TEST REPORT

For

Handheld Microphone

Model Number: M-950ED
FCC ID: UFF-M950ED

Report Number **:** F20060702

Test Laboratory	:	Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory Guangdong EMC Compliance Test Center
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TEST REPORT DECLARATION

Applicant	:	BBS PROSOUND LIMITED
Address	:	Unit9,12/F.,Siu Wai Industrial Centre,29-33 Wing Hong Street,Lai Chi Kok,Kowloon,Hong Kong
Manufacturer	:	SHENZHEN ILIKE ELECTRONICS CO,LTD
Address	:	Industrial Area of Fulaide Dashuikeng Guanlan Baoan Shenzhen
EUT Description	:	Handheld Microphone
Model Number		M-950ED
FCC ID Number		UFF-M950ED

Test Standards:

FCC Rules Part 74 Subpart H.

The EUT described above is tested by Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory to determine the maximum emissions from the EUT.Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory is assumed full responsibility for the accuracy of the test results. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 74 Subpart H.

The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

Tested by:	(Dewelly Yang)	Date:	2006.7.7
Checked by:	(Louis Lin)	Date:	2006.7.7
Approved by:	(Peter Lin)	Date:	2006.7.7

1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	FCC Rules	Test Results
Maximum transmitter power	74.861 (e)	Pass
Peak Frequency Deviation	74.861 (e)	Pass
Frequency Tolerance	74.861 (e)	Pass
Emission Bandwidth	74.861 (e)	Pass
Unwanted radiation	74.861 (e)	Pass

2. GENERAL INFORMATION

2.1. Report information

2.1.1.This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that SMQ approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that SMQ in any way guarantees the later performance of the product/equipment.

2.1.2.The sample/s mentioned in this report is/are supplied by Applicant, SMQ therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

2.1.3.Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through SMQ, unless the applicant has authorized SMQ in writing to do so.

2.2. Laboratory Accreditation and Relationship to Customer

The testing report were performed by the Shenzhen Academy of Metrology and quality Inspection EMC Laboratory (Guangdong EMC compliance testing center), in their facilities located at Bldg. of Metrology & Quality Inspection, Longzhu Road, Nanshan District, Shenzhen, Guangdong, China. At the time of testing, Laboratory is accredited by the following organizations:
China National Accreditation Committee for Laboratories (**CNAL**) accredits the Laboratory for conformance to FCC standards, EMC international standards and EN standards. The Registration Number is L0579.

The Laboratory is listed in the United States of American Federal Communications Commission (**FCC**), and the registration number are **97379**(open area test site) and **274801**(semi anechoic chamber).
The Laboratory is listed in Voluntary Control Council for Interference by Information Technology Equipment (**VCCI**), and the registration number are **R-1974**(open area test site) , **R-1966**(semi anechoic chamber),**C-2117**(mains ports conducted interference measurement) and **T-180**(telecommunication ports conducted interference measurement).

The Laboratory is registered to perform emission tests with Industry Canada (**IC**), and the registration number is **IC4174**.

TUV Rhineland accredits the Laboratory for conformance to IEC and EN standards, the registration number is **E2024086Z02**.
Measurement Uncertainty

2.3. Measurement Uncertainty

Conducted Disturbance : 9kHz~30MHz 3.5dB

Radiated Disturbance: 30MHz~1000MHz 4.5dB
1GHz~18GHz 4.6dB

3. PRODUCT DESCRIPTION

3.1. EUT Description

Description	:	Handheld Microphone
Manufacturer	:	SHENZHEN ILIKE ELECTRONICS CO,LTD
Model Number	:	M-950ED
Input	:	DC4.5V 3XAAsize battery

The EUT is a 16 channels Handheld Microphone designed as Low Power Auxiliary Stations for transmitting voice only. It is designed by way of utilizing the FM modulation achieves the system operating.
A major technical descriptions of EUT is described as following:
A). Frequency Tolerance: 0.00065% (0.005%)
B). Communication Type: Voice/Tone only
C). Modulation: FM
D). Emission designator: 84K5F3E (2M+2DK, M=14.0, D=18.3, K=1,
Necessary Bandwidth = 64.6 KHz)
E).Audio Frequency Response: 18 KHz
F). Output power Modification: Fixed can't be change
G). Antenna Designation: Integral
H). Power Supply: 4.5 V dc by battery
I). Battery Endpoint: DC 3.0 V
J). Operating Frequency Range and Channels
Frequency Range: 766.5 MHz – 770.25 MHz
CH 0 – 766.500 MHz CH 1 – 766.750 MHz CH 2 – 767.000 MHz
CH 3 – 767.250 MHz CH 4 – 767.500 MHz CH 5 – 767.750 MHz
CH 6 – 768.000 MHz CH 7 – 768.250 MHz CH 8 – 768.500MHz
CH 9 – 768.750 MHz CH A – 769.000 MHz CH B – 769.250 MHz
CH C – 769.500 MHz CH D – 769.750 MHz CH E – 770.000 MHz
CH F – 770.250MHz
K). Effective distance: 200feet

3.2. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: UFF-M950ED filing to comply with FCC Part 74 Subpart H Rules.

3.3. Block Diagram of EUT Configuration

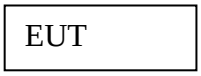


Figure 1 EUT setup

3.4. Operating Condition of EUT

Mode 1: ch1 (766.750MHz)
Mode2: ch8 (768.500MHz)
Mode3: chF(770.250MHz)

3.5. Special Accessories

Not available for this EUT intended for grant.

3.6. Equipment Modifications

Not available for this EUT intended for grant.

3.7. Support Equipment List

N/A

3.8. Test Conditions

Date of test：Jul.1-6,2006
Date of EUT Receive：Jul.1,2006
Temperature: 24~26 ℃
Relative Humidity: 53~58%

4. TEST EQUIPMENT USED

Table 2 Test Equipment

No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
SB2603	EMI Test Receiver	Rohde & Schwarz	ESCS30	Jan.26, 2006	1 Year
SB3321	AMN	Rohde & Schwarz	ESH2-Z5	Jan.26, 2006	1 Year
SB2604	AMN	Rohde & Schwarz	ESH3-Z5	Jan.26, 2006	1 Year
SB3612	Audio generator	KENWOOD	AD-203D	Jun.21, 2005	1 Year
SB3436	EMI Test Receiver	Rohde & Schwarz	ESI26	Jan.26, 2006	1 Year
SB3440	Bilog Antenna	Chase	CBL6112B	Jan.26, 2006	1 Year
SB3435	Horn Antenna	Rohde & Schwarz	HF906	Jan.26, 2006	1 Year
SB3434	Horn Antenna	Rohde & Schwarz	HF906	Jan.26, 2006	1 Year
SB3435/01	Amplifier(1-18GHz)	Rohde & Schwarz	---	Jan.26, 2006	1 Year
SB3435/02	Amplifier(18-40GHz)	Rohde & Schwarz	---	May.06, 2006	1 Year
SB3435/03	Horn Antenna	Rohde & Schwarz	AT4560	May.06, 2006	1 Year
SB3450/01	3m Semi-anechoic chamber	Albatross Projects	9X6X6	Jan 26,2006	1 Year
SB2541	RF Communication Tester(modulation analyzer)	HP	8920A	May 23,2006	1 Year
SB2597/01	Dipole Antenna	Schwarzbeck	VHAP	Jan 30,2005	3 Years
SB2597/02	Dipole Antenna	Schwarzbeck	UHAP	Jan 30,2005	3 Years
SB3438	Signal generator	Rohde & Schwarz	SMR20	Jan 26,2006	1Year
SB3732	Tem Chamber	Qingsheng	THS-C7C±100	Sep 26,2005	1Year
SB2599	Spectrum Analyzer	Anritsu	MS2661C	Jan 26,2006	1 Year

5. MAXIMUMN TRANSMITTER POWER

5.1. PROVISIONS APPLICABLE

According to FCC Part 74 Section 74.861(e) – 1: The power of the measured unmodulated carrier power at the output of the transmitter power amplifier may not exceed 250mW

5.2. MEASUREMENT PROCEDURE

1). On a test site, the EUT shall be placed on a turntable, and in the XYZ three position.
2). The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
3). The output of the antenna shall be connected to the EMI test receiver(R&S ESIB26).
The setup of test receiver:
Detector: Peak
RBW: 120kHz for 30-1000MHz
1MHz for above1GHz
VBW: 300kHz for 30-1000MHz
3MHz for above1GHz
4). The transmitter shall be switched on; if possible, without the modulation and themeasurement receiver shall be tuned to the fr equency of the transmitter under test.
5). The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
6). The transmitter shall than be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
7). The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.
8). The maximum signal level detected by the measuring receiver shall be noted.
9). Replace the antenna with a proper Antenna (substitution antenna).
10). The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
11). The substitution antenna shall be connected to a calibrated signal generator.
12). If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
13). The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
15). The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
16). The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.
17). The measure of the effective radiated power is the larger of the two levels recorded, at the input to the substitution antenna, corrected for the gain of the substitution antenna if necessary.

5.3. TEST SETUP BLOCK DAIGRAM(setup block diagram of configuration)

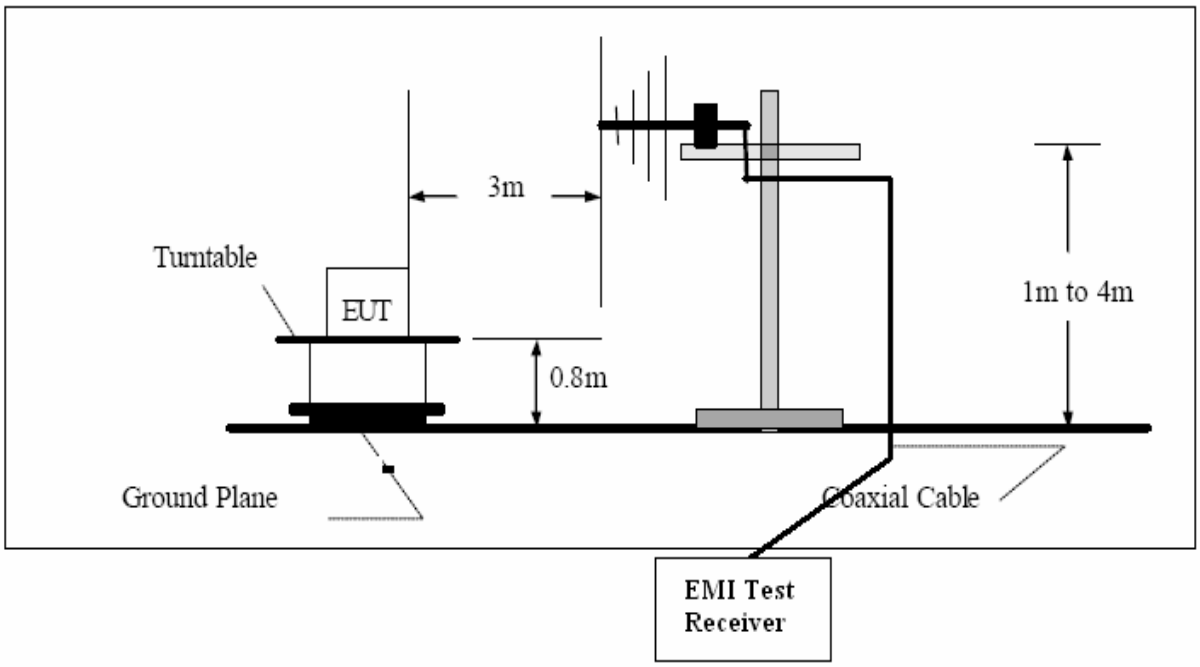


Figure 2 Radaited test setup

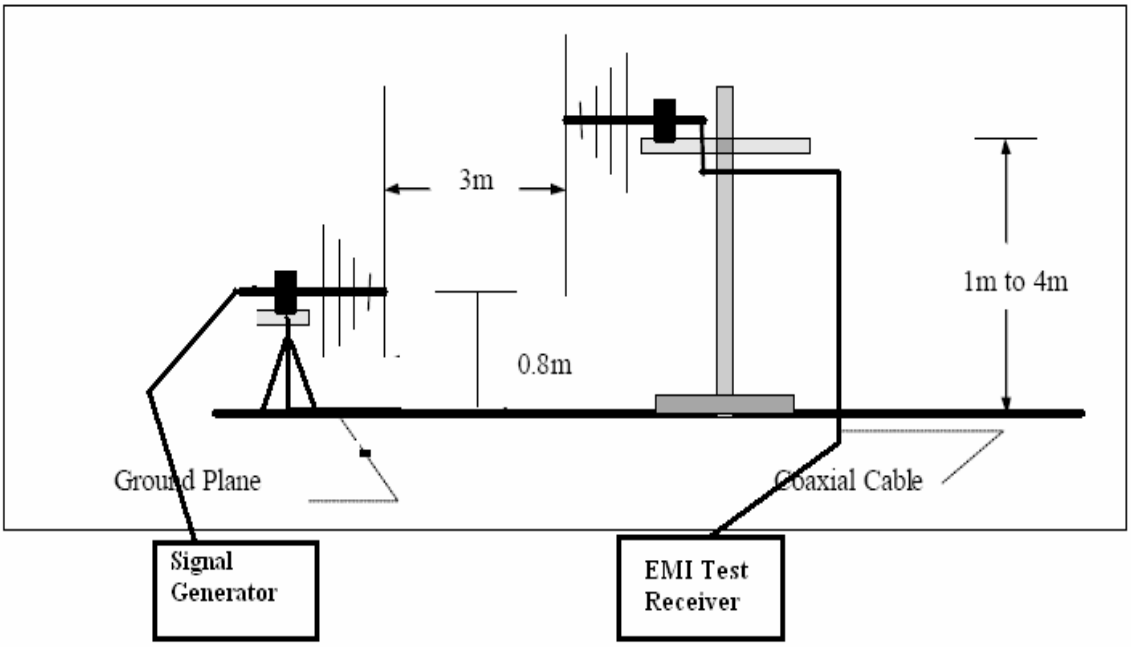


Figure 3 Substitution Method test setup

5.4. Test result:

Table 3 Test data

Working Mode: 1

channel	polarization.	Reading (SG)(dBm)	Antenna Gain (dB)	Cable Loss (dB)	Transmit Power (dBm)	Transmit Power (mW)	Limit (mW)
1	Horizontal	-6.5	-10	1.8	-18.3	0.0148	250
1	Vertical	-10.7	-10	1.8	-22.5	0.0056	250
8	Horizontal	-6.2	-10	1.8	-18.0	0.0158	250
8	Vertical	-9.8	-10	1.8	-21.6	0.0069	250
F	Horizontal	-5.6	-10	1.8	-17.4	0.0182	250
F	Vertical	-11.1	-10	1.8	-22.9	0.0051	250

Note: Transmit Power(dBm)=Reading(SG)(dBm)+Antenna Gain(dB)-Cable Loss(dB)
Transmit Power(dBm)=10Log(Transmit Power(mW)/1mW)

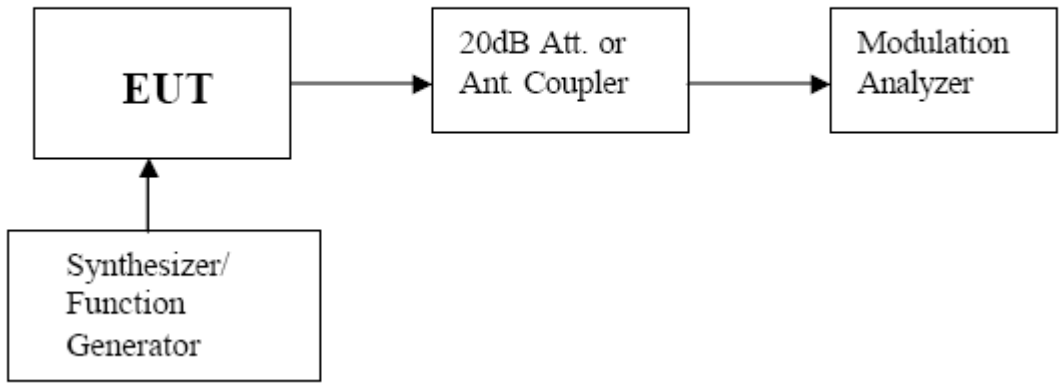
6. MODULATION CHARACTERISTICS

6.1. PROVISIONS APPLICABLE

a).According to CFR 47 section 2.1047(a), for Voice Modulation Communication Equipment, the frequency response of the audio modulation circuit over a range of 100 to 5000Hz shall be measured.
b). According to CFR 47 section 74.861(e)-3, any form of modulation may be used. A maximum deviation of ±75 KHz is permitted when frequency modulation is employed.

6.2. MEASUREMENT METHOD

6.2.1 Modulation Limit
1). Configure the EUT as shown in figure 1, adjust the audio input for 60% of rated system deviation at 1KHz using this level as a reference (0dB) and vary the input level from –20 to +20dB. Record the frequency deviation obtained as a function of the input level.
2). Repeat step 1 with input frequency changing to 300,1000,3000, and 14000Hz in sequence.
6.2.2 Audio Frequency Response
1). Configure the EUT as shown in figure 1.
2). Adjust the audio input for 20% of rated system deviation at 1 KHz using this level as a reference (0 dB).
3). Vary the Audio frequency from 50 Hz to 30 KHz and record the frequency deviation



Note: the modulation analyzer is HP8920A. the audio filter is CCITT.

Figure 4 Modulation test setup

6.3. MEASUREMENT RESULT

6.3.1 Modulation Limit:

Table 4 Modulation Test Results

Test Mode: 1

Modulation Level (dB)	Peak Freq Deviation At 300Hz (kHz)	Peak Freq Deviation At 1000Hz (kHz)	Peak Freq Deviation At 3000Hz (kHz)	Peak Freq Deviation At 18000Hz (kHz)
-20	6.61	4.55	8.1	10.51
-15	6.8	5.1	9.11	11.4
-10	6.85	5.9	10.1	12.34
-5	6.92	6.31	10.8	13.45
0	7.3	6.9	11.4	14.61
5	7.9	7.35	12.1	15.42
10	8.51	8.1	12.9	16.1
15	9.3	8.51	13.5	17.11
20	10	9.34	14.9	18.22

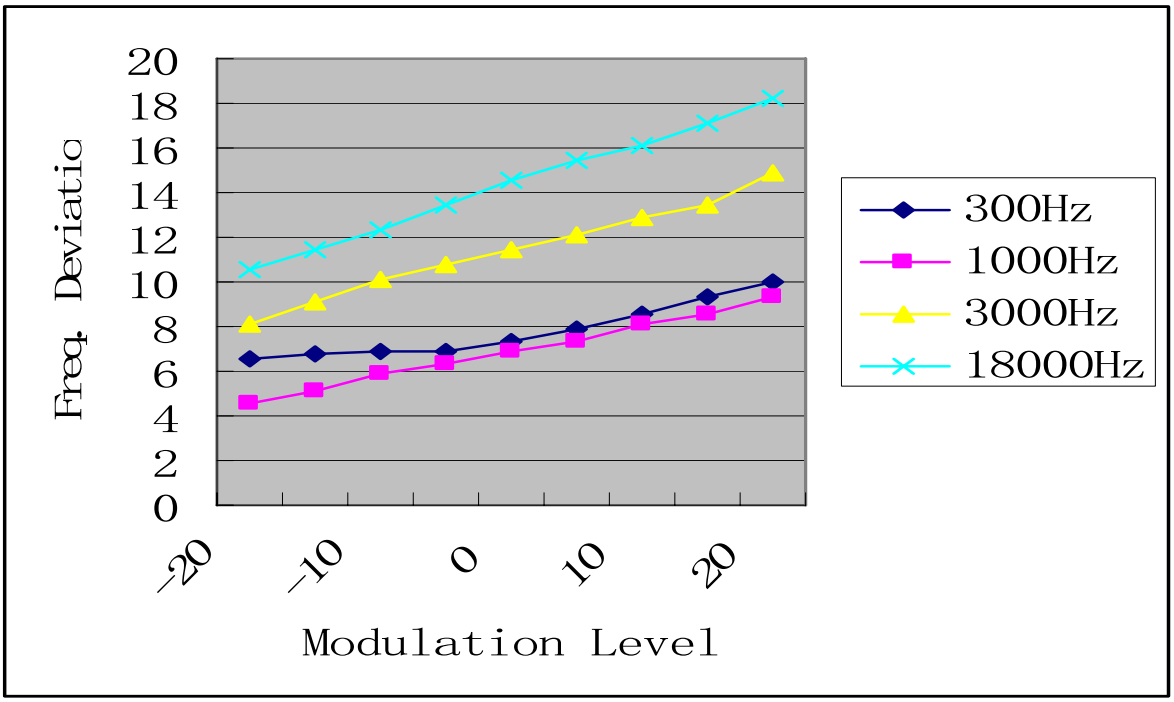


Figure 5 modulation test result

Table 5 Modulation Test Results

Test Mode:2

Modulation Level (dB)	Peak Freq Deviation At 300Hz (kHz)	Peak Freq Deviation At 1000Hz (kHz)	Peak Freq Deviation At 3000Hz (kHz)	Peak Freq Deviation At 18000Hz (kHz)
-20	6.63	4.53	8.11	10.56
-15	6.82	5.12	9.11	11.40
-10	6.86	5.92	10.11	12.40
-5	6.90	6.32	10.80	13.54
0	7.31	6.90	11.45	14.66
5	7.95	7.39	12.20	15.45
10	8.60	8.10	12.61	16.30
15	9.38	8.53	13.45	17.55
20	10.00	9.34	14.99	18.23

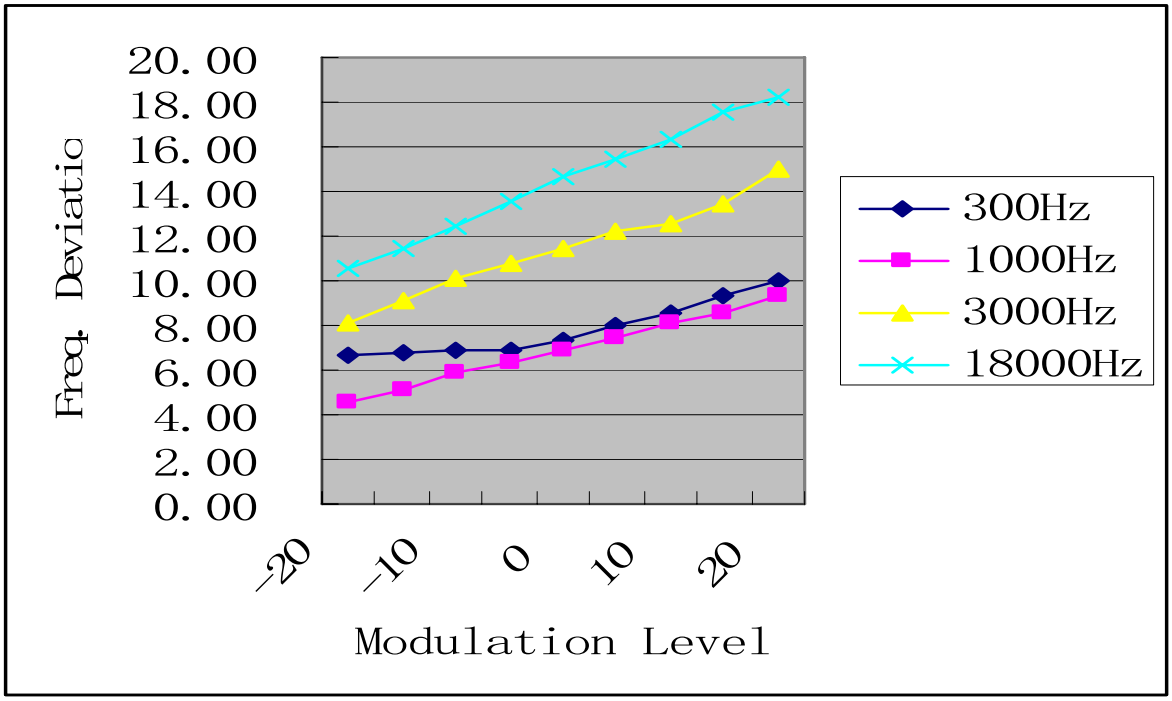


Figure 6 modulation test result

Table 6 Modulation Test Results

Test Mode: 3

Modulation Level (dB)	Peak Freq Deviation At 300Hz (kHz)	Peak Freq Deviation At 1000Hz (kHz)	Peak Freq Deviation At 3000Hz (kHz)	Peak Freq Deviation At 18000Hz (kHz)
-20	6.61	4.55	8.22	10.56
-15	6.83	5.21	9.15	11.40
-10	6.85	5.99	10.15	12.44
-5	6.91	6.38	10.91	13.54
0	7.30	6.91	11.50	14.55
5	7.96	7.93	12.23	15.51
10	8.59	8.11	12.73	16.31
15	9.34	8.56	13.50	17.56
20	10.05	9.33	15.01	18.32

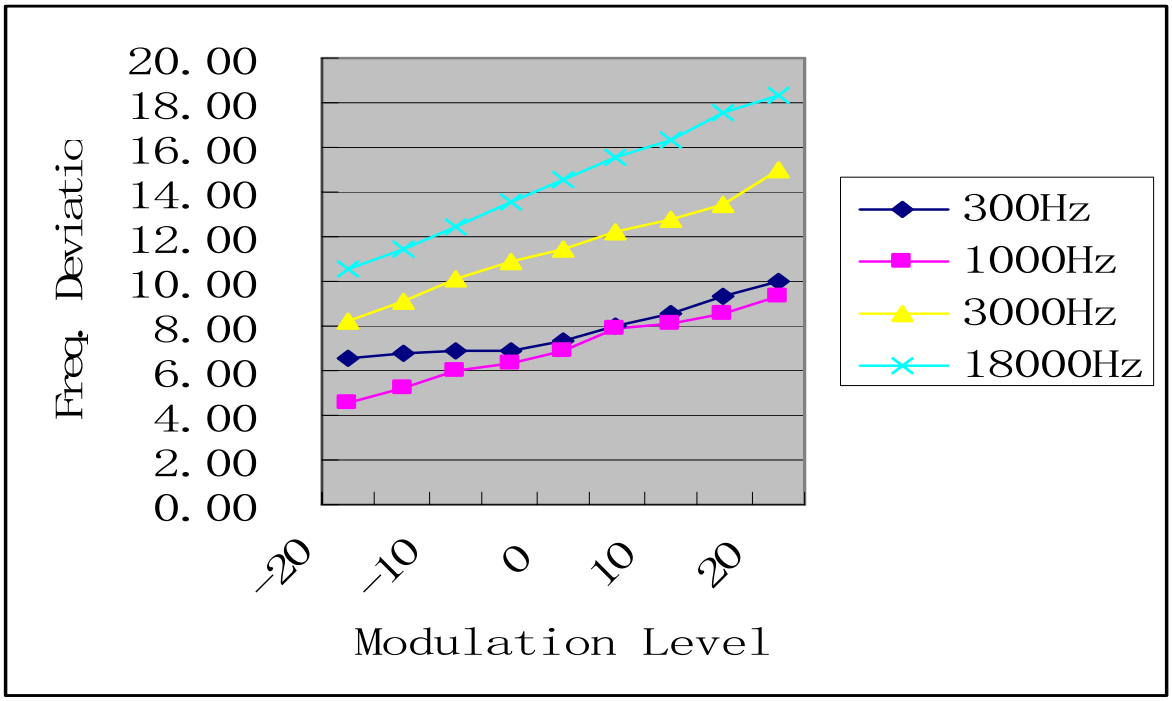


Figure 7 modulation test result

b). Audio Frequency Response:

Table 7 Modulation Test Results

Test Mode: 1

Frequency（Hz）	Deviation (KHz)
50	3.5
100	3.3
200	3.81
300	4.2
400	4.85
500	4.98
600	5.16
700	5.55
800	5.73
900	6.06
1000	6.34
1200	6.6
1400	6.82
1600	7.01
1800	7.11
2000	7.3
2400	7.5
2800	7.68
3200	7.95
3600	8.31
4000	8.67
4500	9.1
5000	9.14
5500	9.3
6000	9.35
6500	9.47
7000	9.54
8000	9.98
9000	10.01
10000	10.08
12000	10.15
14000	10.26
16000	10.02
18000	9.44
20000	8.76
25000	8.05
30000	7.13

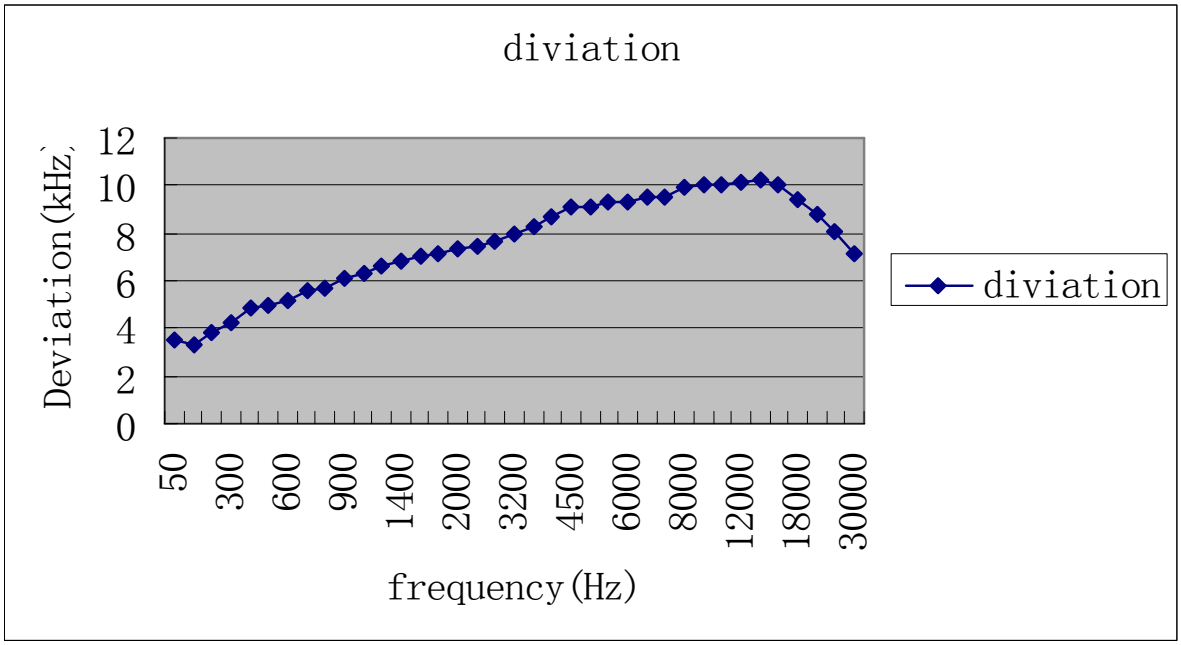


Figure 8 modulation test result

Table 8 Modulation Test Results
Test Mode: 2

Frequency（Hz）	Deviation (KHz)
50	3.53
100	3.31
200	3.90
300	4.21
400	4.86
500	5.00
600	5.25
700	5.61
800	5.73
900	6.06
1000	6.34
1200	6.61
1400	6.82
1600	7.11
1800	7.20
2000	7.30
2400	7.50
2800	7.78
3200	8.33
3600	8.31
4000	8.76
4500	9.10
5000	9.14
5500	9.35
6000	9.50
6500	9.51
7000	9.56
8000	9.99
9000	10.11
10000	10.08
12000	10.15
14000	10.30
16000	10.11
18000	9.54
20000	8.86
25000	8.15
30000	7.23

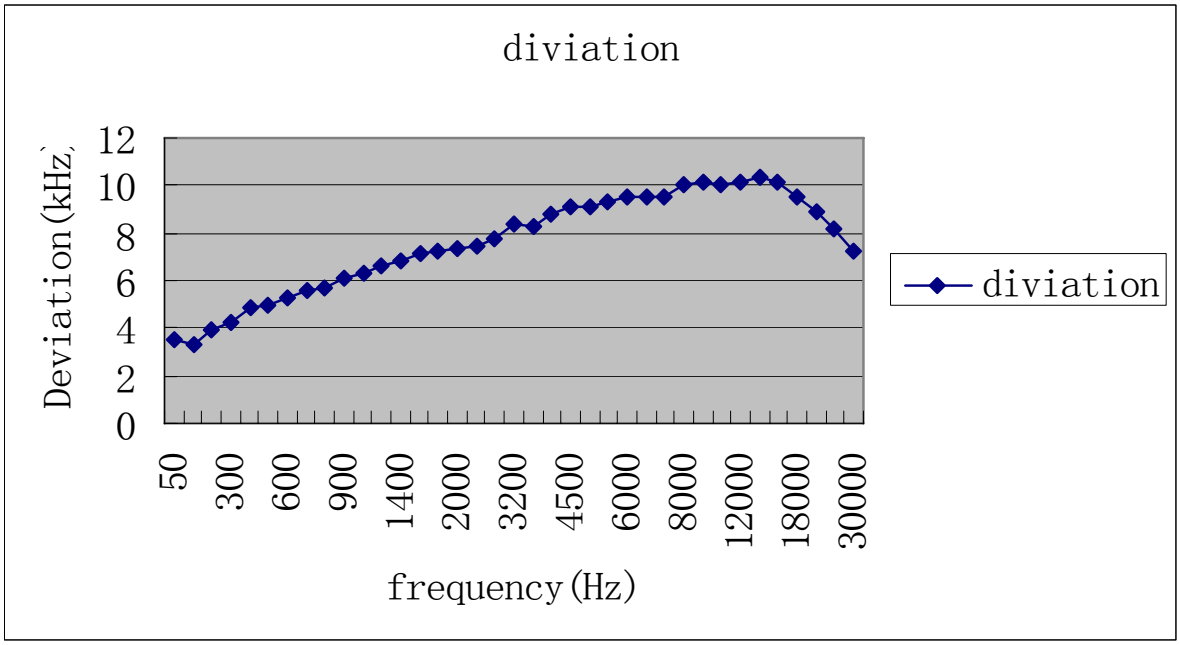


Figure 9 modulation test result

Table 9 Modulation Test Results
Test Mode: 3

Frequency（Hz）	Deviation (KHz)
50	3.58
100	3.24
200	3.70
300	4.11
400	4.68
500	5.01
600	5.26
700	5.65
800	5.73
900	6.06
1000	6.37
1200	6.61
1400	6.82
1600	7.21
1800	7.20
2000	7.33
2400	7.50
2800	7.79
3200	8.33
3600	8.32
4000	8.76
4500	9.11
5000	9.14
5500	9.36
6000	9.50
6500	9.51
7000	9.57
8000	9.99
9000	10.11
10000	10.11
12000	10.15
14000	10.30
16000	10.12
18000	9.55
20000	8.86
25000	8.16
30000	7.24

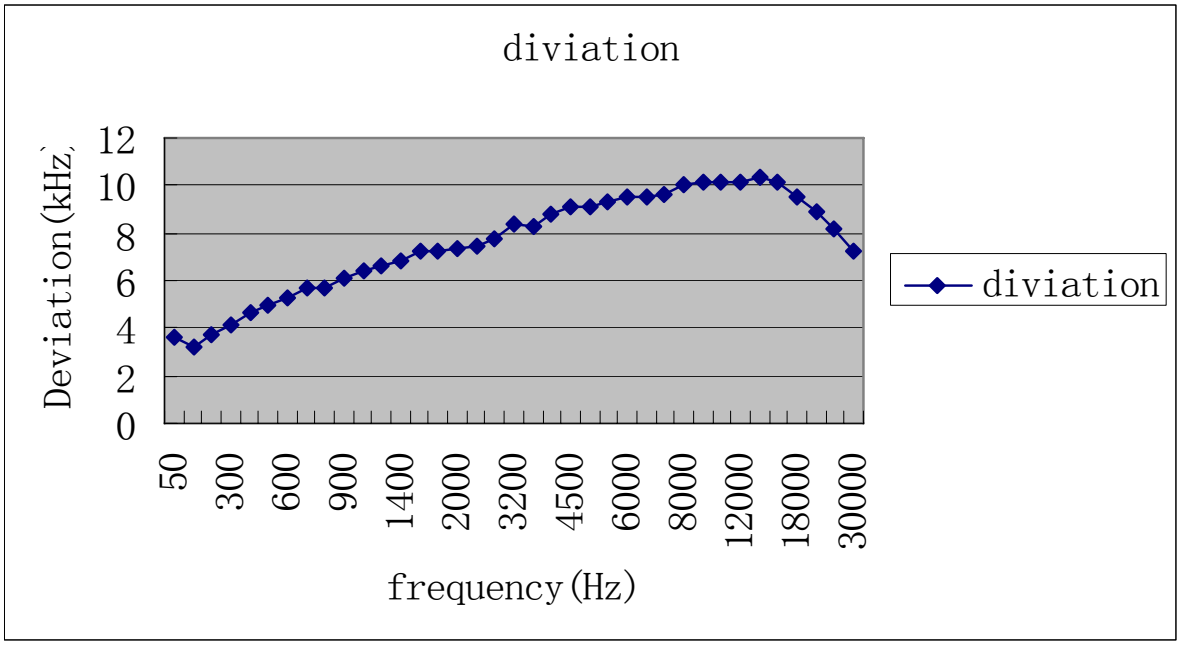


Figure 10 modulation test result

7. FREQUENCY TOLERANCE

7.1. PROVISIONS APPLICABLE

a). According to FCC Part 2 Section 2.1055(a)(1), the frequency stability shall be measured with variation of ambient temperature from –30℃ to +50℃ centigrade.

b). According to FCC Part 2 Section 2.1055(d)(2), for hand carried battery powered equipment, the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point, which is specified by the manufacture.

c). According to FCC Part 74 Section 74.861(e)-4, the frequency tolerance must be maintained within 0.005%.

7.2. MEASUREMENT PROCEDURE

7.2.1 Frequency stability versus environmental temperature

1. Setup the configuration per figure 1 for frequenc ies measurement inside an environment chamber, Install new battery in the EUT.

2. Turn on EUT and set spectrum analyzer center frequency to the EUT radiated frequency. Set spectrum analyzer Resolution Bandwidth to 1KHz and Video Resolution Bandwidth to 1KHz and Frequency Span to 50KHz.Record this frequency as reference frequency.

3. Set the temperature of chamber to 50℃. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. While maintaining a constant temperature inside the chamber, turn the EUT on and measure the EUT operating frequency.

4. Repeat step 2 with a 10℃ decreased per stage until the lowest temperature -30℃ is measured, record all measured frequencies on each temperature step.

7.2.2 Frequency stability versus input voltage

1. Setup the configuration per figure 1 for frequencies measured at temperature if it is within 15 ℃ to 25℃. Otherwise, an environment chamber set for a temperature of 20℃ shall be used. Install new battery in the EUT.

2. Set spectrum analyzer center frequency to the EUT radiated frequency. Set spectrum analyzer Resolution Bandwidth to 1KHz and Video Resolution Bandwidth to 1KHz. Record this frequency as reference frequency.

3. For battery operated only device, supply the EUT primary voltage at the operating end point which is specified by manufacturer and record the frequency.

7.3. TEST SETUP BLOCK DIAGRAM(block diagram of configuration)

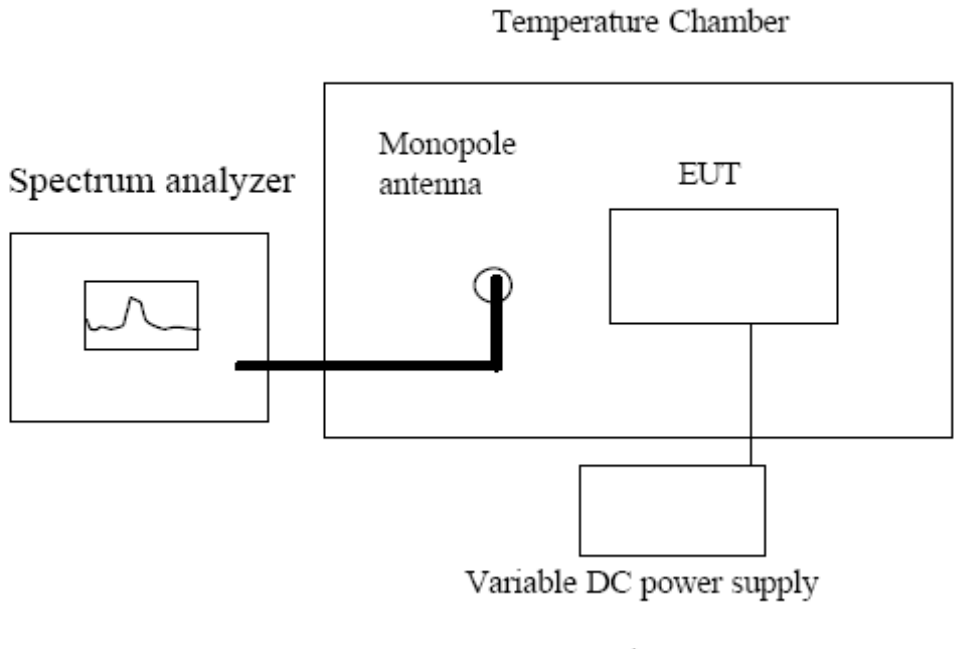


Figure 11 Frequency Tolerance test setup

7.4. TEST RESULT

a. Frequency stability versus input voltage (battery operation end point voltage is 3.0V)

Table 20 Frequency Tolerance Test Results

channel	Reference Frequency (MHz)	Frequency measured (MHz)	Frequency Error (%)	Limit
Ch1	766.750	766.75115	0.00015	0.005%
Ch8	768.500	768.50275	0.00035	0.005%
chF	770.250	770.24845	-0.00020	0.005%

b. Frequency stability versus ambient temperature

Table 31 Frequency Tolerance Test Results

Ch1 766.750MHz			
Temperature (° C)	Power Supply	**Frequency deviation measured with time Elapse (30 minutes)**	
		MHz	%
50	New Battery	766.75225	0.00029
40	New Battery	766.75205	0.00027
30	New Battery	766.75188	0.00025
20	New Battery	766.75119	0.00016
10	New Battery	766.75164	0.00021
0	New Battery	766.75180	0.00023
-10	New Battery	766.75205	0.00027
-20	New Battery	766.75225	0.00029
-30	New Battery	766.75321	0.00042

Table 42 Frequency Tolerance Test Results

Ch8 768.500MHz			
Temperature (° C)	Power Supply	**Frequency deviation measured with time Elapse (30 minutes)**	
		MHz	%
50	New Battery	768.50375	0.00049
40	New Battery	768.50370	0.00048
30	New Battery	768.50225	0.00029
20	New Battery	768.50270	0.00035
10	New Battery	768.50179	0.00023
0	New Battery	768.50265	0.00034
-10	New Battery	768.50277	0.00036
-20	New Battery	768.50283	0.00037
-30	New Battery	768.50300	0.00039

Table 53 Frequency Tolerance Test Results

ChF 770.250MHz			
Temperature (° C)	Power Supply	**Frequency deviation measured with time Elapse (30 minutes)**	
		MHz	%
50	New Battery	770.24945	-0.00007
40	New Battery	770.24985	-0.00002
30	New Battery	770.25020	0.00003
20	New Battery	770.2506	0.00008
10	New Battery	770.24510	-0.00064
0	New Battery	770.24520	-0.00062
-10	New Battery	770.24508	-0.00064
-20	New Battery	770.24501	-0.00065
-30	New Battery	770.24509	-0.00064

8. EMISSION BANDWIDTH

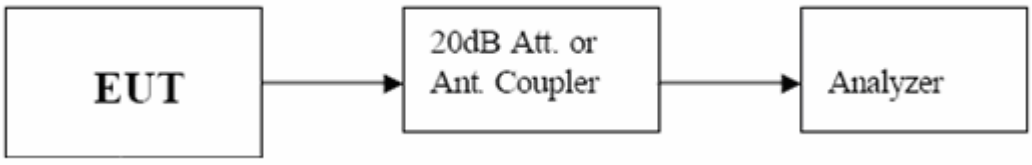
8.1. PROVISIONS APPLICABLE

According to FCC Part 74 Section 74.861(e)-5: The operation bandwidth shall not exceed 200KHz

8.2. MEASUREMENT PROCEDURE

1). The EUT was placed on a turn table which is 0.8m above ground plane.
2). Set EUT as normal operation
3) set the EUT input signal to 2500Hz, the amplitude is 20dB above 50% deviation required Level.
4). Set spectrum analyzer Center Frequency = fundamental frequency , RBW,VBW= 3 KHz, Span =200 KHz.
5). Set spectrum analyzer Max hold. Mark peak, -26dB.

8.3. TEST SETUP BLOCK DIAGRAM (Block Diagram of Configuration)



8.4. MEASUREMENT RESULT:

Table 64 Bandwidth Test Results

channel	Bandwidth (kHz)	Limit (kHz)
Ch1	83.1	200
Ch8	84.1	200
chF	84.5	200

Refer to attached data chart.

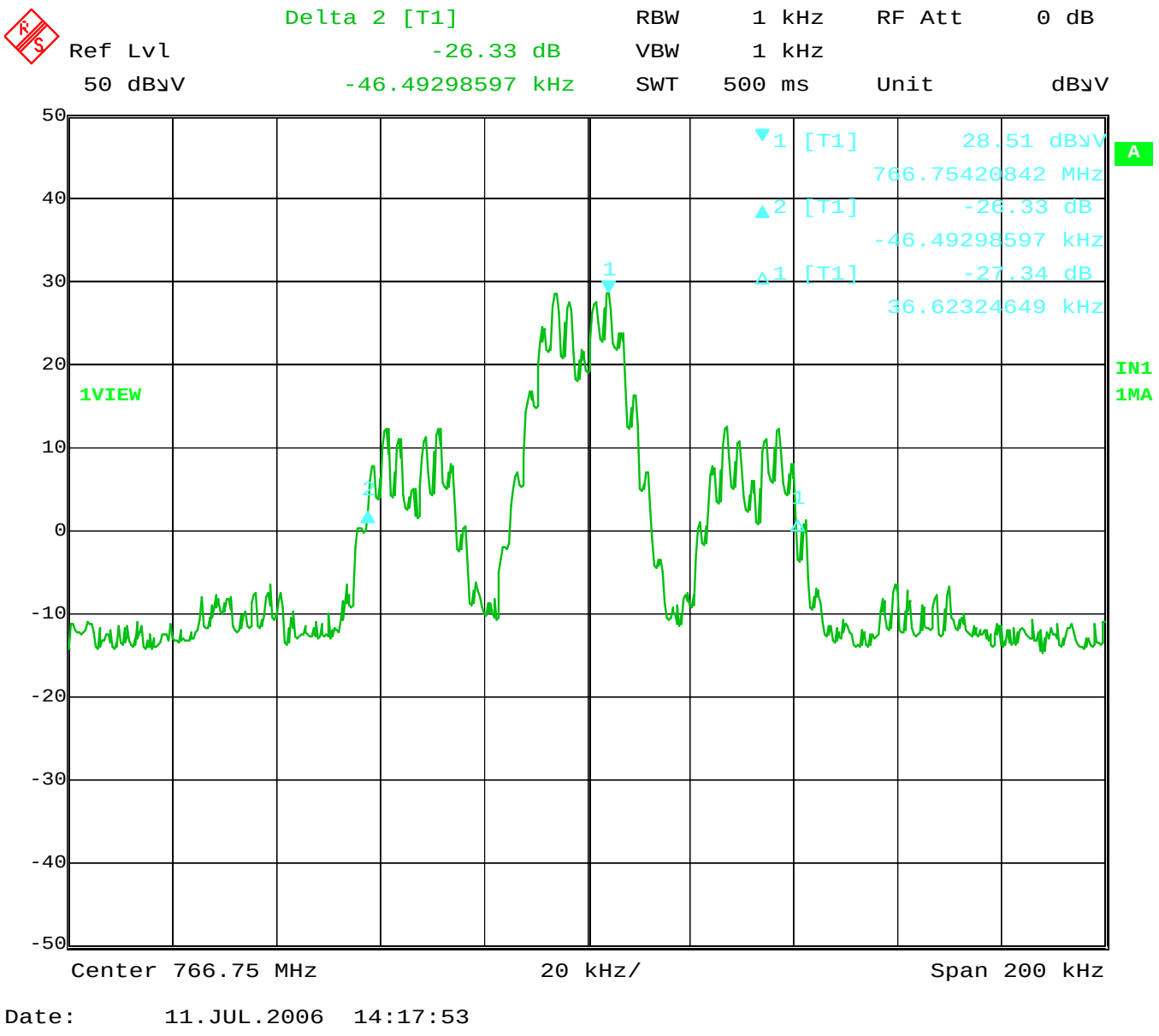


Figure 12 Low bandwidth test result

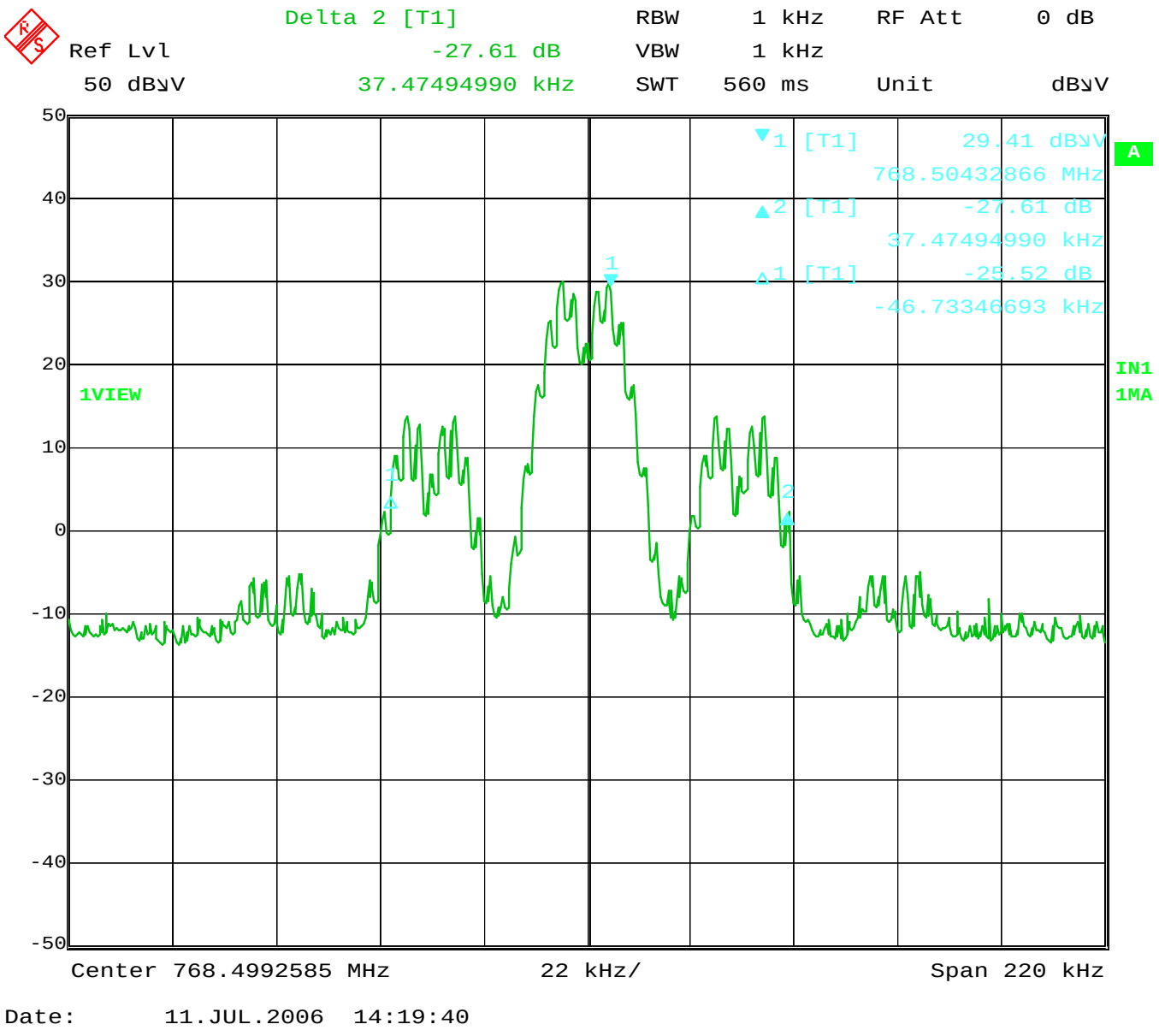


Figure 13 Mid bandwidth test result

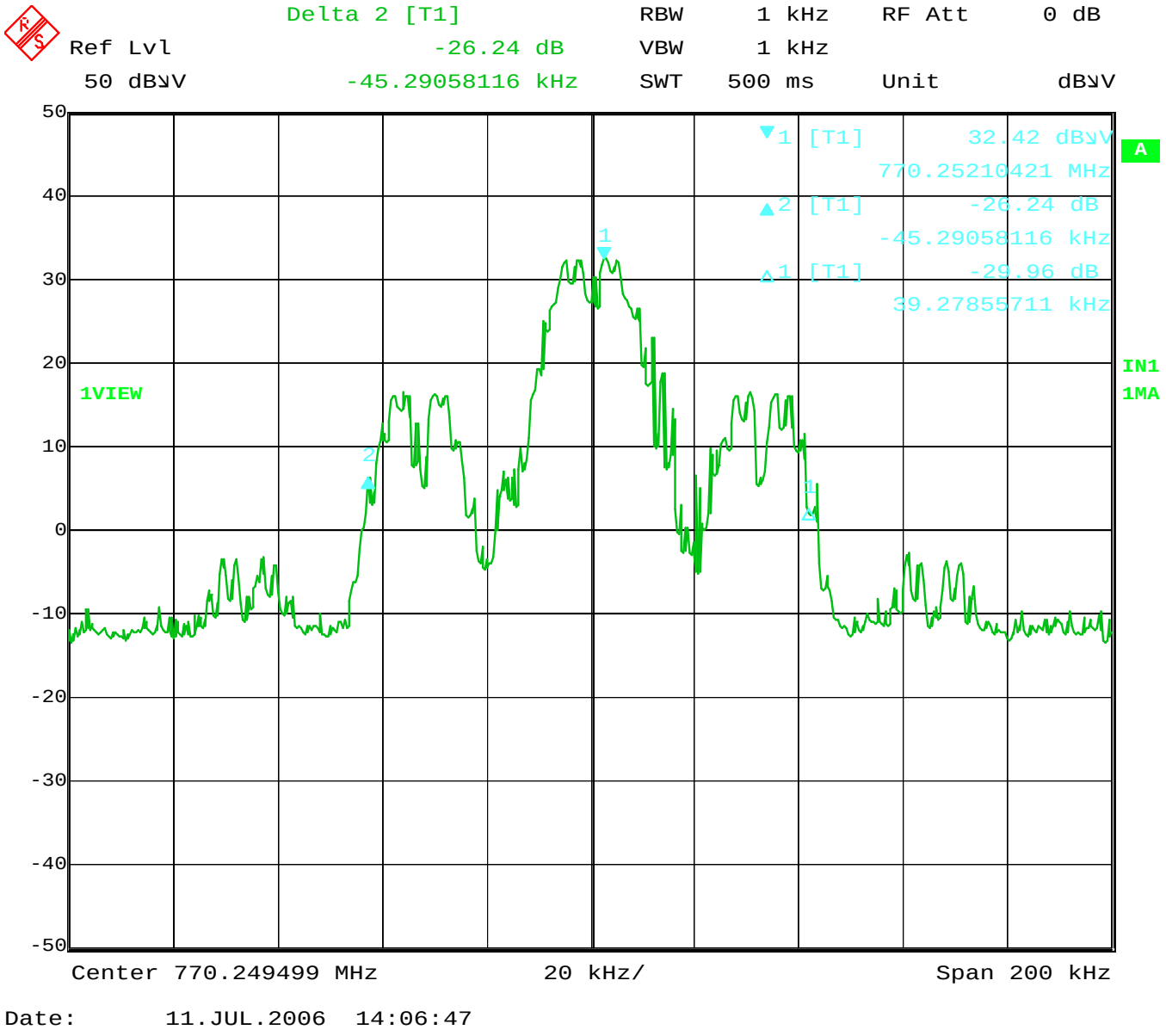


Figure 14 High bandwidth test result

9. UNWANTED RADIATION

9.1. PROVISIONS APPLICABLE

According to Section 74.861(e)-6, The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:
1). On any frequency removed from the operating frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: at least 25 dB;
2). On any frequency removed from the operating frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35 dB;
3). On any frequency removed form the operating frequency by more than 250 percent of the authorized bandwidth: at least 43 + 10 log10 (TP) dB

9.2. MEASUREMENT PROCEDURE

1). On a test site, the EUT shall be placed on a turntable, and in the XYZ three position.
2). The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
3). The output of the antenna shall be connected to the EMI test receiver(R&S ESIB26).
The setup of test receiver:
Detector: Peak
RBW: 120kHz for 30-1000MHz
1MHz for above1GHz
VBW: 300kHz for 30-1000MHz
3MHz for above1GHz
The measurement frequency is up to 8GHz.
4). The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
5). The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
6). The transmitter shall than be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
7). The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.
8). The maximum signal level detected by the measuring receiver shall be noted.
9). The measurement shall be repeated with the test antenna set to horizontal polarization.
10). Replace the antenna with a proper Antenna (substitution antenna).
11). The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
12). The substitution antenna shall be connected to a calibrated signal generator.
13). If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
14). The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
15). The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the

measuring receiver.

16). The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.

17). The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.

9.3. TEST SETUP BLOCK DIAGRAM (block diagram of configuration)

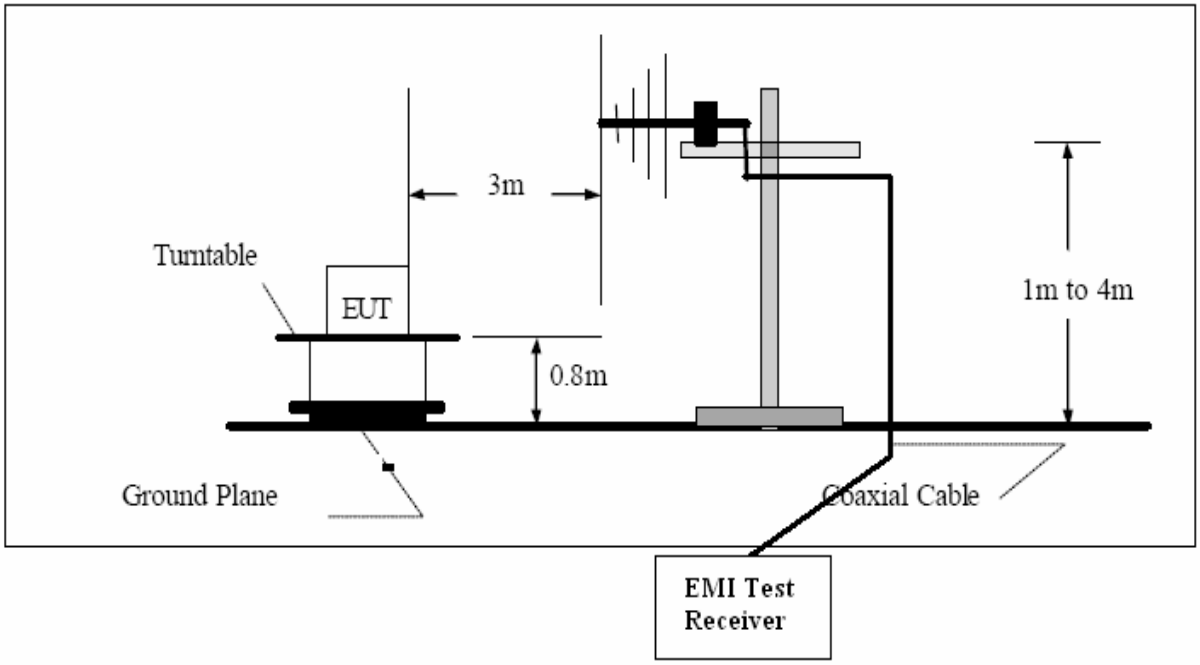


Figure 15 Radiation Test setup

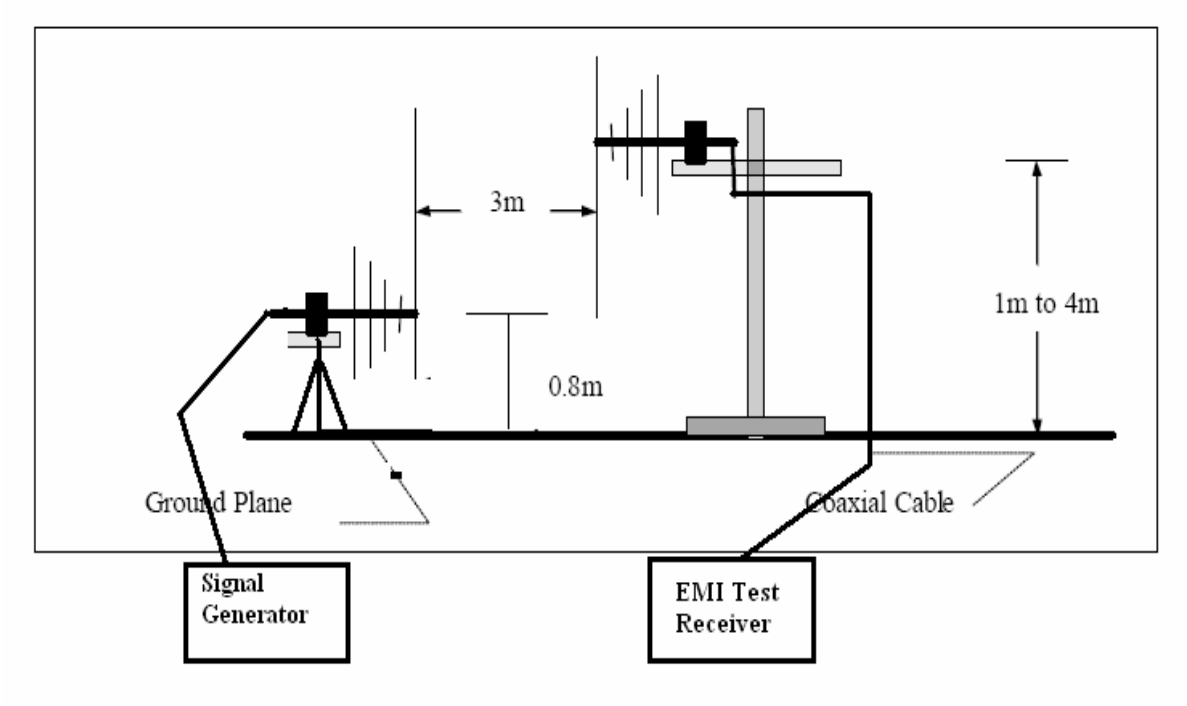


Figure 16 Substitution Method test setup

9.4. MEASUREMENT RESULTS:

Calculation: Limit (dBm)= EL-43-10log10 (TP)
Notes: EL is the emission level of the Output Power expressed in dBm,, in this application, the EL is –17.4 dBm.
Limit (dBm)= -17.4-43-10log 10 (0.000018) = -13
The measurement frequency is up to 8GHz.

Table 15 Test Equipment

Working Mode: 1

Frequency (MHz)	Reading (SG)(dBm)	Antenna Gain (dB)	Cable Loss (dB)	Transmit Power (dBm)	Transmit Power (mW)	Limit (mW)
---	---	---	---	---	---	---

Notes: 1.--- means the output power of all the spurious frequency is at least 20dBdown to the limit.
2. Note: Transmit Power(dBm)=Reading(SG)(dBm)+Antenna Gain(dBm)-Cable Loss(dB)
Transmit Power(dBm)=10Log(Transmit Power(mW)/1mW)

Table 16 Test Equipment

Working Mode: 2

Frequency (MHz)	Reading (SG)(dBm)	Antenna Gain (dB)	Cable Loss (dB)	Transmit Power (dBm)	Transmit Power (mW)	Limit (mW)
---	---	---	---	---	---	---

Notes: 1.--- means the output power of all the spurious frequency is at least 20dBdown to the limit.

2. Note: Transmit Power(dBm)=Reading(SG)(dBm)+Antenna Gain(dBm)-Cable Loss(dB)
Transmit Power(dBm)=10Log(Transmit Power(mW)/1mW)

Table 17 Test Equipment

Working Mode: 3

Frequency (MHz)	Reading (SG)(dBm)	Antenna Gain (dB)	Cable Loss (dB)	Transmit Power (dBm)	Transmit Power (mW)	Limit (mW)
---	---	---	---	---	---	---

Notes: 1.--- means the output power of all the spurious frequency is at least 20dBdown to the limit.

2. Note: Transmit Power(dBm)=Reading(SG)(dBm)+Antenna Gain(dBm)-Cable Loss(dB)
Transmit Power(dBm)=10Log(Transmit Power(mW)/1mW)

9.5. Emission Mask

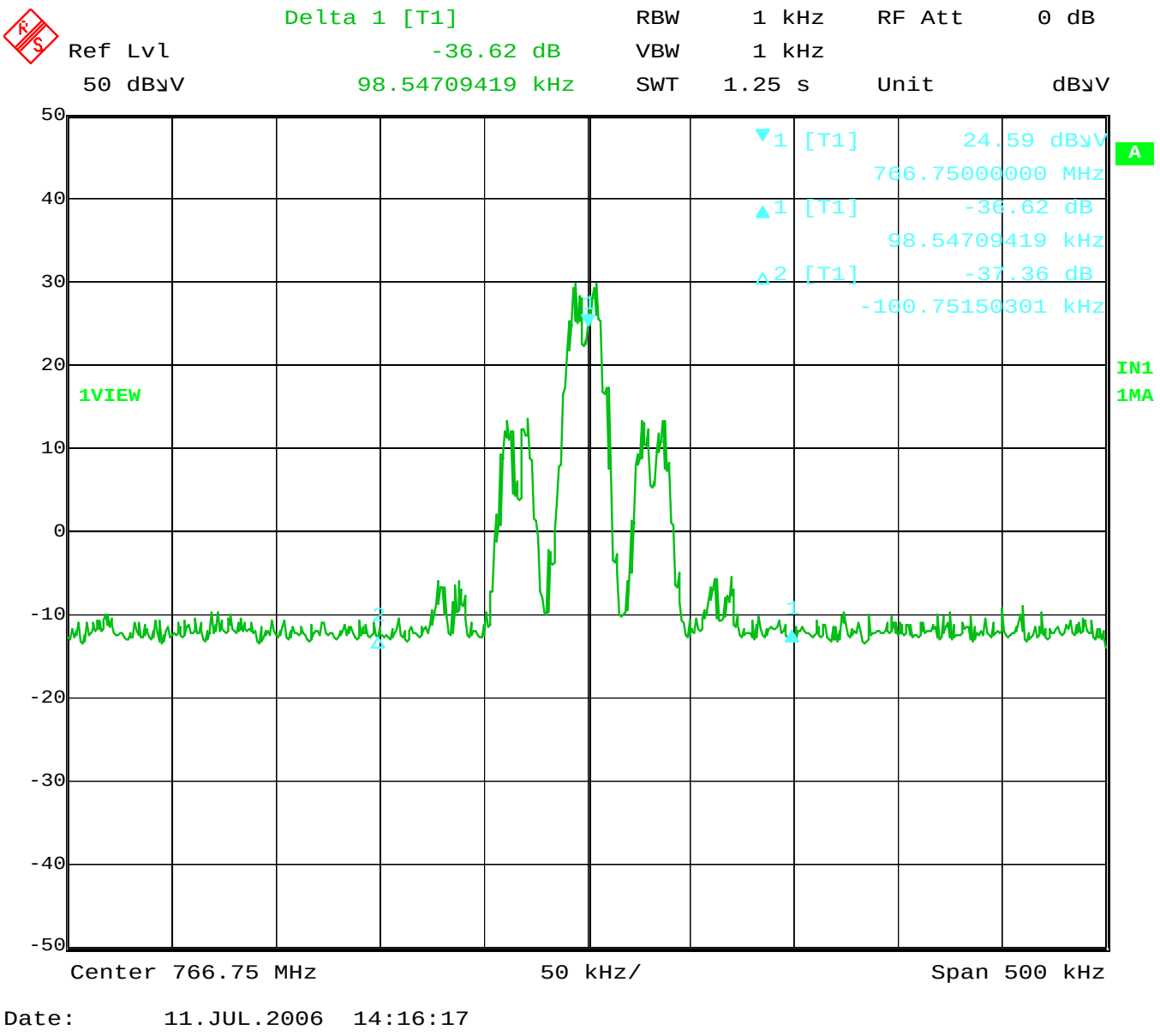


Figure 17 Low Channel Emission Mask

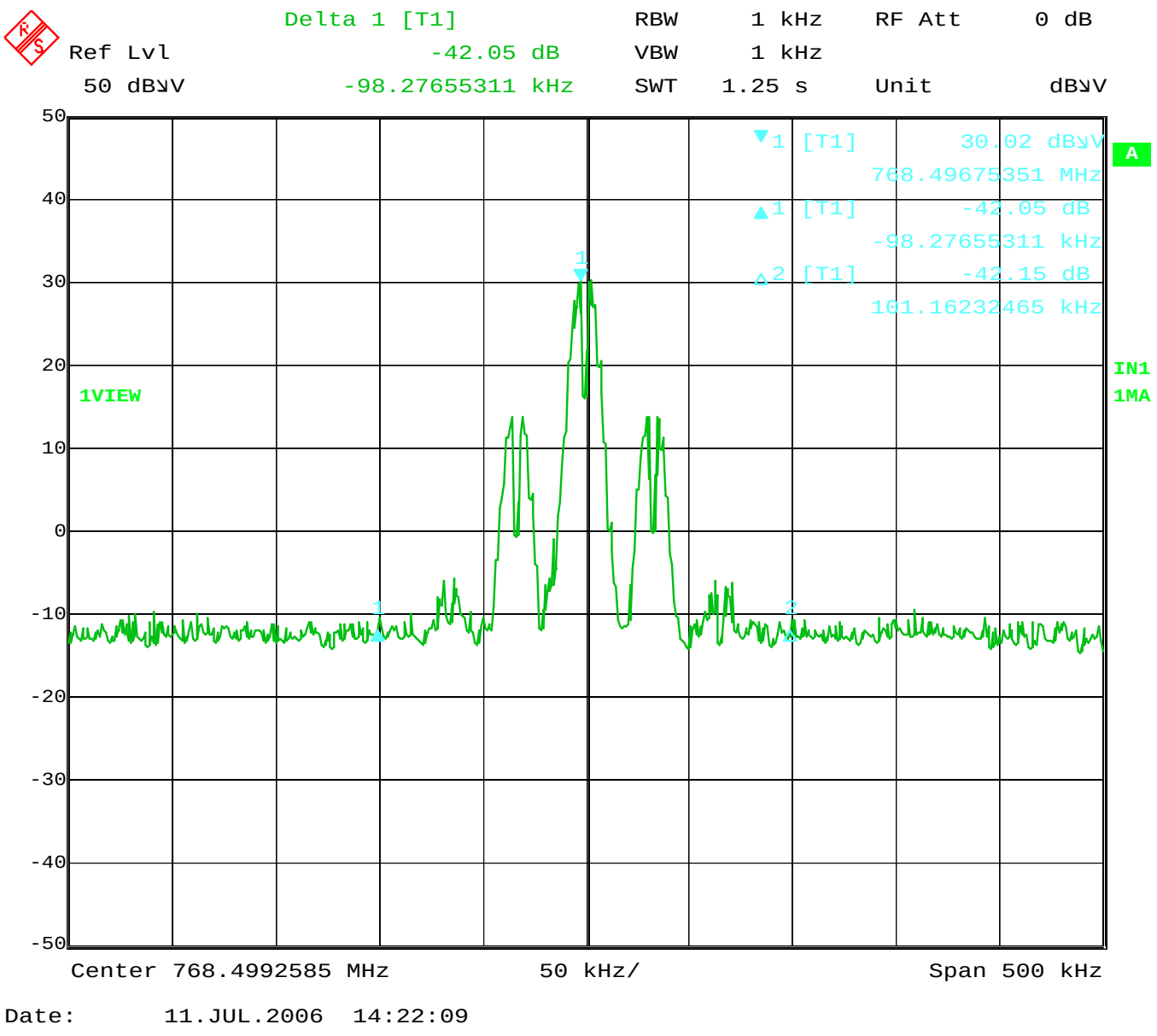


Figure 18 Mid Channel Emission Mask

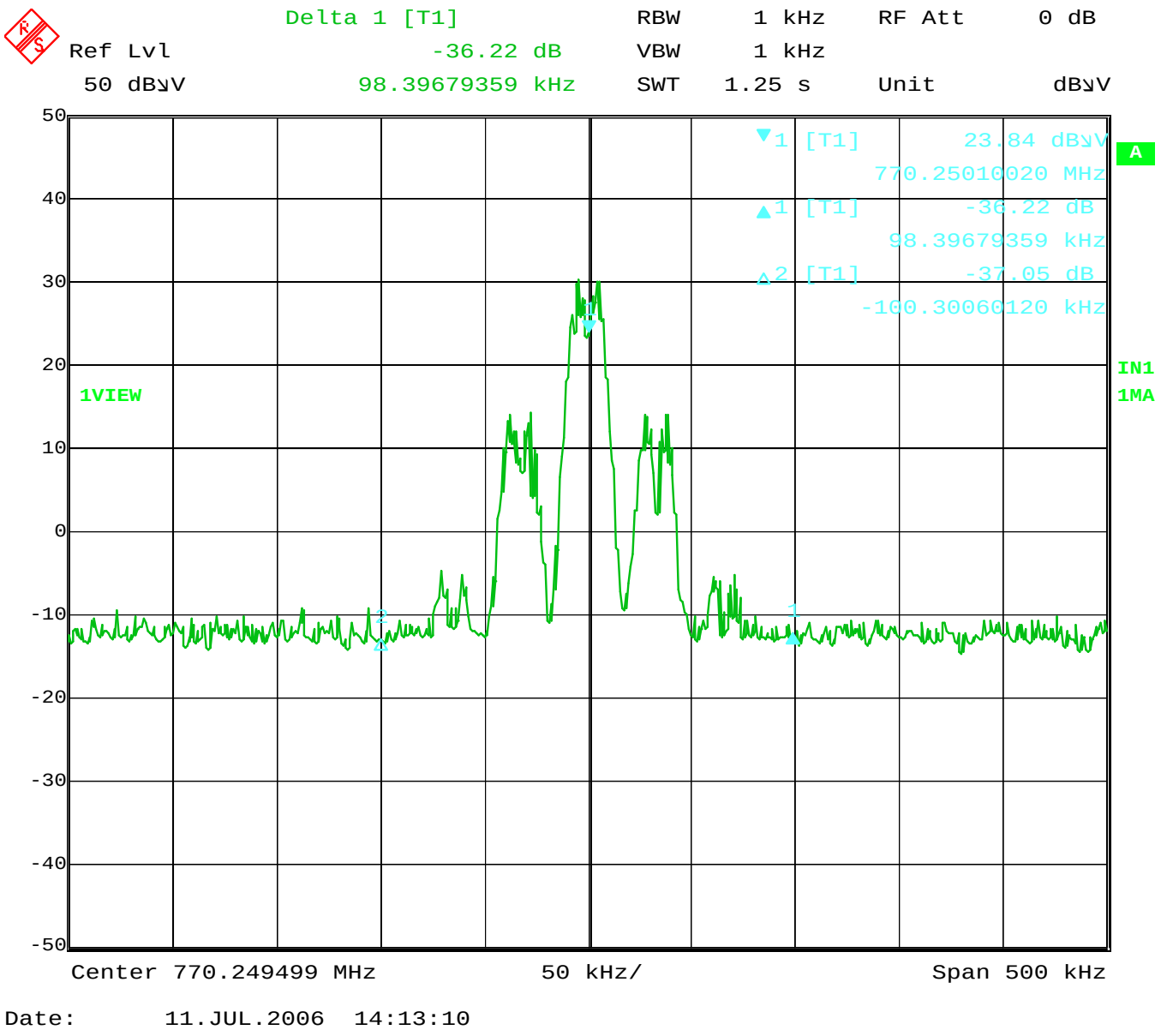


Figure 19 High Channel Emission Mask