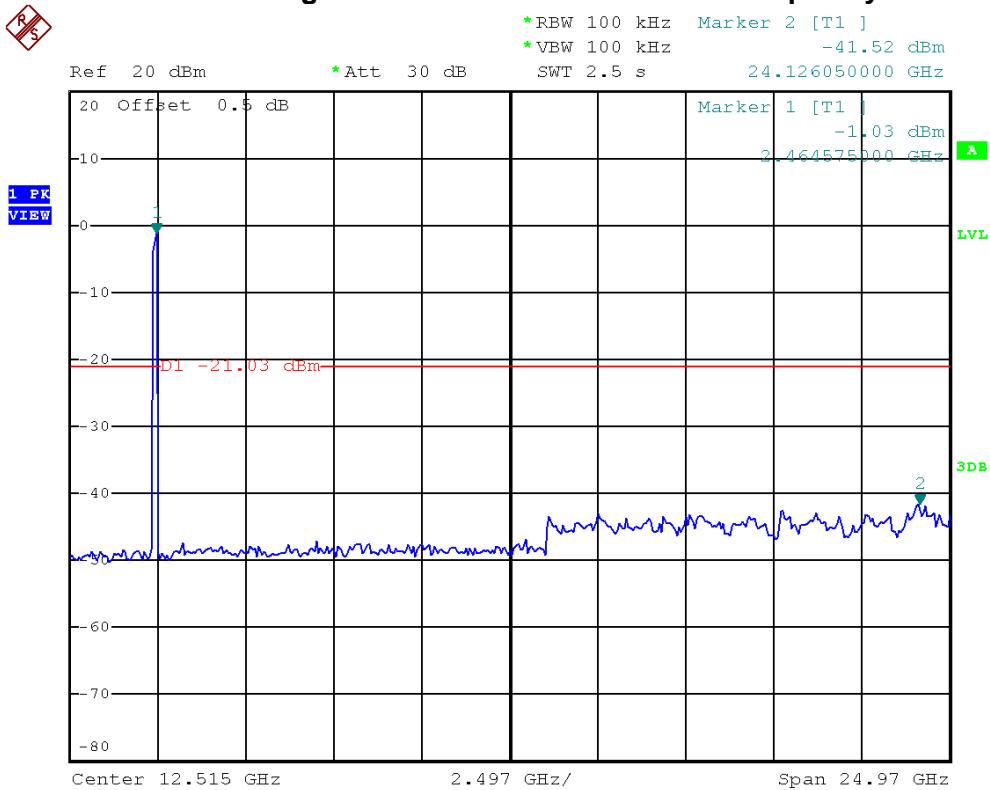


IEEE 802.11g/2437 MHz/10 Harmonic of the frequency





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





E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)		

**Channel of Worst Data**

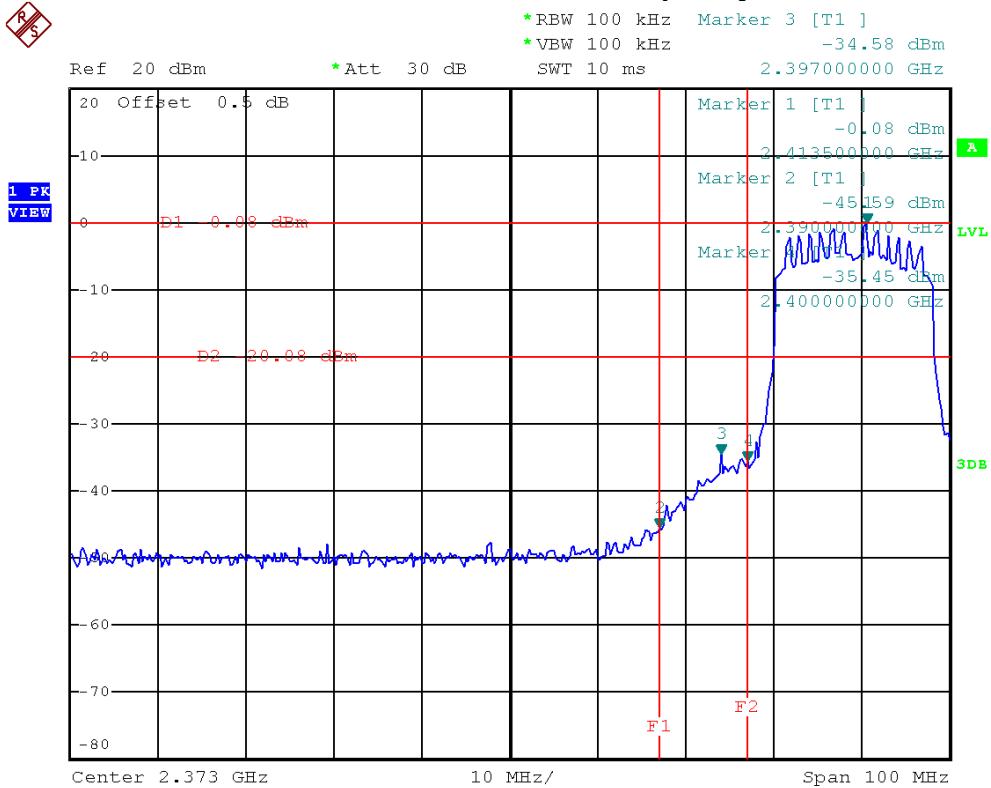
The max. radio frequency power in any 100kHz bandwidth outside the frequency band	The max. radio frequency power in any 100 kHz bandwidth within the frequency band.		
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2397.00	-34.58	2483.50	-39.58

**Result**

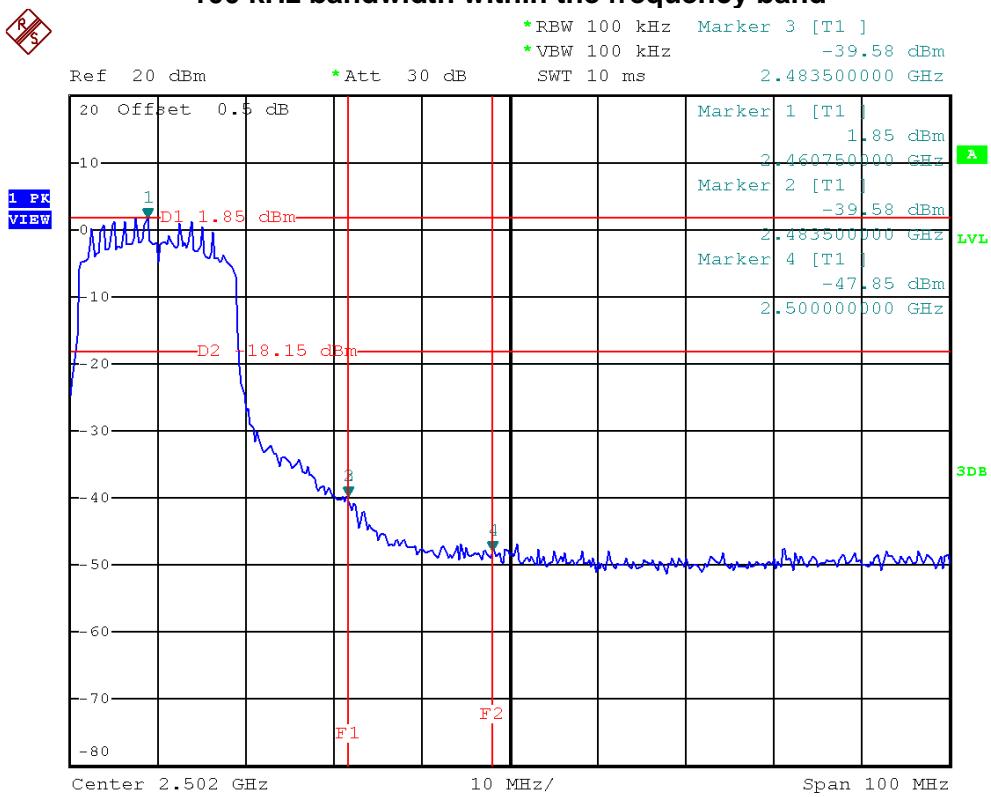
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.



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

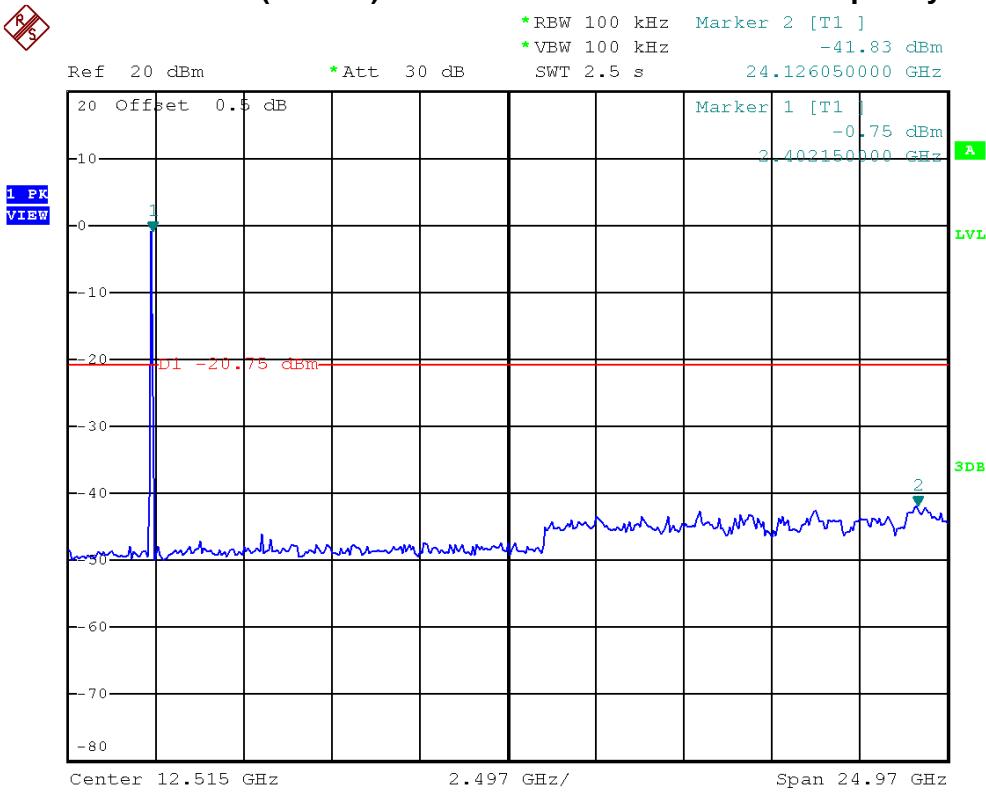


**IEEE 802.11n (20 MHz)/The max. radio frequency power in any 100 kHz bandwidth within the frequency band**

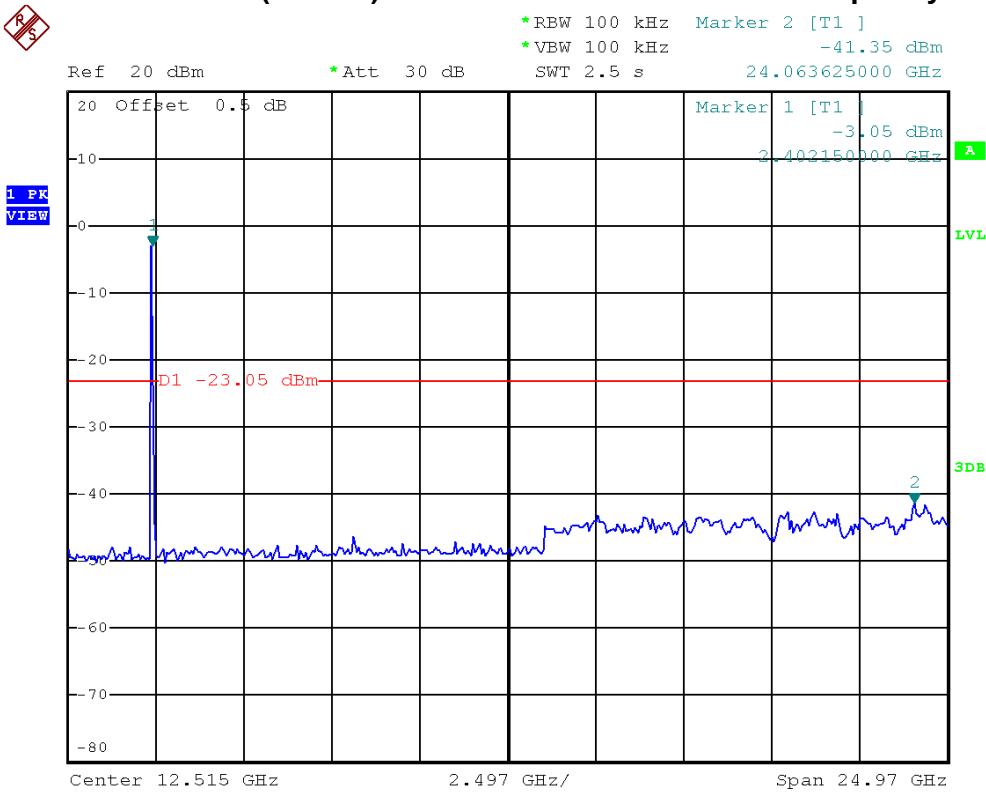




**IEEE 802.11n (20 MHz)/2412 MHz/10 Harmonic of the frequency**

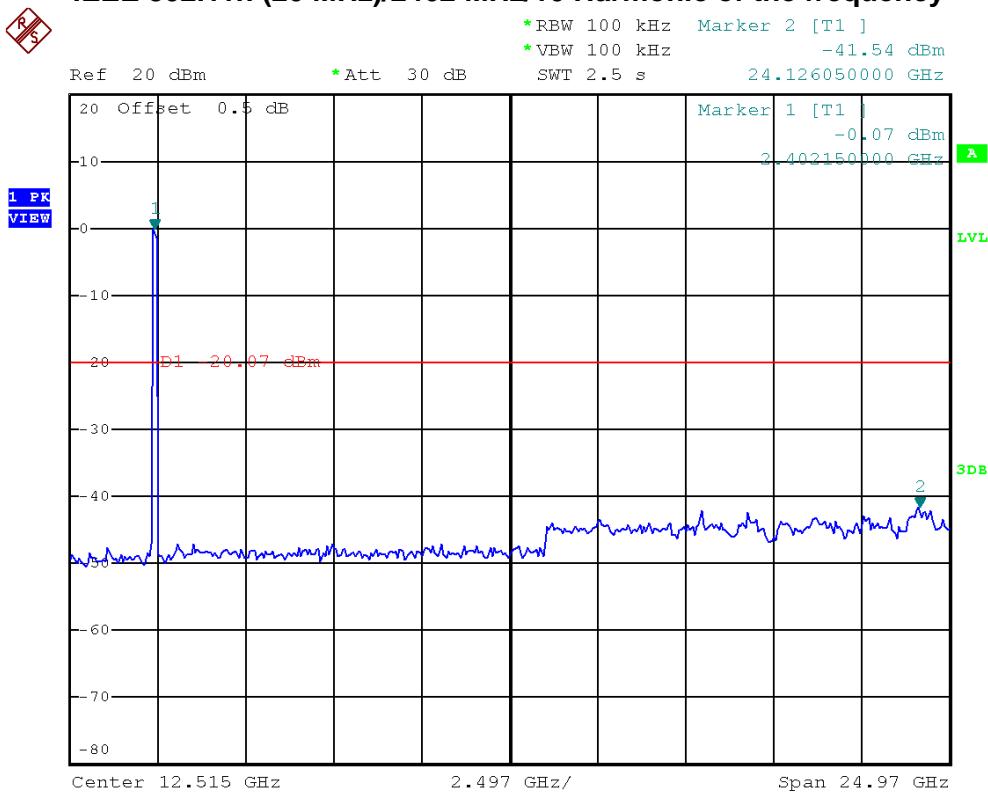


**IEEE 802.11n (20 MHz)/2437 MHz/10 Harmonic of the frequency**





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





## **6 6 DB BANDWIDTH**

### **6.1 LIMIT**

Test Item	Frequency Range (MHz)	Limit
Bandwidth	2400-2483.5	>= 500KHz (6dB bandwidth)

### **6.2 MEASUREMENT INSTRUMENTS LIST**

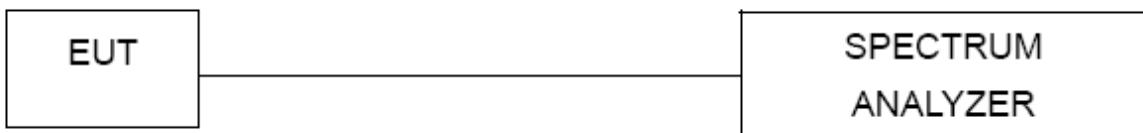
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013

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

### **6.3 TEST PROCEDURES**

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

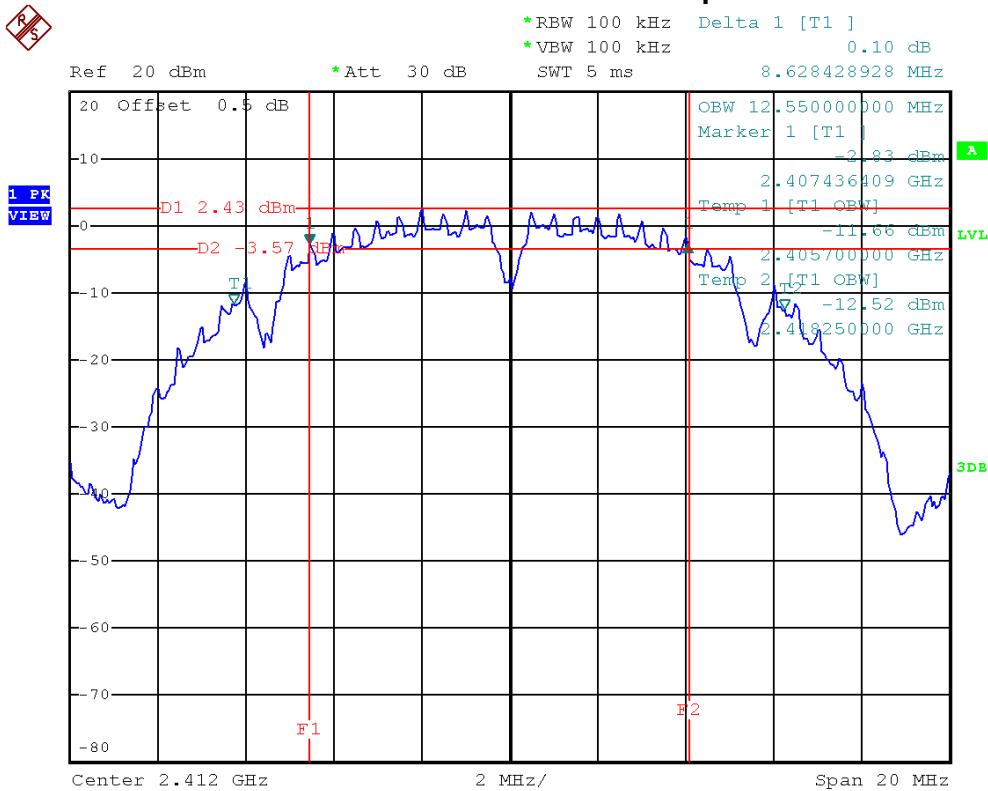


## 6.7 TEST RESULTS

E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz, 2437 MHz, 2462 MHz		

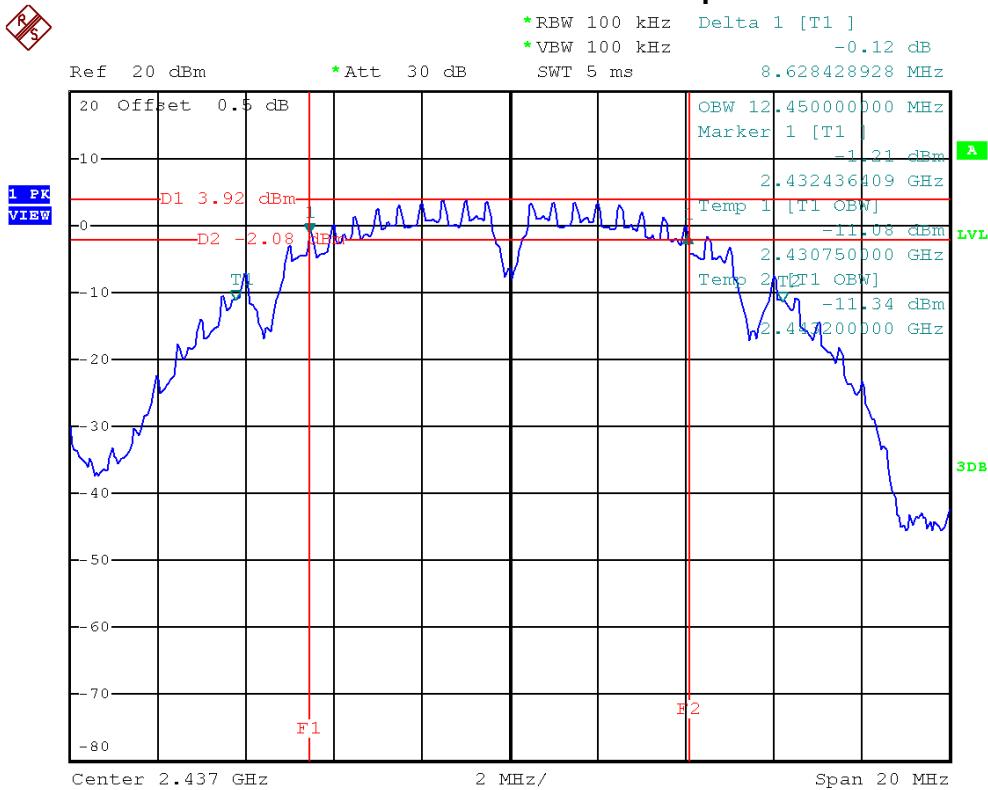
Frequency	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit	Result
2412 MHz	8.63	12.55	>=500 kHz	PASS
2437 MHz	8.63	12.45	>=500 kHz	PASS
2462 MHz	9.08	12.40	>=500 kHz	PASS

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

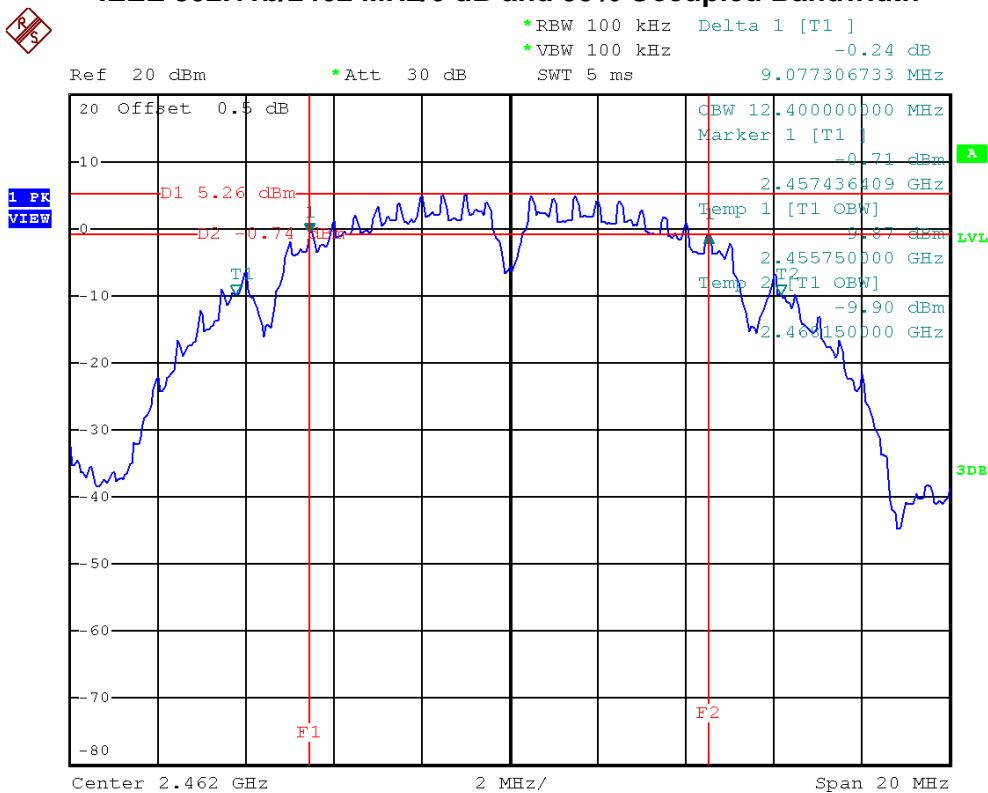




IEEE 802.11b/2437 MHz/6 dB and 99% Occupied Bandwidth



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

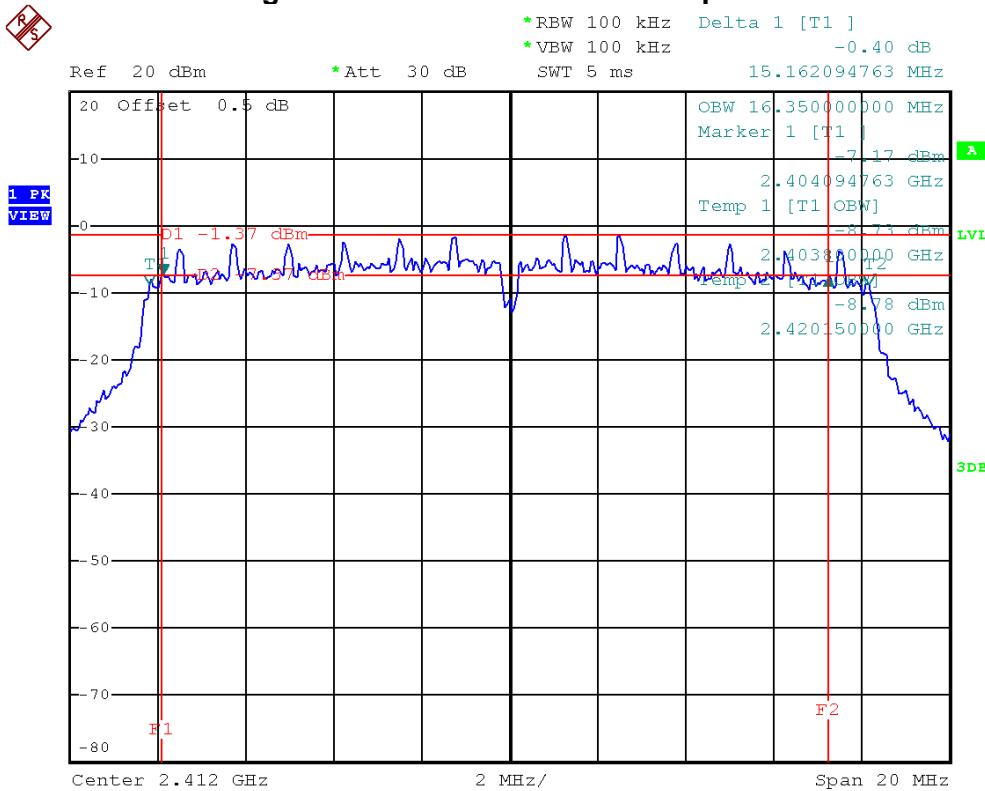




E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz, 2437 MHz, 2462 MHz		

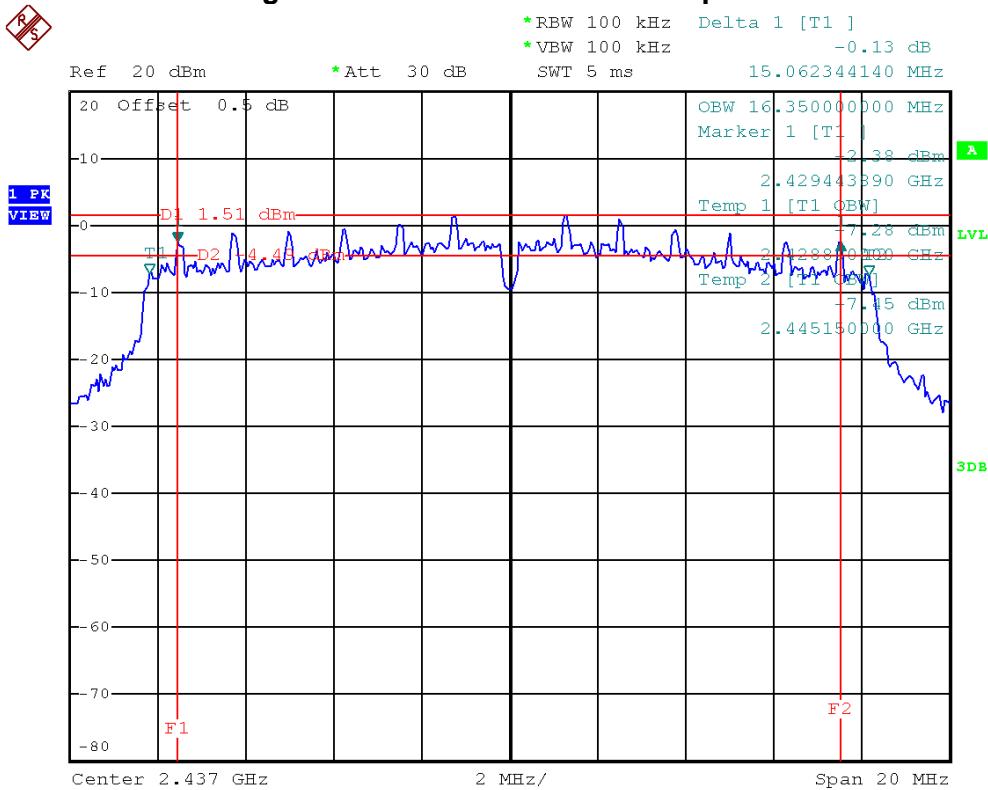
Frequency	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit	Result
2412 MHz	15.16	16.35	>=500 kHz	PASS
2437 MHz	15.06	16.35	>=500 kHz	PASS
2462 MHz	15.21	16.35	>=500 kHz	PASS

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

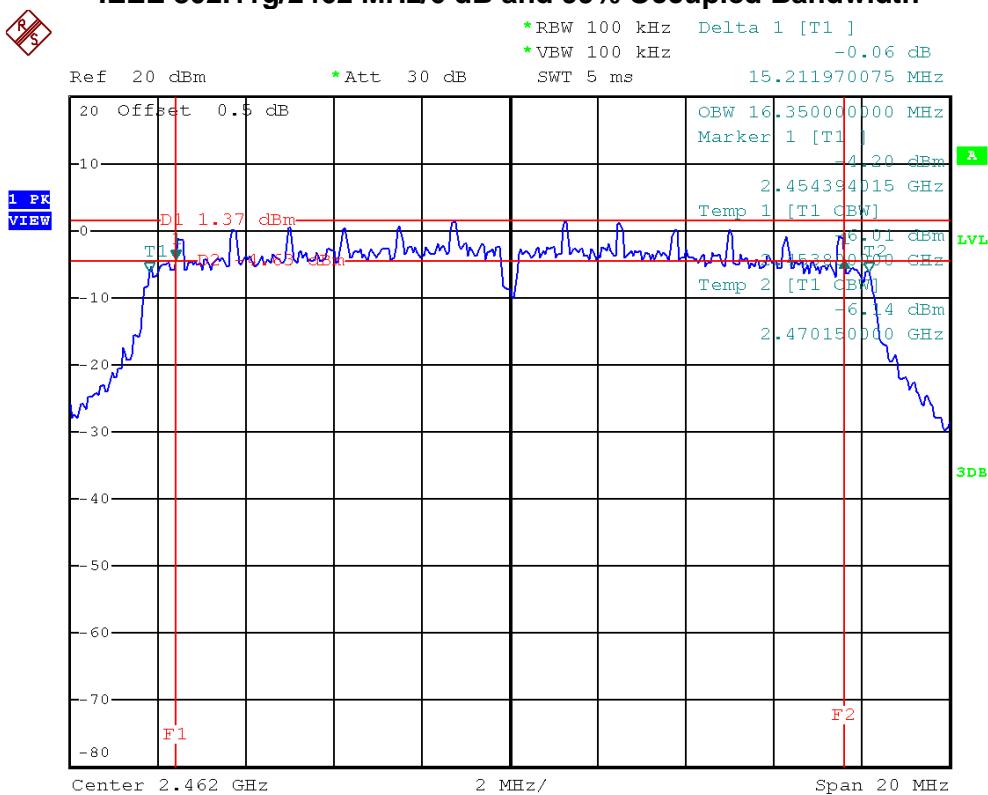




IEEE 802.11g/2437 MHz/6 dB and 99% Occupied Bandwidth



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

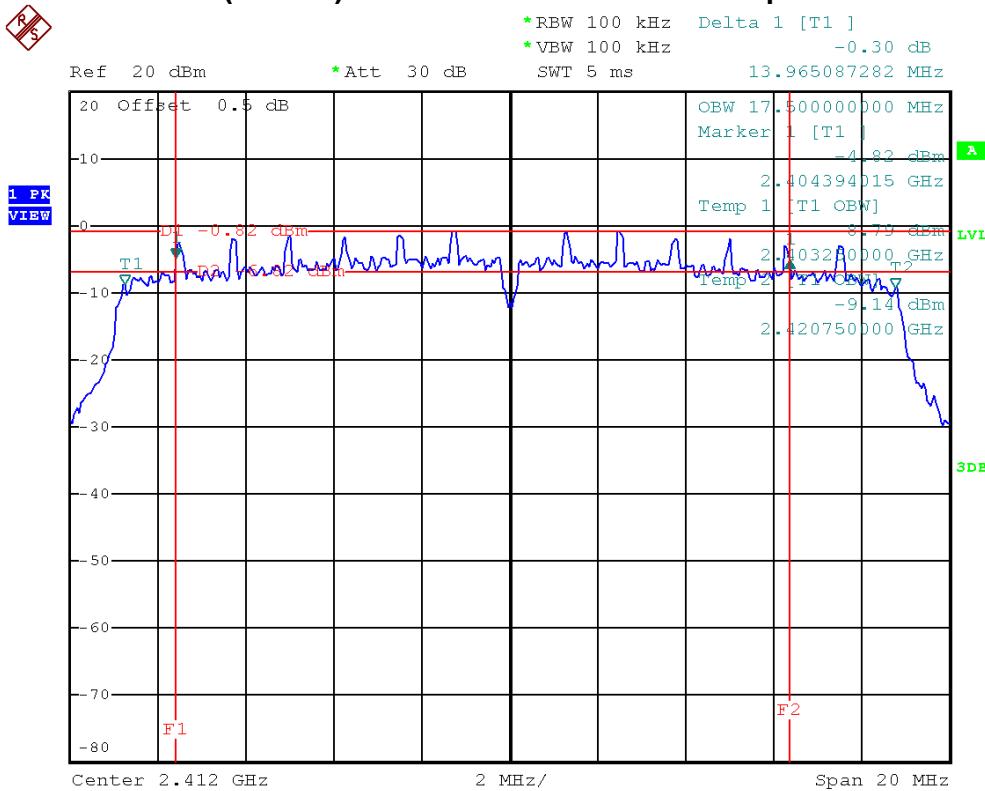




E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11n (20 MHz)/2412 MHz, 2437 MHz, 2462 MHz		

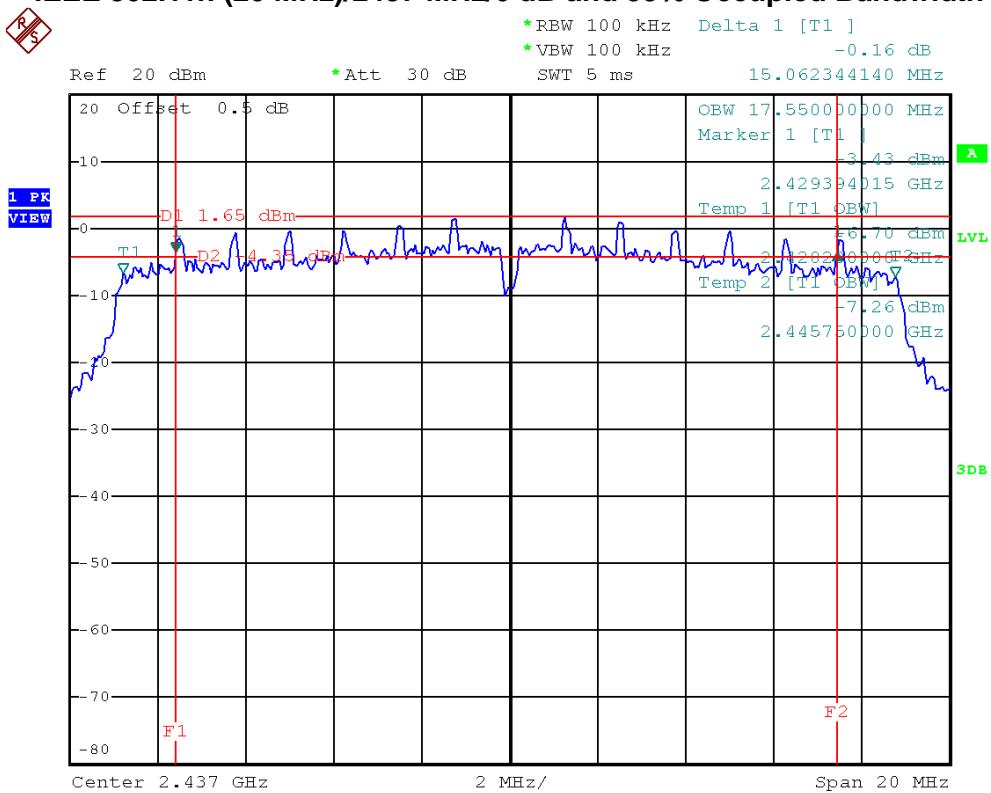
Frequency	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit	Result
2412 MHz	13.97	17.50	>=500 kHz	PASS
2437 MHz	15.06	17.55	>=500 kHz	PASS
2462 MHz	13.97	17.50	>=500 kHz	PASS

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

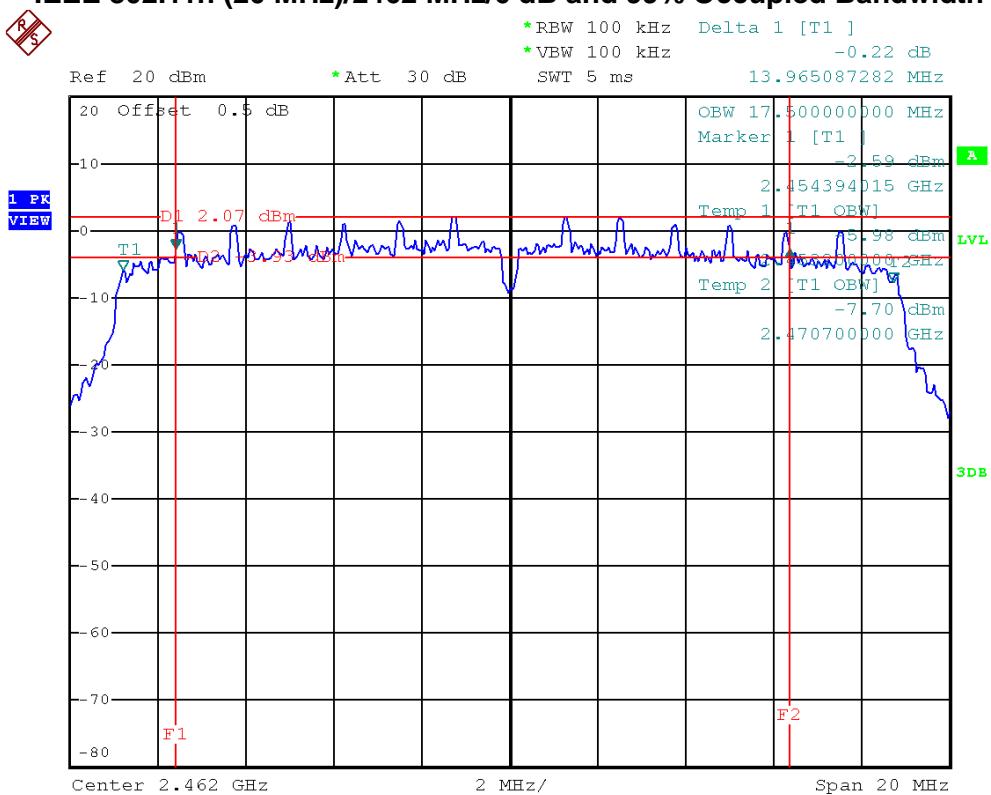




**IEEE 802.11n (20 MHz)/2437 MHz/6 dB and 99% Occupied Bandwidth**



**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	PDA Scanner	Model Name	HT682
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	14.44	30	PASS
2437 MHz	15.98	30	PASS
2462 MHz	16.94	30	PASS



E.U.T	PDA Scanner	Model Name	HT682
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	18.05	30	PASS
2437 MHz	19.78	30	PASS
2462 MHz	20.72	30	PASS



E.U.T	PDA Scanner	Model Name	HT682
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	18.85	30	PASS
2437 MHz	19.66	30	PASS
2462 MHz	20.92	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 (micorvolts/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. 16, 2013
3	Microwave Pre_amplifier	Agilent	8449B	3008A01714	Apr. 17, 2013
4	Microflex Cable	N/A	N/A	1m	Apr. 14, 2013
5	Microflex Cable	AISI	S104-SMAP-1	10m	Apr. 14, 2013
6	Microflex Cable	N/A	N/A	3m	Apr. 14, 2013
7	Test Cable	N/A	LMR-400	966_12m	May. 15, 2013
8	Test Cable	N/A	LMR-400	966_3m	May. 15, 2013
9	Pre-Amplifier	EMC	EMC-330	980001	May. 31, 2013
10	Log-Bicon Antenna	Schwarzbeck	VULB9168-352	9168-352	Jun. 12, 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

- a. 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.
- b. 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.
- c. 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.
- d. 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.
- e. 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.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.
- g. 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.

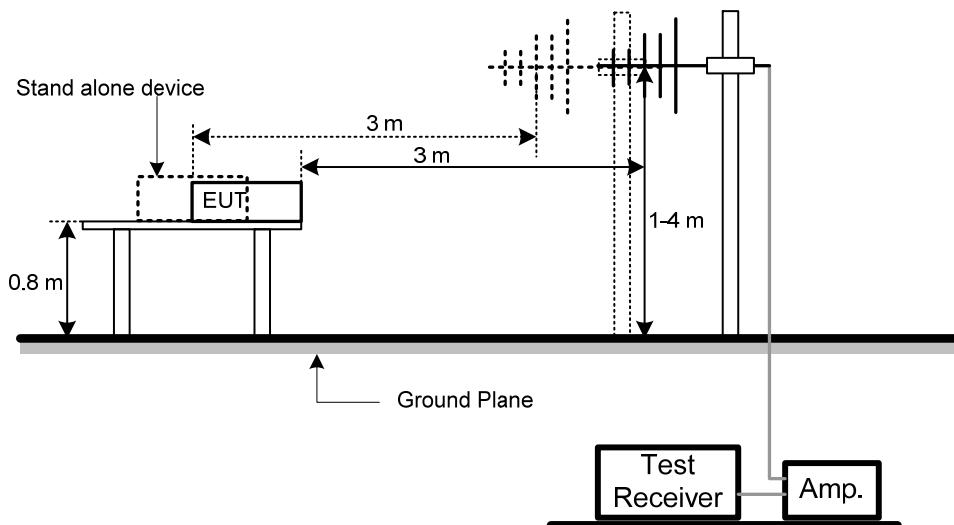
### NOTE:

- a. 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.
- b. 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**

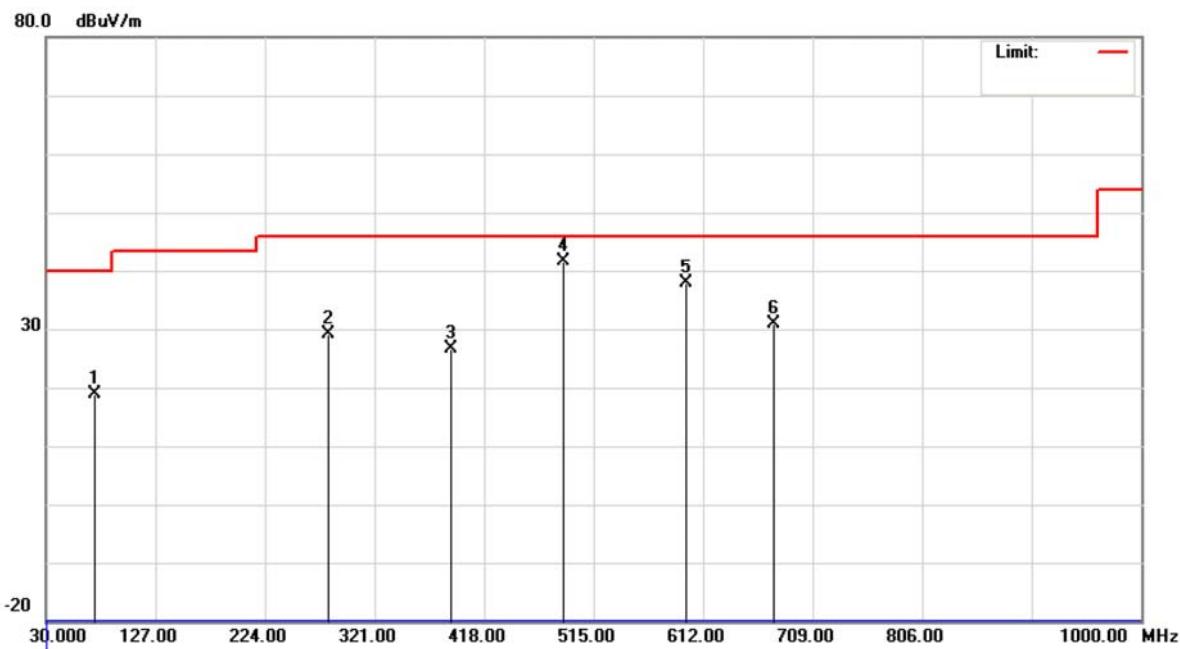
The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.



## 8.8 TEST RESULTS

E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

### Polarization: Vertical

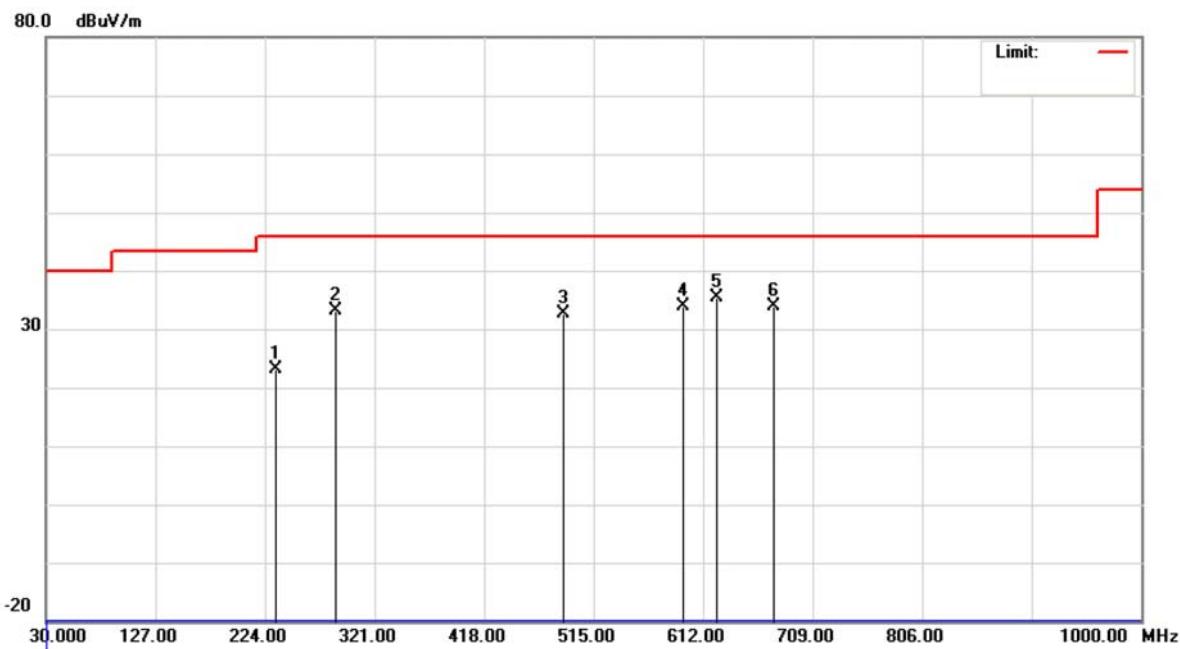


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over		
						Detector	Comment	
1	73.6500	40.50	-21.54	18.96	40.00	-21.04	peak	
2	279.7749	47.92	-18.68	29.24	46.00	-16.76	peak	
3	388.8999	42.63	-16.02	26.61	46.00	-19.39	peak	
4 *	488.3250	55.36	-13.78	41.58	46.00	-4.42	peak	
5	597.4500	49.04	-11.06	37.98	46.00	-8.02	peak	
6	675.0499	40.87	-10.09	30.78	46.00	-15.22	peak	



E.U.T	PDA Scanner	Model Name	HT682
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		
						Detector	Comment	
1	233.6999	43.92	-20.80	23.12	46.00	-22.88	peak	
2	287.0499	51.46	-18.45	33.01	46.00	-12.99	peak	
3	488.3250	46.36	-13.78	32.58	46.00	-13.42	peak	
4	595.0250	45.05	-11.14	33.91	46.00	-12.09	peak	
5 *	624.1250	45.88	-10.62	35.26	46.00	-10.74	peak	
6	675.0499	44.08	-10.09	33.99	46.00	-12.01	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 (micorvolts/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. 16, 2013
3	Microwave Pre_amplifier	Agilent	8449B	3008A01714	Apr. 17, 2013
4	Microflex Cable	N/A	N/A	1m	Apr. 14, 2013
5	Microflex Cable	AISI	S104-SMAP-1	10m	Apr. 14, 2013
6	Microflex Cable	N/A	N/A	3m	Apr. 14, 2013
7	Test Cable	N/A	LMR-400	966_12m	May. 15, 2013
8	Test Cable	N/A	LMR-400	966_3m	May. 15, 2013
9	Pre-Amplifier	EMC	EMC-330	980001	May. 31, 2013
10	Log-Bicon Antenna	Schwarzbeck	VULB9168-352	9168-352	Jun. 12, 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

- a. 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.
- b. 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.
- c. 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.
- d. 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.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.
- f. 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.

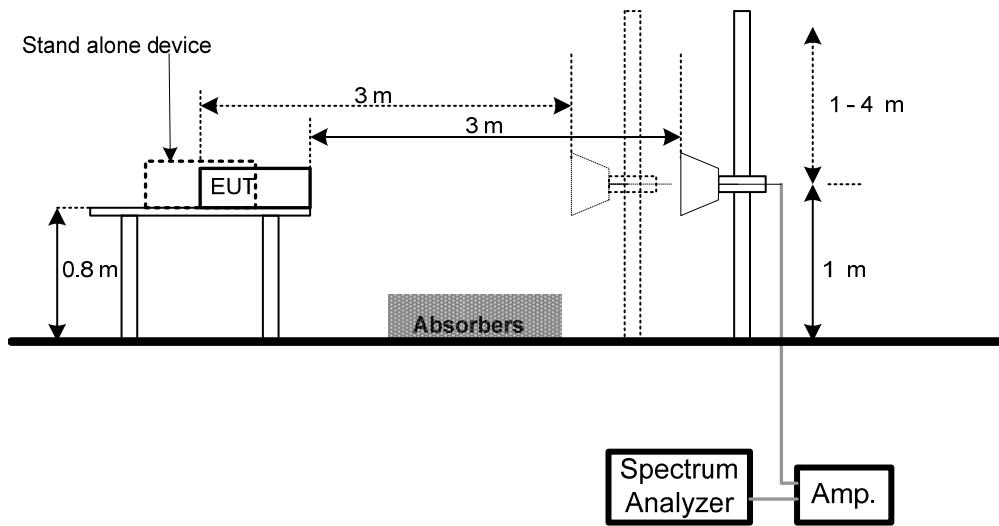
### NOTE:

- a. 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 AVG means measurements by using are Average Mode with instrument setting in RBW= 1 MHz, VBW= 10 Hz, Swp. Time = Auto.
- b. 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**

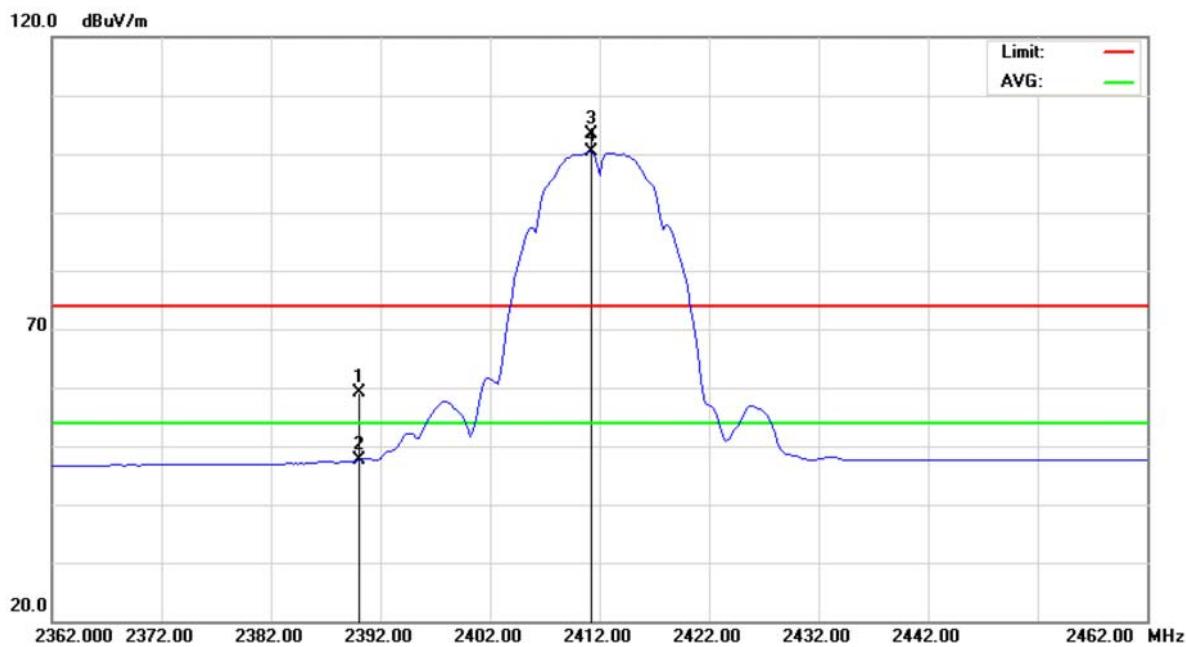
The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.



## 9.8 TEST RESULTS

E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz		

### Polarization: Vertical

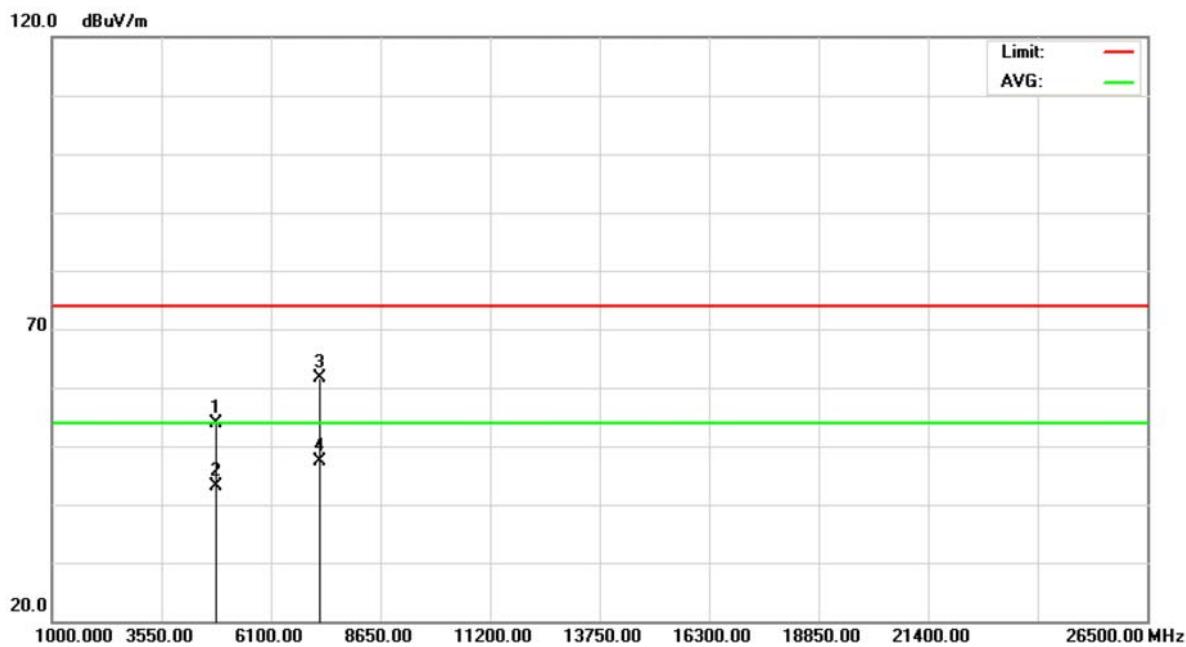


No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Comment					
						MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.000	25.95	33.25	59.20	74.00	-14.80						peak	
2	2390.000	14.38	33.25	47.63	54.00	-6.37						AVG	
3	X 2411.250	69.99	33.36	103.35	74.00	29.35						peak	
4	* 2411.250	67.02	33.36	100.38	54.00	46.38						AVG	



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz		

### Polarization: Vertical

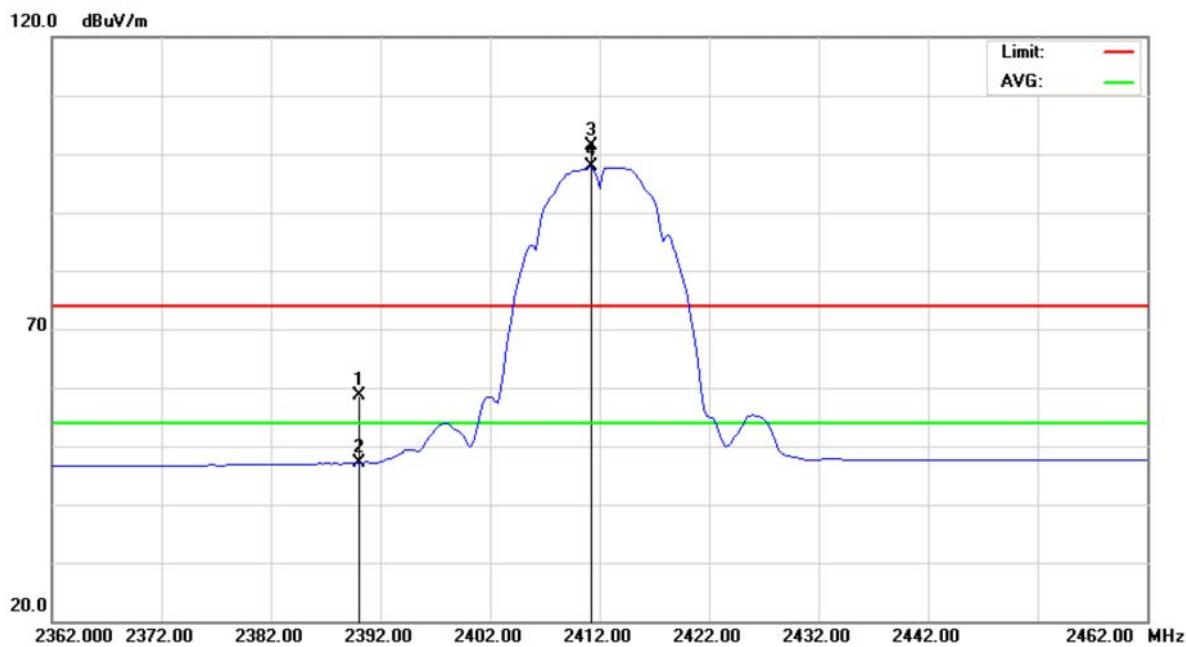


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Limit dB	Detector
1	4823.900	45.32	8.61	53.93	74.00	-20.07	peak
2	4823.900	34.55	8.61	43.16	54.00	-10.84	AVG
3	7238.413	45.29	16.28	61.57	74.00	-12.43	peak
4 *	7238.413	31.13	16.28	47.41	54.00	-6.59	AVG



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz		

**Polarization: Horizontal**

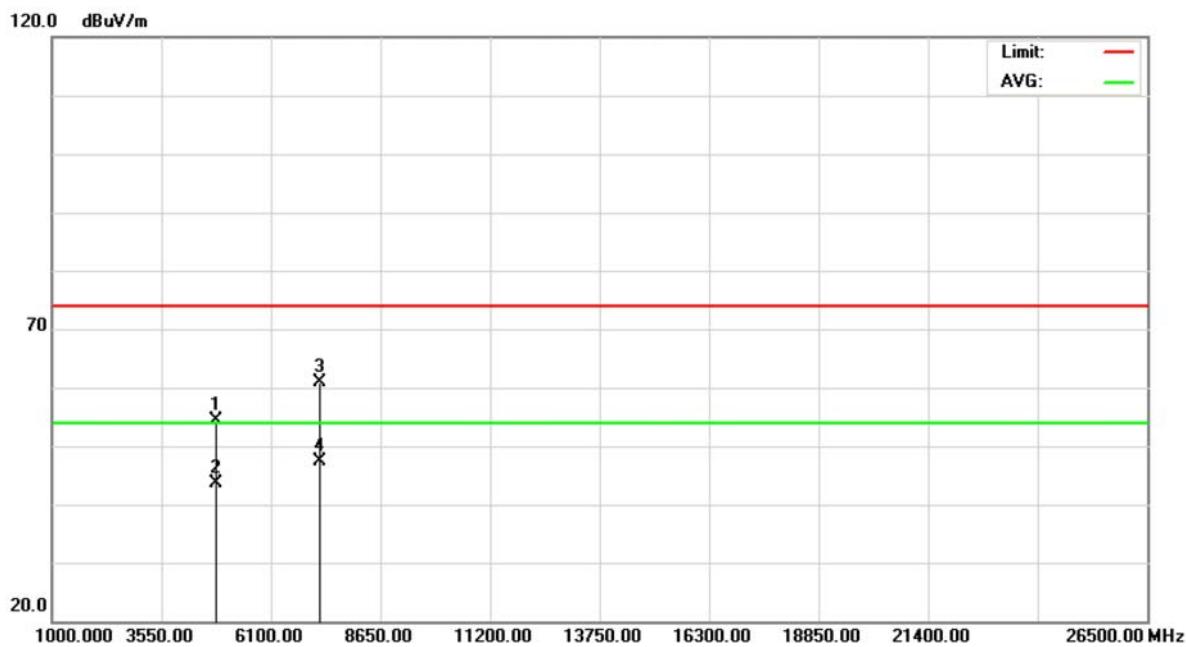


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over		Comment
						Detector		
1	2390.000	25.37	33.25	58.62	74.00	-15.38		peak
2	2390.000	13.87	33.25	47.12	54.00	-6.88	AVG	
3	X 2411.250	67.93	33.36	101.29	74.00	27.29	peak	
4	* 2411.250	64.44	33.36	97.80	54.00	43.80	AVG	



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2412 MHz		

**Polarization: Horizontal**

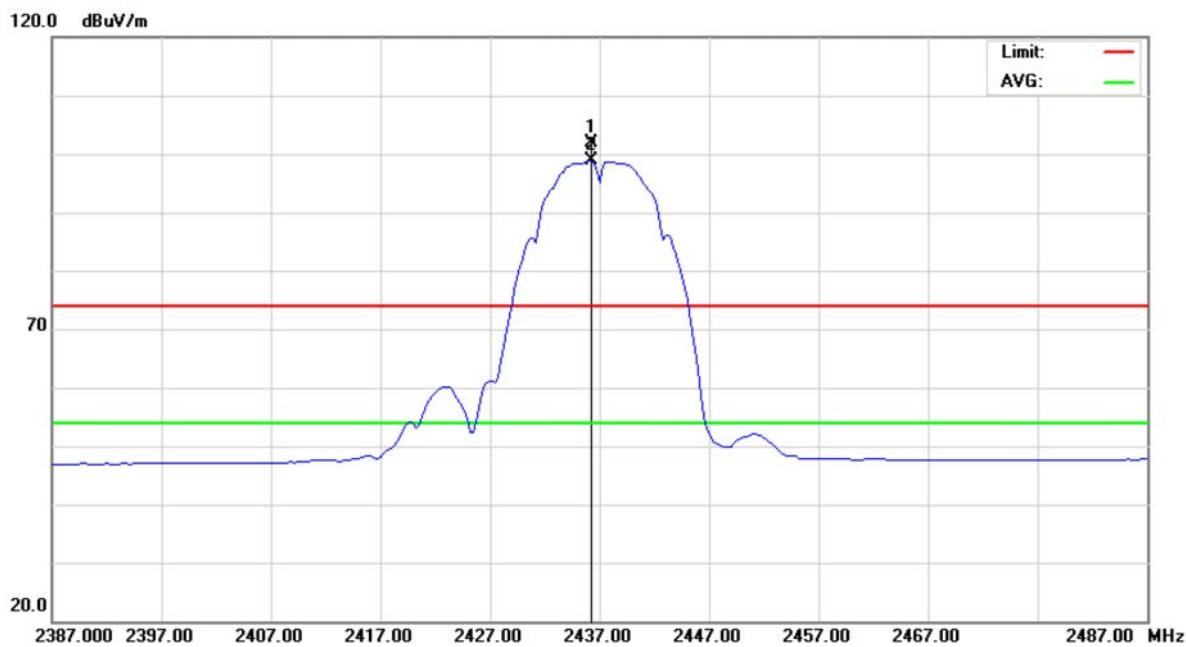


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Detector	Comment
1	4823.825	45.82	8.61	54.43	74.00	-19.57	peak
2	4823.825	34.97	8.61	43.58	54.00	-10.42	AVG
3	7234.163	44.58	16.27	60.85	74.00	-13.15	peak
4 *	7234.163	31.18	16.27	47.45	54.00	-6.55	AVG



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

**Polarization: Vertical**

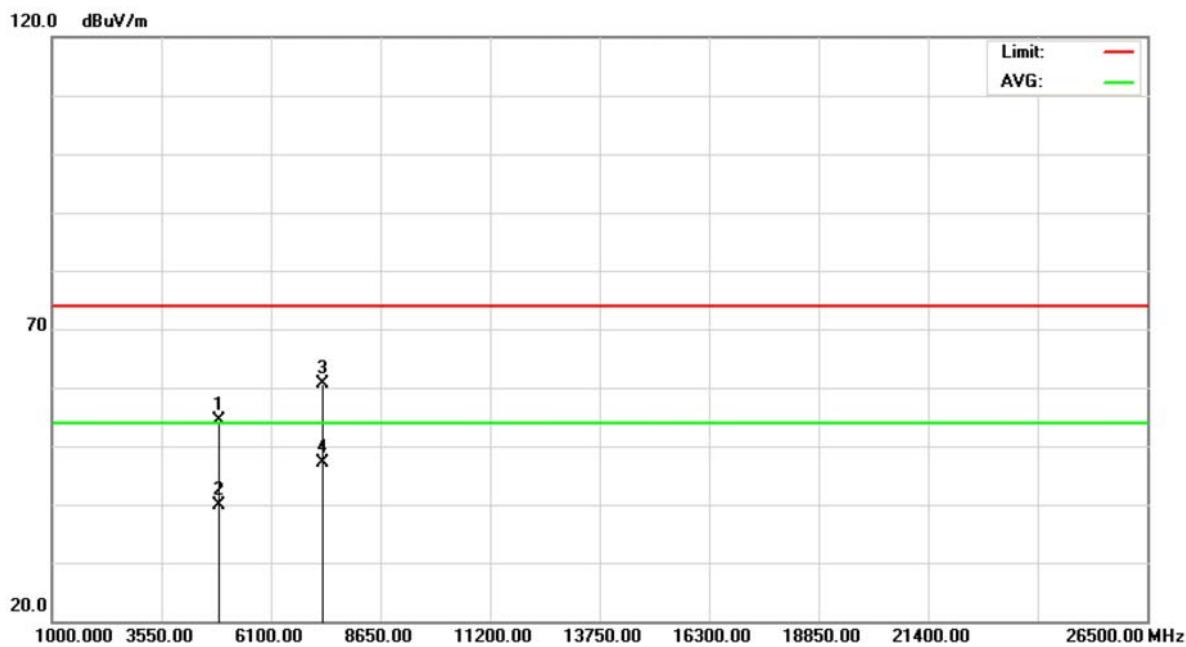


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Detector	Comment
1 X	2436.250	68.46	33.50	101.96	74.00	27.96	peak
2 *	2436.250	65.41	33.50	98.91	54.00	44.91	AVG



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

**Polarization: Vertical**

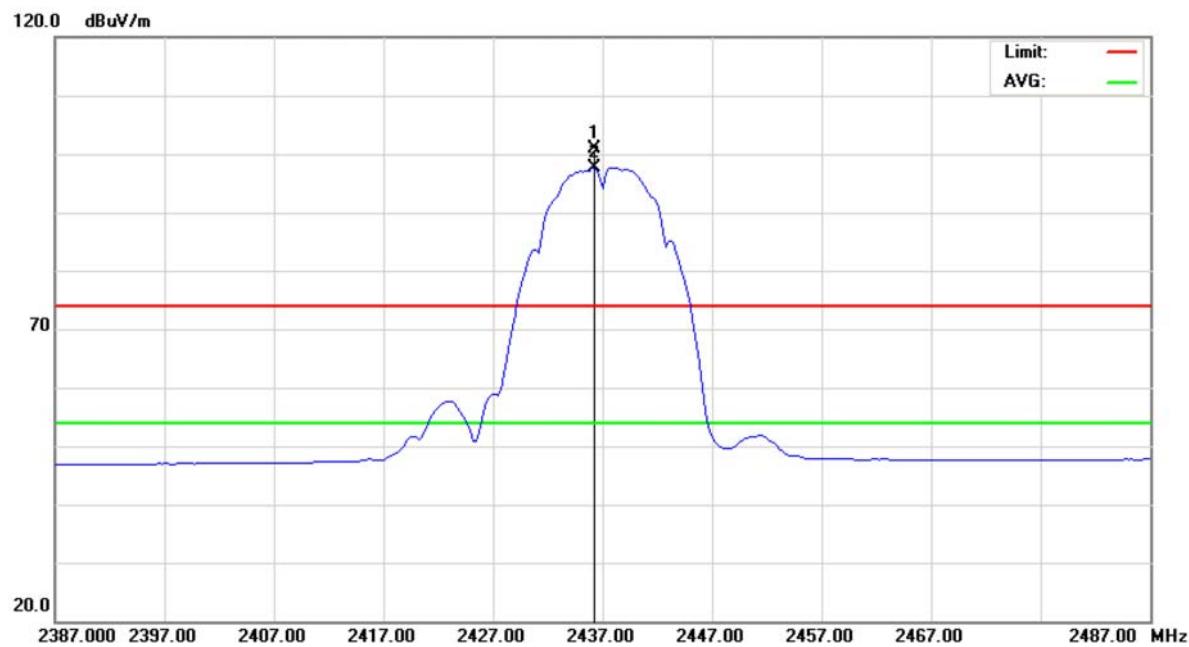


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Limit dB	Detector
1	4873.900	45.67	8.78	54.45	74.00	-19.55	peak
2	4873.900	31.19	8.78	39.97	54.00	-14.03	AVG
3	7310.775	44.13	16.54	60.67	74.00	-13.33	peak
4 *	7310.775	30.69	16.54	47.23	54.00	-6.77	AVG



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

## Polarization: Horizontal

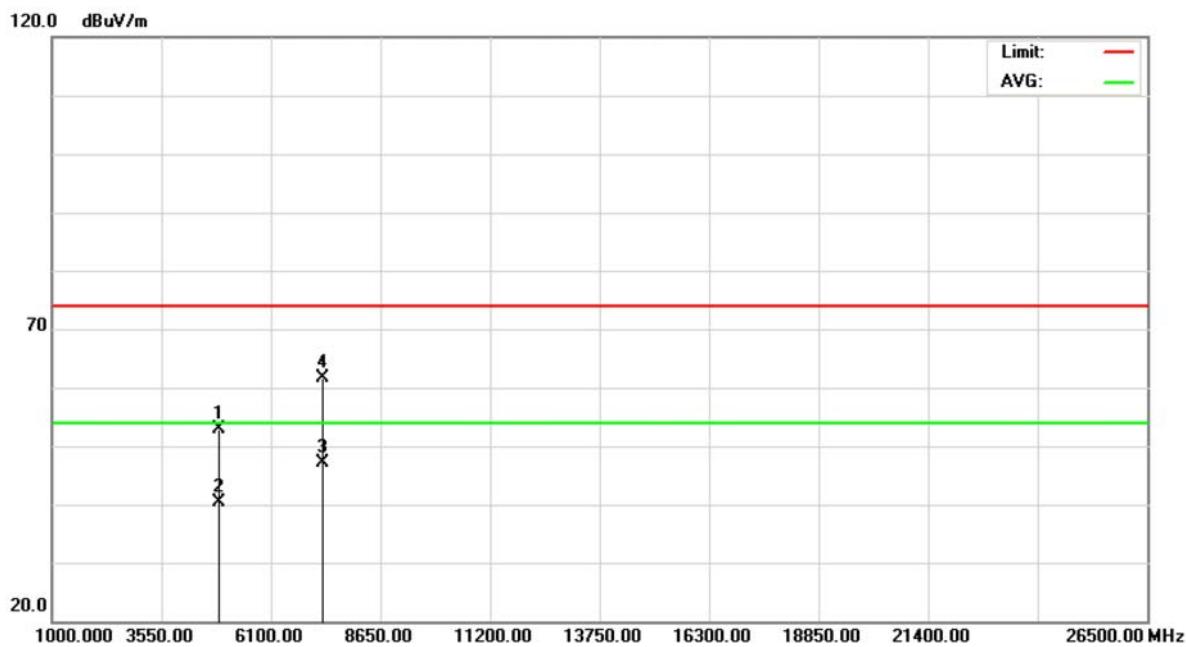


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Detector	Comment
1	X 2436.250	67.29	33.50	100.79	74.00	26.79	peak
2	* 2436.250	64.14	33.50	97.64	54.00	43.64	AVG



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2437 MHz		

**Polarization: Horizontal**

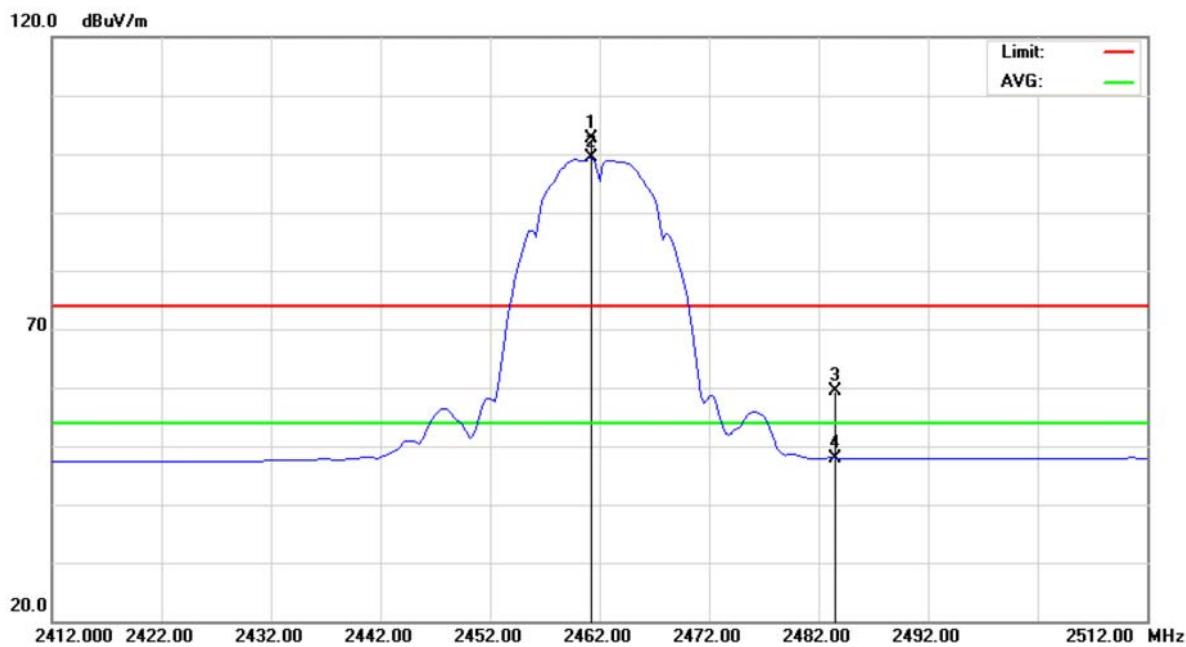


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Limit dB	Detector
1	4873.975	44.14	8.78	52.92	74.00	-21.08	peak
2	4873.975	31.71	8.78	40.49	54.00	-13.51	AVG
3 *	7310.362	30.63	16.53	47.16	54.00	-6.84	AVG
4	7310.450	44.98	16.53	61.51	74.00	-12.49	peak



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2462 MHz		

Polarization: Vertical

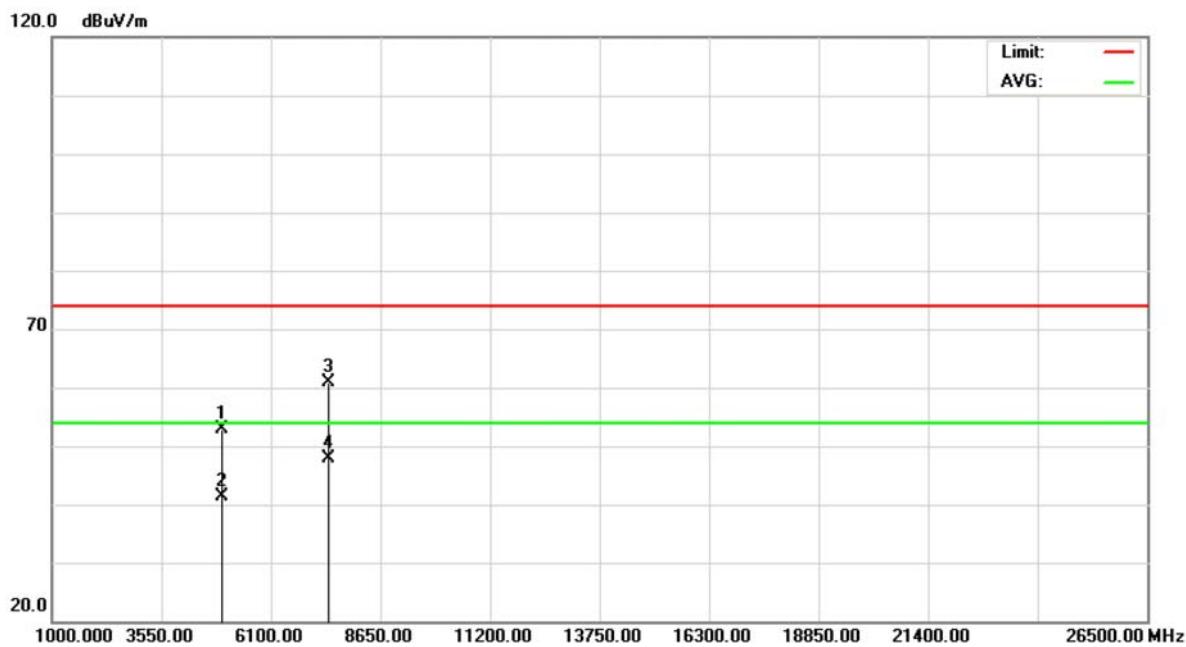


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Detector	Comment
1 X	2461.250	68.96	33.63	102.59	74.00	28.59	peak
2 *	2461.250	65.66	33.63	99.29	54.00	45.29	AVG
3	2483.500	25.69	33.75	59.44	74.00	-14.56	peak
4	2483.500	14.25	33.75	48.00	54.00	-6.00	AVG



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2462 MHz		

### Polarization: Vertical

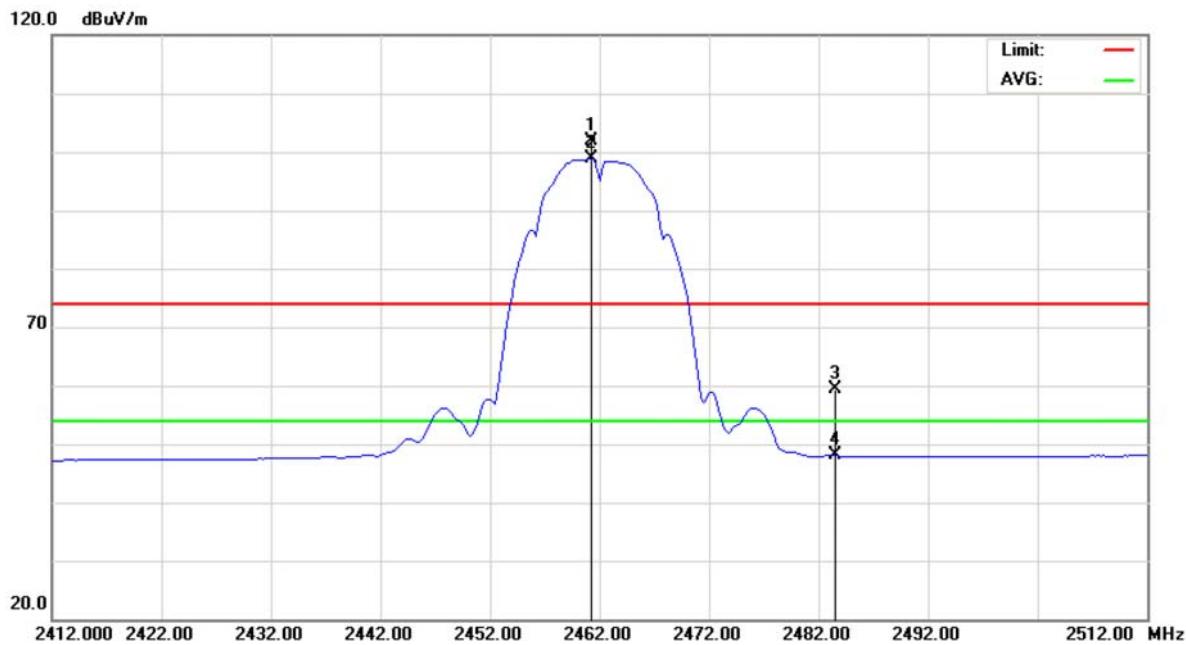


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Detector	Comment
1	4923.925	43.97	8.95	52.92	74.00	-21.08	peak
2	4923.925	32.32	8.95	41.27	54.00	-12.73	AVG
3	7388.362	44.12	16.80	60.92	74.00	-13.08	peak
4 *	7388.362	31.04	16.80	47.84	54.00	-6.16	AVG



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2462 MHz		

**Polarization: Horizontal**

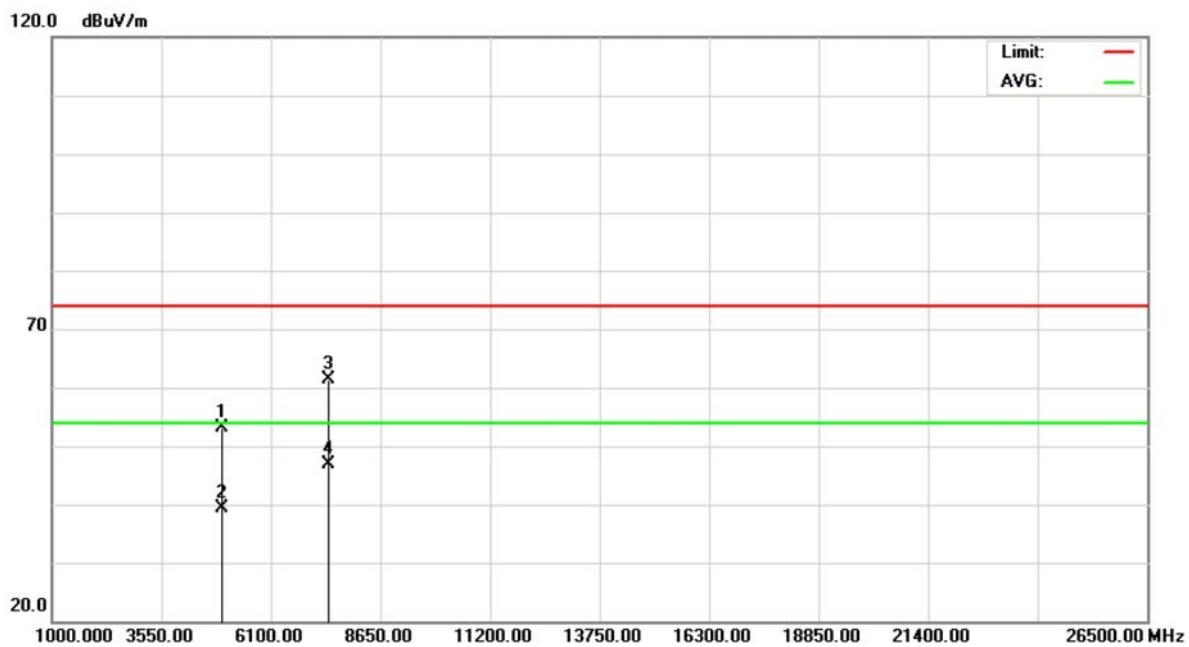


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Detector	Comment
1 X	2461.250	68.23	33.63	101.86	74.00	27.86	peak
2 *	2461.250	65.28	33.63	98.91	54.00	44.91	AVG
3	2483.500	25.61	33.75	59.36	74.00	-14.64	peak
4	2483.500	14.29	33.75	48.04	54.00	-5.96	AVG



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11b/2462 MHz		

**Polarization: Horizontal**

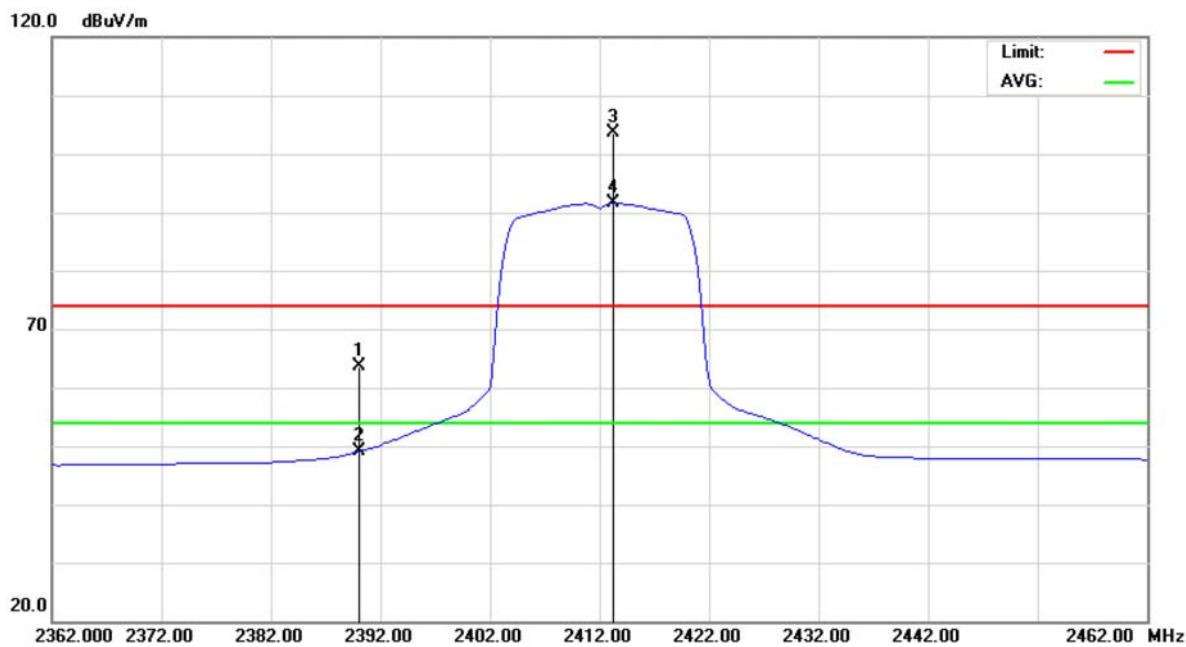


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Detector	Comment
1	4924.200	44.29	8.95	53.24	74.00	-20.76	peak
2	4924.200	30.52	8.95	39.47	54.00	-14.53	AVG
3	7386.125	44.51	16.80	61.31	74.00	-12.69	peak
4 *	7386.125	30.18	16.80	46.98	54.00	-7.02	AVG



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz		

**Polarization: Vertical**

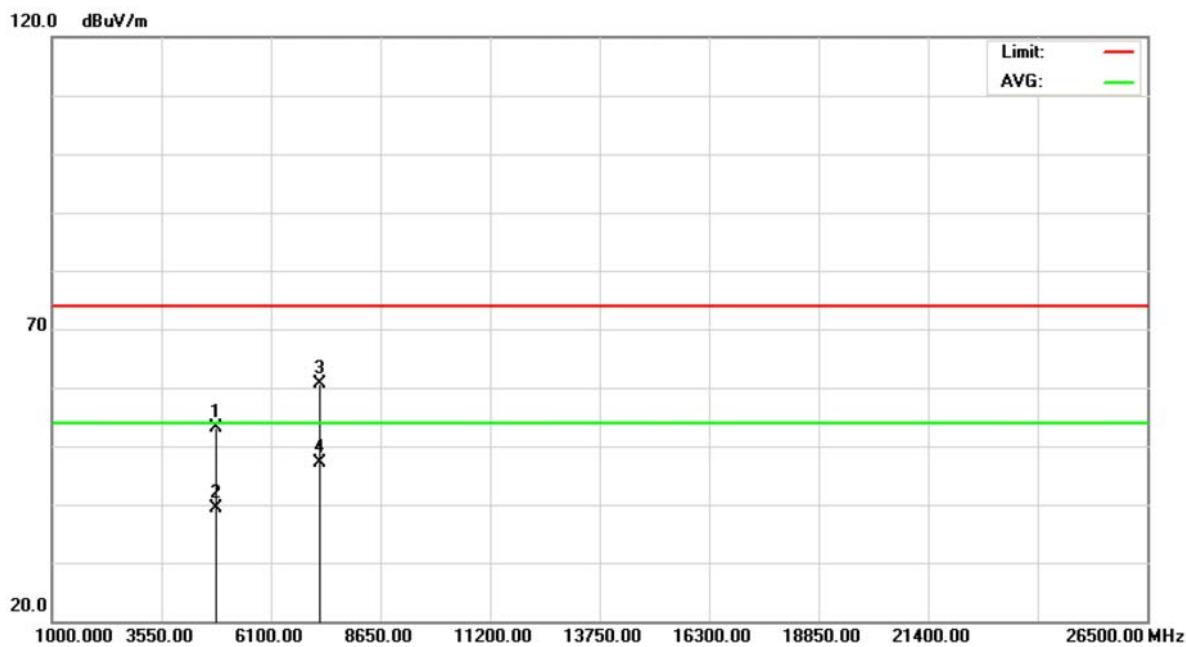


No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over					
						dBuV	dB	dBuV/m	dB	Detector	Comment
1	2390.000	30.44	33.25	63.69	74.00	-10.31				peak	
2	2390.000	15.79	33.25	49.04	54.00	-4.96				AVG	
3	X 2413.250	70.22	33.37	103.59	74.00	29.59				peak	
4	* 2413.250	58.24	33.37	91.61	54.00	37.61				AVG	



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz		

### Polarization: Vertical

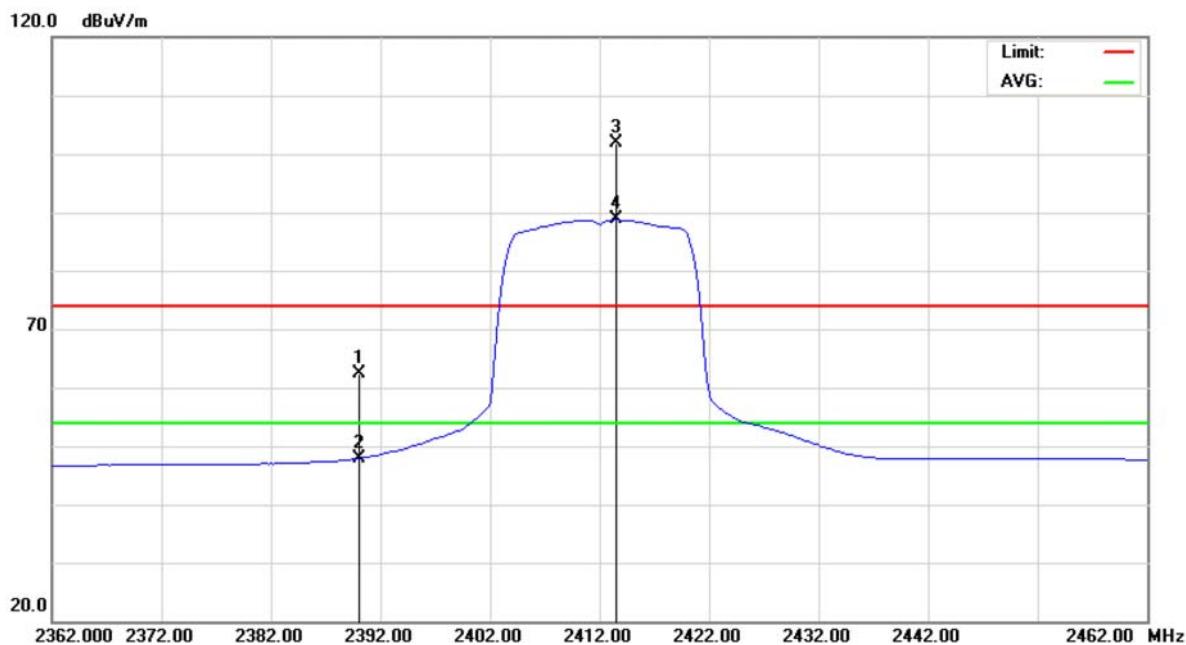


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Limit dB	Detector
1	4822.788	44.55	8.60	53.15	74.00	-20.85	peak
2	4822.788	30.89	8.60	39.49	54.00	-14.51	AVG
3	7235.763	44.30	16.28	60.58	74.00	-13.42	peak
4 *	7235.763	30.93	16.28	47.21	54.00	-6.79	AVG



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz		

**Polarization: Horizontal**

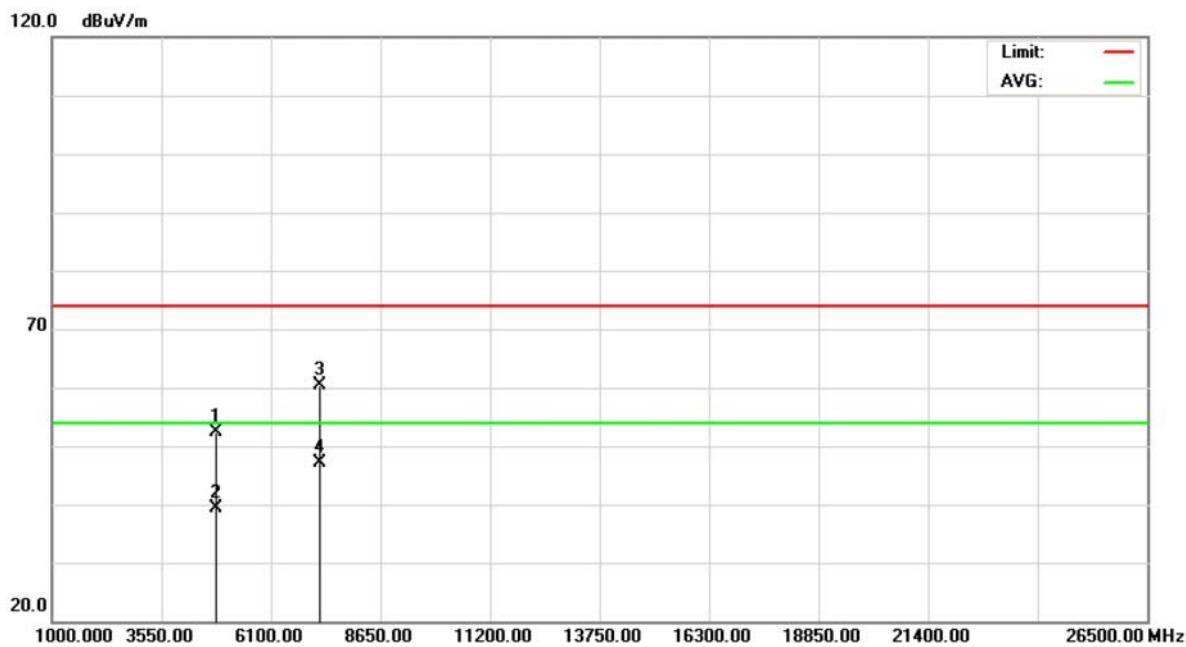


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Detector	Comment
1	2390.000	29.25	33.25	62.50	74.00	-11.50	peak
2	2390.000	14.67	33.25	47.92	54.00	-6.08	AVG
3 X	2413.500	68.39	33.38	101.77	74.00	27.77	peak
4 *	2413.500	55.39	33.38	88.77	54.00	34.77	AVG



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2412 MHz		

### Polarization: Horizontal

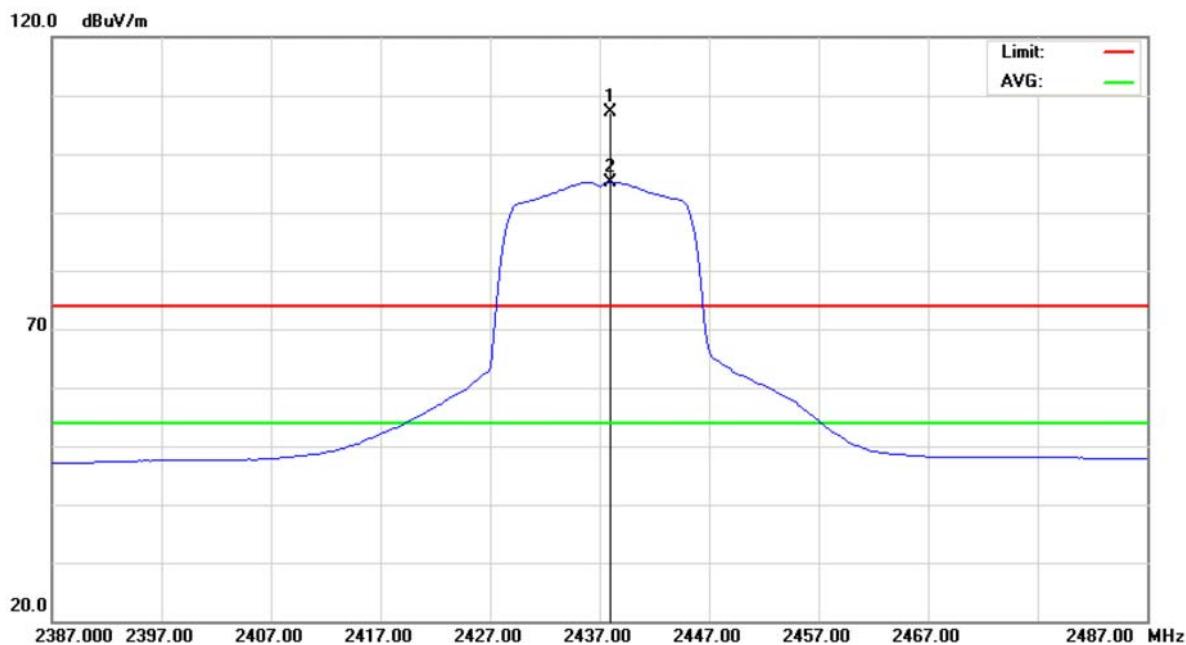


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Limit dB	Detector
1	4822.987	43.83	8.60	52.43	74.00	-21.57	peak
2	4822.987	30.88	8.60	39.48	54.00	-14.52	AVG
3	7237.225	44.17	16.28	60.45	74.00	-13.55	peak
4 *	7237.225	30.97	16.28	47.25	54.00	-6.75	AVG



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2437 MHz		

**Polarization: Vertical**

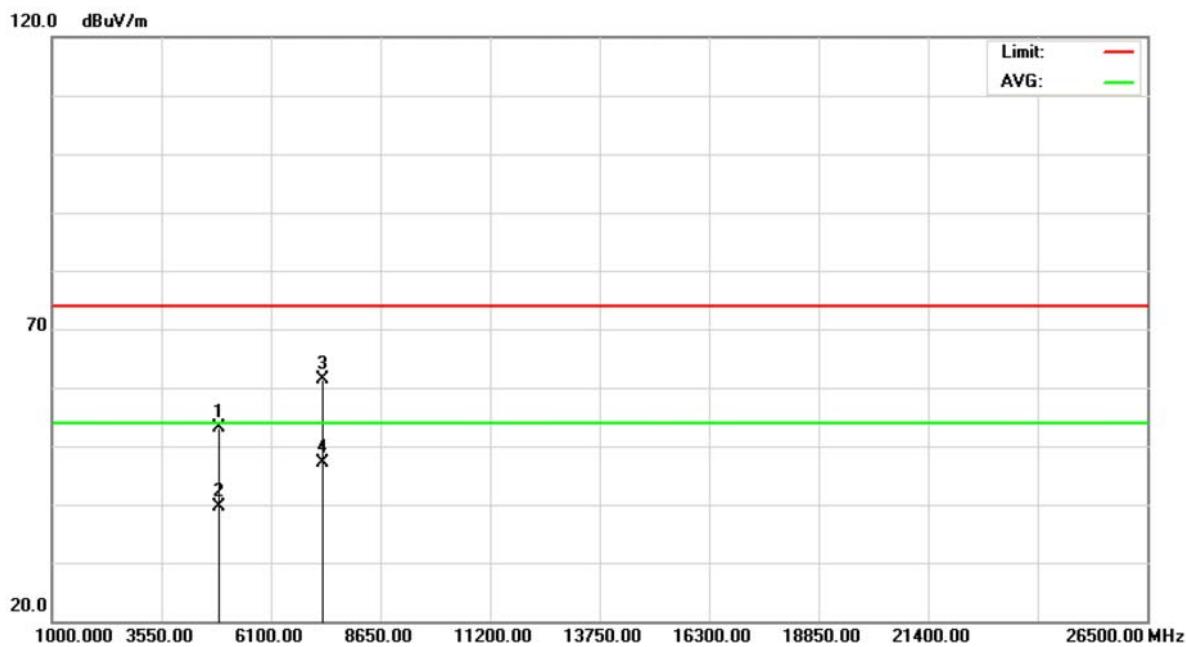


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Detector	Comment
1 X	2438.000	73.55	33.51	107.06	74.00	33.06	peak
2 *	2438.000	61.73	33.51	95.24	54.00	41.24	AVG



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2437 MHz		

**Polarization: Vertical**

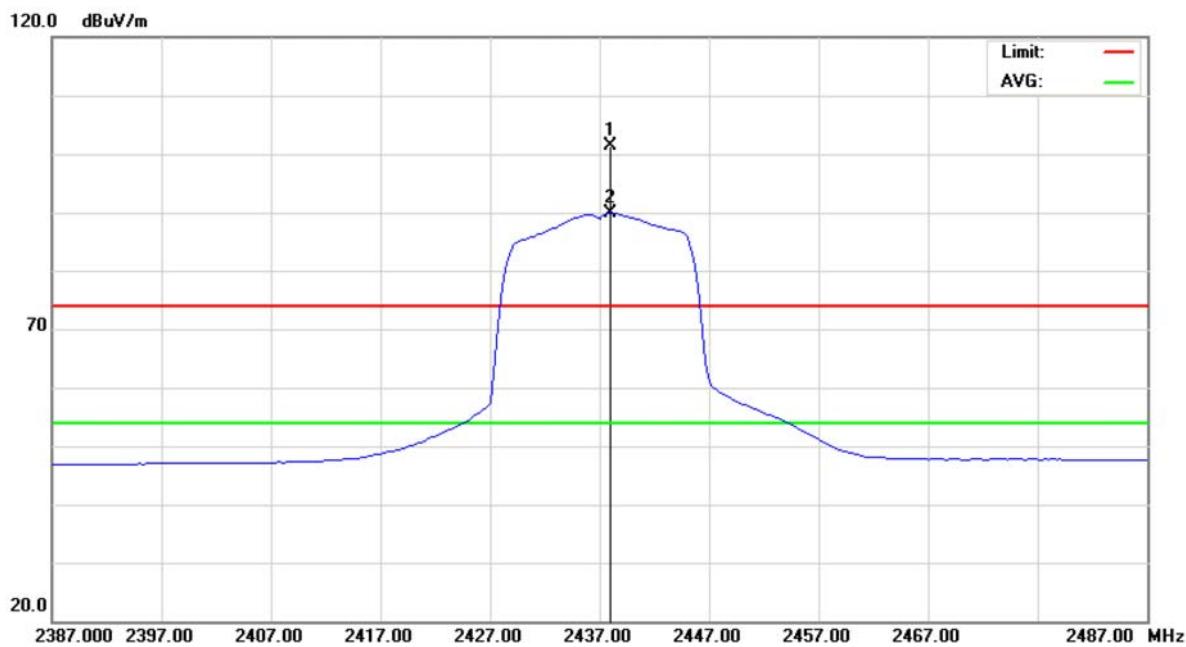


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Limit dB	Detector
1	4872.300	44.32	8.77	53.09	74.00	-20.91	peak
2	4872.300	30.77	8.77	39.54	54.00	-14.46	AVG
3	7310.250	44.79	16.53	61.32	74.00	-12.68	peak
4 *	7310.250	30.72	16.53	47.25	54.00	-6.75	AVG



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2437 MHz		

**Polarization: Horizontal**

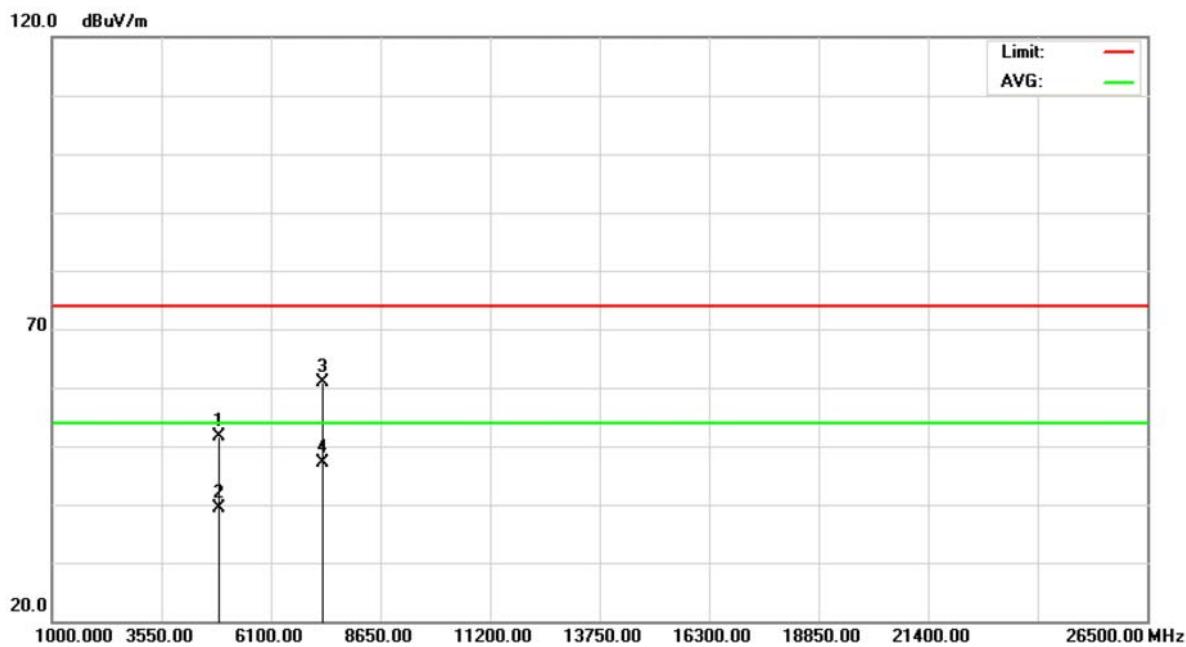


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Detector	Comment
1 X	2438.000	67.98	33.51	101.49	74.00	27.49	peak
2 *	2438.000	56.36	33.51	89.87	54.00	35.87	AVG



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2437 MHz		

**Polarization: Horizontal**

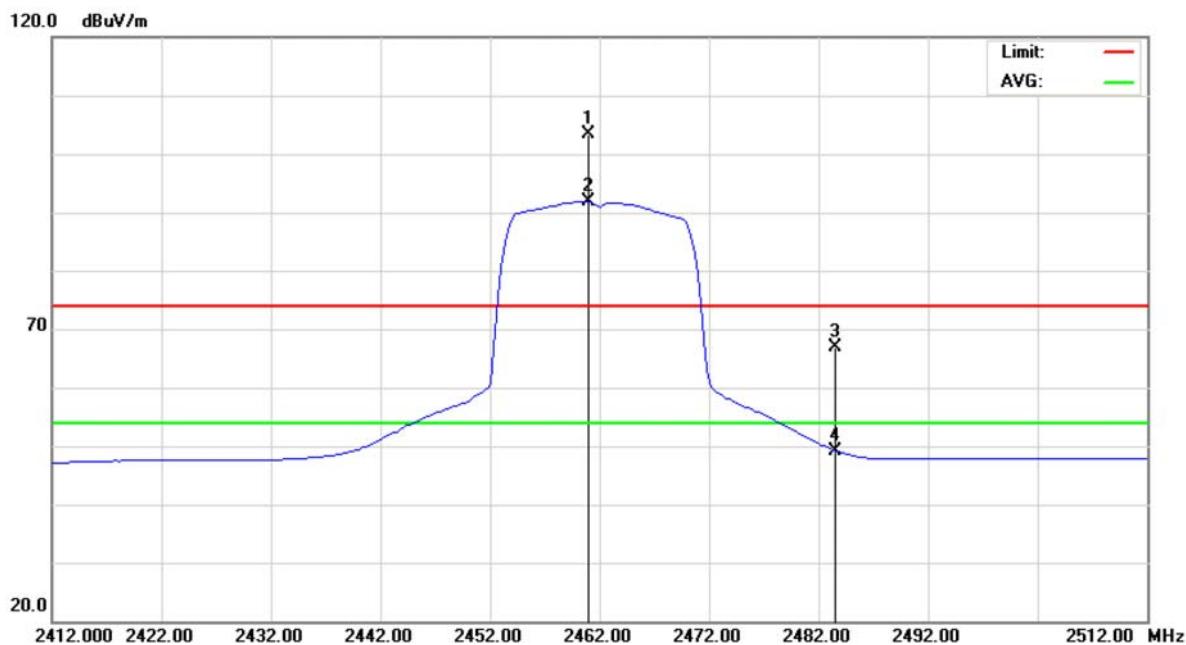


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Detector	Comment
1	4875.450	42.78	8.78	51.56	74.00	-22.44	peak
2	4875.450	30.62	8.78	39.40	54.00	-14.60	AVG
3	7310.175	44.33	16.53	60.86	74.00	-13.14	peak
4 *	7310.175	30.68	16.53	47.21	54.00	-6.79	AVG



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2462 MHz		

Polarization: Vertical

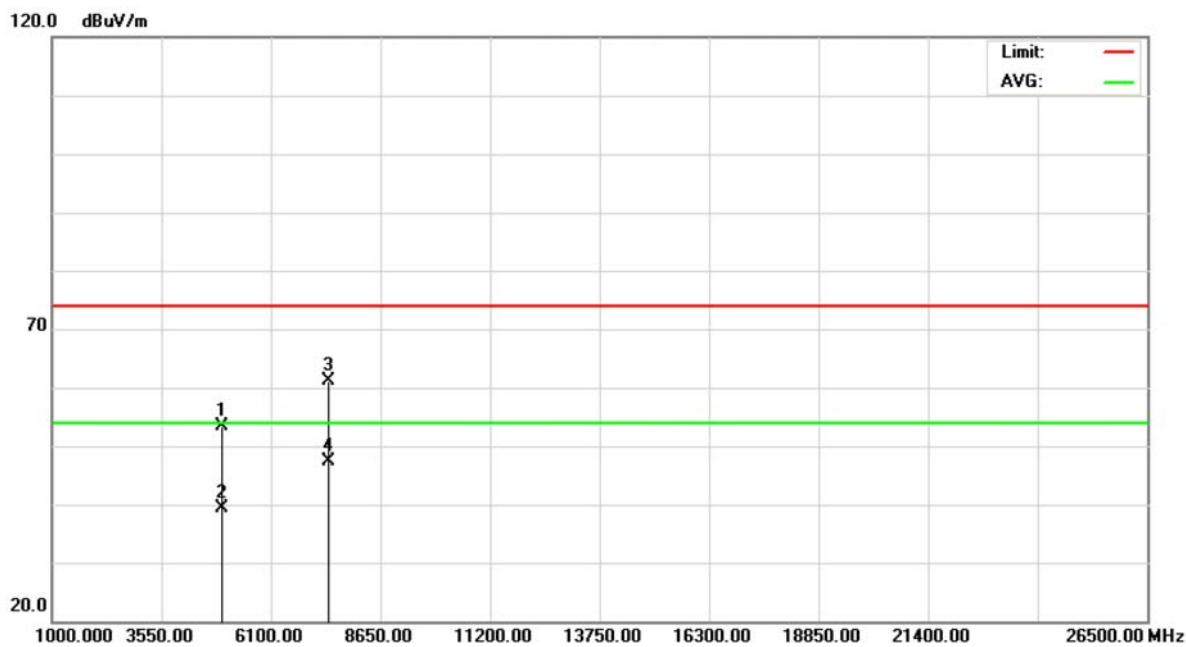


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Detector	Comment
1 X	2461.000	69.84	33.63	103.47	74.00	29.47	peak
2 *	2461.000	58.21	33.63	91.84	54.00	37.84	AVG
3	2483.500	33.19	33.75	66.94	74.00	-7.06	peak
4	2483.500	15.44	33.75	49.19	54.00	-4.81	AVG



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2462 MHz		

### Polarization: Vertical

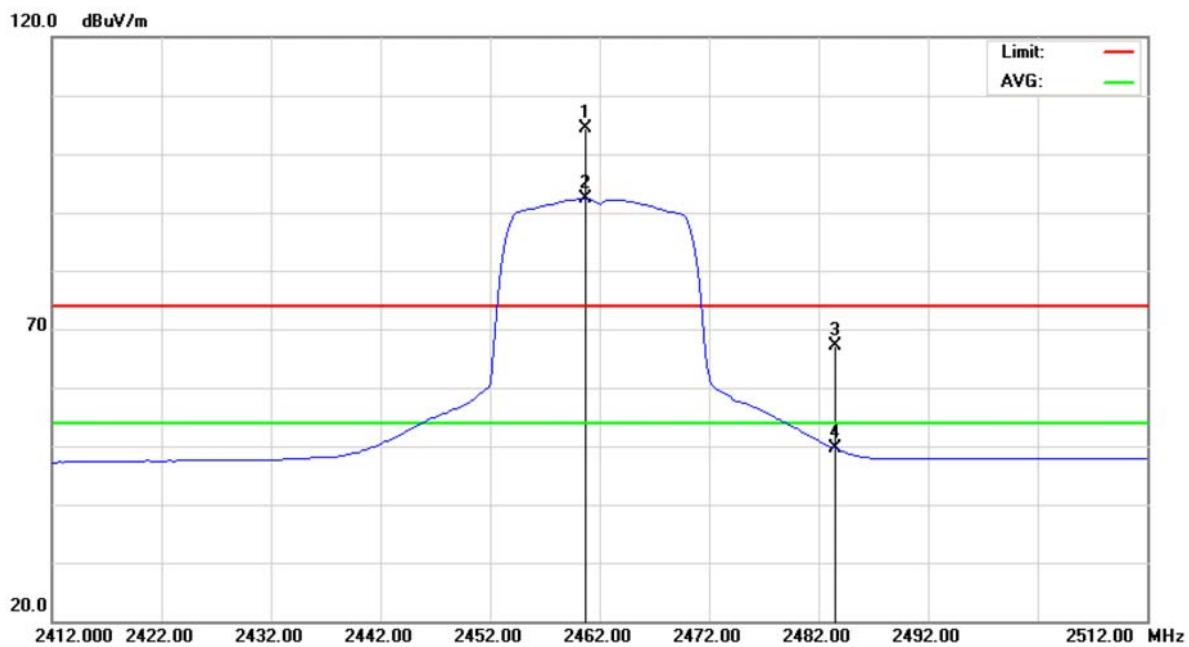


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Limit dB	Detector
1	4924.000	44.54	8.95	53.49	74.00	-20.51	peak
2	4924.000	30.53	8.95	39.48	54.00	-14.52	AVG
3	7385.150	44.23	16.79	61.02	74.00	-12.98	peak
4 *	7385.150	30.68	16.79	47.47	54.00	-6.53	AVG



E.U.T	PDA Scanner	Model Name	HT682
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	IEEE 802.11g/2462 MHz		

**Polarization: Horizontal**

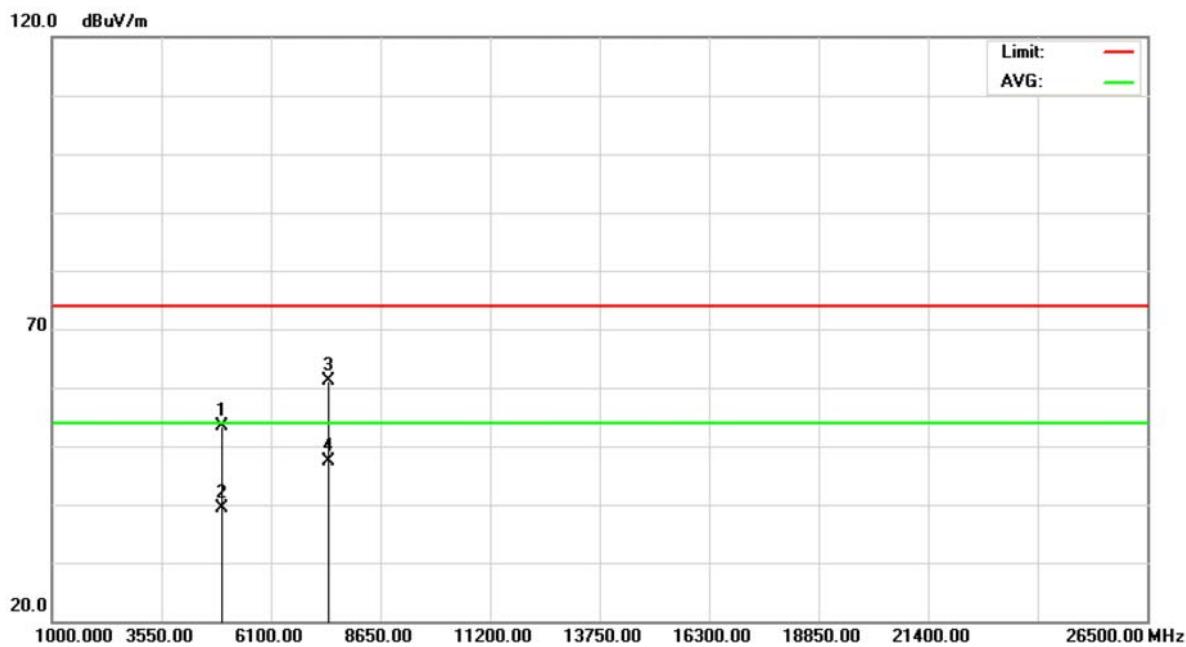


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Detector	Comment
1 X	2460.750	70.74	33.63	104.37	74.00	30.37	peak
2 *	2460.750	58.72	33.63	92.35	54.00	38.35	AVG
3	2483.500	33.42	33.75	67.17	74.00	-6.83	peak
4	2483.500	15.81	33.75	49.56	54.00	-4.44	AVG



E.U.T	PDA Scanner	Model Name	HT682
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	Measure- ment dBuV/m	Limit dBuV/m	Over	
						Detector	Comment
1	4921.925	44.53	8.94	53.47	74.00	-20.53	peak
2	4921.925	30.44	8.94	39.38	54.00	-14.62	AVG
3	7385.462	44.37	16.79	61.16	74.00	-12.84	peak
4 *	7385.462	30.63	16.79	47.42	54.00	-6.58	AVG