

# FCC PART 15B

## MEASUREMENT AND TEST REPORT

### FOR

**NEWMI TECH(HK) CO., LTD.**

**908 B, Xin Neng Yuan Bl., Nanhai Rd., Nanshan Dist., Shenzhen, China**

**FCC ID: XY310001**

<b>Report Concerns:</b> Original Report	<b>Equipment Type:</b> USB TV Dongle
<b>Model:</b>	<u>DM26AN</u>
<b>Report No.:</b>	<u>STR09118119I</u>
<b>Test/Witness Engineer:</b>	<u></u>
<b>Test Date:</b>	<u>2009-11-23 to 2009-12-17</u>
<b>Issue Date:</b>	<u>2009-12-18</u>
<b>Prepared By:</b>	<b>SEM.Test Compliance Service Co., Ltd.</b> 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C. (518101)
<b>Approved &amp; Authorized By:</b>	<u></u> Jandy So / PSQ Manager

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by SEM.Test Compliance Service Co., Ltd.

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## 1. GENERAL INFORMATION

### 1.1 Product Description for Equipment Under Test (EUT)

**Client Information**

Applicant: NEWMI TECH(HK) CO., LTD.  
Address of applicant: 908 B, Xin Neng Yuan Bl., Nanhai Rd., Nanshan Dist.,  
Shenzhen, China

Manufacturer: NEWMI TECH(HK) CO., LTD.  
Address of manufacturer: 908 B, Xin Neng Yuan Bl., Nanhai Rd., Nanshan Dist.,  
Shenzhen, China

**General Description of E.U.T**

Items	Description
EUT Description:	USB TV Dongle
Trade Name:	/
Model No.:	DM26AN
Rate Voltage:	DC 5V
Rate Current:	500mA
Rate Power:	2.5W
Packaging Size:	10.4 X 3.2 X 1.6 cm
For more information refer to the circuit diagram form and the user's manual.	

*The test data is gathered from a production sample, provided by the manufacturer.*

### 1.2 Test Standards

The following report is prepared on behalf of the NEWMI TECH (HK) CO., LTD. in accordance with Part 2, Subpart J, and Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15.107, and 15.109 rules.

**Maintenance of compliance** is the responsibility of the manufacturer. Any modification of the product, which results in lowering the emission/immunity, should be checked to ensure compliance has been maintained.

### 1.3 Related Submittal(s)/Grant(s)

No Related Submittal(s).

## 1.4 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

The equipment under test (EUT) was configured to measure its highest possible susceptibility against the tested phenomena. The test modes were adapted accordingly in reference to the Operating Instructions.

## 1.5 Test Facility

FCC – Registration No.: **994117**

SEM.Test Compliance Services Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 994117.

Industry Canada (IC) Registration No.: **7673A**

The 3m Semi-anechoic chamber of SEM.Test Compliance Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 7673A.

## 1.6 EUT Exercise Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the system components. The test software, provided by the customer, is started while the EUT is on to simulate the normal work. under the Windows XP terminal.

## 1.7 Accessories Equipment List and Details

Manufacturer	Description	Model	Serial Number
lenovo	Tabletop PC	Yangtian M3100V	SS06901622
lenovo	Monitor	LXM-L17AB	4M0233274805856
TP-LINK	Modem	TM-EC5658V	KT99CTQC-508
Lenovo	Printer	3110	OD65133711480

## 1.8 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
Antenna Cable	1.5	Unshielded	Without Core
AV Cable	0.15	Unshielded	Without Core

2. SUMMARY OF TEST RESULTS

Description of Test	Result
§15.107 (a) Conducted Emission	Compliant
§15.109(a) Radiated Emission	Compliant

### 3. §15.107 (a)- CONDUCTED EMISSION

#### 3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is  $\pm 1.5$  dB.

#### 3.2 Test Equipment List and Details

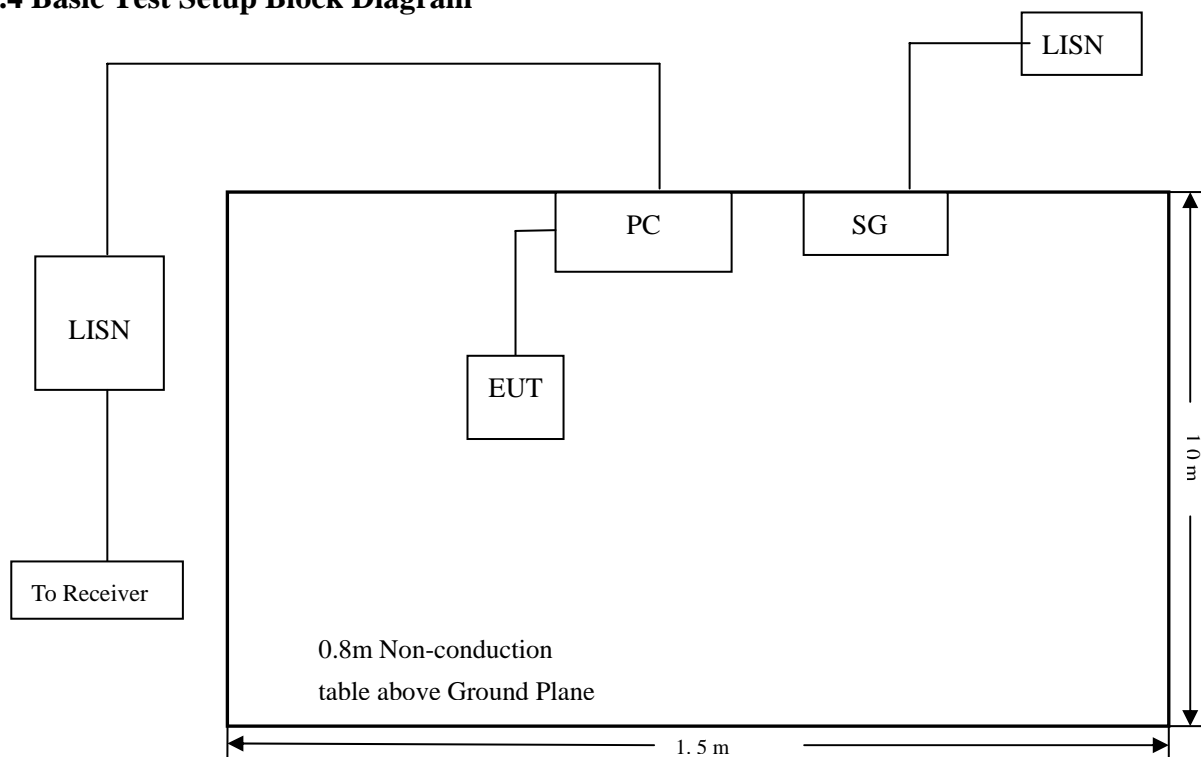
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2009-08-12	2010-08-11
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2009-08-12	2010-08-11
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2009-08-12	2010-08-11
AMN	Rohde & Schwarz	ESH3-Z5	828304/014	2009-08-12	2010-08-11

#### 3.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.107 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle. The spacing between the peripherals was 10 cm.

#### 3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

3.6 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency ..... 150 kHz  
Stop Frequency..... 30 MHz  
Sweep Speed ..... Auto  
IF Bandwidth..... 10 kHz  
Quasi-Peak Adapter Bandwidth ..... 9 kHz  
Quasi-Peak Adapter Mode ..... Normal

3.7 Summary of Test Results/Plots

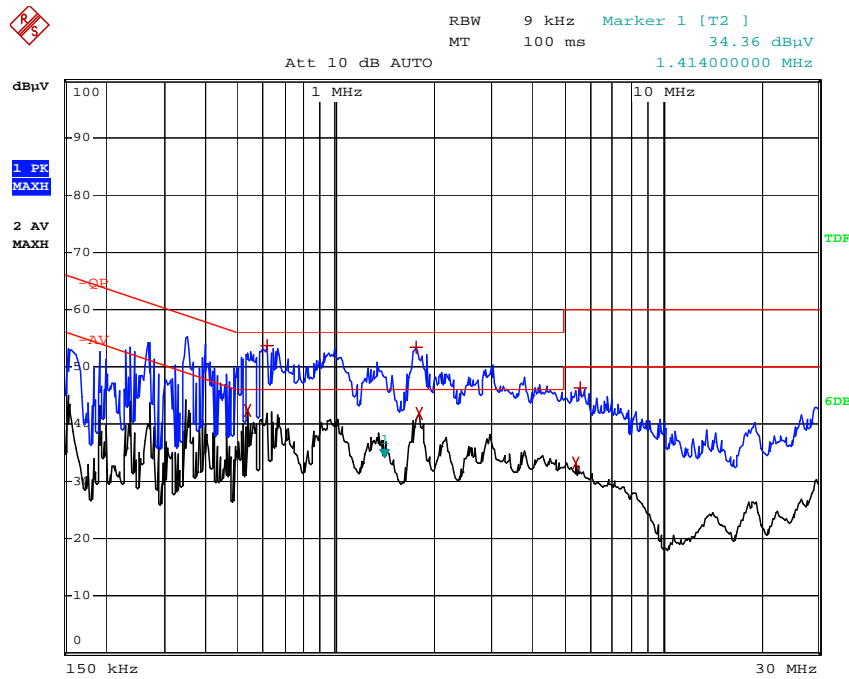
According to the data in section 3.8, the EUT complied with the FCC 15B Conducted margin for a Class B device, with the *worst* margin reading of:

**-2.39 dBµV at 0.618 MHz in the Neutral mode, Pk detector, 0.15-30MHz**

3.8 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

Conducted Disturbance  
EUT: USB TV Dongle  
M/N: DM26AN  
Operating Condition: TV Receiving  
Test Specification: N  
Comment: AC 120V/60Hz connect to PC, USB 5V

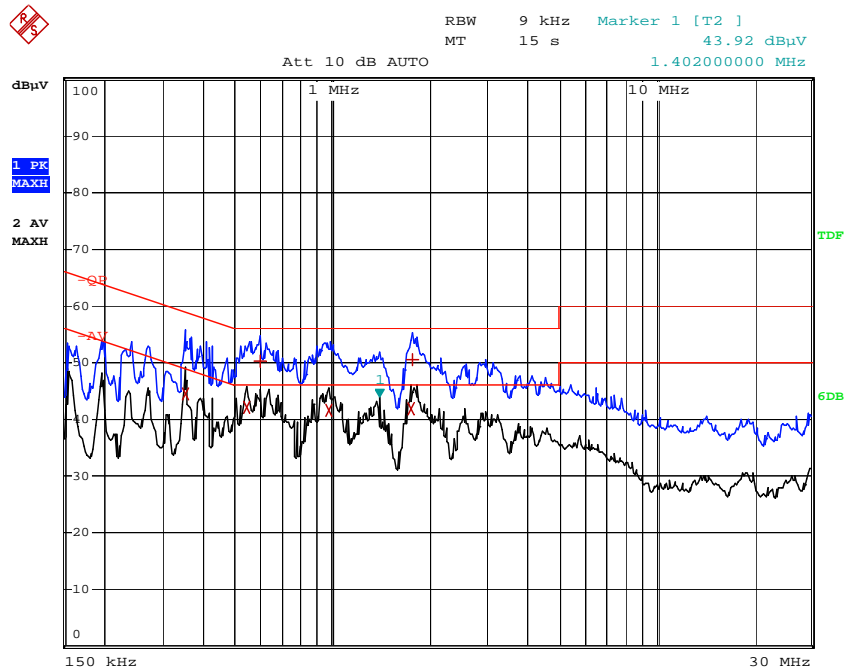


EDIT PEAK LIST (Prescan Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	538 kHz	42.30	-3.69
1 Max Peak	618 kHz	53.60	-2.39
1 Max Peak	1.774 MHz	53.42	-2.57
2 Average	1.81 MHz	41.92	-4.07
2 Average	5.45 MHz	33.24	-16.75
1 Max Peak	5.61 MHz	46.43	-13.56



Plot of Conducted Emissions Test Data

Conducted Disturbance  
EUT: USB TV Dongle  
M/N: DM26AN  
Operating Condition: TV Receiving  
Test Specification: L  
Comment: AC 120V/60Hz connect to PC, USB 5V



EDIT PEAK LIST (Final Measurement Results)				
Trace1:	-QP			
Trace2:	-AV			
Trace3:	---			
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB	
2 Average	350 kHz	44.48	-4.48	
2 Average	542 kHz	42.18	-3.81	
1 Quasi Peak	594 kHz	50.37	-5.62	
2 Average	970 kHz	41.58	-4.41	
2 Average	1.746 MHz	41.80	-4.19	
1 Quasi Peak	1.77 MHz	50.58	-5.41	

## 4. §15.109(a)- RADIATED EMISSION

### 4.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is  $\pm 3.0$  dB.

### 4.2 Test Equipment List and Details

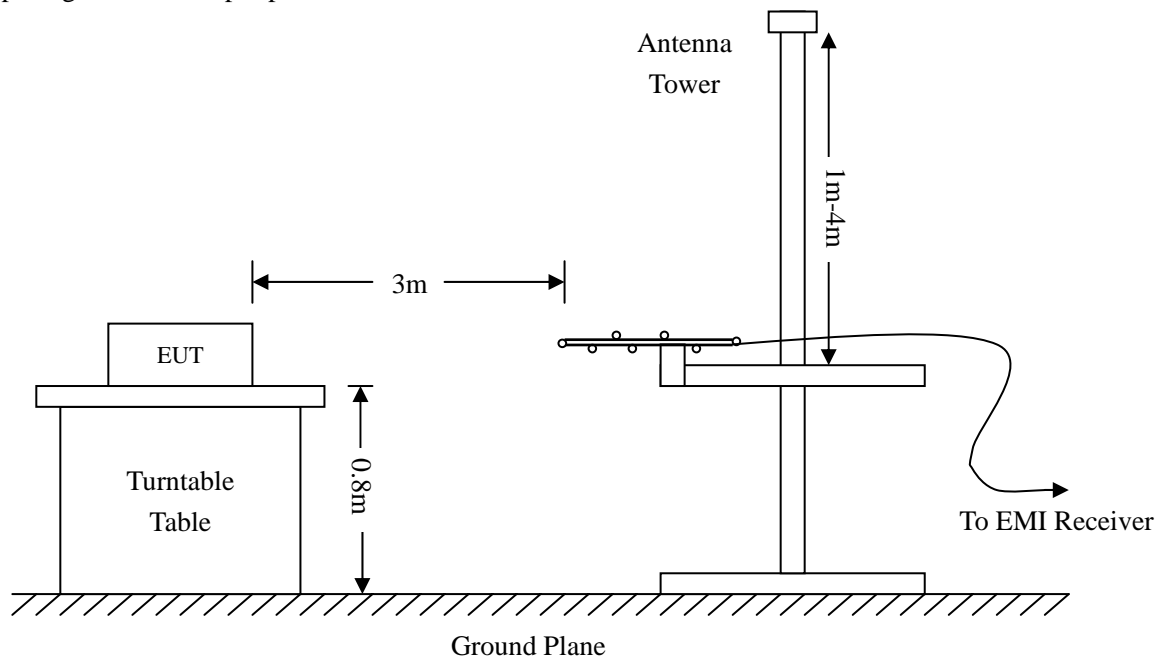
Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	ROHDE&SCHWARZ	FSEA20	DE25181	2009-08-12	2010-08-11
Positioning Controller	C&C	CC-C-1F	N/A	2009-08-12	2010-08-11
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2009-07-21	2010-07-20
Horn Antenna	SCHWARZBECK	BBHX 9120	9120-426	2009-07-21	2010-07-20
RF Switch	EM	EMSW18	SW060023	2009-08-12	2010-08-11
Amplifier	Agilent	8447F	3113A06717	2009-08-12	2010-08-11
Coaxial Cable	SCHWARZBECK	AK9513	9513-10	2009-08-12	2010-08-11
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	25498514	2009-08-12	2010-08-11

### 4.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.205 and FCC Part 15.109 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.



#### 4.4 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency ..... 30 MHz  
 Stop Frequency..... 1000 MHz  
 Sweep Speed ..... Auto  
 IF Bandwidth..... 10 kHz  
 Quasi-Peak Adapter Bandwidth ..... 120 kHz  
 Quasi-Peak Adapter Mode ..... Normal

#### 4.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB $\mu$ V means the emission is 6dB $\mu$ V below the maximum limit for Class B. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15B Limit}$$

#### 4.6 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

#### 4.7 Summary of Test Results/Plots

According to the data, the EUT complied with the FCC 15B Class B standards, and had the worst margin of:

**-2.08 dB $\mu$ V at 325.5957MHz in the Vertical polarization, at TV Receiving mode, 30 MHz to 1 GHz, 3Meters**

**-2.62 dB $\mu$ V at 323.3204MHz in the Horizontal polarization, at AV Input mode, 30 MHz to 1 GHz, 3Meters**

Plot of Radiation Emissions Test Data

Radiated Disturbance

EUT: USB TV Dongle

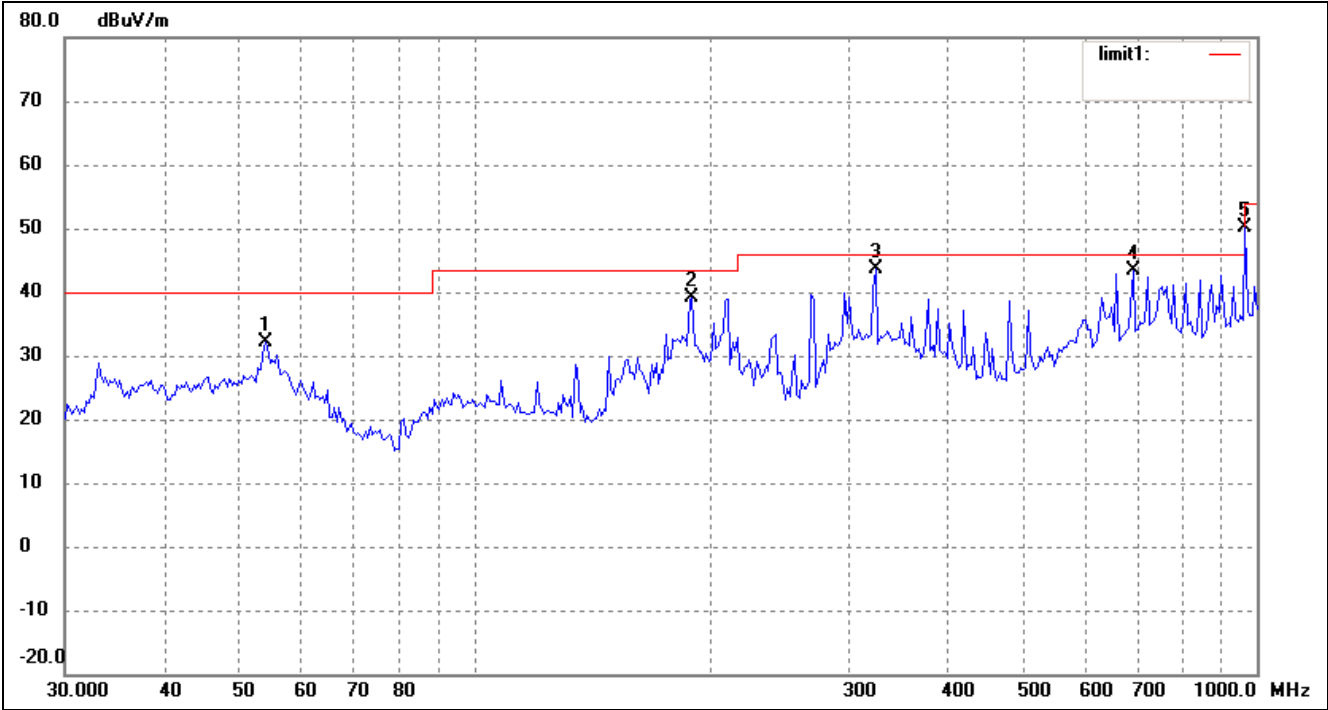
M/N: DM26AN

Operating Condition: TV Receiving

Test Specification: Horizontal & Vertical

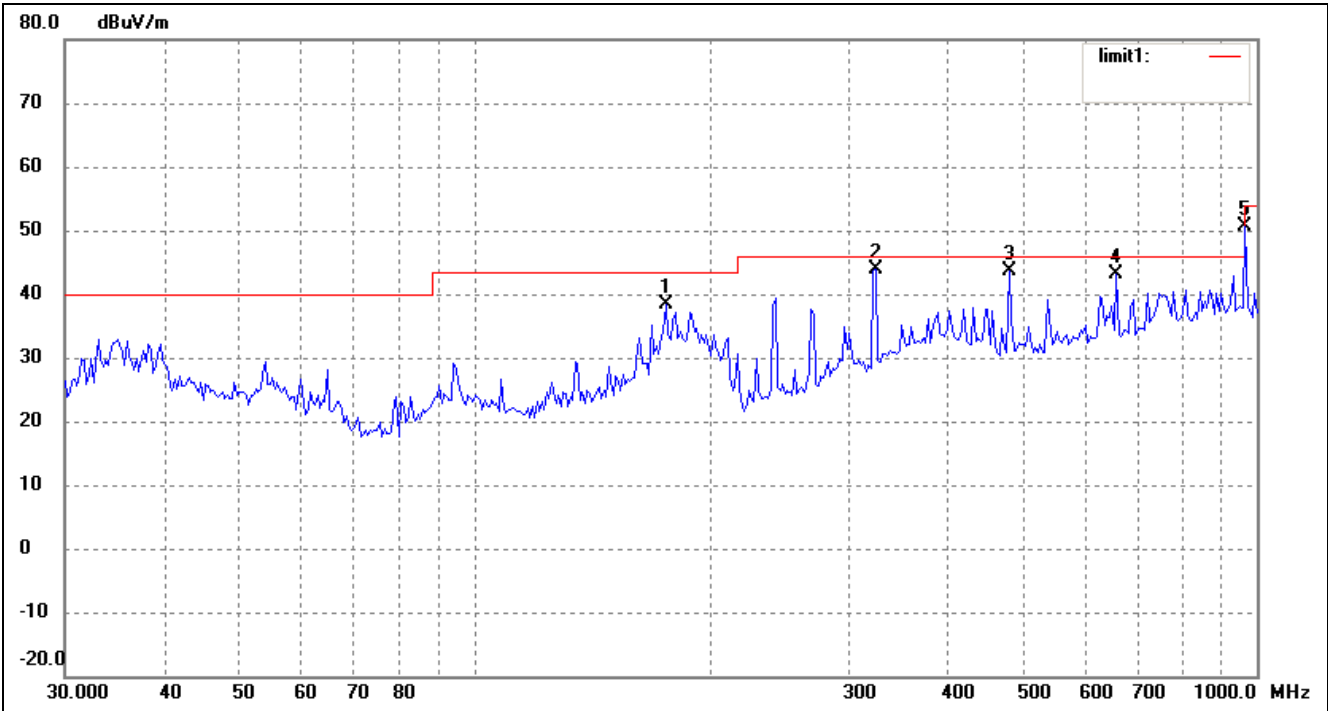
Comment: AC 120V/60Hz connect to PC, USB 5V

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	( ° )	(cm)	
1	54.0711	24.31	7.80	32.11	40.00	-7.89	223	200	peak
2	189.7384	32.20	6.81	39.01	43.50	-4.49	360	200	peak
3	325.5957	33.01	10.74	43.75	46.00	-2.25	229	100	peak
4	694.4174	26.14	17.23	43.37	46.00	-2.63	139	150	peak
5	965.5421	28.89	21.21	50.10	54.00	-3.90	205	100	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	( ° )	(cm)	
1	175.6516	32.95	5.31	38.26	43.50	-5.24	190	150	peak
2	325.5957	33.18	10.74	43.92	46.00	-2.08	73	100	peak
3	482.2155	30.16	13.36	43.52	46.00	-2.48	96	100	peak
4	661.1503	26.30	16.78	43.08	46.00	-2.92	260	150	peak
5	965.5421	29.38	21.21	50.59	54.00	-3.41	49	200	peak

Plot of Radiation Emissions Test Data

Radiated Disturbance

EUT: USB TV Dongle

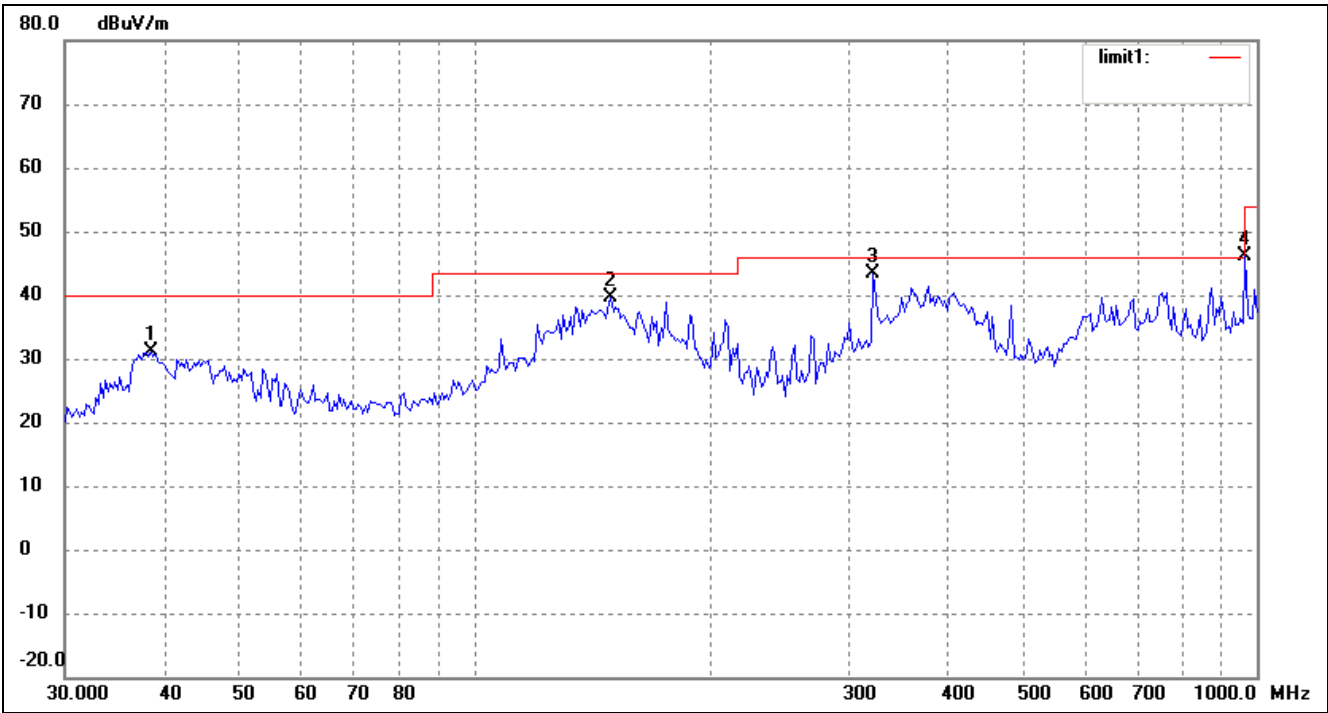
M/N: DM26AN

Operating Condition: AV Input

Test Specification: Horizontal & Vertical

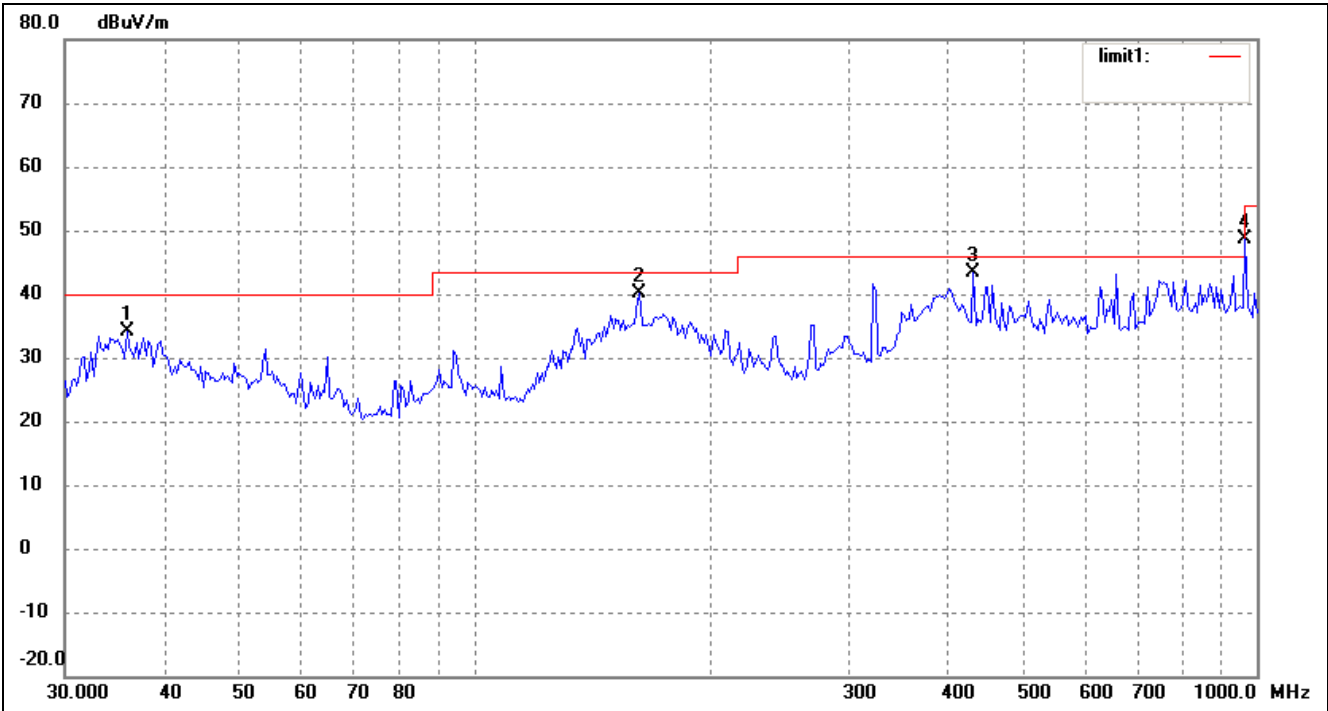
Comment: AC 120V/60Hz connect to PC, USB 5V

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	( ° )	(cm)	
1	38.6160	24.26	6.86	31.12	40.00	-8.88	163	200	peak
2	149.4857	35.48	4.08	39.56	43.50	-3.94	136	150	peak
3	323.3204	32.79	10.59	43.38	46.00	-2.62	33	100	peak
4	965.5421	24.89	21.21	46.10	54.00	-7.90	360	100	peak

Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( ° )	Height (cm)	Remark
1	36.0007	27.27	6.84	34.11	40.00	-5.89	166	200	peak
2	162.6106	35.51	4.63	40.14	43.50	-3.36	39	100	peak
3	434.0649	30.66	12.65	43.31	46.00	-2.69	296	100	peak
4	965.5421	27.38	21.21	48.59	54.00	-5.41	42	100	peak

\*\*\*\*\* END OF REPORT \*\*\*\*\*