FCC Radio Test Report

FCC ID: 2AEDNA68

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

Project No.	: 1801C013B
Equipment	: wireless entry-level deskset, black
Test Model	: SL-640304-BK
Series Model	SL-640304-BK-XX ("XX" could be letter "A~Z", what stand for keyboard layout; or "XX" could be "V1~V10", what stand for keyboard version)
Applicant	: Winspeed Co.,Ltd.
Address	: 14F-1, No.2, Jian-Ba Rd., Chung-Ho City 235, Taipei, Taiwan

Date of Receipt	: Jan. 03, 2018
Date of Test	: Jan. 05, 2018 ~ Feb. 27, 2018
Issued Date	: Mar. 08, 2018
Tested by	: BTL Inc.

Testing Engineer : Welly Zhou
(Welly Zhou)

Technical Manager : Shawn Xiao
(Shawn Xiao)

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(David Mao)

BTL INC.

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NVLAP TESTING
NVLAP LAB CODE 200788-0

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Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

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REPORT ISSUED HISTORY

Issued No.	Version	Description	Issued Date
BTL-FCCP-1-1801C013B	Rev.01	Original Issue.	Mar. 06, 2018
BTL-FCCP-1-1801C013B	Rev.02	Product name is changed.	Mar. 08, 2018

1. CERTIFICATION

Equipment	:	wireless entry-level deskset, black
Brand Name	:	SPEEDLINK
Model Name	:	SL-640304-BK
Series Model		SL-640304-BK-XX ("XX" could be letter "A~Z", what stand for keyboard layout; or "XX" could be "V1~V10", what stand for keyboard version)
Applicant	:	Winspeed Co.,Ltd.
Manufacturer	:	Winspeed Co.,Ltd
Address	:	14F-1, No.2, Jian-Ba Rd., Chung-Ho City 235, Taipei, Taiwan
Date of Test	:	Jan. 05, 2018 ~ Feb. 27, 2018
Test Sample	:	Engineering Sample
Standard(s)	:	FCC Part15, Subpart C (15.249) / ANSI C63.10-2013

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-1-1801C013B) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP according to the ISO-17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): FCC Part15, Subpart C (15.249)			
Standard(s) Section	Test Item	Judgment	Remark
15.207(a)	Conducted Emission	PASS	
15.205	Restricted Band of Operation	PASS	
15.209 15.249(a)	Radiated Emissions	PASS	
15.215(c)	20dB Bandwidth Test	PASS	

NOTE:

(1)" N/A" denotes test is not applicable to this device.

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.
BTL's test firm number for FCC: 319330
BTL's designation number for FCC: CN5020

2.2 MEASUREMENT UNCERTAINTY

The measurement uncertainty figures shall be calculated according the methods described in the ETSI TR 100 028 and shall correspond to an expansion factor (coverage factor) k=1.96 or k=2(which provide confidence levels of respectively 90% and 95.45% in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)). Measurement Uncertainty for a Level of Confidence of 95 %, U=2xUc(y).

The BTL measurement uncertainty as below table:

A. Conducted Measurement:

Test Site	Method	Measurement Frequency Range	U, (dB)
DG-C02	CISPR	150 KHz ~ 30MHz	1.94

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
DG-CB03	CISPR	9KHz~30MHz	V	3.79
		9KHz~30MHz	H	3.57
		30MHz ~ 200MHz	V	3.82
		30MHz ~ 200MHz	H	3.78
		200MHz ~ 1,000MHz	V	4.10
		200MHz ~ 1,000MHz	H	4.06
		1GHz~18GHz	V	3.12
		1GHz~18GHz	H	3.68
		18GHz~40GHz	V	4.15
		18GHz~40GHz	H	4.14

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

3. GENERAL INFORMATION

3.1 DESCRIPTION OF EUT

Equipment	wireless entry-level deskset, black	
Brand Name	SPEEDLINK	
Model Name	SL-640304-BK	
Series Model	SL-640304-BK-XX ("XX" could be letter "A~Z", what stand for keyboard layout; or "XX" could be "V1~V10", what stand for keyboard version)	
Model Difference	The product is the same, the model name is different.	
Product Description	Operation Frequency	2408-2474 MHz
	Modulation Technology	FSK
	Bit Rate of Transmitter	1 Mbps
	Field Strength	81.72 dBuV/m (Peak Max) 77.65 dBuV/m (AVG Max)
Power Source	Supplied from MosArt receiver.	
EUT Power Rating	3 DC 5V, 40mA	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2408	13	2432	25	2456
02	2410	14	2434	26	2458
03	2412	15	2436	27	2460
04	2414	16	2438	28	2462
05	2416	17	2440	29	2464
06	2418	18	2442	30	2466
07	2420	19	2444	31	2468
08	2422	20	2446	32	2470
09	2424	21	2448	33	2472
10	2426	22	2450	34	2474
11	2428	23	2452		
12	2430	24	2454		

3. Table for Filed Antenna

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Printed	N/A	0

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.

Pretest Mode	Description
Mode 1	TX Mode

The EUT system operated these modes were found to be the worst case during the pre-scanning test as following:

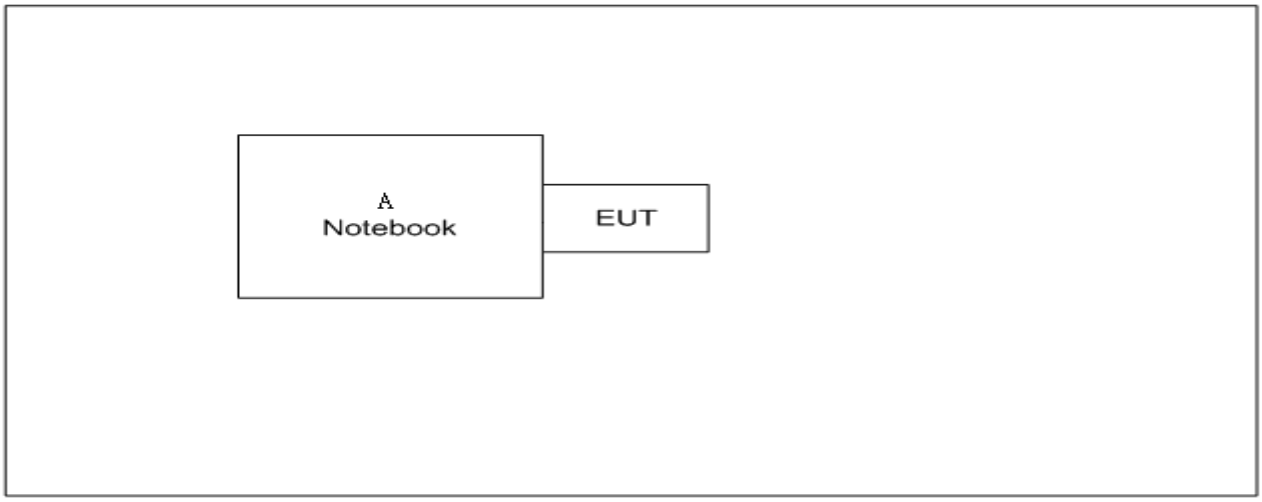
For Conducted Test	
Final Test Mode	Description
Mode 1	TX Mode

For Radiated Test	
Final Test Mode	Description
Mode 1	TX Mode **NOTE (1)**

Note:
(1) The measurements are performed at the high, middle, low available channels.

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated TX Mode:



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.
A	Notebook	Lenovo	DCSM	DOC	EB22953770

Item	Shielded Type	Ferrite Core	Length	Note
-	-	-	-	-

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

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 -0.	66 to 56*	56 to 46*
0.50 -5.0	56	46
5.0 -30.0	60	50

Note:

(1) The limit of " * " decreases with the logarithm of the frequency

(2) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Insertion Loss + Cable Loss - Amplifier Gain(if use)
Margin Level = Measurement Value - Limit Value

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

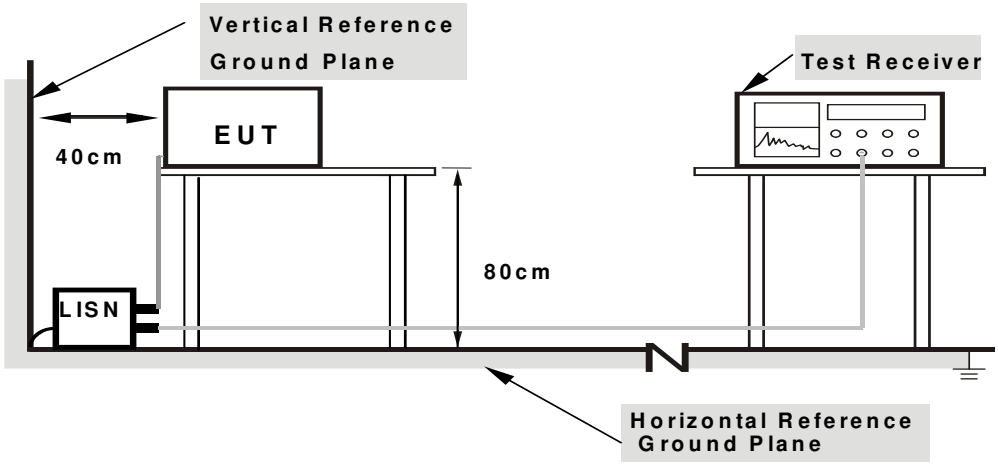
4.1.2 TEST PROCEDURE

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.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical function (as a customer would normally use it), EUT was programmed to be in continuously transmitting/receiving data or hopping on mode.

4.1.6 EUT TEST CONDITIONS

Temperature: 23°C
Relative Humidity: 60%
Test Voltage: AC 120V/60Hz

4.1.7 TEST RESULTS

Please refer to the Attachment A.

Remark:

(1) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the 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 QP Mode was measured, but AVG Mode didn't perform.In this case, a " * " marked in AVG Mode column of Interference Voltage Measured.
(2) Measuring frequency range from 150KHz to 30MHz.
(3) " N/A" denotes test is not applicable to this device.

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS (FCC 15.209)

Frequencies (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
960~1000	500	3

Harmonic emissions limits comply with below 54 dBuV/m at 3m. Other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or comply with the radiated emissions limits specified in section15.209(a) limit in the table below has to be followed.

Note:

(1) The tighter limit applies at the band edges.

(2) Emission level (dBuV/m)=20log Emission level (uV/m).

LIMITS OF RADIATED EMISSION MEASUREMENT (FCC 15.209)

FREQUENCY (MHz)	(dBuV/m) (at 3m)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

LIMITS OF RADIATED EMISSION MEASUREMENT (FCC Part 15.249)

FCC Part15 (15.249) , Subpart C	
Limit	Frequency Range(MHz)
Field strength of fundamental 50000 μV/m (94 dBμV/m) @ 3 m	2400-2483.5
Field strength of harmonics 500 μV/m (54 dBμV/m) @ 3 m	Above 2483.5

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9KHz~90KHz for PK/AVG detector
Start ~ Stop Frequency	90KHz~110KHz for QP detector
Start ~ Stop Frequency	110KHz~490KHz for PK/AVG detector
Start ~ Stop Frequency	490KHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector

4.2.2 TEST PROCEDURE

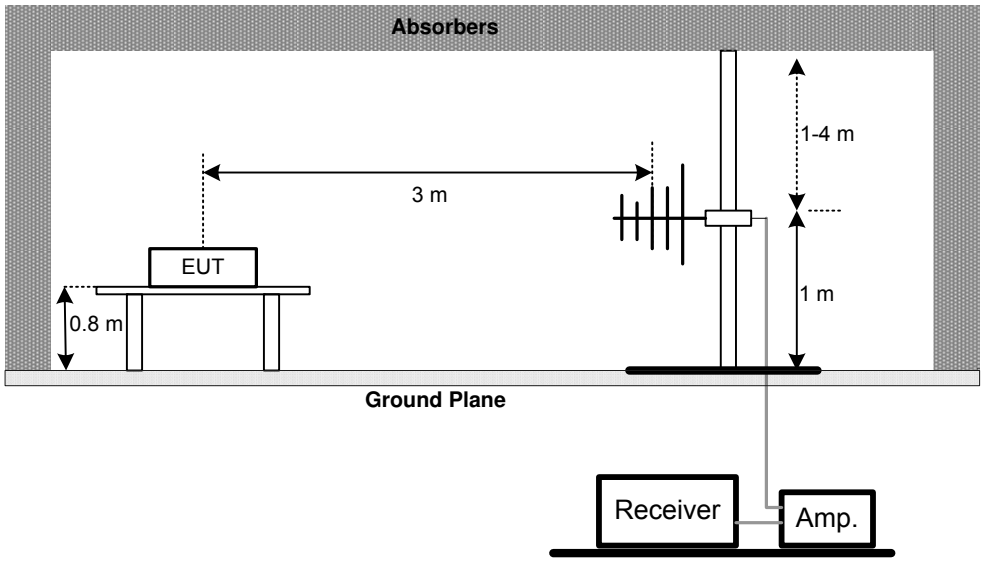
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
c. The height of the equipment or of the substitution antenna shall be 0.8 m or 1.5m, 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. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
g. 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. (below 1GHz)
h. 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. (above 1GHz)
i. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.3 DEVIATION FROM TEST STANDARD

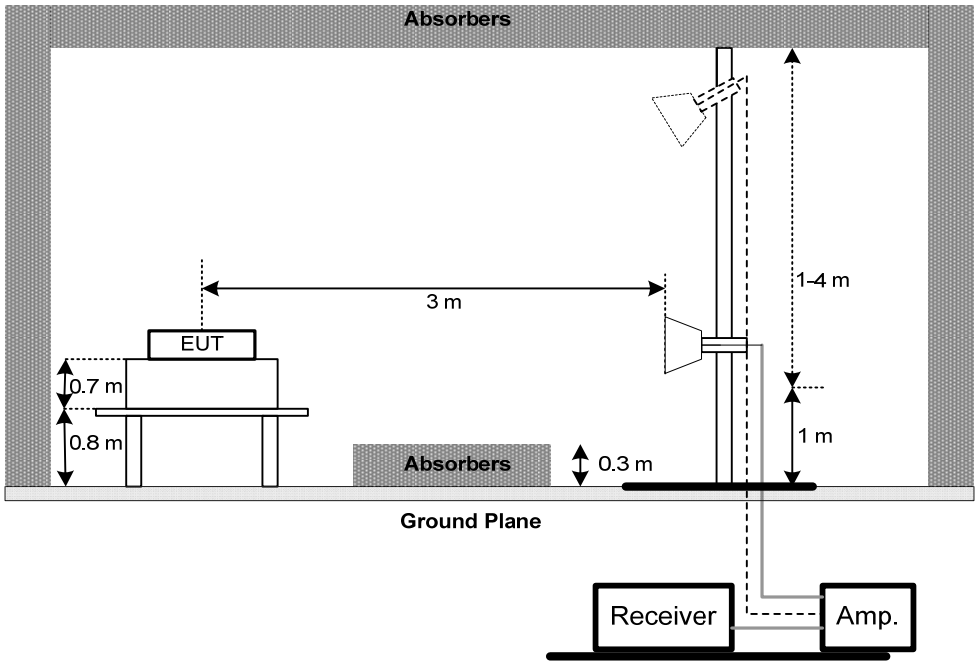
No deviation

4.2.4 TEST SETUP

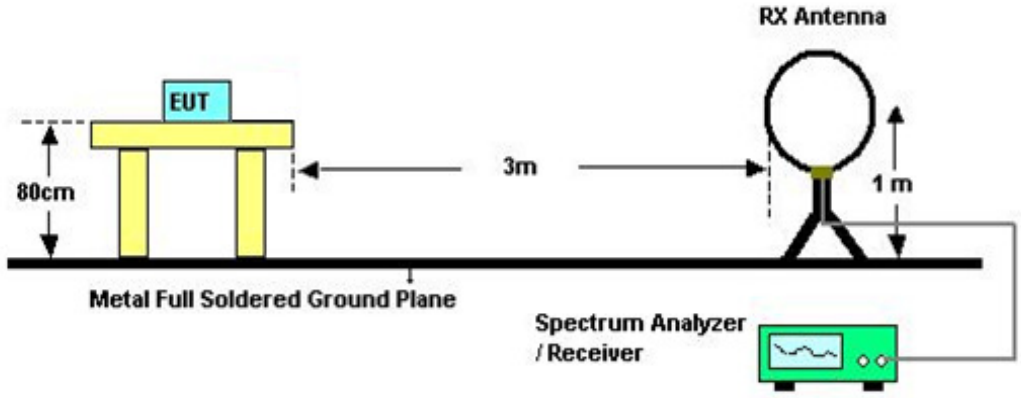
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz



(C) For radiated emissions below 30MHz



4.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.5** unless otherwise a special operating condition is specified in the follows during the testing.

4.2.6 EUT TEST CONDITIONS

Temperature: 25°C
Relative Humidity: 60%
Test Voltage: DC 5V

4.2.7 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the Attachment B

Remark:

(1) The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
(2) Distance extrapolation factor = 40 log (specific distance / test distance) (dB).
(3) Limit line = specific limits (dBuV) + distance extrapolation factor.

4.2.8 TEST RESULTS (30MHZ TO 1000MHZ)

Please refer to the Attachment C.

Remark:

(1) Measuring frequency range from 30MHz to 1000MHz.
(2) If the peak scan value lower limit more than 20dB, then this signal data does not show in table.

4.2.9TEST RESULTS (ABOVE 1000 MHZ)

Please refer to the Attachment D.

Remark:

(1) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission

(2) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(3) EUT Orthogonal Axis:
"X" - denotes Laid on Table, "Y" - denotes Vertical Stand, "Z" - denotes Side Stand

(4) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

(5) No limit: This is fundamental signal, the judgment is not applicable.
For fundamental signal judgment was referred to Peak output test.

5. BANDWIDTH TEST

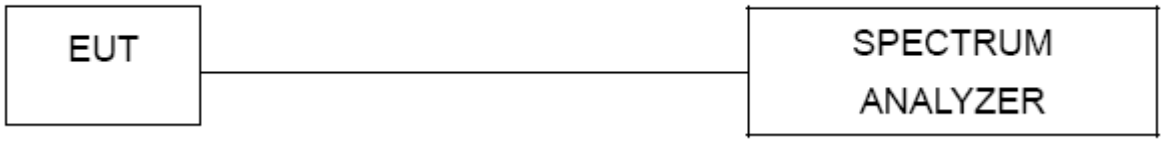
5.1 TEST PROCEDURE

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.

5.2 DEVIATION FROM STANDARD

No deviation.

5.3 TEST SETUP



5.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.5 EUT TEST CONDITIONS

Temperature: 25°C
Relative Humidity: 60%
Test Voltage: DC 5V

5.6 TEST RESULTS

Please refer to the Attachment E.

6. MEASUREMENT INSTRUMENTS LIST

Conducted Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EMI Test Receiver	R&S	ESCI	100382	Mar. 26, 2018
2	LISN	EMCO	3816/2	52765	Mar. 26, 2018
3	50Ω Terminator	SHX	TF2-3G-A	8122901	Mar. 26, 2018
4	TWO-LINE V-NETWORK	R&S	ENV216	101447	Mar. 26, 2018
5	Cable	emci	RG223(9KHz-30 MHz)(5m)	N/A	Mar. 09, 2018
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Mar. 26, 2018
2	Amplifier	HP	8447D	2944A09673	Oct. 19, 2018
3	Receiver	AGILENT	N9038A	MY52130039	Sep. 03, 2018
4	Test Cable	emci	LMR-400(30MH z-1GHz)	C-01	Jun. 26, 2018
5	Controller	CT	SC100	N/A	N/A
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
7	Antenna	ETS	3115	00075789	Mar. 26, 2018
8	Amplifier	Agilent	8449B	3008A02274	Nov. 01, 2018
9	Test Cable	emci	EMC104-SM-S M-10000(1GHz-26.5GHz)	C-68	Jun. 25, 2018
10	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Mar. 26, 2018
11	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 26, 2018
12	EMI Test Receiver	R&S	ESCI	100895	Mar. 26, 2018
13	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Sep. 06, 2018

Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Sep. 03, 2018

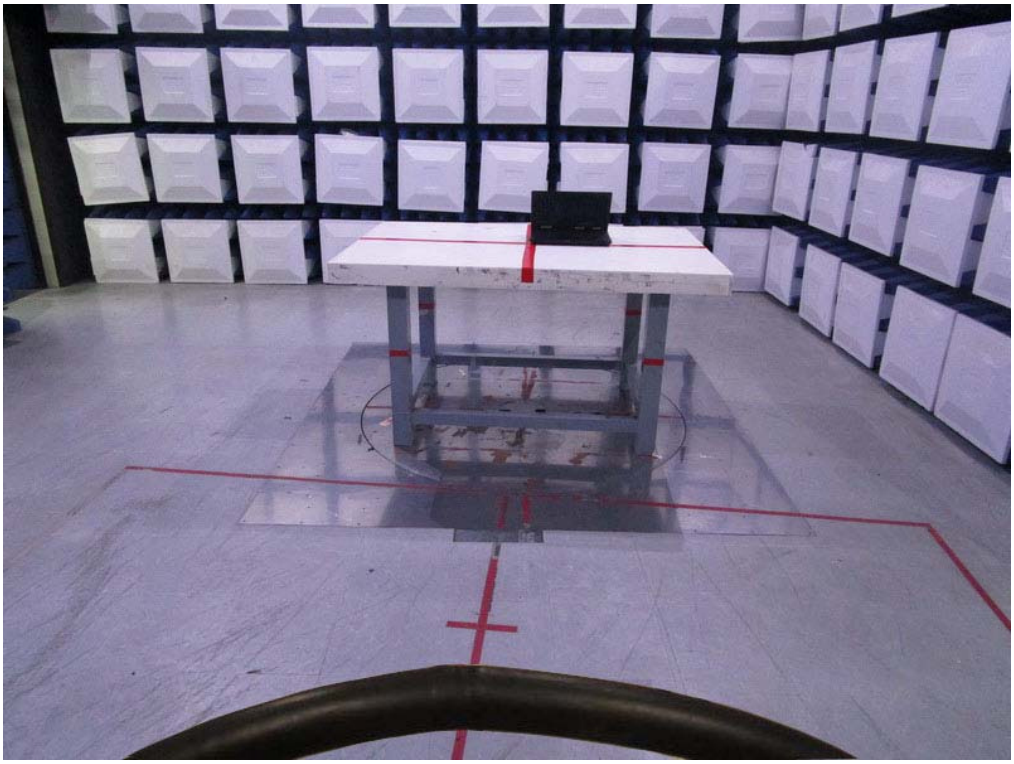
Remark: ”N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

7. EUT TEST PHOTO

Conducted Measurement Photos

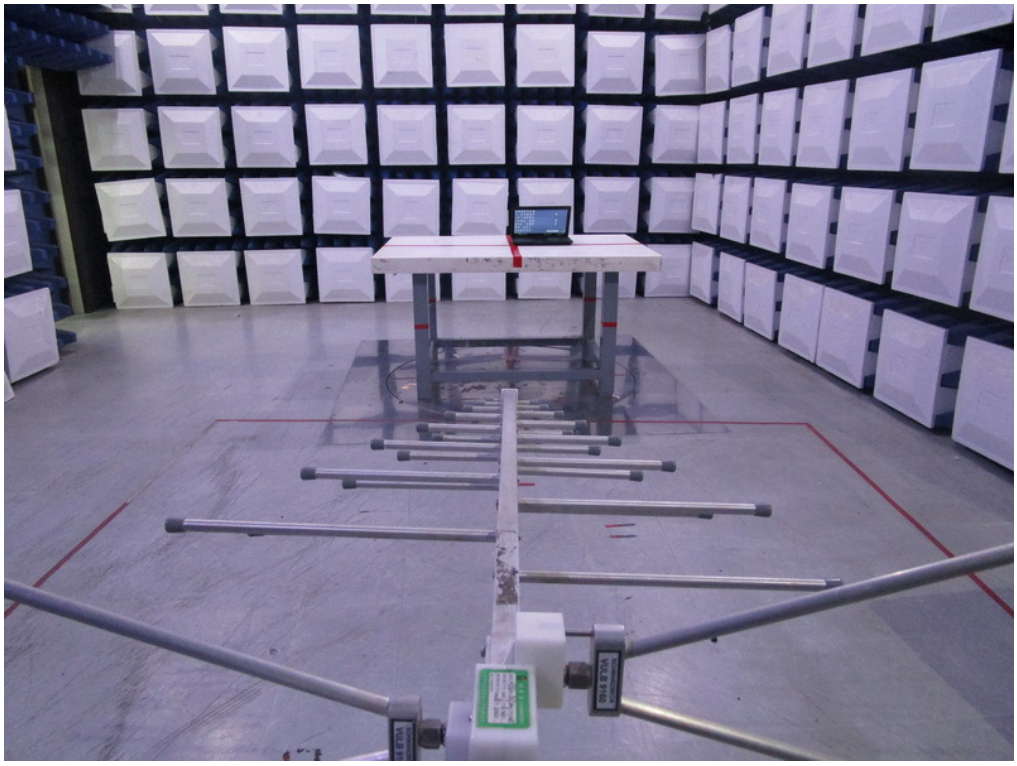
Radiated Measurement Photos

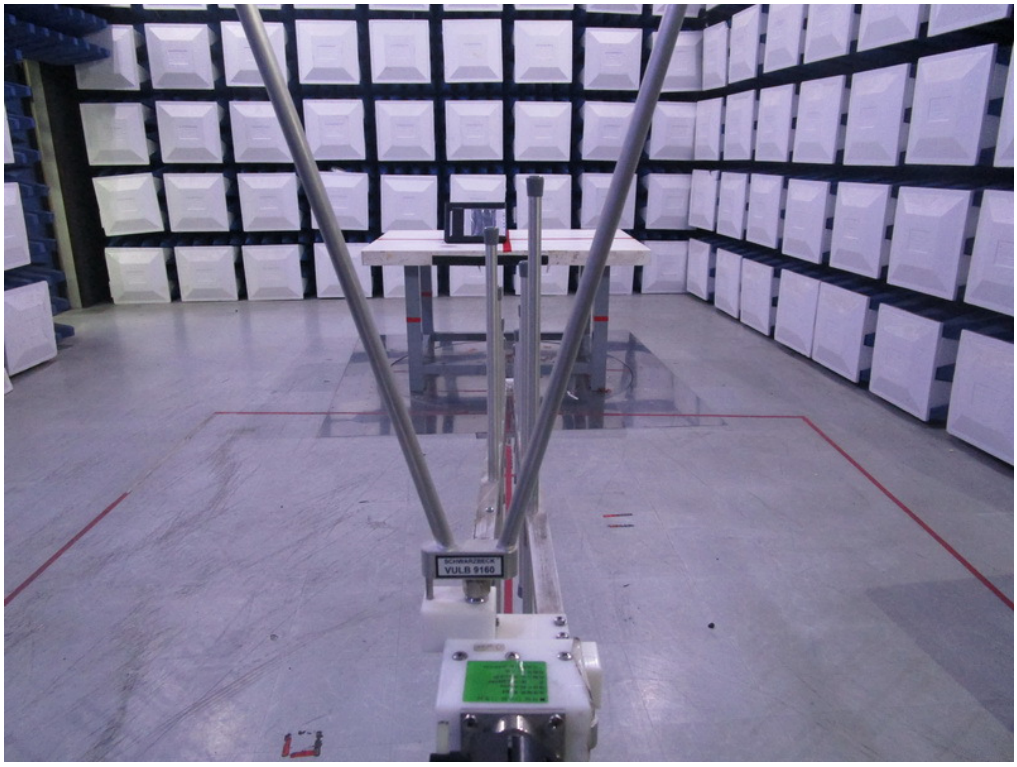
9KHz to 30MHz



Radiated Measurement Photos

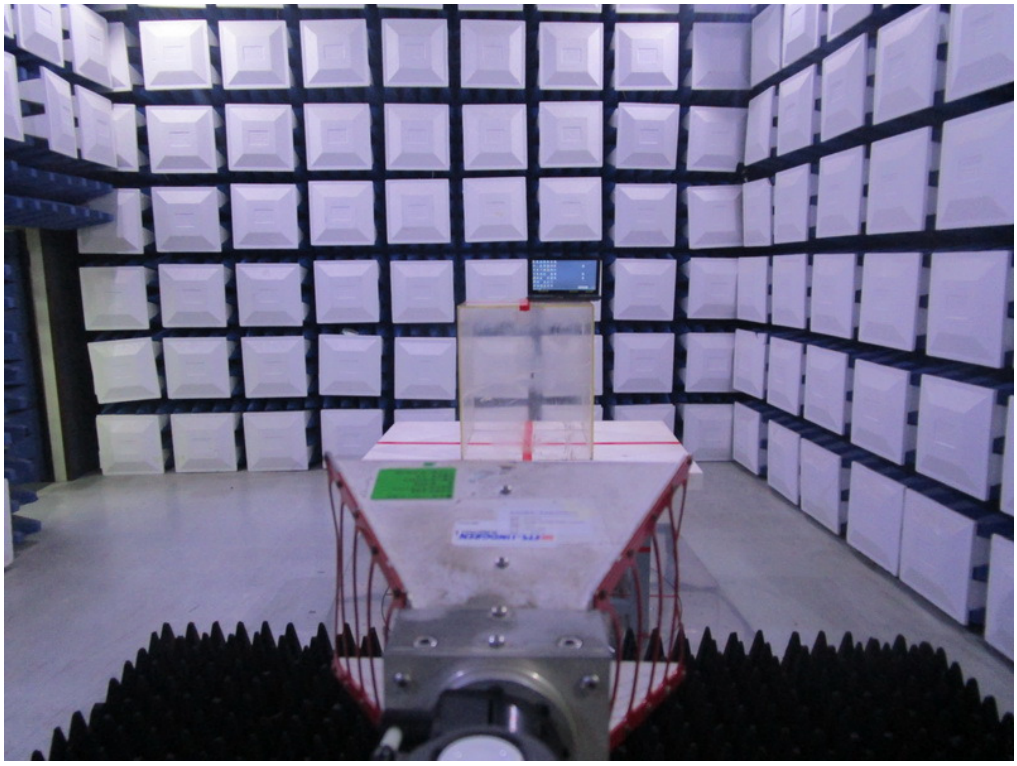
30MHz to 1000MHz

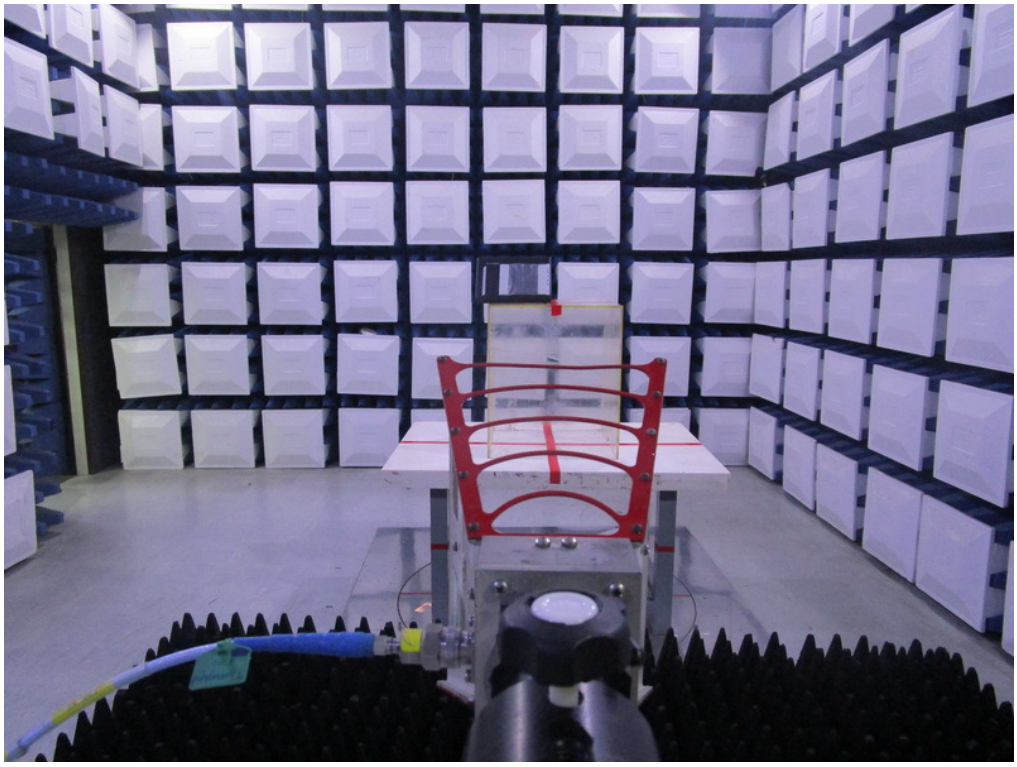




Radiated Measurement Photos

Above 1000MHz

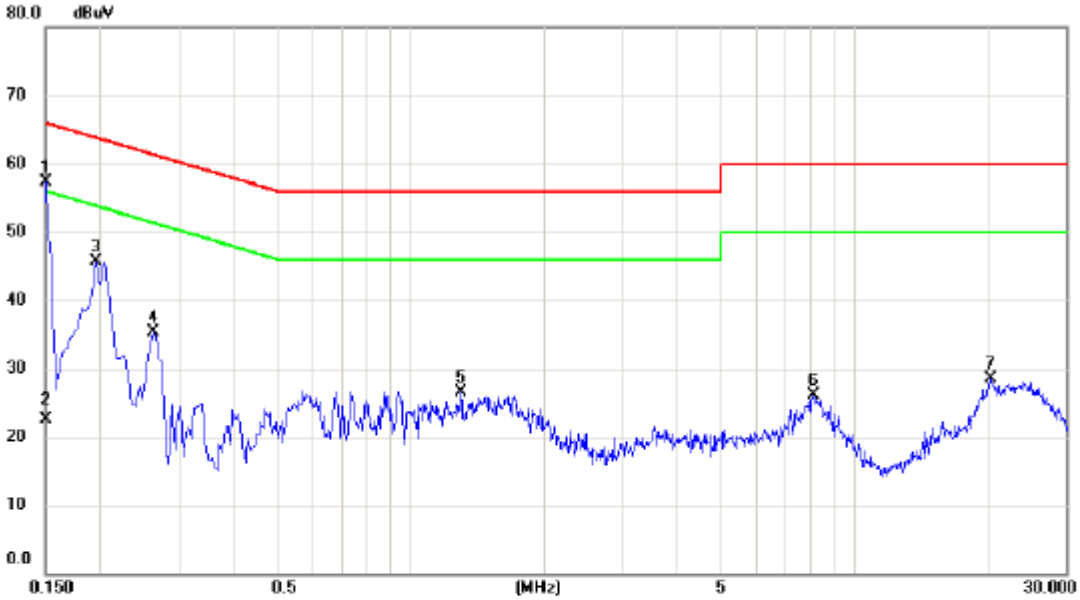




ATTACHMENT A - CONDUCTED EMISSION

Test Mode:	TX MODE

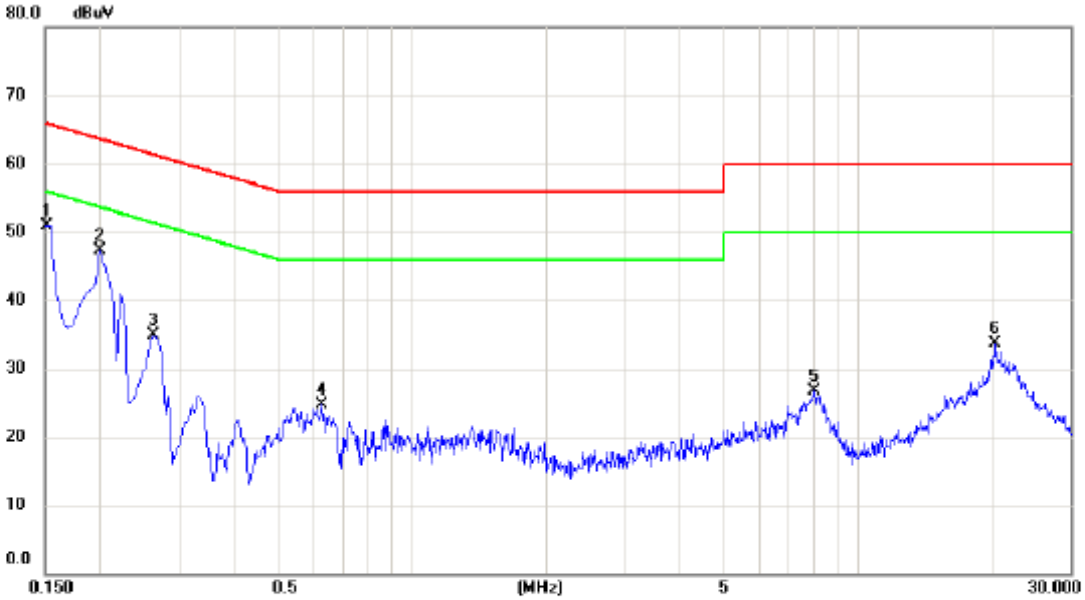
Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1500	47.56	9.72	57.28	66.00	-8.72	peak	
2		0.1500	12.80	9.72	22.52	56.00	-33.48	AVG	
3		0.1950	36.05	9.69	45.74	63.82	-18.08	peak	
4		0.2625	25.64	9.69	35.33	61.35	-26.02	peak	
5		1.3020	16.76	9.72	26.48	56.00	-29.52	peak	
6		8.0700	16.21	9.80	26.01	60.00	-33.99	peak	
7		20.2785	18.53	9.95	28.48	60.00	-31.52	peak	

Test Mode:	TX MODE

Neutral

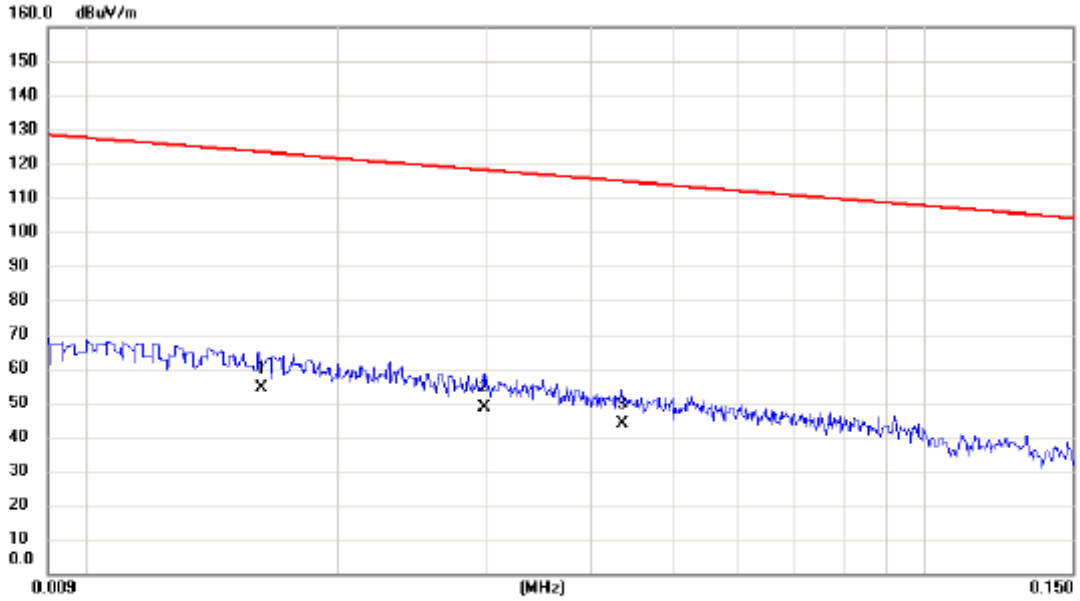


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1516	41.28	9.61	50.89	65.91	-15.02	peak	
2		0.1995	37.59	9.62	47.21	63.63	-16.42	peak	
3		0.2625	25.24	9.60	34.84	61.35	-26.51	peak	
4		0.6270	15.19	9.61	24.80	56.00	-31.20	peak	
5		7.9575	17.02	9.73	26.75	60.00	-33.25	peak	
6		20.2290	23.65	10.06	33.71	60.00	-26.29	peak	

ATTACHMENT B - RADIATED EMISSION (9KHZ TO 30MHZ)

Test Mode:	TX Mode

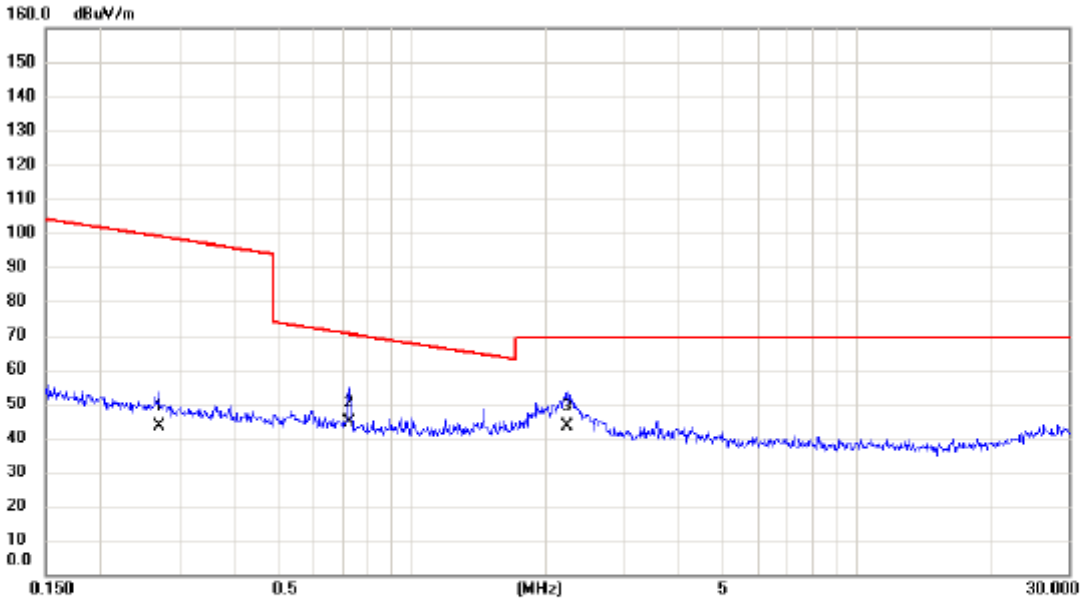
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0162	34.02	20.11	54.13	123.41	-69.28	AVG	
2		0.0298	29.08	19.33	48.41	118.12	-69.71	AVG	
3		0.0435	25.06	18.91	43.97	114.84	-70.87	AVG	

Test Mode:	TX Mode

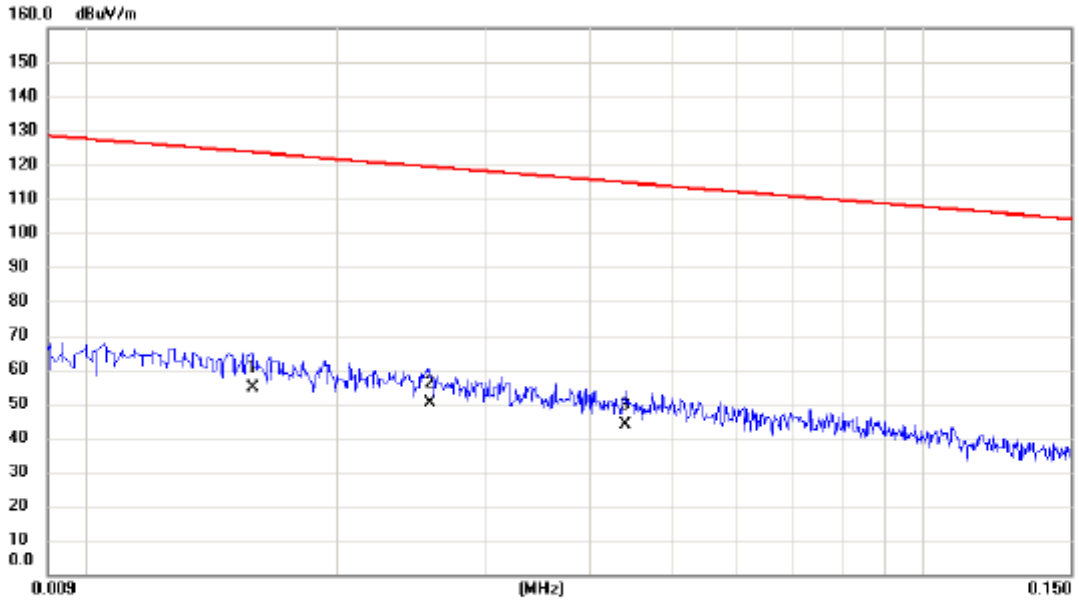
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.2701	26.58	16.64	43.22	98.97	-55.75	AVG	
2	*	0.7236	28.45	16.21	44.66	70.41	-25.75	QP	
3		2.2367	27.87	15.44	43.31	69.54	-26.23	QP	

Test Mode:	TX Mode

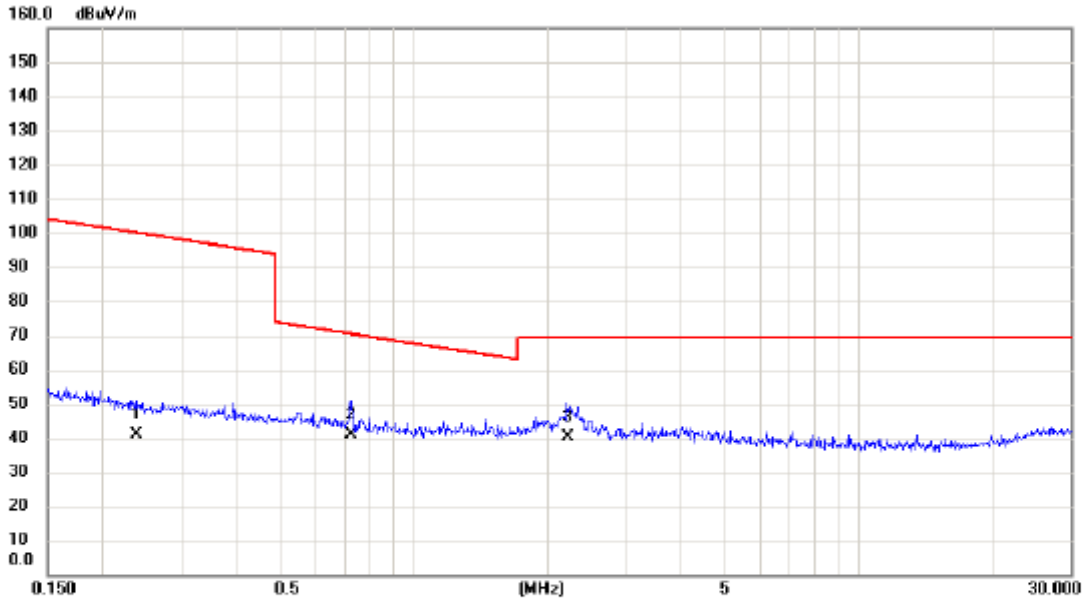
Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0158	34.39	20.17	54.56	123.63	-69.07	AVG	
2		0.0258	30.83	19.45	50.28	119.37	-69.09	AVG	
3		0.0440	24.75	18.90	43.65	114.74	-71.09	AVG	

Test Mode:	TX Mode

Ant 90°

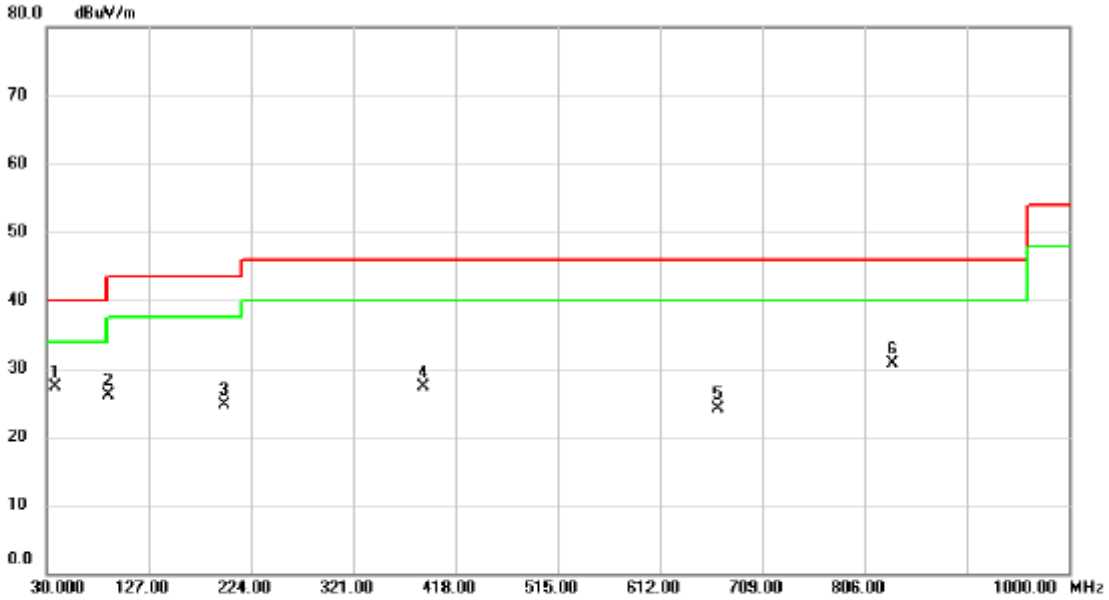


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.2391	24.35	16.69	41.04	100.03	-58.99	AVG	
2		0.7236	24.65	16.21	40.86	70.41	-29.55	QP	
3	*	2.2132	24.60	15.45	40.05	69.54	-29.49	QP	

ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)

Test Mode:	TX 2408MHz

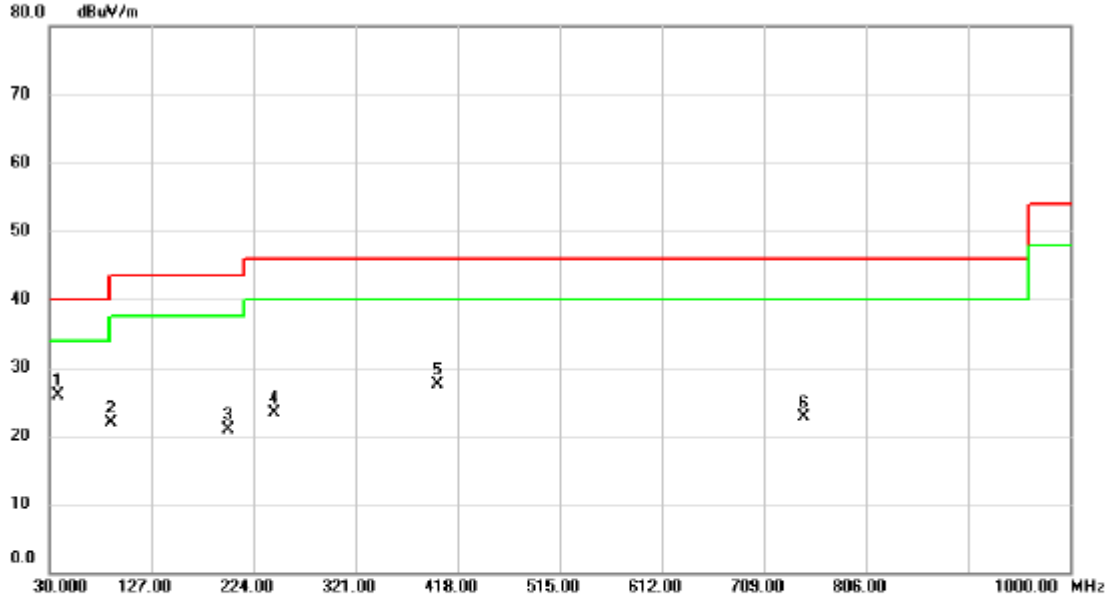
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	38.730	49.60	-22.27	27.33	40.00	-12.67	peak	
2		88.200	50.72	-24.69	26.03	43.50	-17.47	peak	
3		198.780	43.06	-18.43	24.63	43.50	-18.87	peak	
4		386.960	45.32	-18.03	27.29	46.00	-18.71	peak	
5		666.320	33.22	-9.08	24.14	46.00	-21.86	peak	
6		832.190	33.92	-3.17	30.75	46.00	-15.25	peak	

Test Mode:	TX 2408MHz

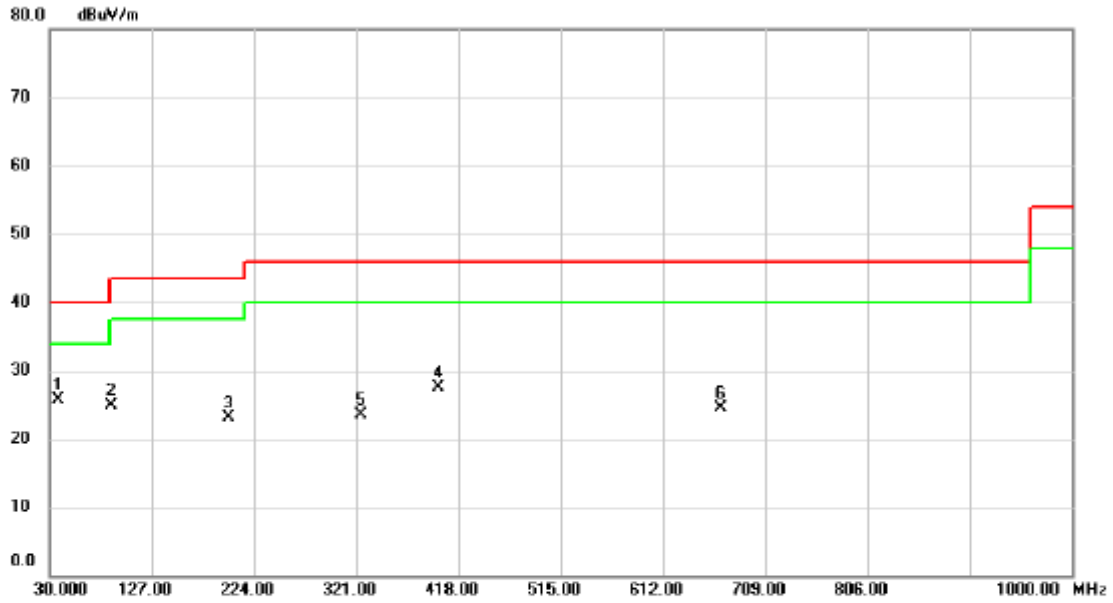
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	38.730	48.51	-22.67	25.84	40.00	-14.16	peak	
2		89.170	47.38	-25.40	21.98	43.50	-21.52	peak	
3		199.750	40.44	-19.50	20.94	43.50	-22.56	peak	
4		244.370	43.45	-20.12	23.33	46.00	-22.67	peak	
5		398.600	41.56	-13.96	27.60	46.00	-18.40	peak	
6		746.830	28.41	-5.66	22.75	46.00	-23.25	peak	

Test Mode:	TX 2440MHz

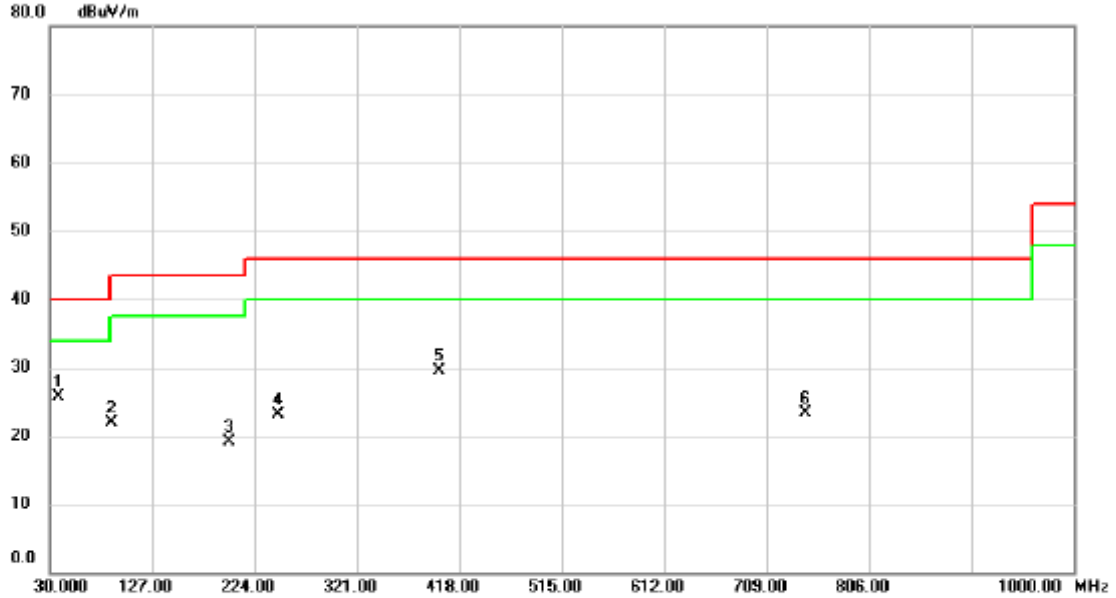
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	38.730	48.00	-22.27	25.73	40.00	-14.27	peak	
2		89.170	49.64	-24.75	24.89	43.50	-18.61	peak	
3		199.750	41.61	-18.53	23.08	43.50	-20.42	peak	
4		398.600	44.81	-17.27	27.54	46.00	-18.46	peak	
5		325.850	42.13	-18.59	23.54	46.00	-22.46	peak	
6		666.320	33.67	-9.08	24.59	46.00	-21.41	peak	

Test Mode:	TX 2440MHz

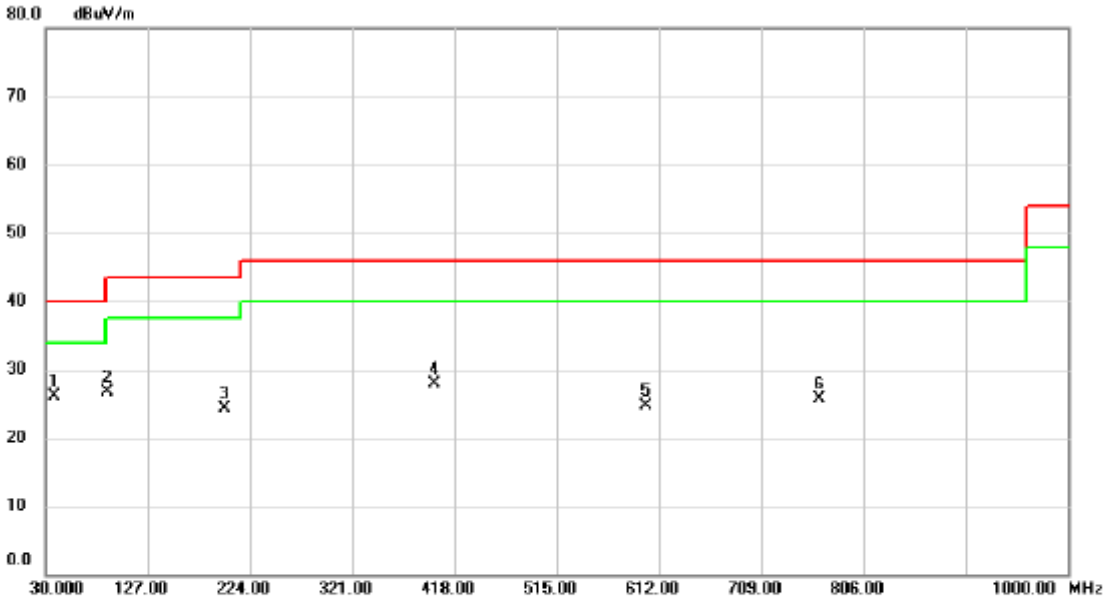
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	38.730	48.41	-22.67	25.74	40.00	-14.26	peak	
2		88.200	47.35	-25.45	21.90	43.50	-21.60	peak	
3		199.750	38.55	-19.50	19.05	43.50	-24.45	peak	
4		246.310	43.18	-20.04	23.14	46.00	-22.86	peak	
5		398.600	43.48	-13.96	29.52	46.00	-16.48	peak	
6		745.860	28.88	-5.64	23.24	46.00	-22.76	peak	

Test Mode:	TX 2474MHz

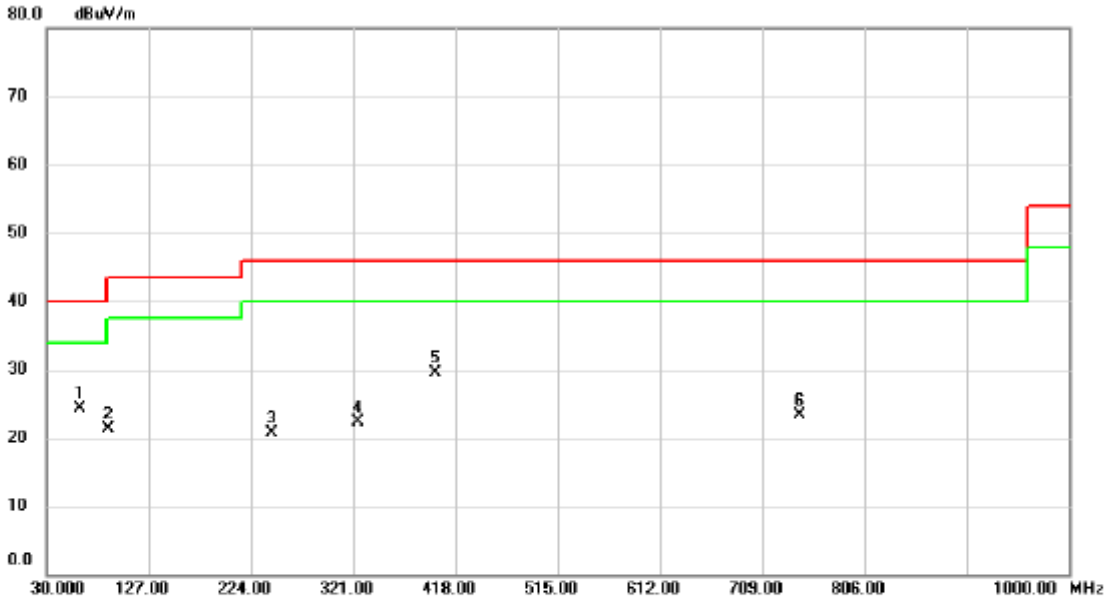
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	37.760	48.38	-22.34	26.04	40.00	-13.96	peak	
2		89.170	51.42	-24.75	26.67	43.50	-16.83	peak	
3		199.750	42.92	-18.53	24.39	43.50	-19.11	peak	
4		399.570	45.04	-17.21	27.83	46.00	-18.17	peak	
5		599.390	33.47	-8.79	24.68	46.00	-21.32	peak	
6		763.320	29.09	-3.41	25.68	46.00	-20.32	peak	

Test Mode:	TX 2474MHz

Horizontal

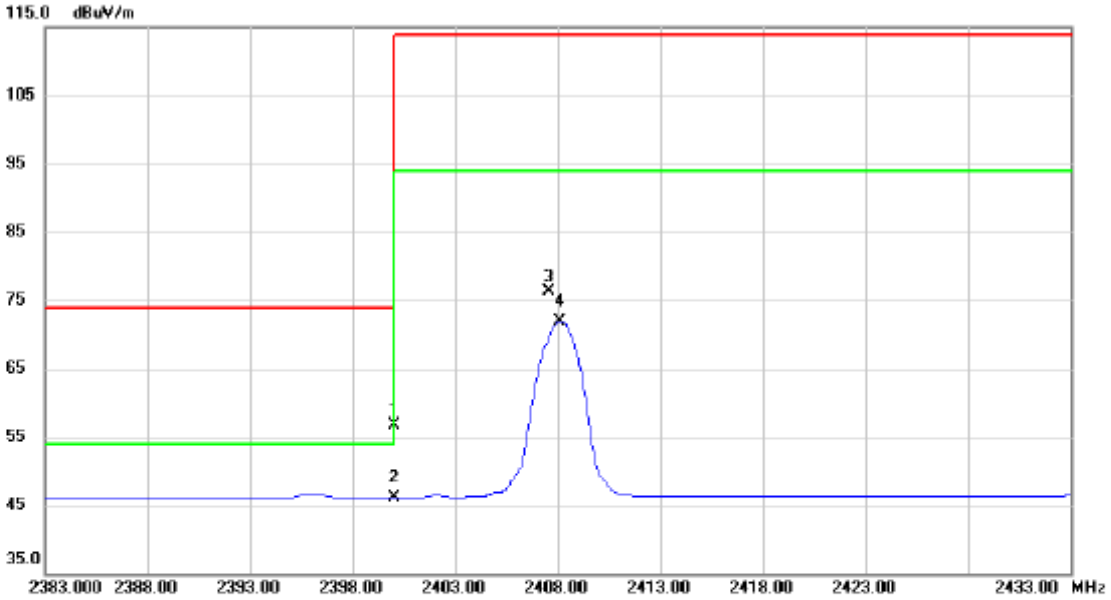


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	62.010	47.55	-23.22	24.33	40.00	-15.67	peak	
2		88.200	46.77	-25.45	21.32	43.50	-22.18	peak	
3		243.400	40.94	-20.15	20.79	46.00	-25.21	peak	
4		324.880	40.42	-18.03	22.39	46.00	-23.61	peak	
5		398.600	43.40	-13.96	29.44	46.00	-16.56	peak	
6		743.920	28.88	-5.60	23.28	46.00	-22.72	peak	

ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)

Test Mode	TX Mode_2408 MHz

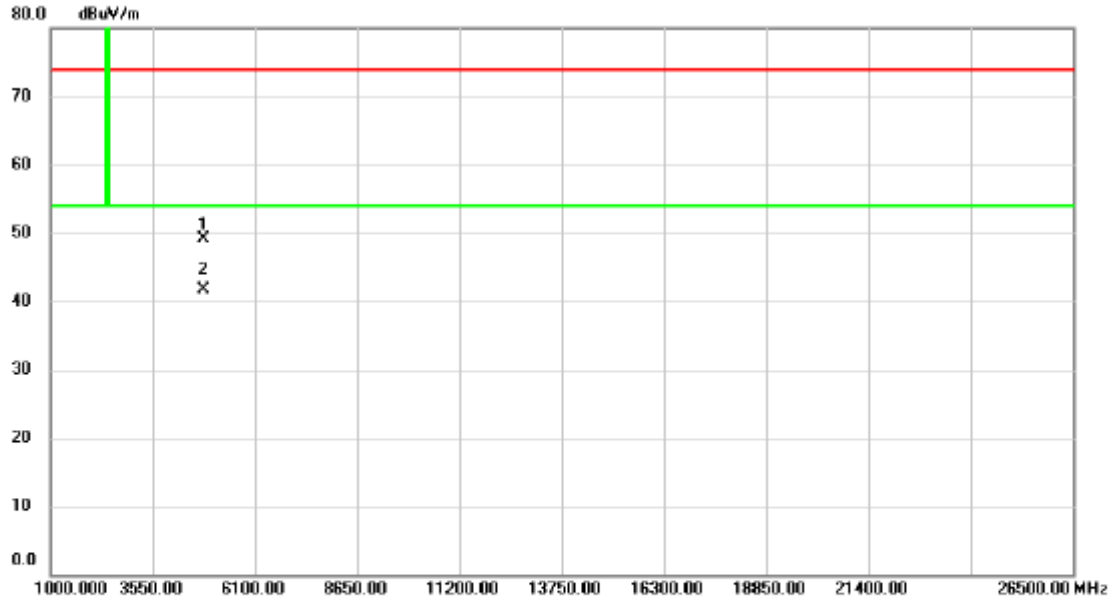
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2400.000	23.61	33.09	56.70	74.00	-17.30	peak	
2	*	2400.000	12.94	33.09	46.03	54.00	-7.97	AVG	
3		2407.575	43.13	33.12	76.25	114.00	-37.75	peak	
4		2408.125	38.88	33.12	72.00	94.00	-22.00	AVG	

Test Mode	TX Mode_2408 MHz

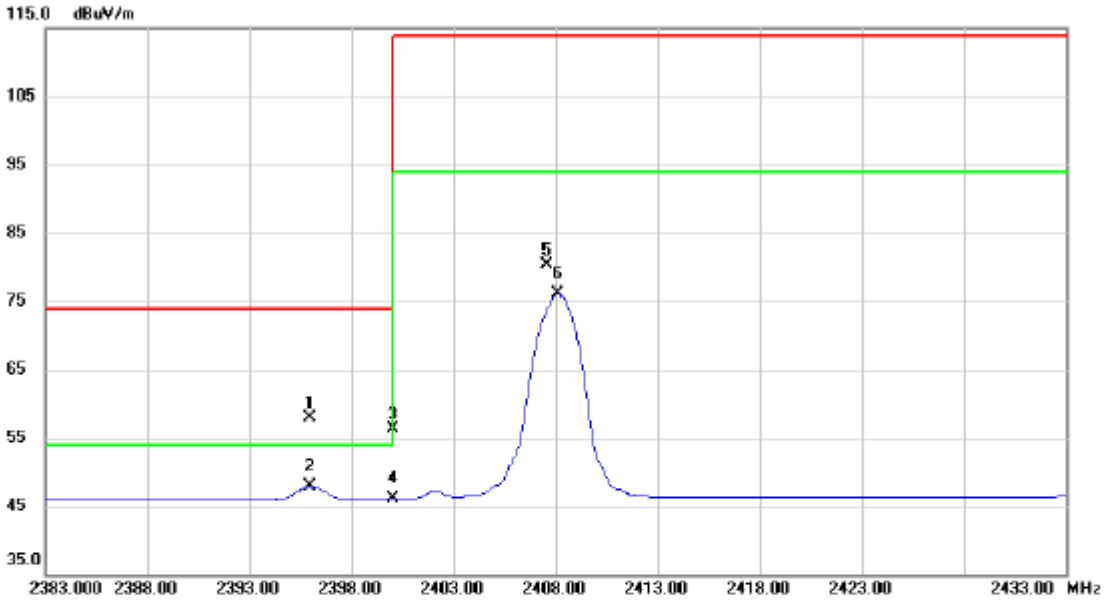
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4817.087	42.55	6.64	49.19	74.00	-24.81	peak	
2	*	4817.140	35.14	6.64	41.78	54.00	-12.22	AVG	

Test Mode	TX Mode_2408 MHz

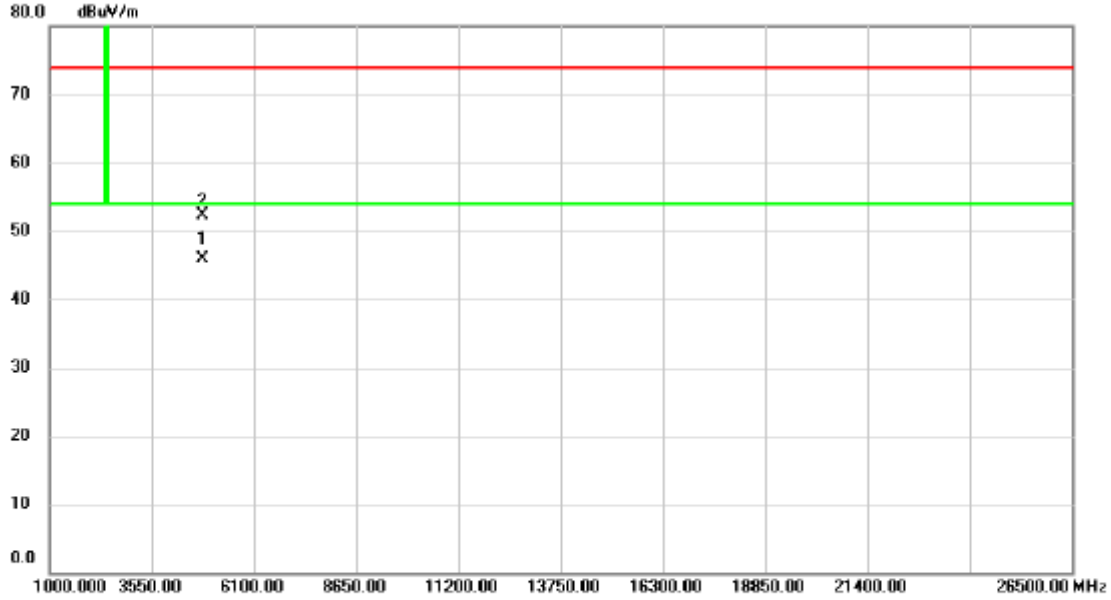
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2395.950	24.76	33.08	57.84	74.00	-16.16	peak	
2	*	2395.950	14.78	33.08	47.86	54.00	-6.14	AVG	
3		2400.000	23.29	33.09	56.38	74.00	-17.62	peak	
4		2400.000	13.01	33.09	46.10	54.00	-7.90	AVG	
5		2407.600	47.19	33.12	80.31	114.00	-33.69	peak	
6		2408.125	43.02	33.12	76.14	94.00	-17.86	AVG	

Test Mode	TX Mode_2408 MHz

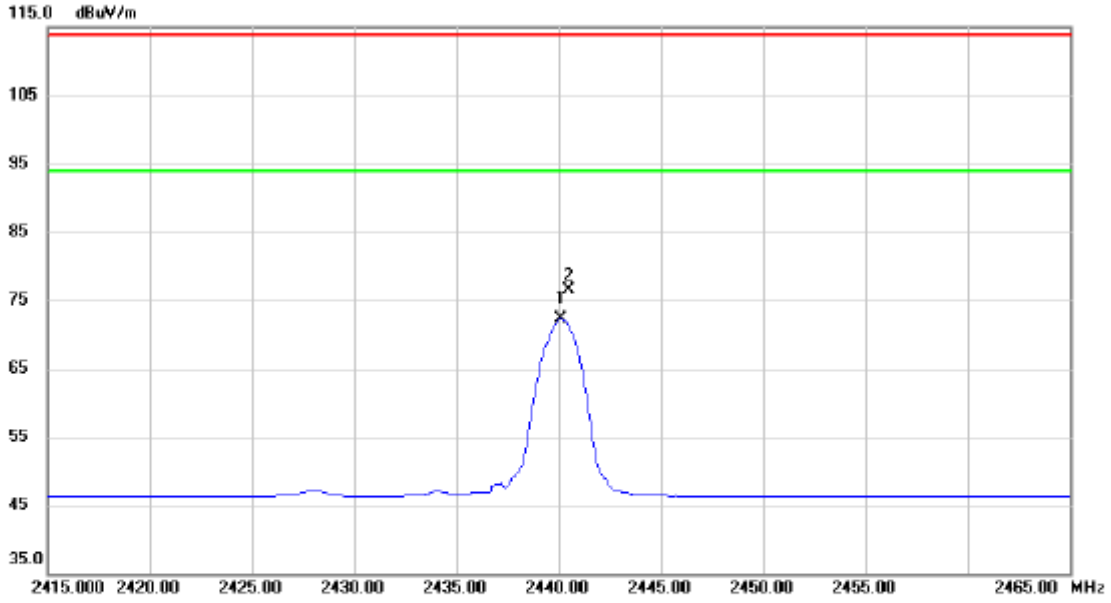
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4817.065	39.17	6.64	45.81	54.00	-8.19	AVG	
2		4817.083	45.74	6.64	52.38	74.00	-21.62	peak	

Test Mode	TX Mode_2440 MHz

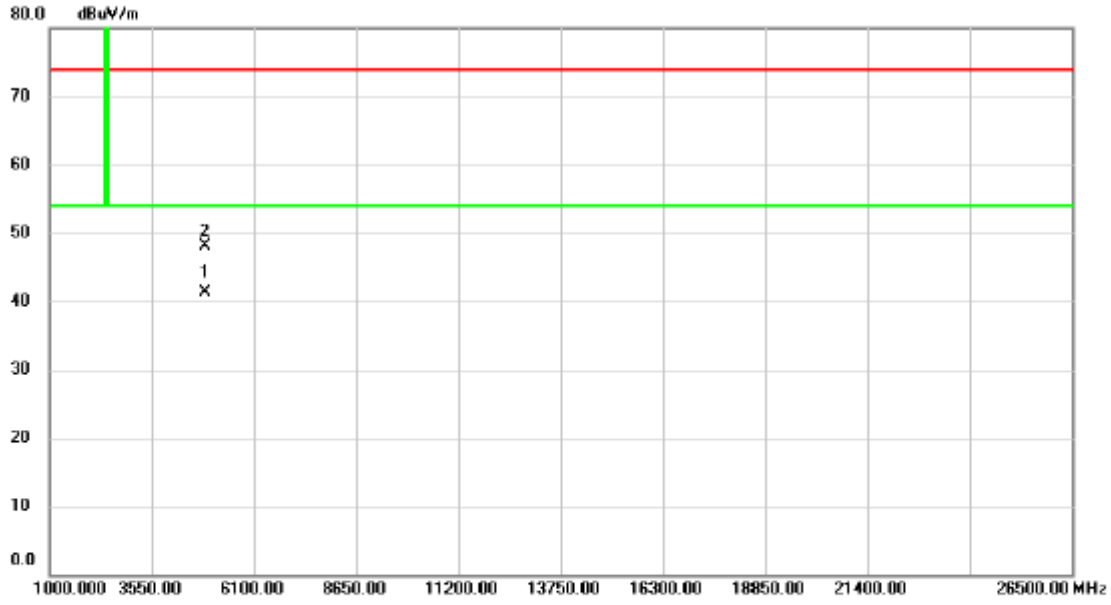
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2440.125	39.05	33.24	72.29	94.00	-21.71	AVG	
2		2440.525	43.22	33.25	76.47	114.00	-37.53	peak	

Test Mode	TX Mode_2440 MHz

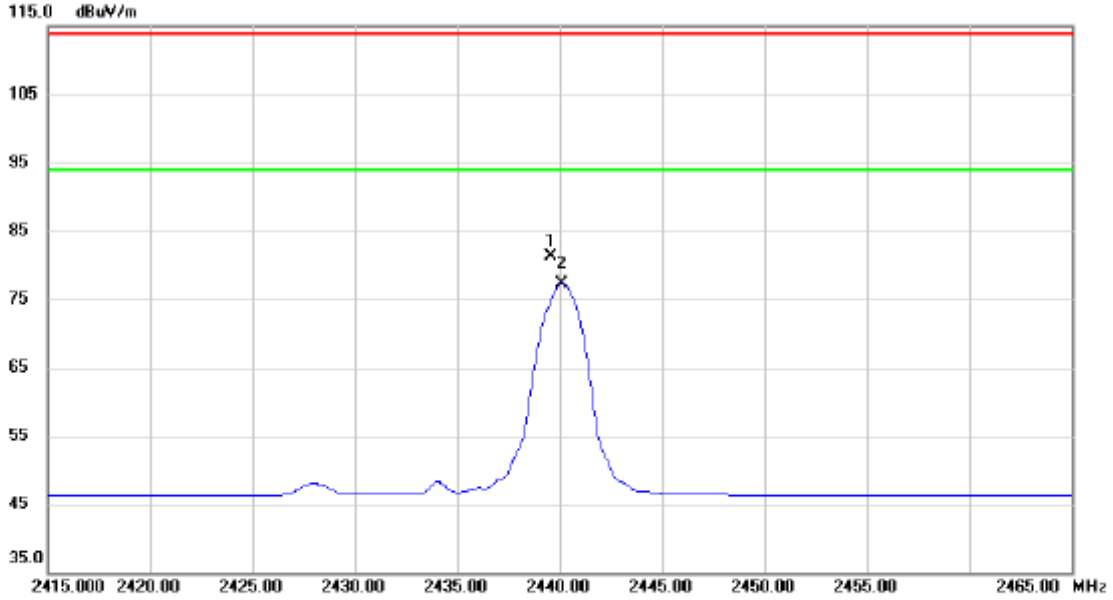
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4881.085	34.35	6.87	41.22	54.00	-12.78	AVG	
2		4881.212	41.33	6.87	48.20	74.00	-25.80	peak	

Test Mode	TX Mode_2440 MHz

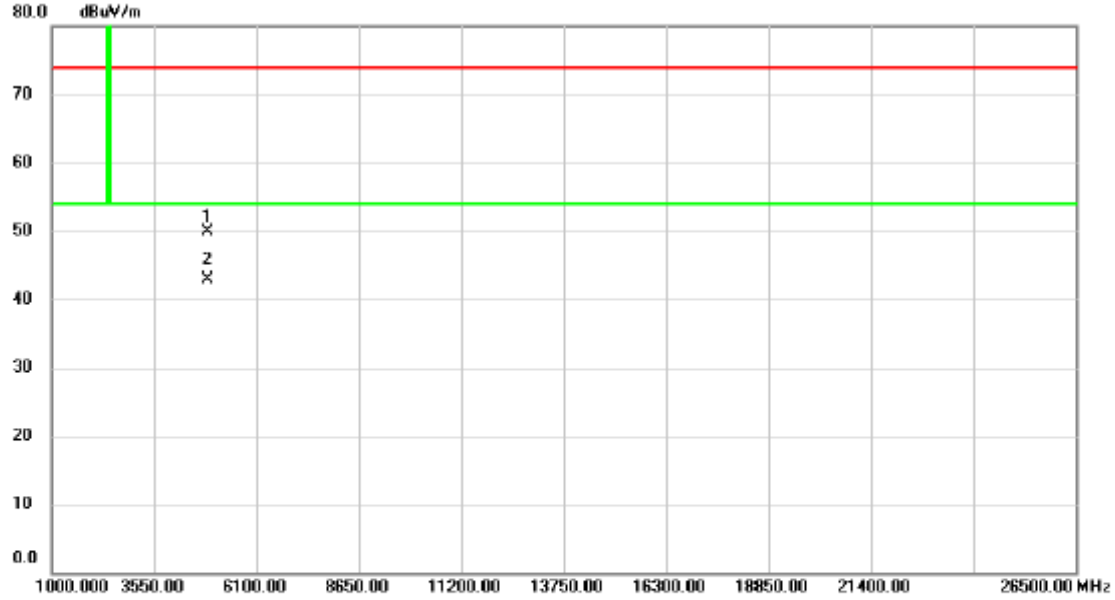
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2439.600	48.13	33.24	81.37	114.00	-32.63	peak	
2	*	2440.125	44.10	33.24	77.34	94.00	-16.66	AVG	

Test Mode	TX Mode_2440 MHz

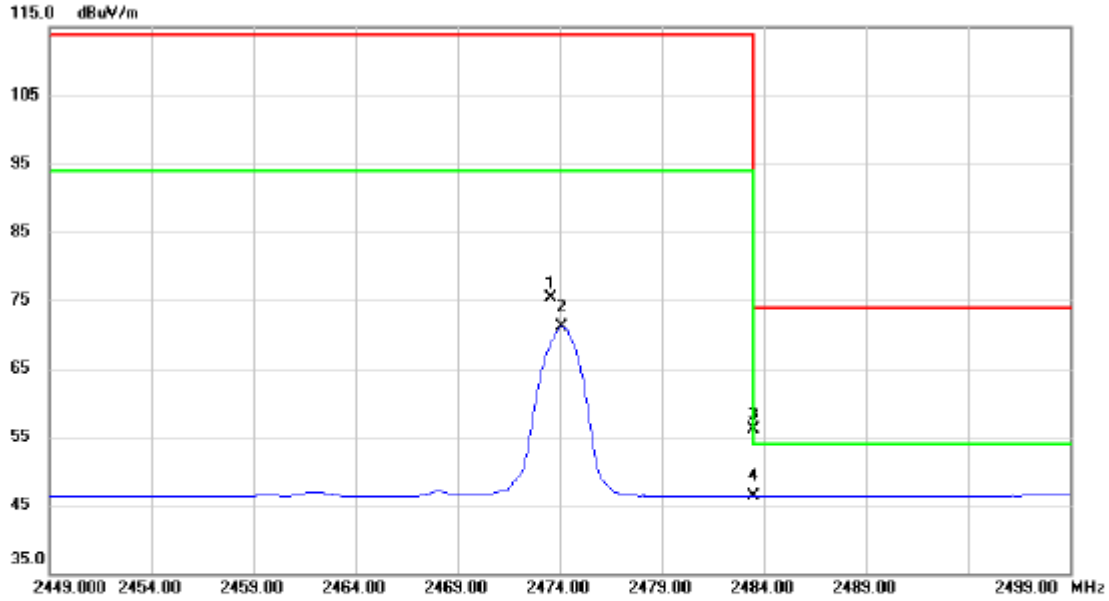
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4879.063	43.05	6.86	49.91	74.00	-24.09	peak	
2	*	4881.073	36.06	6.87	42.93	54.00	-11.07	AVG	

Test Mode	TX Mode_2474 MHz

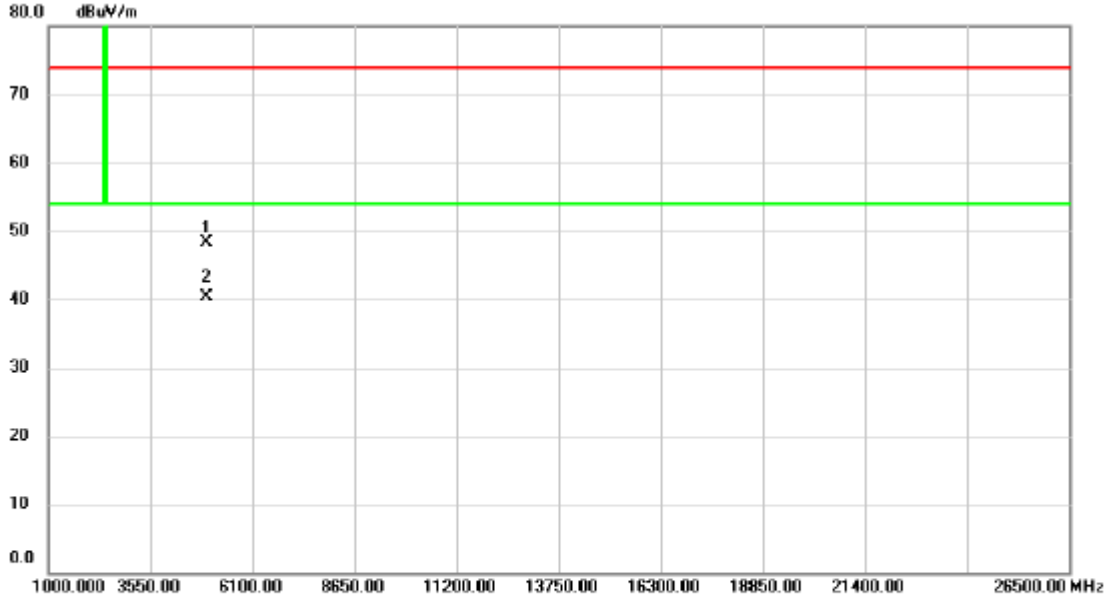
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2473.550	41.93	33.37	75.30	114.00	-38.70	peak	
2		2474.125	37.70	33.37	71.07	94.00	-22.93	AVG	
3		2483.500	22.61	33.41	56.02	74.00	-17.98	peak	
4	*	2483.500	12.89	33.41	46.30	54.00	-7.70	AVG	

Test Mode	TX Mode_2474 MHz

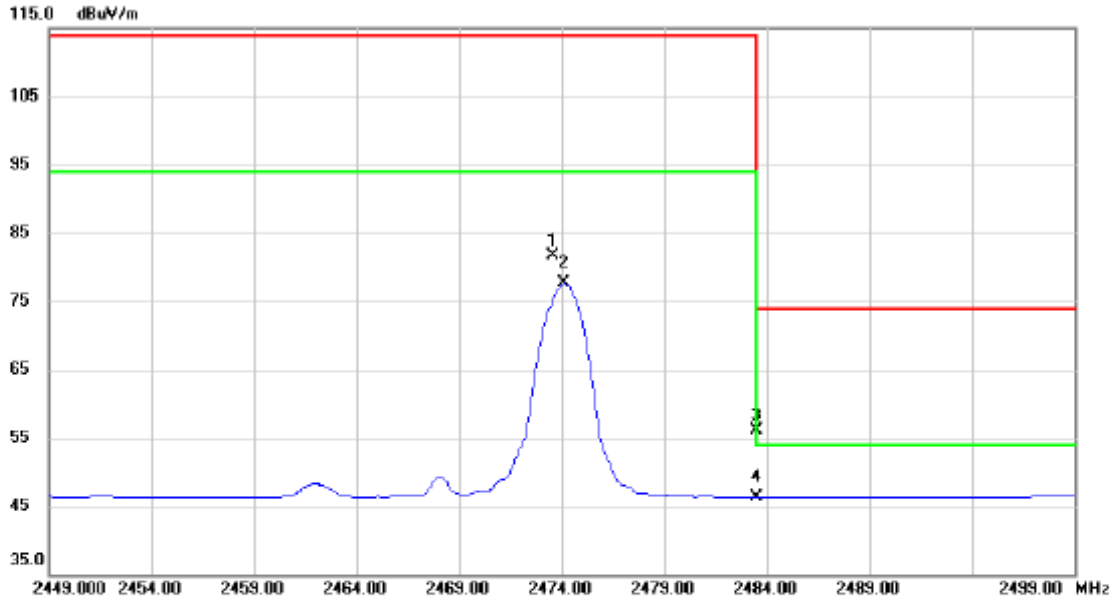
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4947.095	41.12	7.10	48.22	74.00	-25.78	peak	
2	*	4949.087	33.18	7.11	40.29	54.00	-13.71	AVG	

Test Mode	TX Mode_2474 MHz

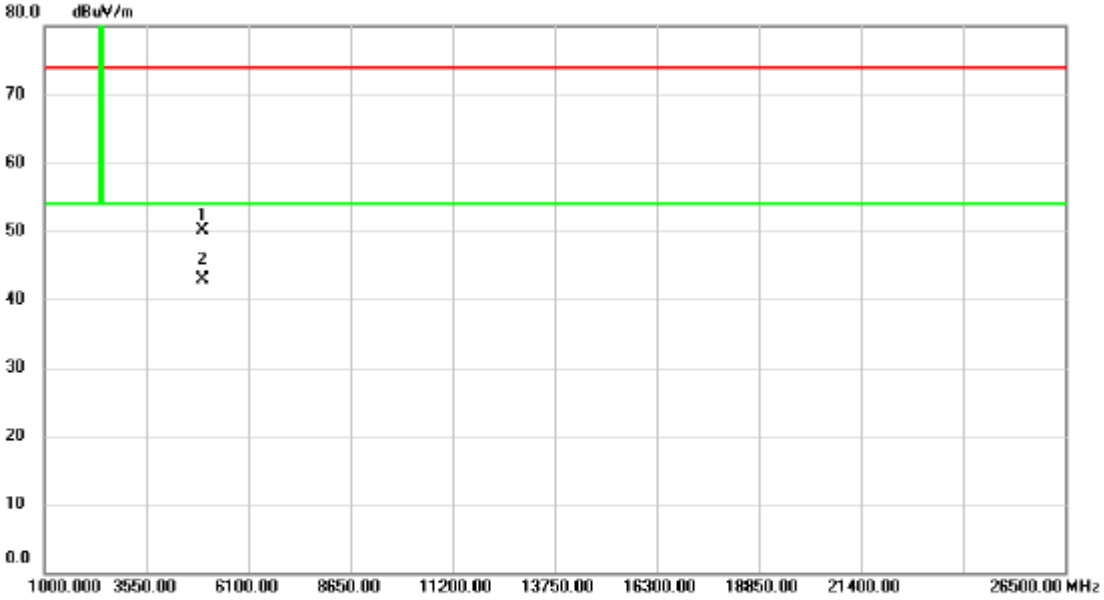
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2473.575	48.35	33.37	81.72	114.00	-32.28	peak	
2		2474.125	44.28	33.37	77.65	94.00	-16.35	AVG	
3		2483.500	22.64	33.41	56.05	74.00	-17.95	peak	
4	*	2483.500	12.90	33.41	46.31	54.00	-7.69	AVG	

Test Mode	TX Mode_2474 MHz

Horizontal



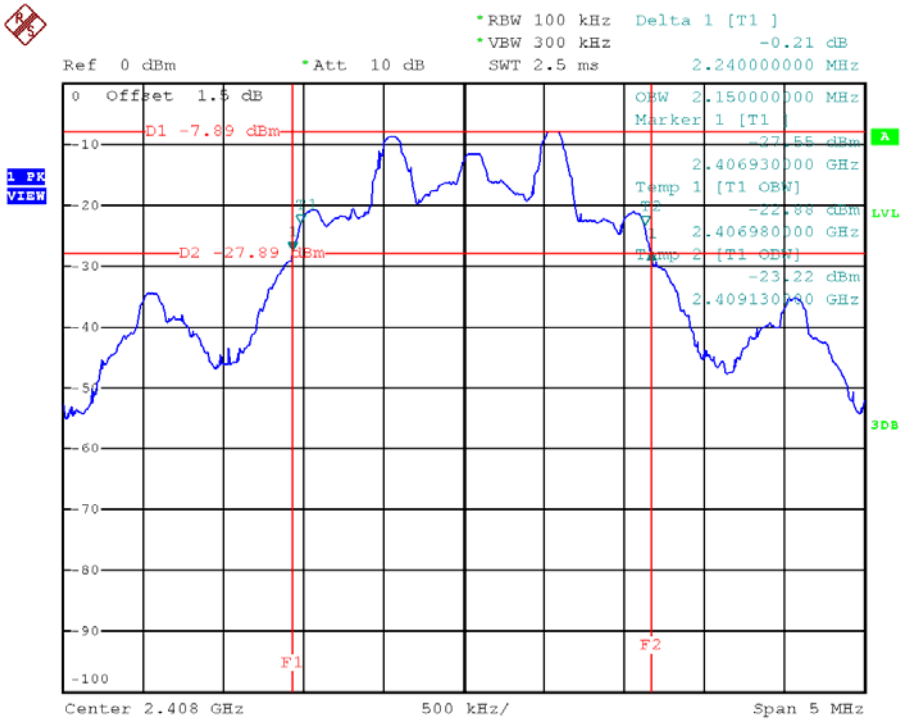
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4947.010	43.02	7.10	50.12	74.00	-23.88	peak	
2	*	4949.092	35.76	7.11	42.87	54.00	-11.13	AVG	

ATTACHMENT E - BANDWIDTH

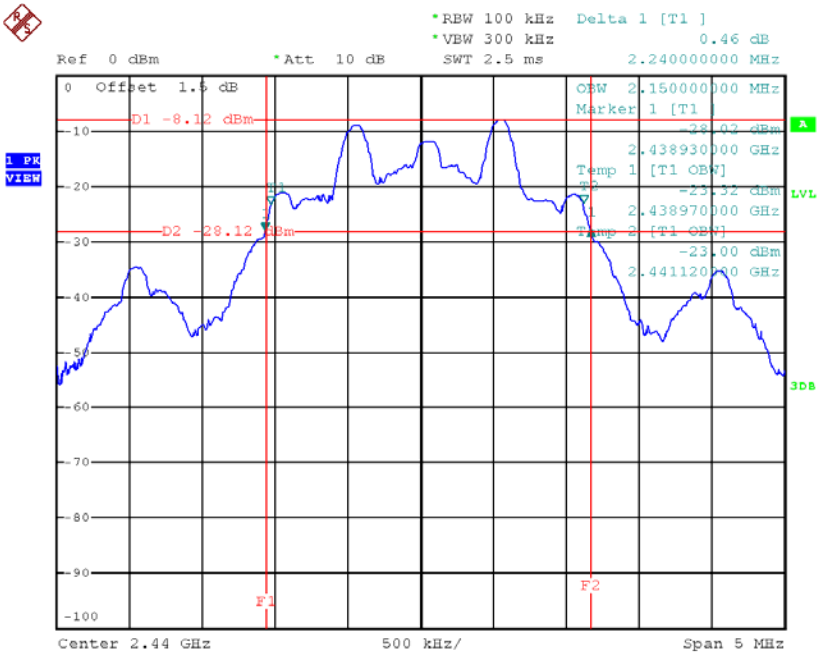
Test Mode:	TX Mode_2408 MHz/2440 MHz/2474 MHz

Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied BW (MHz)
2408	2.240	2.15
2440	2.240	2.15
2474	2.240	2.15

TX Mode_2408 MHz



TX Mode_2440 MHz



TX Mode_2474 MHz