



# **FCC RADIO TEST REPORT**

## **FCC ID: LNQSBWD100B**

**Product :** ScreenBeam Pro Wireless Display Receiver,  
ScreenBeam Pro - Education Edition 2,  
ScreenBeam Pro - Business Edition,  
ScreenBeam Kit,  
ScreenBeam Pro

**Trade Name :** Actiontec

**Model Name :** SBWD100B

**Serial Model :** N/A

**Report No. :** NTEK-2014NT0515718F3-02

### **Prepared for**

Actiontec Electronics, Inc.

760 North Mary Ave., Sunnyvale, California 94085 United States

### **Prepared by**

Shenzhen NTEK Testing Technology Co., Ltd.

1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street  
Bao'an District, Shenzhen P.R. China

Tel.: +86-0755-61156588 Fax.: +86-0755-61156599

Website: [www.ntek.org.cn](http://www.ntek.org.cn)

## TEST RESULT CERTIFICATION

**Applicant's name** ..... Actiontec Electronics, Inc.

**Address** ..... 760 North Mary Ave., Sunnyvale, California 94085 United States

**Manufacturer's Name**... Actiontec Electronics, Inc.

**Address** ..... 760 North Mary Ave., Sunnyvale, California 94085 United States

### Product description

**Product name** ..... ScreenBeam Pro Wireless Display Receiver,  
ScreenBeam Pro - Education Edition 2,  
ScreenBeam Pro - Business Edition,  
ScreenBeam Kit,  
ScreenBeam Pro

**Model and/or type  
reference** ..... SBWD100B

**Serial Model** ..... N/A

**Standards** ..... FCC Part15.247 01 Oct.2015

**Test procedure** ..... ANSI C63.10-2013 and KDB 558074: June 5, 2014  
RSS-Gen Rules

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

This report shall not be reproduced except in full, without the written approval of NTEK, this document may be altered or revised by NTEK, personnel only, and shall be noted in the revision of the document.

**Date of Test** .....

**Date (s) of performance of tests** ..... 20 Nov. 2015 ~07 Dec. 2015

**Date of Issue** ..... 07 Dec. 2015

**Test Result** ..... **Pass**

**Testing Engineer** : Jason Chen  
(Jason Chen)

**Technical Manager** : Brown Lu  
(Brown Lu)

**Authorized Signatory** : Sam Chen  
(Sam Chen)

| <b>Table of Contents</b>                                    | <b>Page</b> |
|-------------------------------------------------------------|-------------|
| <b>1 . SUMMARY OF TEST RESULTS</b>                          | <b>4</b>    |
| 1.1 TEST FACILITY                                           | 5           |
| 1.2 MEASUREMENT UNCERTAINTY                                 | 5           |
| <b>2 . GENERAL INFORMATION</b>                              | <b>6</b>    |
| 2.1 GENERAL DESCRIPTION OF EUT                              | 6           |
| 2.2 DESCRIPTION OF TEST MODES                               | 9           |
| 2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED | 10          |
| 2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)            | 11          |
| 2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS                      | 12          |
| <b>3 . EMC EMISSION TEST</b>                                | <b>13</b>   |
| 3.1 CONDUCTED EMISSION MEASUREMENT                          | 13          |
| 3.1.1 POWER LINE CONDUCTED EMISSION LIMITS                  | 13          |
| 3.1.2 TEST PROCEDURE                                        | 14          |
| 3.1.3 DEVIATION FROM TEST STANDARD                          | 14          |
| 3.1.4 TEST SETUP                                            | 14          |
| 3.1.5 EUT OPERATING CONDITIONS                              | 14          |
| 3.1.6 TEST RESULTS                                          | 15          |
| 3.2 RADIATED EMISSION MEASUREMENT                           | 27          |
| 3.2.1 RADIATED EMISSION LIMITS                              | 27          |
| 3.2.2 TEST PROCEDURE                                        | 28          |
| 3.2.3 DEVIATION FROM TEST STANDARD                          | 28          |
| 3.2.4 TEST SETUP                                            | 29          |
| 3.2.5 EUT OPERATING CONDITIONS                              | 30          |
| 3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)                  | 31          |
| 3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)                   | 32          |
| 3.2.8 TEST RESULTS (ABOVE 1000 MHZ)                         | 40          |
| <b>4 . EUT TEST PHOTO</b>                                   | <b>41</b>   |
| <b>APPENDIX-PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS</b>   |             |

## 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

| FCC Part15 (15.247) , Subpart C |                            |          |        |
|---------------------------------|----------------------------|----------|--------|
| Standard Section                | Test Item                  | Judgment | Remark |
| 15.207                          | Conducted Emission         | PASS     |        |
| 15.247 (c)                      | Radiated Spurious Emission | PASS     |        |

Note : This C2PC testing , the changed is: Only change the Adapter.

### 1.1 TEST FACILITY

NTEK Testing Technology Co., Ltd

Add.:1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen P.R. China.

FCC Registration No.:238937; IC Registration No.:9270A-1

CNAS Registration No.:L5516

### 1.2 MEASUREMENT UNCERTAINTY

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

| No. | Item                         | Uncertainty               |
|-----|------------------------------|---------------------------|
| 1   | Conducted Emission Test      | $\pm 1.38\text{dB}$       |
| 2   | RF power,conducted           | $\pm 0.16\text{dB}$       |
| 3   | Spurious emissions,conducted | $\pm 0.21\text{dB}$       |
| 4   | All emissions,radiated(<1G)  | $\pm 4.68\text{dB}$       |
| 5   | All emissions,radiated(>1G)  | $\pm 4.89\text{dB}$       |
| 6   | Temperature                  | $\pm 0.5^{\circ}\text{C}$ |
| 7   | Humidity                     | $\pm 2\%$                 |

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

|                        |                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                           |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Equipment              | ScreenBeam Pro Wireless Display Receiver,<br>ScreenBeam Pro - Education Edition 2,<br>ScreenBeam Pro - Business Edition,<br>ScreenBeam Kit,<br>ScreenBeam Pro                                                                                                                                                                                             |                                                                                                                                                                                           |
| Trade Name             | Actiontec                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                           |
| Model Name             | SBWD100B                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                           |
| Product Description    | The EUT is a ScreenBeam Pro Wireless Display Receiver,<br>ScreenBeam Pro - Education Edition 2,<br>ScreenBeam Pro - Business Edition,<br>ScreenBeam Kit,<br>ScreenBeam Pro                                                                                                                                                                                |                                                                                                                                                                                           |
|                        | Operation Frequency:                                                                                                                                                                                                                                                                                                                                      | 802.11b/g/n(20MHz):2412~2462 MHz<br>802.11n(40MHz):2422~2452 MHz                                                                                                                          |
|                        | Modulation Type:                                                                                                                                                                                                                                                                                                                                          | 802.11b : DSSS (CCK, DQPSK, DBPSK)<br>802.11g/n (HT20/HT40) : OFDM<br>(64QAM, 16QAM, QPSK, BPSK)                                                                                          |
|                        | Bit Rate of Transmitter                                                                                                                                                                                                                                                                                                                                   | 802.11b:11/5.5/2/1 Mbps<br>802.11g:54/48/36/24/18/12/9/6Mbps<br>802.11n(20MHz):150/144.44/130/117/115.56/104/86.67/78/52/6.5Mbps<br>802.11n(40MHz):300/270/240/180/150/120/108/90/54 Mbps |
|                        | Number Of Channel                                                                                                                                                                                                                                                                                                                                         | 802.11b/g/n20MHz:11CH<br>802.11n40MHz:7CH                                                                                                                                                 |
|                        | Antenna Designation:                                                                                                                                                                                                                                                                                                                                      | Please see Note 3.                                                                                                                                                                        |
|                        | Antenna Gain (dBi)                                                                                                                                                                                                                                                                                                                                        | Please see Note 3.                                                                                                                                                                        |
|                        | 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.                                                                                                                                        |                                                                                                                                                                                           |
| Channel List           | Please refer to the Note 2.                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                           |
| Ratings                | DC 5V                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                           |
| Adapter                | Adapter 1<br>Mode: KSAS0120500200HU<br>Input: 100-240V~, 50/60Hz, 0.4A<br>Output: 5.0V $\overline{\text{---}}$ , 2.0A<br>Adapter 2<br>Mode: MU05BS050100-A1<br>Input: 100-240V~, 50/60Hz, 0.18A<br>Output: 5V $\overline{\text{---}}$ , 1A<br>Adapter 3<br>Mode: WB-10E05FU<br>Input: 100-240V~, 50/60Hz, 0.4A<br>Output: 5V $\overline{\text{---}}$ , 2A |                                                                                                                                                                                           |
| Battery                | N/A                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                           |
| Connecting I/O Port(s) | Please refer to the User's Manual                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                           |

Note:

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

2. 2.4GHz

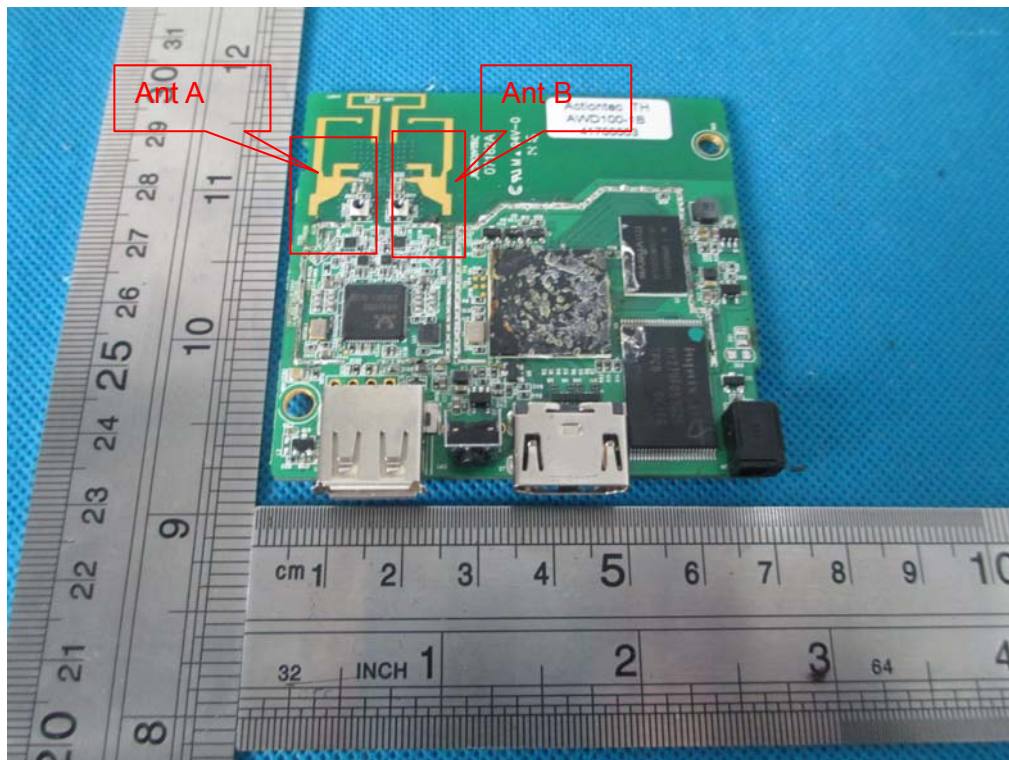
| Channel List for 802.11b/g/n(20 MHz) |                 |         |                 |         |                 |         |                 |
|--------------------------------------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| Channel     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

| Channel List for 802.11n(40MHz) |                 |         |                 |         |                 |         |                 |
|---------------------------------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| Channel                         | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 03                              | 2422            | 06      | 2437            | 09      | 2452            | -       | -               |
| 04                              | 2427            | 07      | 2442            | -       | -               | -       | -               |
| 05                              | 2432            | 08      | 2447            | -       | -               | -       | -               |

3.

Table for Filed Antenna

| Ant . | Brand | Model Name | Antenna Type | Gain (dBi) | NOTE         |
|-------|-------|------------|--------------|------------|--------------|
| A     | N/A   | N/A        | PCB antenna  | 2.4G:3.6   | Wifi Antenna |
| B     | N/A   | N/A        | PCB antenna  | 2.4G:3.6   | Wifi Antenna |



The Control software(tool\_WIFI.exe) can control antenna A/ B ,

For 2.4GHz mode, antenna A/ B are transmitting, two antennas simultaneously transmit. And the data is recorded for radiated emission and band edge.

For 5GHz mode, antenna A B are transmitting ,Two antennas simultaneously transmit. And the data is recorded for radiated emission, and band edge.

For MIMO mode , Directional gain= $G_{ANT} + 10\log(N)$ dbi =6.61dbi in 2.4GHz

Directional gain= $G_{ANT} + 10\log(N)$ dbi =6.61dbi in 5GHz  
802.11a/b/g/n 2.4GHz & 5GHz has MIMO mode.

## 2.2 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       | 802.11b CH1/ CH6/ CH11   |
| Mode 2       | 802.11g CH1/ CH6/ CH11   |
| Mode 3       | 802.11n20 CH1/ CH6/ CH11 |
| Mode 4       | 802.11n40 CH3/ CH6/ CH9  |
| Mode 5       | Link Mode                |

| For Conducted Emission |             |
|------------------------|-------------|
| Final Test Mode        | Description |
| Mode 5                 | Link Mode   |

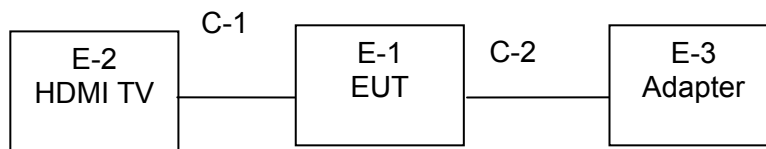
| For Radiated Emission |                          |
|-----------------------|--------------------------|
| Final Test Mode       | Description              |
| Mode 1                | 802.11b CH1/ CH6/ CH11   |
| Mode 2                | 802.11g CH1/ CH6/ CH11   |
| Mode 3                | 802.11n20 CH1/ CH6/ CH11 |
| Mode 4                | 802.11n40 CH3/ CH6/ CH 9 |
| Mode 5                | Link Mode                |

Note:

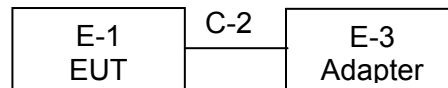
(1) The measurements are performed at the highest, middle, lowest available channels.

### 2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

#### Conducted Emission Test



#### Radiated Emission Test



## 2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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                                                                                                                                                   | Brand     | Model/Type No.   | Series No. | Note |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------|------------|------|
| E-1  | ScreenBeam Pro Wireless Display Receiver,<br>ScreenBeam Pro - Education Edition 2,<br>ScreenBeam Pro-Business Edition,<br>ScreenBeam Kit,<br>ScreenBeam Pro | Actiontec | SBWD100B         | N/A        | EUT  |
| E-2  | TV                                                                                                                                                          | SONY      | KDL-24EX520      | N/A        |      |
| E-3  | Adapter 1                                                                                                                                                   | Ktec      | KSAS0120500200HU | N/A        |      |
| E-3  | Adapter 2                                                                                                                                                   | Actiontec | MU05BS050100-A1  | N/A        |      |
| E-3  | Adapter 3                                                                                                                                                   | APD       | WB-10E05FU       | N/A        |      |

| Item | Shielded Type | Ferrite Core | Length | Note      |
|------|---------------|--------------|--------|-----------|
| C-1  | Metal wire    | NO           | 100cm  | HDMI Line |
| C-2  | Unshielded    | NO           | 80cm   | DC Line   |
|      |               |              |        |           |
|      |               |              |        |           |

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

## 2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

### Radiation Test equipment

| Item | Kind of Equipment  | Manufacturer | Type No.    | Serial No.   | Last calibration | Calibrated until | Calibration period |
|------|--------------------|--------------|-------------|--------------|------------------|------------------|--------------------|
| 1    | Spectrum Analyzer  | Agilent      | E4407B      | MY45108040   | 2015.07.06       | 2016.07.05       | 1 year             |
| 2    | Test Receiver      | R&S          | ESPI        | 101318       | 2015.06.06       | 2016.06.05       | 1 year             |
| 3    | Bilog Antenna      | TESEQ        | CBL6111D    | 31216        | 2015.07.06       | 2016.07.05       | 1 year             |
| 4    | 50Ω Coaxial Switch | Anritsu      | MP59B       | 6200264416   | 2015.06.06       | 2016.06.05       | 1 year             |
| 5    | Spectrum Analyzer  | ADVANTEST    | R3132       | 150900201    | 2015.06.06       | 2016.06.05       | 1 year             |
| 6    | Horn Antenna       | EM           | EM-AH-10180 | 2011071402   | 2015.07.06       | 2016.07.05       | 1 year             |
| 7    | Horn Ant           | Schwarzbeck  | BBHA 9170   | 9170-181     | 2015.07.06       | 2016.07.05       | 1 year             |
| 8    | Amplifier          | EM           | EM-30180    | 060538       | 2014.12.22       | 2015.12.21       | 1 year             |
| 9    | Loop Antenna       | ARA          | PLA-1030/B  | 1029         | 2015.06.06       | 2016.06.05       | 1 year             |
| 10   | Power Meter        | R&S          | NRVS        | 100696       | 2015.07.06       | 2016.07.05       | 1 year             |
| 11   | Power Sensor       | R&S          | URV5-Z4     | 0395.1619.05 | 2015.07.06       | 2016.07.05       | 1 year             |

### Conduction Test equipment

| Item | Kind of Equipment     | Manufacturer | Type No. | Serial No. | Last calibration | Calibrated until | Calibration period |
|------|-----------------------|--------------|----------|------------|------------------|------------------|--------------------|
| 1    | Test Receiver         | R&S          | ESCI     | 101160     | 2015.06.06       | 2016.06.05       | 1 year             |
| 2    | LISN                  | R&S          | ENV216   | 101313     | 2015.08.24       | 2016.08.23       | 1 year             |
| 3    | LISN                  | EMCO         | 3816/2   | 00042990   | 2015.06.06       | 2016.06.05       | 1 year             |
| 4    | 50Ω Coaxial Switch    | Anritsu      | MP59B    | 6200264417 | 2015.06.06       | 2016.06.05       | 1 year             |
| 5    | Passive Voltage Probe | R&S          | ESH2-Z3  | 100196     | 2015.06.06       | 2016.06.05       | 1 year             |
| 6    | Absorbing clamp       | R&S          | MOS-21   | 100423     | 2015.06.06       | 2016.06.05       | 1 year             |

|   |             |     |          |        |            |            |        |
|---|-------------|-----|----------|--------|------------|------------|--------|
| 1 | Attenuation | MCE | 24-10-34 | BN9258 | 2015.06.06 | 2016.06.05 | 1 year |
|---|-------------|-----|----------|--------|------------|------------|--------|

### 3. EMC EMISSION TEST

#### 3.1 CONDUCTED EMISSION MEASUREMENT

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

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

|           |       |       |           |           |     |
|-----------|-------|-------|-----------|-----------|-----|
| 0.15 -0.5 | 79.00 | 66.00 | 66 - 56 * | 56 - 46 * | FCC |
| 0.50 -5.0 | 73.00 | 60.00 | 56.00     | 46.00     | FCC |
| 5.0 -30.0 | 73.00 | 60.00 | 60.00     | 50.00     | FCC |

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.

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    |

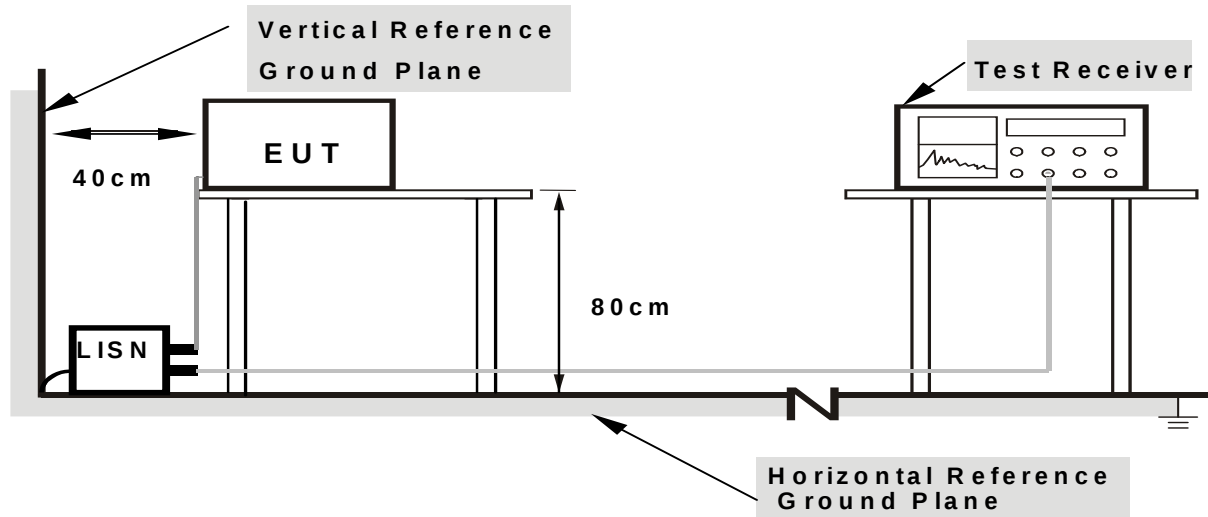
### 3.1.2 TEST PROCEDURE

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

### 3.1.3 DEVIATION FROM TEST STANDARD

No deviation

### 3.1.4 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

### 3.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

### 3.1.6 TEST RESULTS

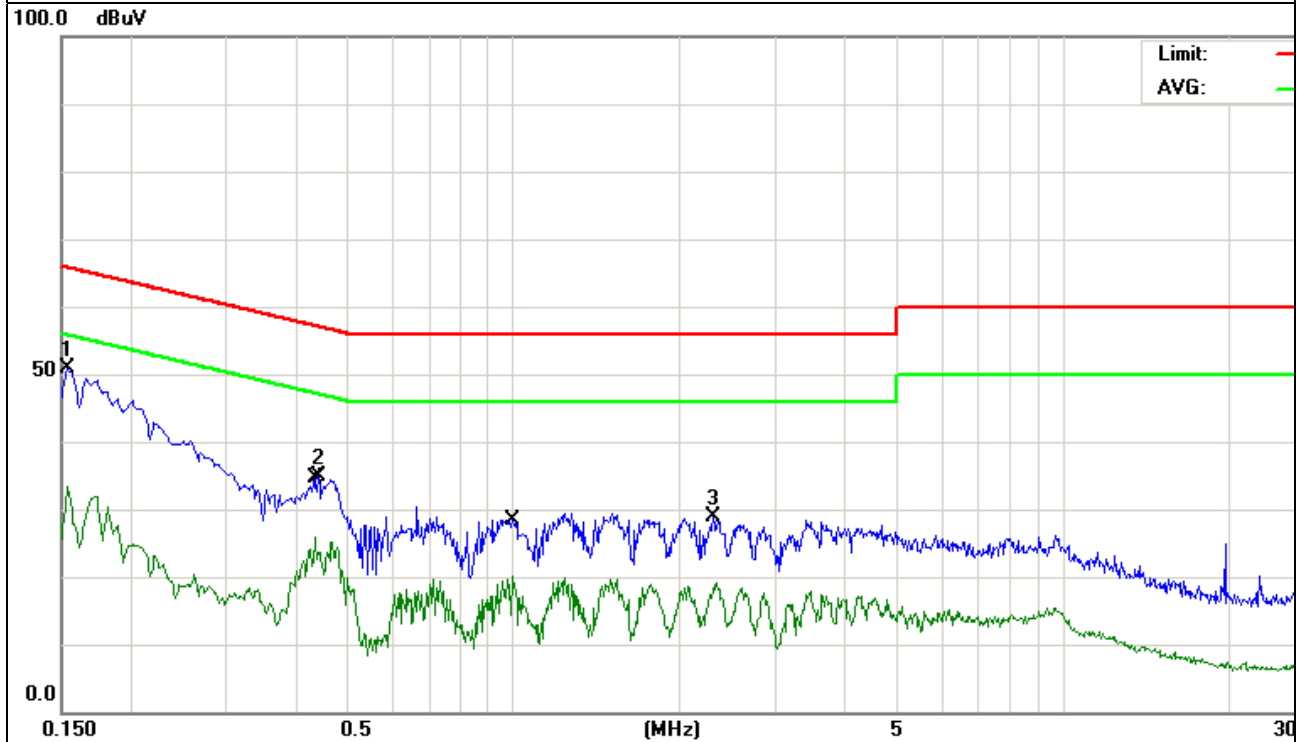
|                |                                   |                     |                  |
|----------------|-----------------------------------|---------------------|------------------|
| EUT :          | Refer to Page 6                   | Model Name. :       | SBWD100B         |
| Temperature :  | 26 °C                             | Relative Humidity : | 56%              |
| Pressure :     | 1010hPa                           | Phase :             | L                |
| Test Voltage : | DC 5V From adapter<br>AC120V/60Hz | Test Mode :         | Mode 5-Adapter 1 |

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|--------|--------|---------------|
| (MHz)     | (dBμV)        | (dB)   | (dBμV)         | (dBμV) | (dB)   |               |
| 0.1539    | 41.17         | 9.63   | 50.80          | 65.78  | -14.98 | QP            |
| 0.4420    | 25.43         | 9.53   | 34.96          | 57.02  | -22.06 | QP            |
| 2.3060    | 19.11         | 9.66   | 28.77          | 56.00  | -27.23 | QP            |
| 0.1539    | 23.81         | 9.63   | 33.44          | 55.78  | -22.34 | AVG           |
| 0.4340    | 16.49         | 9.50   | 25.99          | 47.18  | -21.19 | AVG           |
| 0.9900    | 10.38         | 9.73   | 20.11          | 46.00  | -25.89 | AVG           |

Remark:

1. All readings are Quasi-Peak and Average values.

2. Factor = Insertion Loss + Cable Loss.

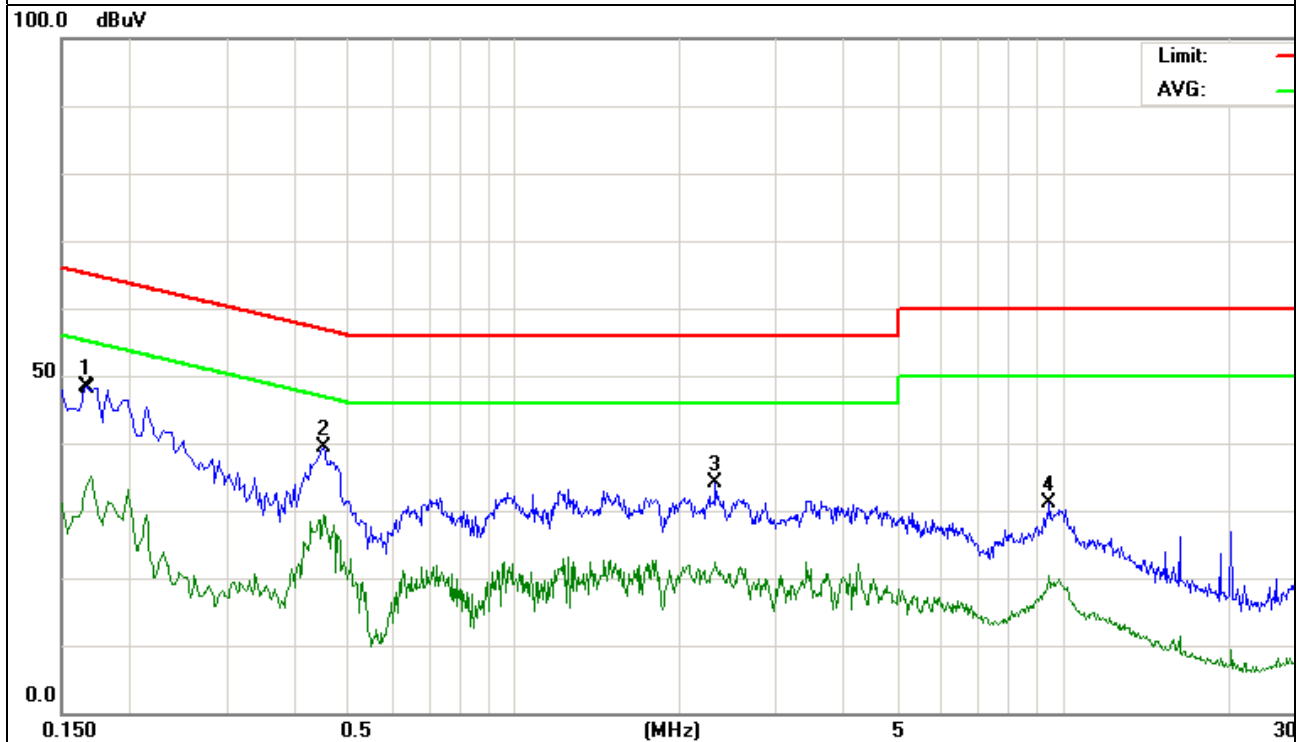


|                |                                   |                     |                  |
|----------------|-----------------------------------|---------------------|------------------|
| EUT :          | Refer to Page 6                   | Model Name. :       | SBWD100B         |
| Temperature :  | 26 °C                             | Relative Humidity : | 56%              |
| Pressure :     | 1010hPa                           | Phase :             | N                |
| Test Voltage : | DC 5V From adapter<br>AC120V/60Hz | Test Mode :         | Mode 5-Adapter 1 |

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV) | Limits<br>(dBμV) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|--------------------------|------------------|----------------|---------------|
| 0.1660             | 38.90                   | 9.60           | 48.50                    | 65.15            | -16.65         | QP            |
| 0.4500             | 29.84                   | 9.66           | 39.50                    | 56.87            | -17.37         | QP            |
| 2.3300             | 24.67                   | 9.53           | 34.20                    | 56.00            | -21.80         | QP            |
| 9.4339             | 21.50                   | 9.63           | 31.13                    | 60.00            | -28.87         | QP            |
| 0.1700             | 25.39                   | 9.61           | 35.00                    | 54.96            | -19.96         | AVG           |
| 0.4500             | 19.77                   | 9.66           | 29.43                    | 46.87            | -17.44         | AVG           |
| 9.4339             | 10.66                   | 9.63           | 20.29                    | 50.00            | -29.71         | AVG           |

**Remark:**

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

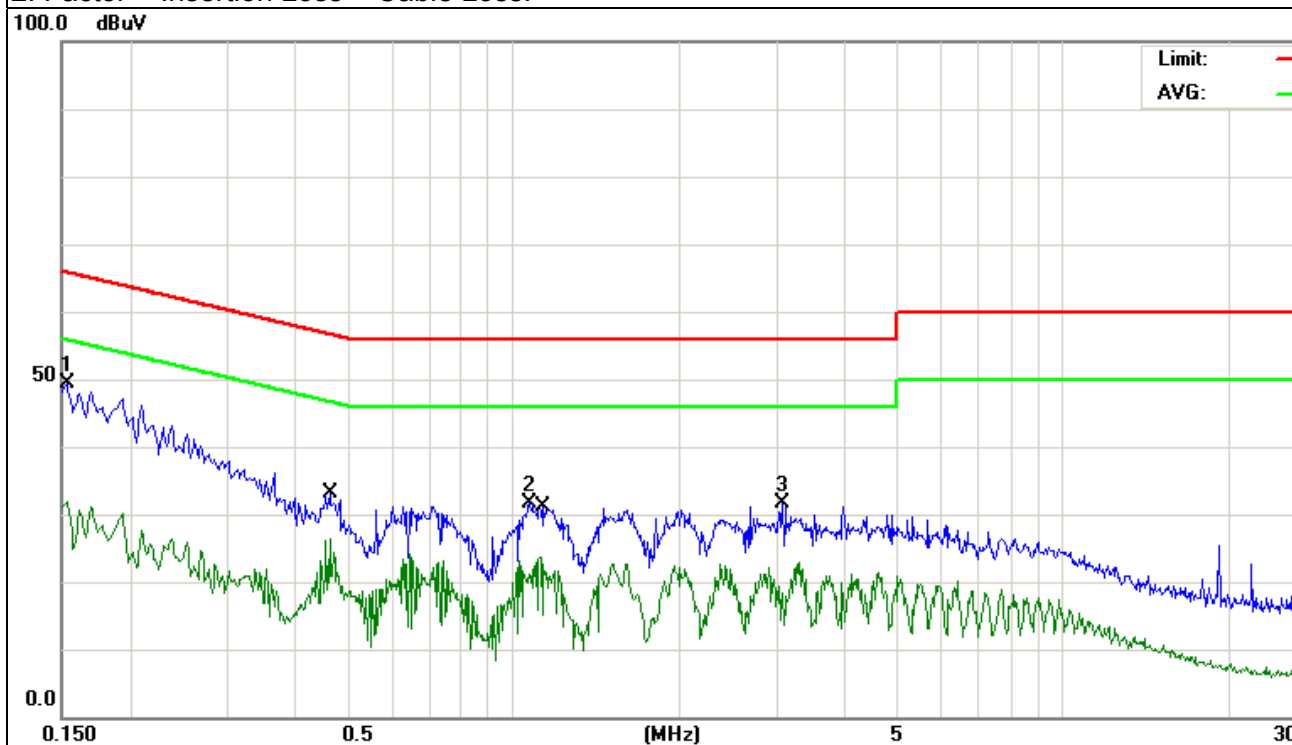


|                |                                   |                     |                  |
|----------------|-----------------------------------|---------------------|------------------|
| EUT :          | Refer to Page 6                   | Model Name. :       | SBWD100B         |
| Temperature :  | 26 °C                             | Relative Humidity : | 56%              |
| Pressure :     | 1010hPa                           | Phase :             | L                |
| Test Voltage : | DC 5V From adapter<br>AC240V/60Hz | Test Mode :         | Mode 5-Adapter 1 |

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV) | Limits<br>(dBμV) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|--------------------------|------------------|----------------|---------------|
| 0.1539             | 39.67                   | 9.63           | 49.30                    | 65.78            | -16.48         | QP            |
| 1.0660             | 21.87                   | 9.73           | 31.60                    | 56.00            | -24.40         | QP            |
| 3.0860             | 21.90                   | 9.67           | 31.57                    | 56.00            | -24.43         | QP            |
| 28.3660            | 27.07                   | 9.98           | 37.05                    | 60.00            | -22.95         | QP            |
| 0.1539             | 22.27                   | 9.63           | 31.90                    | 55.78            | -23.88         | AVG           |
| 0.4620             | 16.84                   | 9.61           | 26.45                    | 46.66            | -20.21         | AVG           |
| 1.1220             | 14.01                   | 9.72           | 23.73                    | 46.00            | -22.27         | AVG           |
| 28.3660            | 7.20                    | 9.98           | 17.18                    | 50.00            | -32.82         | AVG           |

**Remark:**

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

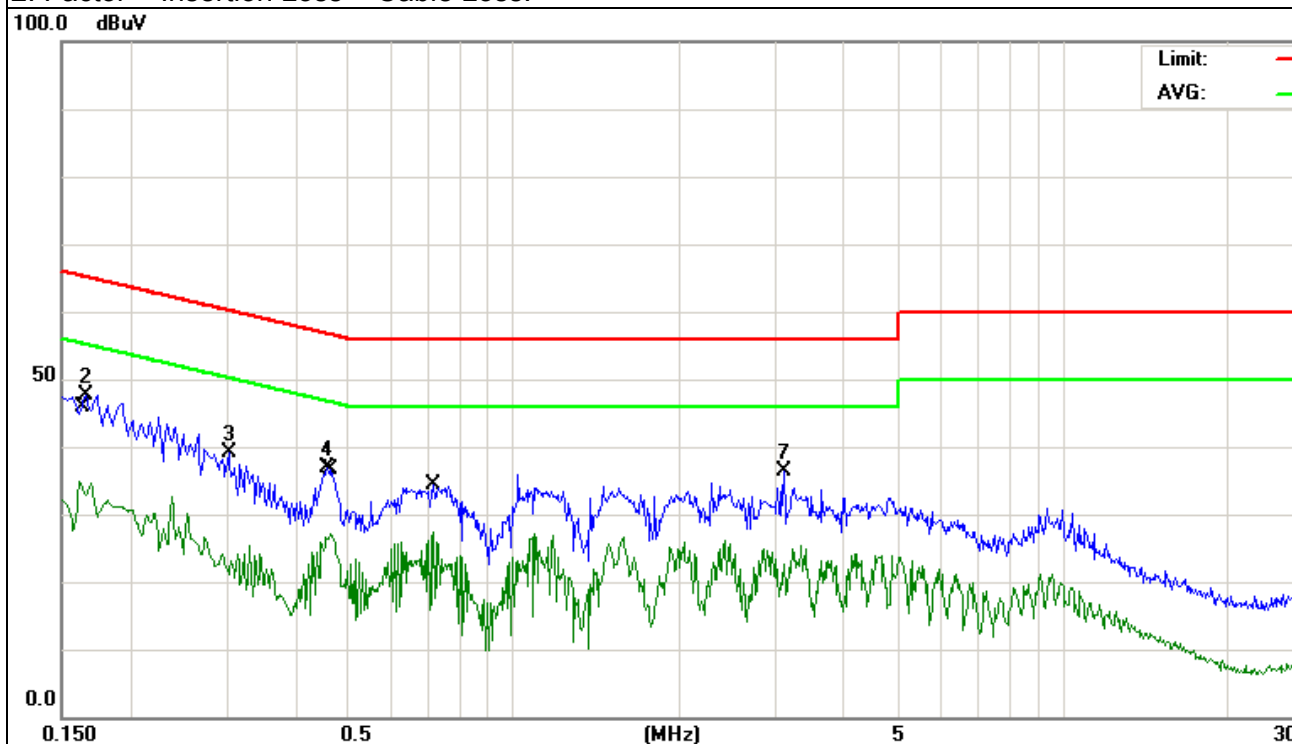


|                |                                   |                     |                  |
|----------------|-----------------------------------|---------------------|------------------|
| EUT :          | Refer to Page 6                   | Model Name. :       | SBWD100B         |
| Temperature :  | 26 °C                             | Relative Humidity : | 56%              |
| Pressure :     | 1010hPa                           | Phase :             | N                |
| Test Voltage : | DC 5V From adapter<br>AC240V/60Hz | Test Mode :         | Mode 5-Adapter 1 |

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV) | Limits<br>(dBμV) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|--------------------------|------------------|----------------|---------------|
| 0.1620             | 25.27                   | 9.60           | 34.87                    | 55.36            | -20.49         | AVG           |
| 0.1660             | 38.09                   | 9.60           | 47.69                    | 65.15            | -17.46         | QP            |
| 0.3020             | 29.45                   | 9.62           | 39.07                    | 60.19            | -21.12         | QP            |
| 0.4580             | 27.25                   | 9.66           | 36.91                    | 56.73            | -19.82         | QP            |
| 0.4660             | 17.36                   | 9.66           | 27.02                    | 46.58            | -19.56         | AVG           |
| 0.7140             | 17.72                   | 9.64           | 27.36                    | 46.00            | -18.64         | AVG           |
| 3.0980             | 26.98                   | 9.52           | 36.50                    | 56.00            | -19.50         | QP            |

#### Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

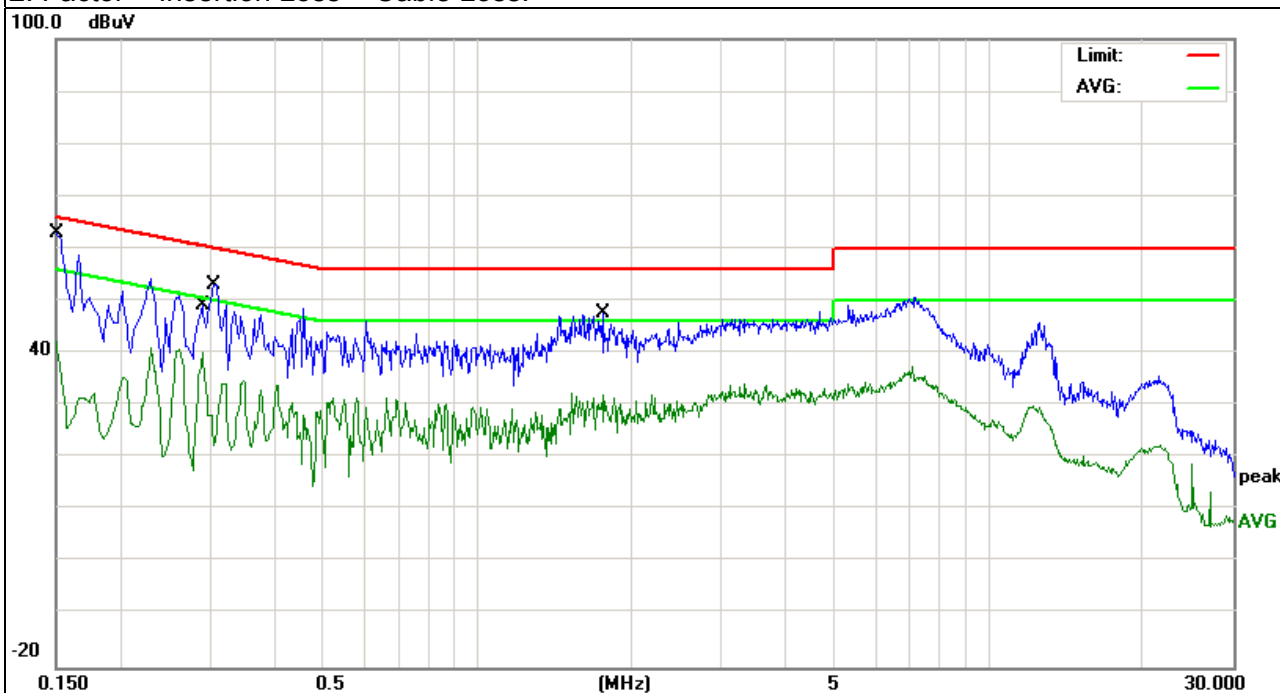


|                |                                   |                     |                  |
|----------------|-----------------------------------|---------------------|------------------|
| EUT :          | Refer to Page 6                   | Model Name. :       | SBWD100B         |
| Temperature :  | 26 °C                             | Relative Humidity : | 56%              |
| Pressure :     | 1010hPa                           | Phase :             | L                |
| Test Voltage : | DC 5V From adapter<br>AC120V/60Hz | Test Mode :         | Mode 5-Adapter 2 |

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|--------|--------|---------------|
| (MHz)     | (dBμV)        | (dB)   | (dBμV)         | (dBμV) | (dB)   |               |
| 0.1500    | 53.41         | 9.49   | 62.90          | 65.99  | -3.09  | QP            |
| 0.1500    | 32.68         | 9.49   | 42.17          | 55.99  | -13.82 | AVG           |
| 0.2900    | 30.46         | 9.56   | 40.02          | 50.52  | -10.50 | AVG           |
| 0.3060    | 43.58         | 9.54   | 53.12          | 60.08  | -6.96  | QP            |
| 1.7580    | 38.13         | 9.57   | 47.70          | 56.00  | -8.30  | QP            |
| 1.7580    | 22.56         | 9.57   | 32.13          | 46.00  | -13.87 | AVG           |

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

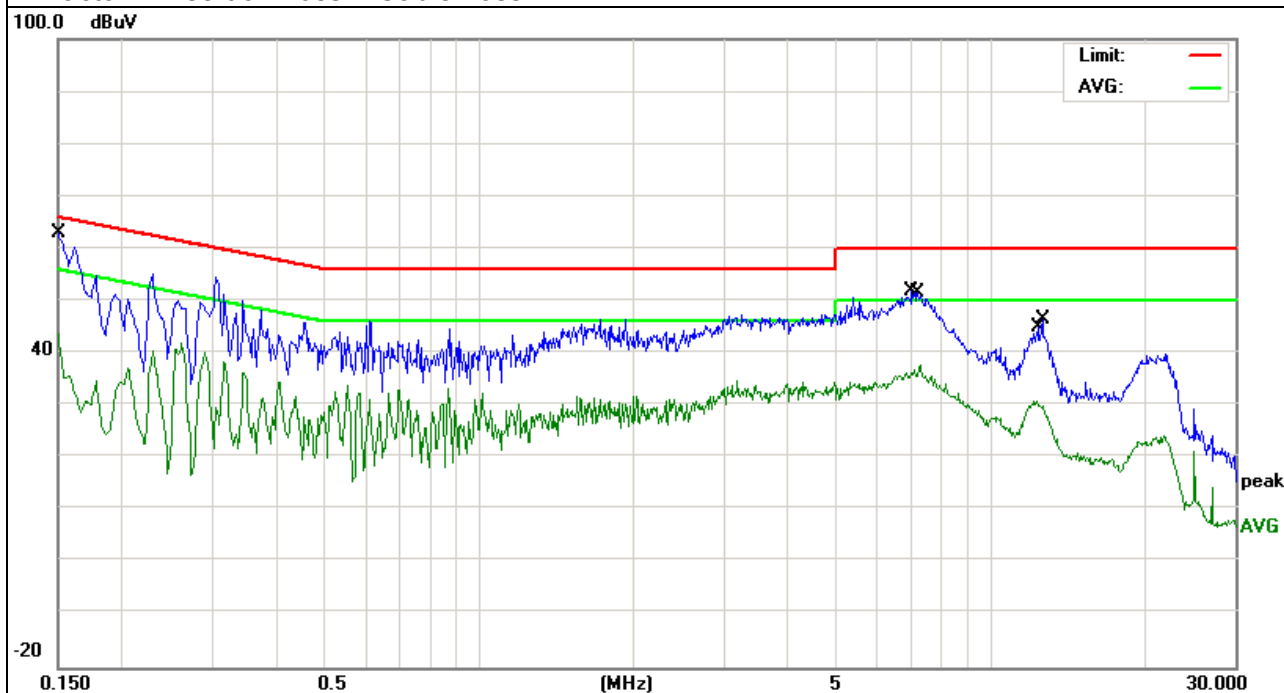


|                |                                   |                     |                  |
|----------------|-----------------------------------|---------------------|------------------|
| EUT :          | Refer to Page 6                   | Model Name. :       | SBWD100B         |
| Temperature :  | 26 °C                             | Relative Humidity : | 56%              |
| Pressure :     | 1010hPa                           | Phase :             | N                |
| Test Voltage : | DC 5V From adapter<br>AC120V/60Hz | Test Mode :         | Mode 5-Adapter 2 |

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV) | Limits<br>(dBμV) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|--------------------------|------------------|----------------|---------------|
| 0.1499             | 53.34                   | 9.49           | 62.83                    | 66.00            | -3.17          | QP            |
| 0.1499             | 34.36                   | 9.49           | 43.85                    | 56.00            | -12.15         | AVG           |
| 7.0140             | 42.18                   | 9.70           | 51.88                    | 60.00            | -8.12          | QP            |
| 7.2780             | 27.93                   | 9.70           | 37.63                    | 50.00            | -12.37         | AVG           |
| 12.2860            | 21.20                   | 9.78           | 30.98                    | 50.00            | -19.02         | AVG           |
| 12.6220            | 36.73                   | 9.78           | 46.51                    | 60.00            | -13.49         | QP            |

**Remark:**

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

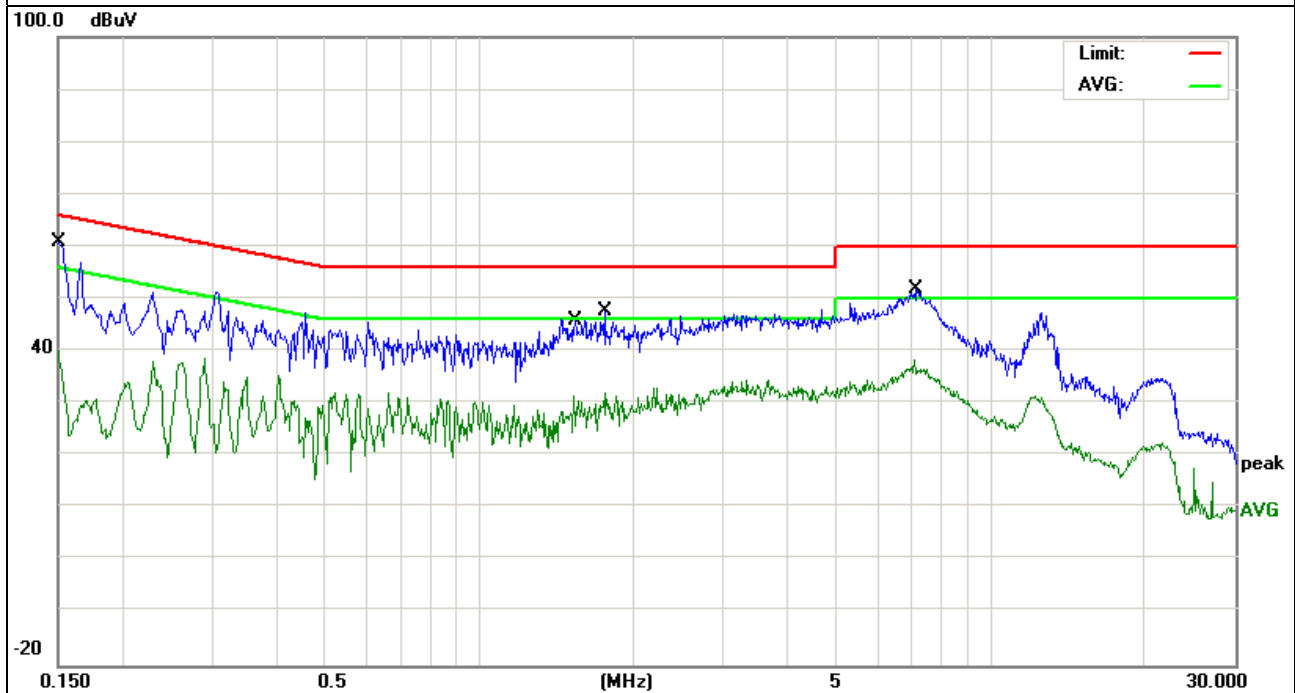


|                |                                   |                     |                  |
|----------------|-----------------------------------|---------------------|------------------|
| EUT :          | Refer to Page 6                   | Model Name. :       | SBWD100B         |
| Temperature :  | 26 °C                             | Relative Humidity : | 56%              |
| Pressure :     | 1010hPa                           | Phase :             | L                |
| Test Voltage : | DC 5V From adapter<br>AC240V/60Hz | Test Mode :         | Mode 5-Adapter 2 |

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|--------|--------|---------------|
| (MHz)     | (dBμV)        | (dB)   | (dBμV)         | (dBμV) | (dB)   |               |
| 0.1499    | 30.68         | 9.49   | 40.17          | 56.00  | -15.83 | AVG           |
| 0.1500    | 51.41         | 9.49   | 60.90          | 65.99  | -5.09  | QP            |
| 1.5339    | 21.86         | 9.56   | 31.42          | 46.00  | -14.58 | AVG           |
| 1.7580    | 38.13         | 9.57   | 47.70          | 56.00  | -8.30  | QP            |
| 7.0979    | 28.70         | 9.70   | 38.40          | 50.00  | -11.60 | AVG           |
| 7.1379    | 42.05         | 9.70   | 51.75          | 60.00  | -8.25  | QP            |

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

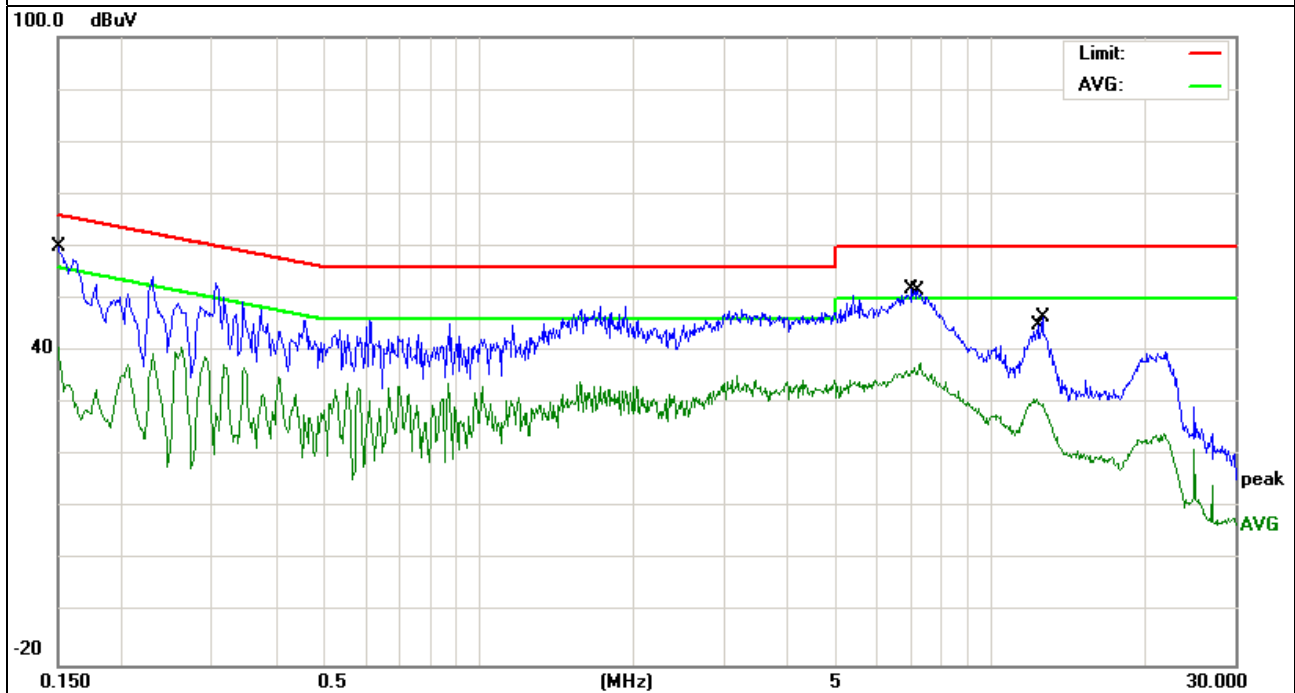


|                |                                   |                     |                  |
|----------------|-----------------------------------|---------------------|------------------|
| EUT :          | Refer to Page 6                   | Model Name. :       | SBWD100B         |
| Temperature :  | 26 °C                             | Relative Humidity : | 56%              |
| Pressure :     | 1010hPa                           | Phase :             | N                |
| Test Voltage : | DC 5V From adapter<br>AC240V/60Hz | Test Mode :         | Mode 5-Adapter 2 |

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV) | Limits<br>(dBμV) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|--------------------------|------------------|----------------|---------------|
| 0.1500             | 50.34                   | 9.49           | 59.83                    | 65.99            | -6.16          | QP            |
| 0.1500             | 31.36                   | 9.49           | 40.85                    | 55.99            | -15.14         | AVG           |
| 7.0140             | 42.18                   | 9.70           | 51.88                    | 60.00            | -8.12          | QP            |
| 7.2780             | 27.93                   | 9.70           | 37.63                    | 50.00            | -12.37         | AVG           |
| 12.2860            | 21.20                   | 9.78           | 30.98                    | 50.00            | -19.02         | AVG           |
| 12.6220            | 36.73                   | 9.78           | 46.51                    | 60.00            | -13.49         | QP            |

**Remark:**

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

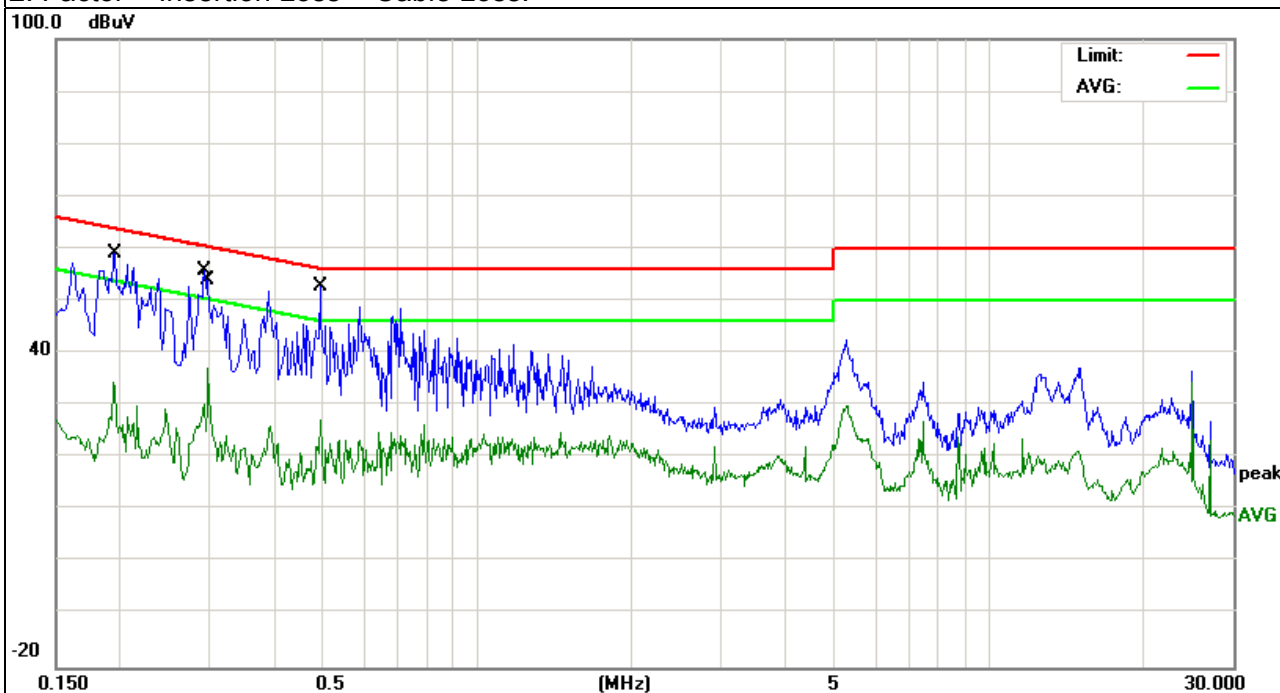


|                |                                   |                     |                  |
|----------------|-----------------------------------|---------------------|------------------|
| EUT :          | Refer to Page 6                   | Model Name. :       | SBWD100B         |
| Temperature :  | 26 °C                             | Relative Humidity : | 56%              |
| Pressure :     | 1010hPa                           | Phase :             | L                |
| Test Voltage : | DC 5V From adapter<br>AC120V/60Hz | Test Mode :         | Mode 5-Adapter 3 |

| Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|-----------|---------------|--------|----------------|--------|--------|---------------|
| (MHz)     | (dBμV)        | (dB)   | (dBμV)         | (dBμV) | (dB)   |               |
| 0.1943    | 25.52         | 9.45   | 34.97          | 53.85  | -18.88 | AVG           |
| 0.1955    | 50.25         | 9.45   | 59.70          | 63.80  | -4.10  | QP            |
| 0.2923    | 46.24         | 9.56   | 55.80          | 60.46  | -4.66  | QP            |
| 0.2977    | 27.65         | 9.57   | 37.22          | 50.30  | -13.08 | AVG           |
| 0.4939    | 43.25         | 9.53   | 52.78          | 56.10  | -3.32  | QP            |
| 0.4939    | 17.87         | 9.53   | 27.40          | 46.10  | -18.70 | AVG           |

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

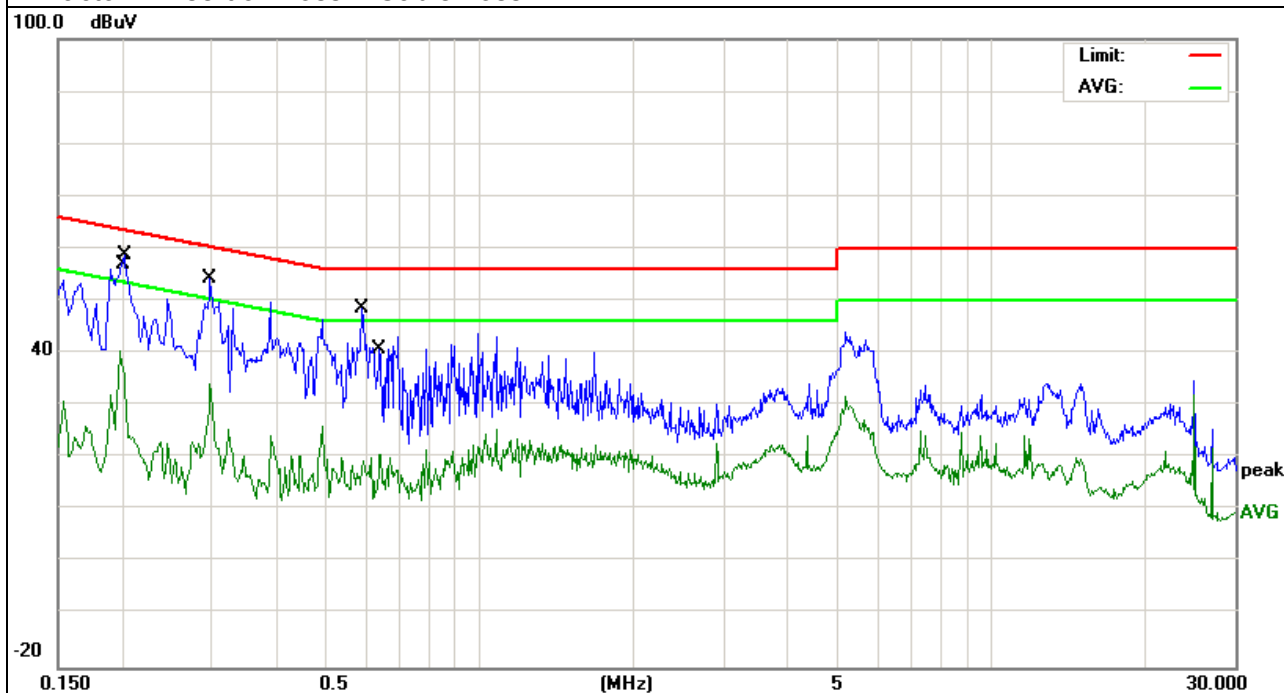


|                |                                   |                     |                  |
|----------------|-----------------------------------|---------------------|------------------|
| EUT :          | Refer to Page 6                   | Model Name. :       | SBWD100B         |
| Temperature :  | 26 °C                             | Relative Humidity : | 56%              |
| Pressure :     | 1010hPa                           | Phase :             | N                |
| Test Voltage : | DC 5V From adapter<br>AC120V/60Hz | Test Mode :         | Mode 5-Adapter 3 |

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV) | Limits<br>(dBμV) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|--------------------------|------------------|----------------|---------------|
| 0.1980             | 33.03                   | 9.45           | 42.48                    | 53.69            | -11.21         | AVG           |
| 0.2020             | 50.55                   | 9.45           | 60.00                    | 63.52            | -3.52          | QP            |
| 0.2977             | 46.63                   | 9.57           | 56.20                    | 60.30            | -4.10          | QP            |
| 0.2977             | 26.66                   | 9.57           | 36.23                    | 50.30            | -14.07         | AVG           |
| 0.5897             | 39.90                   | 9.56           | 49.46                    | 56.00            | -6.54          | QP            |
| 0.6419             | 12.10                   | 9.56           | 21.66                    | 46.00            | -24.34         | AVG           |

**Remark:**

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

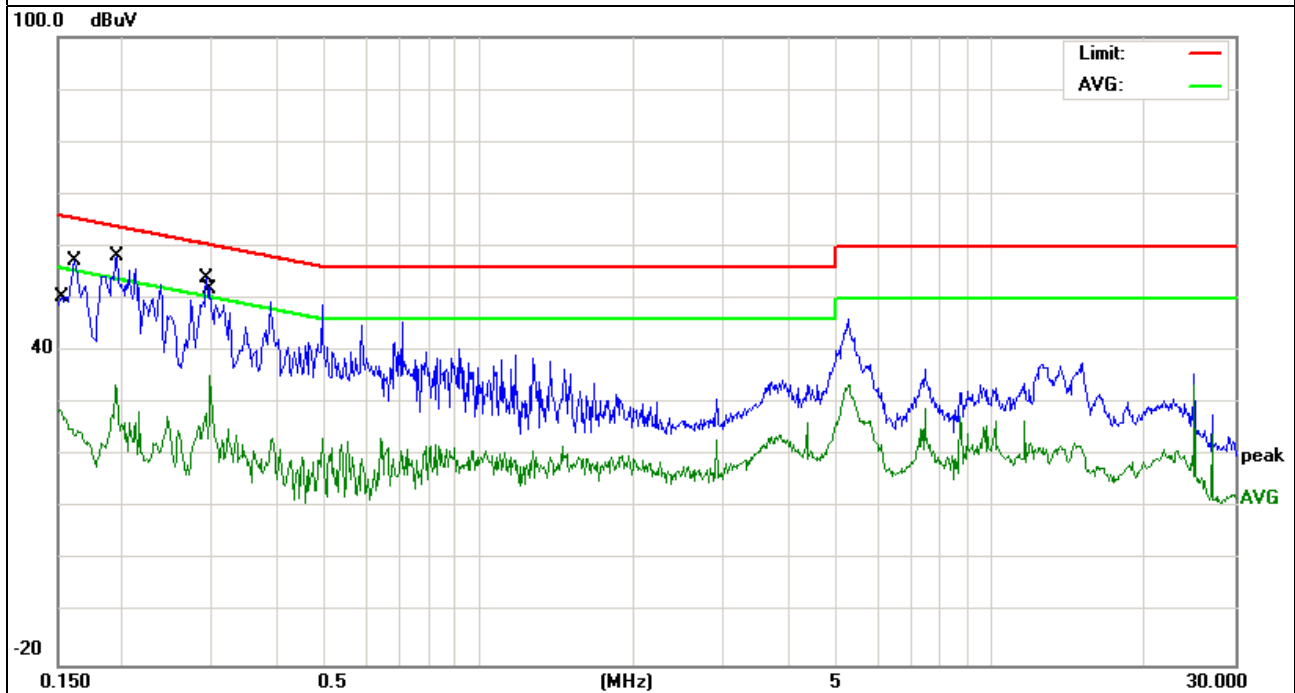


|                |                                   |                     |                  |
|----------------|-----------------------------------|---------------------|------------------|
| EUT :          | Refer to Page 6                   | Model Name. :       | SBWD100B         |
| Temperature :  | 26 °C                             | Relative Humidity : | 56%              |
| Pressure :     | 1010hPa                           | Phase :             | L                |
| Test Voltage : | DC 5V From adapter<br>AC240V/60Hz | Test Mode :         | Mode 5-Adapter 3 |

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV) | Limits<br>(dBμV) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|--------------------------|------------------|----------------|---------------|
| 0.1516             | 18.14                   | 9.49           | 27.63                    | 55.91            | -28.28         | AVG           |
| 0.1620             | 48.83                   | 9.48           | 58.31                    | 65.36            | -7.05          | QP            |
| 0.1943             | 25.02                   | 9.45           | 34.47                    | 53.85            | -19.38         | AVG           |
| 0.1955             | 49.75                   | 9.45           | 59.20                    | 63.80            | -4.60          | QP            |
| 0.2923             | 45.74                   | 9.56           | 55.30                    | 60.46            | -5.16          | QP            |
| 0.2977             | 27.15                   | 9.57           | 36.72                    | 50.30            | -13.58         | AVG           |

#### Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

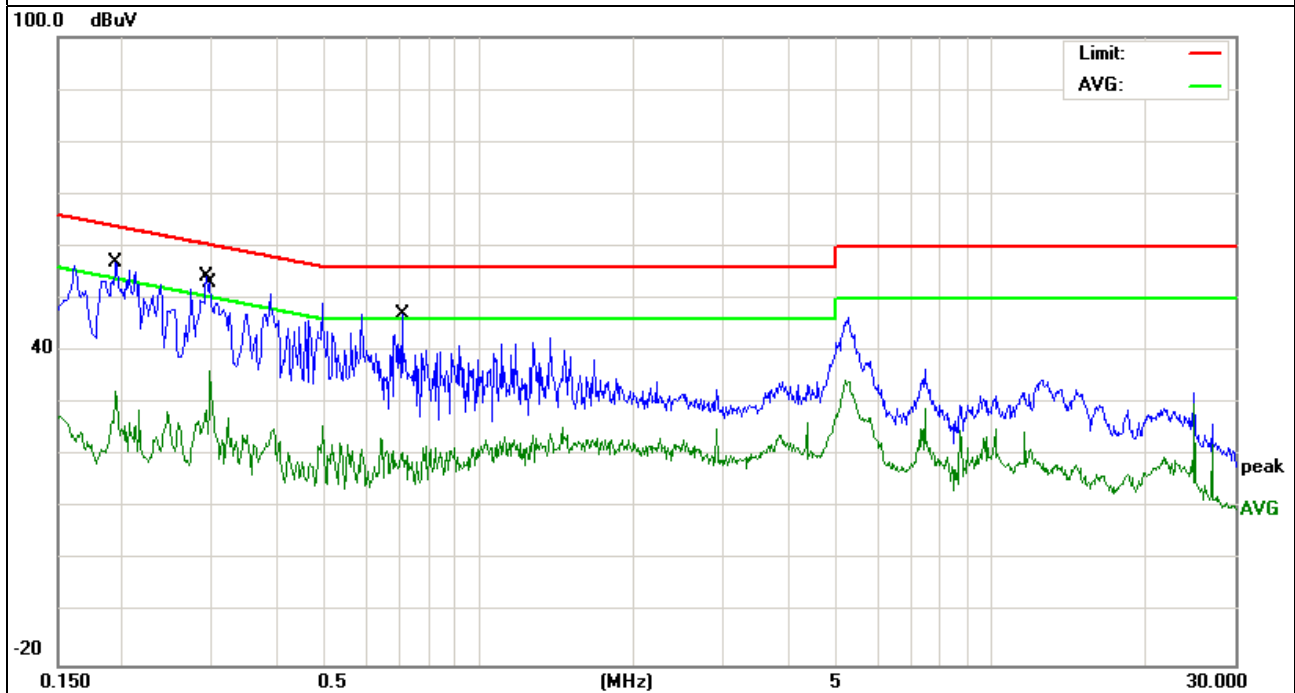


|                |                                   |                     |                  |
|----------------|-----------------------------------|---------------------|------------------|
| EUT :          | Refer to Page 6                   | Model Name. :       | SBWD100B         |
| Temperature :  | 26 °C                             | Relative Humidity : | 56%              |
| Pressure :     | 1010hPa                           | Phase :             | N                |
| Test Voltage : | DC 5V From adapter<br>AC240V/60Hz | Test Mode :         | Mode 5-Adapter 3 |

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV) | Limits<br>(dBμV) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|--------------------------|------------------|----------------|---------------|
| 0.1943             | 49.05                   | 9.45           | 58.50                    | 63.85            | -5.35          | QP            |
| 0.1943             | 24.52                   | 9.45           | 33.97                    | 53.85            | -19.88         | AVG           |
| 0.2923             | 45.74                   | 9.56           | 55.30                    | 60.46            | -5.16          | QP            |
| 0.2977             | 27.65                   | 9.57           | 37.22                    | 50.30            | -13.08         | AVG           |
| 0.7056             | 39.10                   | 9.57           | 48.67                    | 56.00            | -7.33          | QP            |
| 0.7096             | 11.54                   | 9.57           | 21.11                    | 46.00            | -24.89         | AVG           |

#### Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



### 3.2 RADIATED EMISSION MEASUREMENT

#### 3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

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.

| Frequencies<br>(MHz) | Field Strength<br>(micorvolts/meter) | Measurement Distance<br>(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                                |

#### LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

| 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).

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

| 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 |

### 3.2.2 TEST PROCEDURE

- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 m for below 1GHz and 1.5m for above 1GHz the ground at a 3 meter test site. 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 for below 1GHz and 1.5m for above 1GHz; 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.

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

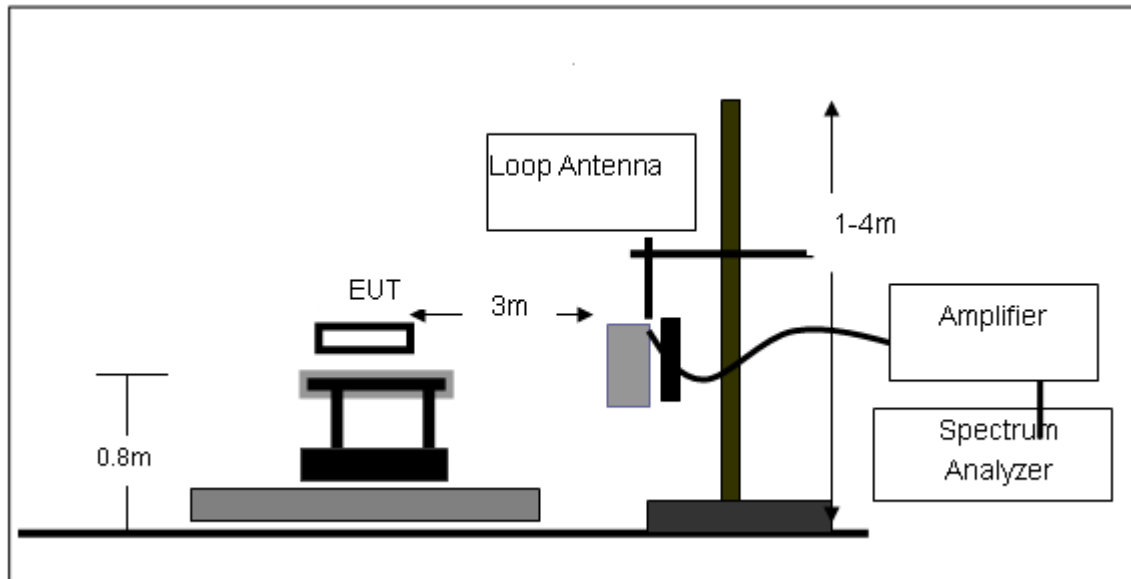
| Frequency Band (MHz) | Function | Resolution bandwidth | Video Bandwidth |
|----------------------|----------|----------------------|-----------------|
| 30 to 1000           | Peak     | 100 kHz              | 100 kHz         |
| Above 1000           | Peak     | 1 MHz                | 1 MHz           |
|                      | Average  | 1 MHz                | 10 Hz           |

### 3.2.3 DEVIATION FROM TEST STANDARD

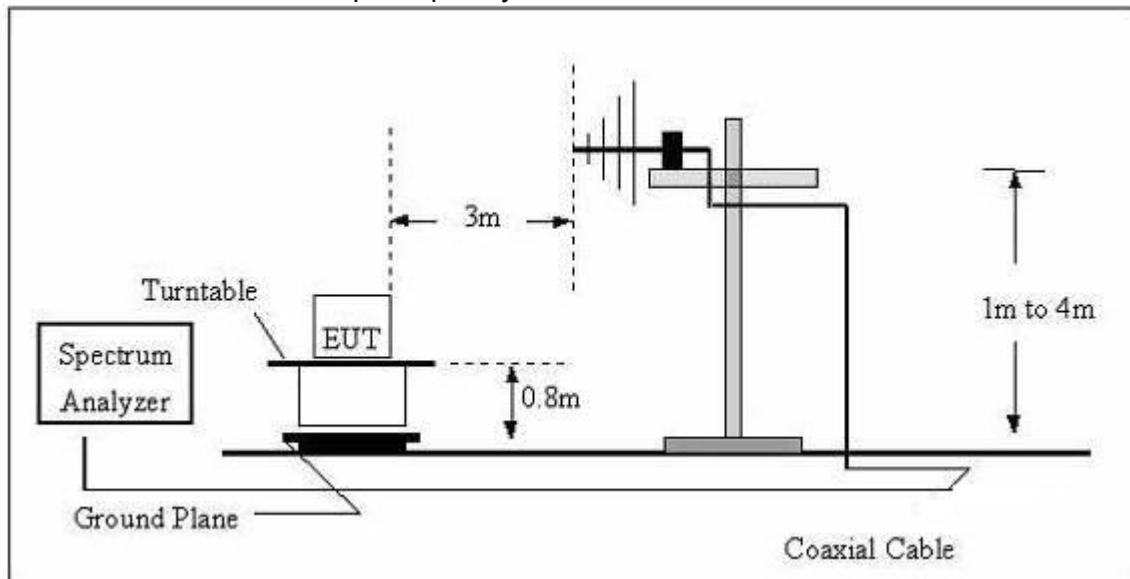
No deviation

### 3.2.4 TEST SETUP

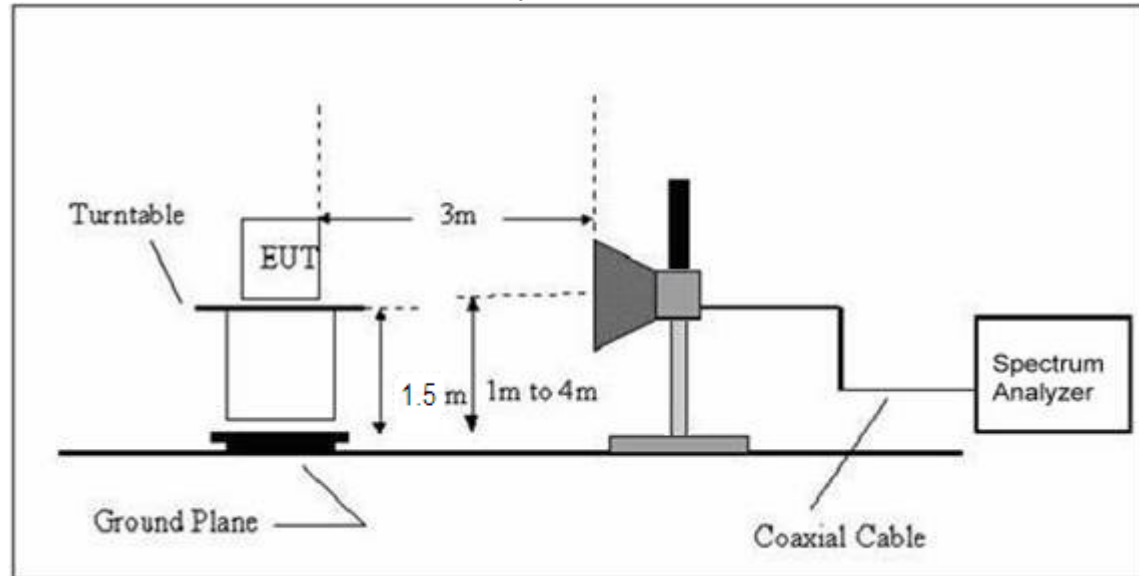
#### (A) Radiated Emission Test-Up Frequency Below 30MHz



#### (B) Radiated Emission Test-Up Frequency 30MHz~1GHz



## (C) Radiated Emission Test-Up Frequency Above 1GHz

**3.2.5 EUT OPERATING CONDITIONS**

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

### 3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)

|              |                 |                    |                                   |
|--------------|-----------------|--------------------|-----------------------------------|
| EUT:         | Refer to Page 6 | Model Name. :      | SBWD100B                          |
| Temperature: | 20 °C           | Relative Humidity: | 48%                               |
| Pressure:    | 1010 hPa        | Test Voltage :     | DC 5V From adapter<br>AC120V/60Hz |
| Test Mode :  | TX              | Polarization :     | --                                |

| Freq. | Reading  | Limit    | Margin | State |
|-------|----------|----------|--------|-------|
| (MHz) | (dBuV/m) | (dBuV/m) | (dB)   | P/F   |
| --    | --       | --       | --     | N/A   |
| --    | --       | --       | --     | N/A   |

#### NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =  $40 \log (\text{specific distance/test distance})(\text{dB})$ ;

Limit line = specific limits(dBuv) + distance extrapolation factor.

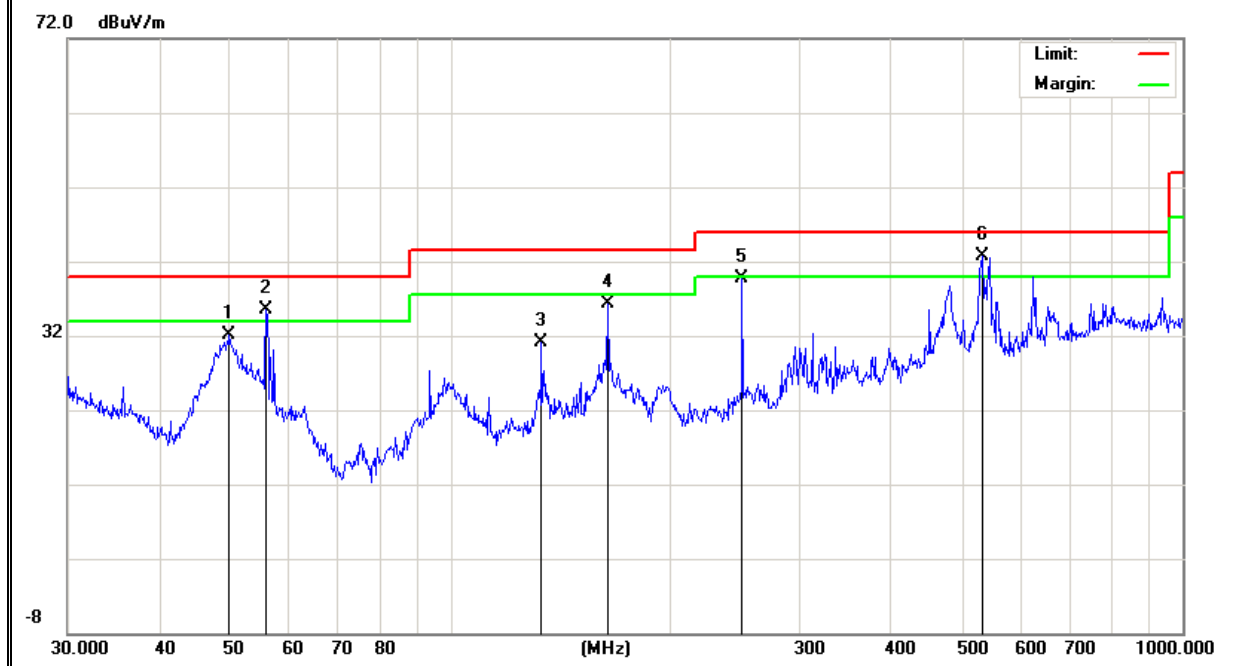
### 3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)

|               |                      |                     |                                   |
|---------------|----------------------|---------------------|-----------------------------------|
| EUT :         | Refer to Page 6      | Model Name :        | SBWD100B                          |
| Temperature : | 20 °C                | Relative Humidity : | 48%                               |
| Pressure :    | 1010 hPa             | Test Voltage :      | DC 5V From adapter<br>AC120V/60Hz |
| Test Mode :   | TX (2.4G) -Adapter 1 |                     |                                   |

| Polar<br>(H/V) | Frequency | Meter<br>Reading | Factor | Emission<br>Level | Limits   | Margin | Remark |
|----------------|-----------|------------------|--------|-------------------|----------|--------|--------|
|                | (MHz)     | (dBuV)           | (dB)   | (dBuV/m)          | (dBuV/m) | (dB)   |        |
| V              | 49.8814   | 21.39            | 10.71  | 32.10             | 40.00    | -7.90  | QP     |
| V              | 56.0007   | 26.51            | 8.97   | 35.48             | 40.00    | -4.52  | QP     |
| V              | 133.1511  | 19.44            | 11.74  | 31.18             | 43.50    | -12.32 | QP     |
| V              | 163.755   | 25.73            | 10.51  | 36.24             | 43.50    | -7.26  | QP     |
| V              | 250.3012  | 26.10            | 13.59  | 39.69             | 46.00    | -6.31  | QP     |
| V              | 533.8321  | 21.76            | 21.00  | 42.76             | 46.00    | -3.24  | QP     |

#### Remark:

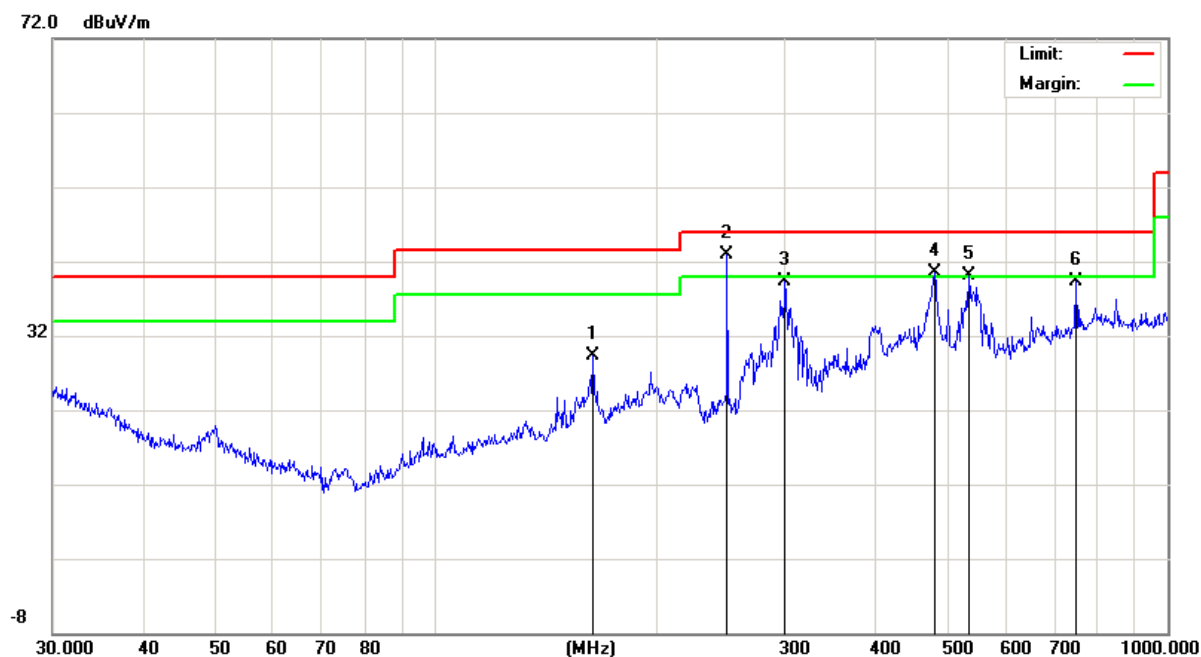
Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit



| Polar<br>(H/V) | Frequency | Meter<br>Reading | Factor | Emission<br>Level | Limits   | Margin | Remark |
|----------------|-----------|------------------|--------|-------------------|----------|--------|--------|
|                | (MHz)     | (dBuV)           | (dB)   | (dBuV/m)          | (dBuV/m) | (dB)   |        |
| H              | 163.7548  | 18.74            | 10.51  | 29.25             | 43.50    | -14.25 | QP     |
| H              | 250.3012  | 29.34            | 13.59  | 42.93             | 46.00    | -3.07  | QP     |
| H              | 300.3672  | 25.06            | 14.16  | 39.22             | 46.00    | -6.78  | QP     |
| H              | 480.5276  | 20.66            | 19.91  | 40.57             | 46.00    | -5.43  | QP     |
| H              | 535.7073  | 18.99            | 21.04  | 40.03             | 46.00    | -5.97  | QP     |
| H              | 750.1083  | 13.18            | 26.10  | 39.28             | 46.00    | -6.72  | QP     |

**Remark:**

Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit

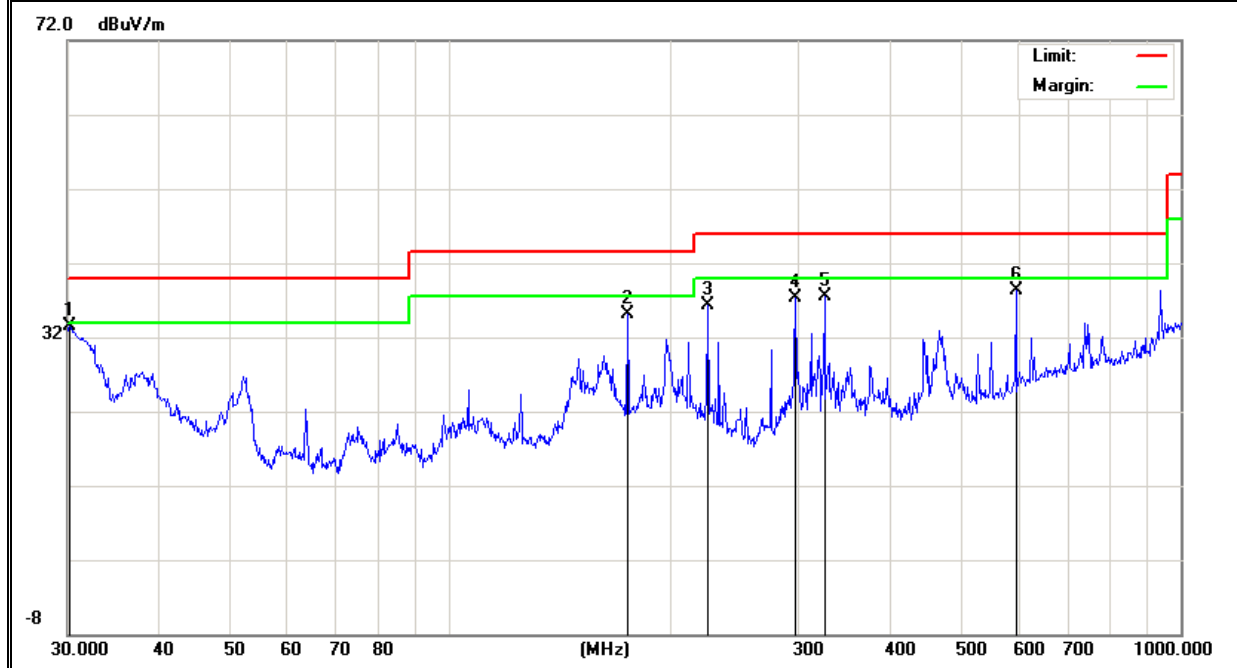


|               |                      |                     |                                   |
|---------------|----------------------|---------------------|-----------------------------------|
| EUT :         | Refer to Page 6      | Model Name :        | SBWD100B                          |
| Temperature : | 20 °C                | Relative Humidity : | 48%                               |
| Pressure :    | 1010 hPa             | Test Voltage :      | DC 5V From adapter<br>AC120V/60Hz |
| Test Mode :   | TX (2.4G) -Adapter 2 |                     |                                   |

| Polar<br>(H/V) | Frequency | Meter<br>Reading | Factor | Emission<br>Level | Limits   | Margin | Remark |
|----------------|-----------|------------------|--------|-------------------|----------|--------|--------|
|                | (MHz)     | (dBuV)           | (dB)   | (dBuV/m)          | (dBuV/m) | (dB)   |        |
| V              | 30.2107   | 14.07            | 19.49  | 33.56             | 40.00    | -6.44  | QP     |
| V              | 175.0364  | 22.79            | 12.31  | 35.10             | 43.50    | -8.40  | QP     |
| V              | 225.3077  | 25.36            | 10.92  | 36.28             | 46.00    | -9.72  | QP     |
| V              | 297.2241  | 24.86            | 12.51  | 37.37             | 46.00    | -8.63  | QP     |
| V              | 325.5957  | 23.96            | 13.46  | 37.42             | 46.00    | -8.58  | QP     |
| V              | 595.1326  | 19.07            | 19.21  | 38.28             | 46.00    | -7.72  | QP     |

**Remark:**

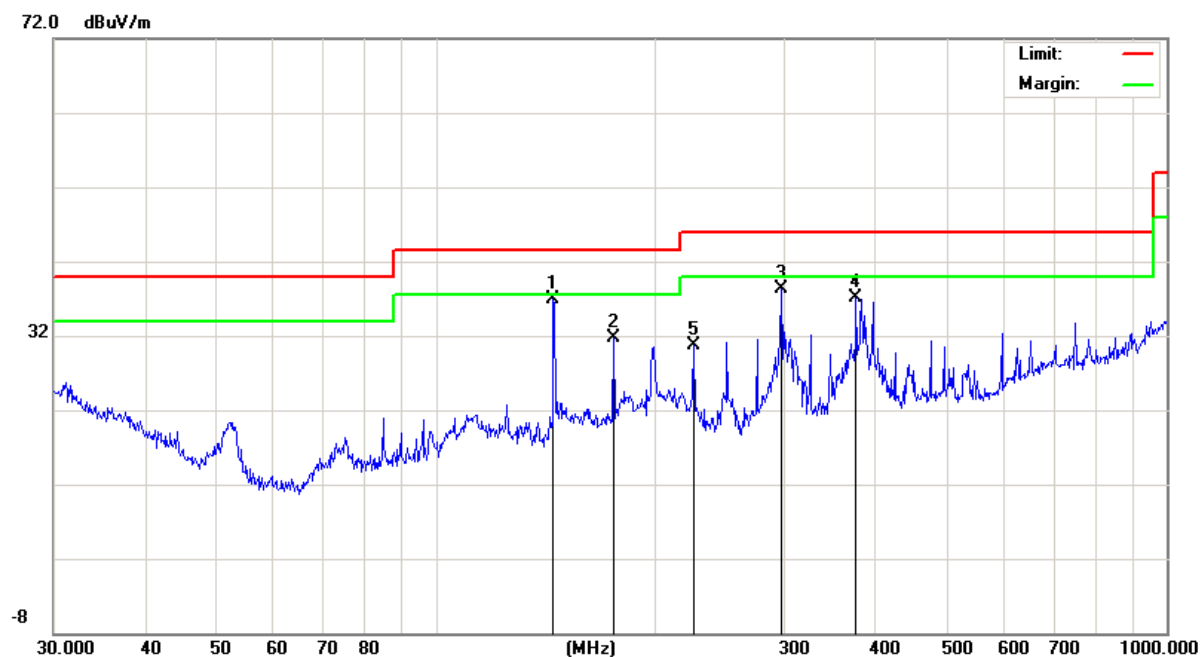
Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit



| Polar<br>(H/V) | Frequency | Meter<br>Reading | Factor | Emission<br>Level | Limits   | Margin | Remark |
|----------------|-----------|------------------|--------|-------------------|----------|--------|--------|
|                | (MHz)     | (dBuV)           | (dB)   | (dBuV/m)          | (dBuV/m) | (dB)   |        |
| H              | 144.8418  | 25.63            | 11.27  | 36.90             | 43.50    | -6.60  | QP     |
| H              | 175.0363  | 19.45            | 12.31  | 31.76             | 43.50    | -11.74 | QP     |
| H              | 297.2241  | 25.82            | 12.51  | 38.33             | 46.00    | -7.67  | QP     |
| H              | 375.9384  | 22.18            | 14.86  | 37.04             | 46.00    | -8.96  | QP     |
| H              | 225.3077  | 19.79            | 10.92  | 30.71             | 46.00    | -15.29 | QP     |

**Remark:**

Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit

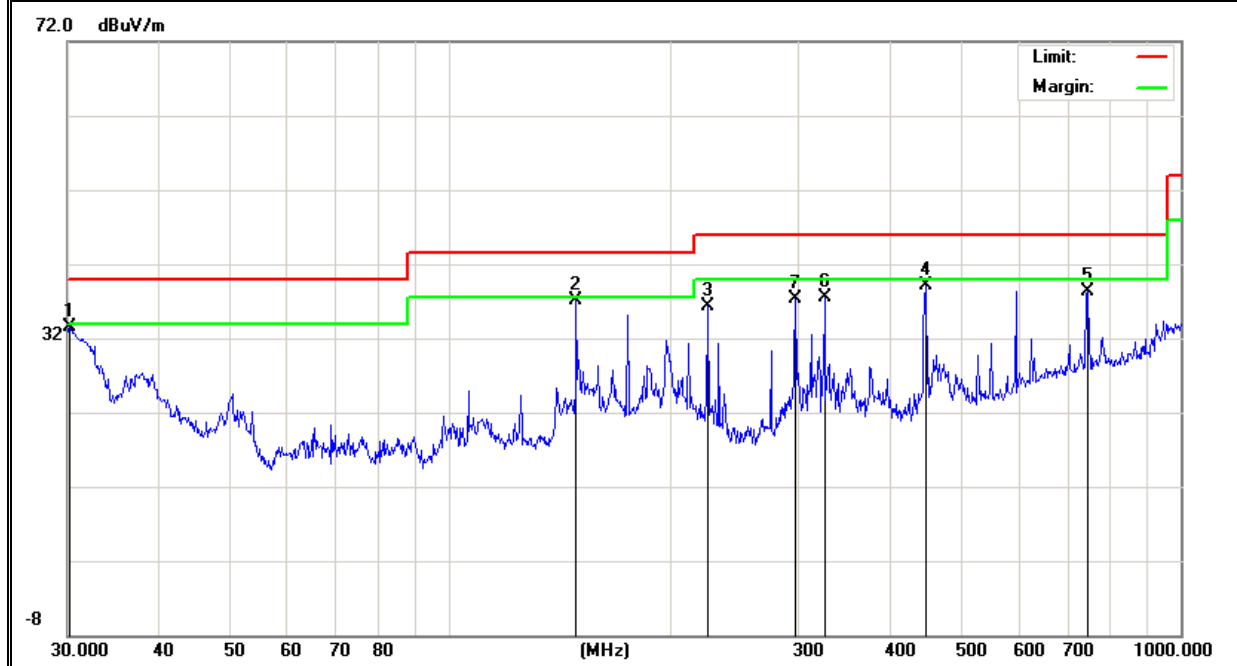


|               |                      |                     |                                   |
|---------------|----------------------|---------------------|-----------------------------------|
| EUT :         | Refer to Page 6      | Model Name :        | SBWD100B                          |
| Temperature : | 20 °C                | Relative Humidity : | 48%                               |
| Pressure :    | 1010 hPa             | Test Voltage :      | DC 5V From adapter<br>AC120V/60Hz |
| Test Mode :   | TX (2.4G) -Adapter 3 |                     |                                   |

| Polar<br>(H/V) | Frequency | Meter<br>Reading | Factor | Emission<br>Level | Limits   | Margin | Remark |
|----------------|-----------|------------------|--------|-------------------|----------|--------|--------|
|                | (MHz)     | (dBuV)           | (dB)   | (dBuV/m)          | (dBuV/m) | (dB)   |        |
| V              | 30.2103   | 14.07            | 19.49  | 33.56             | 40.00    | -6.44  | QP     |
| V              | 148.9625  | 25.59            | 11.61  | 37.20             | 43.50    | -6.30  | QP     |
| V              | 225.3077  | 25.36            | 10.92  | 36.28             | 46.00    | -9.72  | QP     |
| V              | 447.9821  | 23.14            | 15.96  | 39.10             | 46.00    | -6.90  | QP     |
| V              | 744.8659  | 16.26            | 22.04  | 38.30             | 46.00    | -7.70  | QP     |
| V              | 325.5957  | 23.96            | 13.46  | 37.42             | 46.00    | -8.58  | QP     |
| V              | 297.2241  | 24.86            | 12.51  | 37.37             | 46.00    | -8.63  | QP     |

#### Remark:

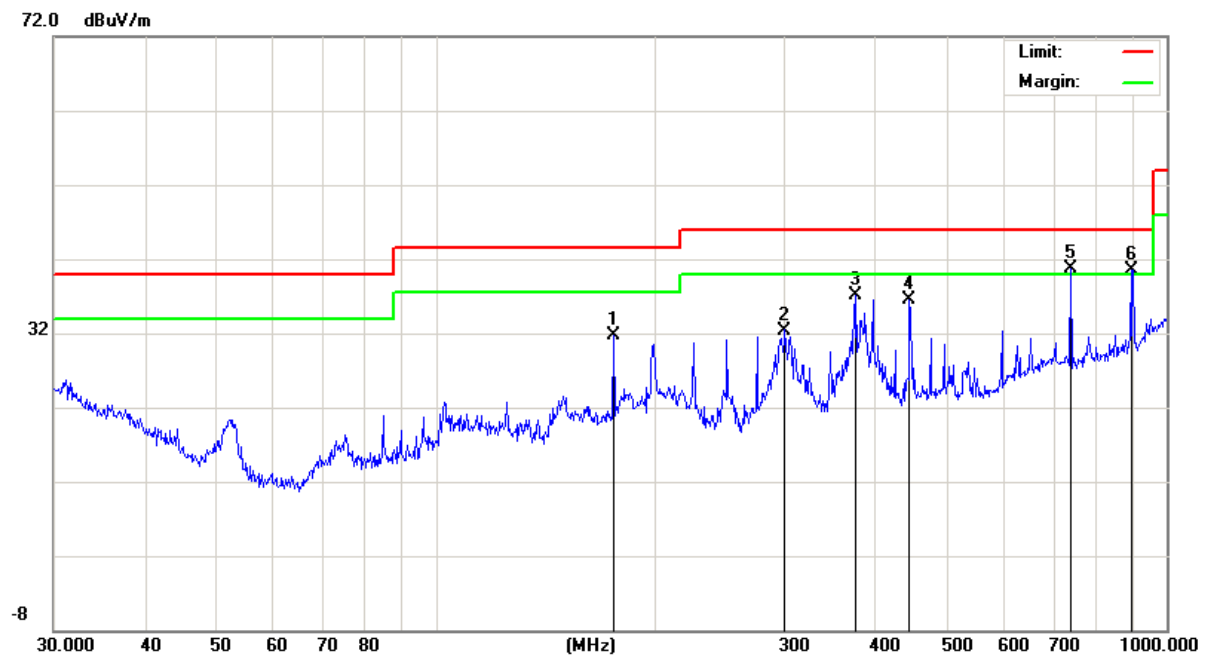
Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit



| Polar<br>(H/V) | Frequency | Meter<br>Reading | Factor | Emission<br>Level | Limits   | Margin | Remark |
|----------------|-----------|------------------|--------|-------------------|----------|--------|--------|
|                | (MHz)     | (dBuV)           | (dB)   | (dBuV/m)          | (dBuV/m) | (dB)   |        |
| H              | 175.0363  | 19.45            | 12.31  | 31.76             | 43.50    | -11.74 | QP     |
| H              | 300.3673  | 19.80            | 12.60  | 32.40             | 46.00    | -13.60 | QP     |
| H              | 375.9384  | 22.18            | 14.86  | 37.04             | 46.00    | -8.96  | QP     |
| H              | 444.8514  | 20.63            | 15.87  | 36.50             | 46.00    | -9.50  | QP     |
| H              | 739.6603  | 18.83            | 21.97  | 40.80             | 46.00    | -5.20  | QP     |
| H              | 893.8567  | 16.39            | 24.05  | 40.44             | 46.00    | -5.56  | QP     |

**Remark:**

Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit

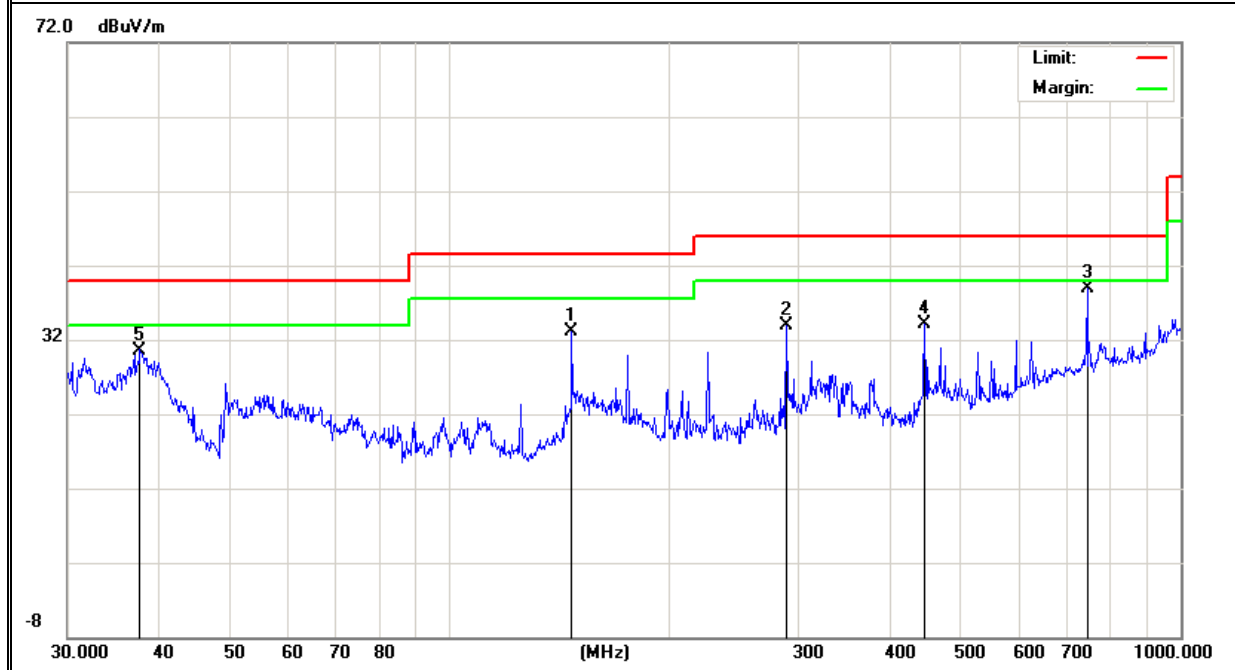


|               |                     |                     |                                   |
|---------------|---------------------|---------------------|-----------------------------------|
| EUT :         | Refer to Page 6     | Model Name :        | SBWD100B                          |
| Temperature : | 20 °C               | Relative Humidity : | 48%                               |
| Pressure :    | 1010 hPa            | Test Voltage :      | DC 5V From adapter<br>AC120V/60Hz |
| Test Mode :   | TX(5.0G) -Adapter 3 |                     |                                   |

| Polar<br>(H/V) | Frequency | Meter<br>Reading | Factor | Emission<br>Level | Limits   | Margin | Remark |
|----------------|-----------|------------------|--------|-------------------|----------|--------|--------|
|                | (MHz)     | (dBuV)           | (dB)   | (dBuV/m)          | (dBuV/m) | (dB)   |        |
| V              | 146.8874  | 21.67            | 11.43  | 33.10             | 43.50    | -10.40 | QP     |
| V              | 289.0020  | 21.82            | 12.18  | 34.00             | 46.00    | -12.00 | QP     |
| V              | 744.8659  | 16.77            | 22.04  | 38.81             | 46.00    | -7.19  | QP     |
| V              | 446.4141  | 18.27            | 15.91  | 34.18             | 46.00    | -11.82 | QP     |
| V              | 37.6798   | 14.67            | 15.93  | 30.60             | 40.00    | -9.40  | QP     |

**Remark:**

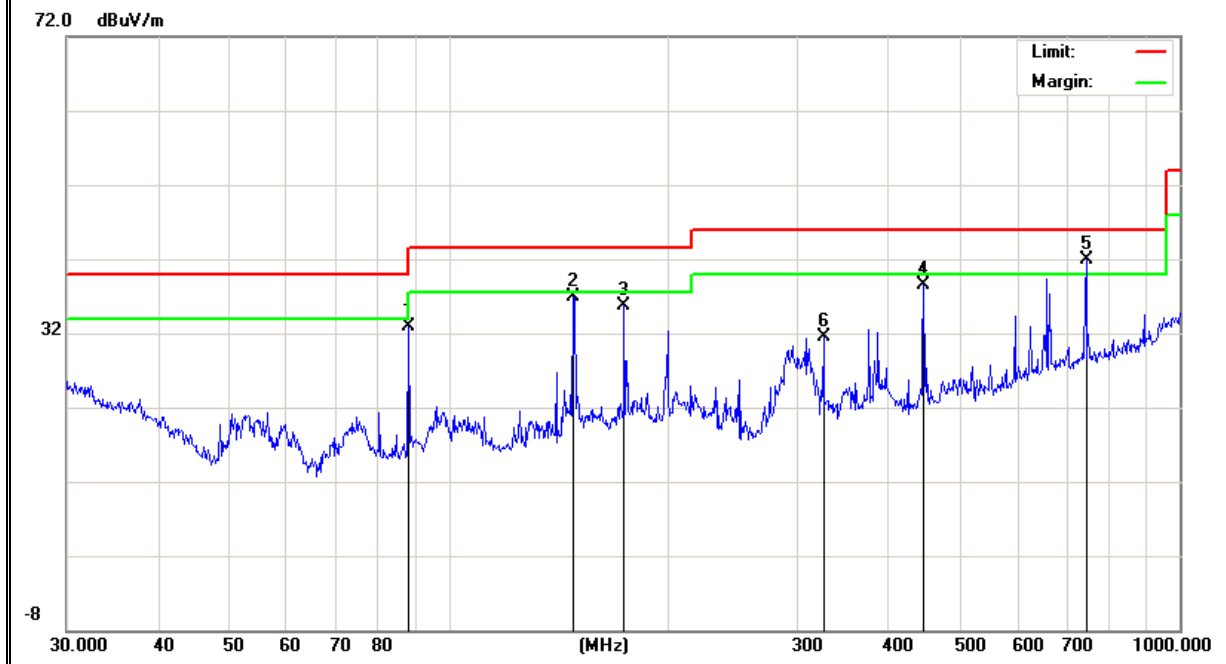
Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit



| Polar<br>(H/V) | Frequency | Meter<br>Reading | Factor | Emission<br>Level | Limits   | Margin | Remark |
|----------------|-----------|------------------|--------|-------------------|----------|--------|--------|
|                | (MHz)     | (dBuV)           | (dB)   | (dBuV/m)          | (dBuV/m) | (dB)   |        |
| H              | 88.0327   | 23.22            | 9.64   | 32.86             | 43.50    | -10.64 | QP     |
| H              | 147.9214  | 25.47            | 11.53  | 37.00             | 43.50    | -6.50  | QP     |
| H              | 173.8135  | 23.25            | 12.37  | 35.62             | 43.50    | -7.88  | QP     |
| H              | 446.4141  | 22.52            | 15.91  | 38.43             | 46.00    | -7.57  | QP     |
| H              | 744.8659  | 19.95            | 22.04  | 41.99             | 46.00    | -4.01  | QP     |
| H              | 325.5957  | 18.11            | 13.46  | 31.57             | 46.00    | -14.43 | QP     |

**Remark:**

Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit



### 3.2.8 TEST RESULTS (ABOVE 1000 MHZ)

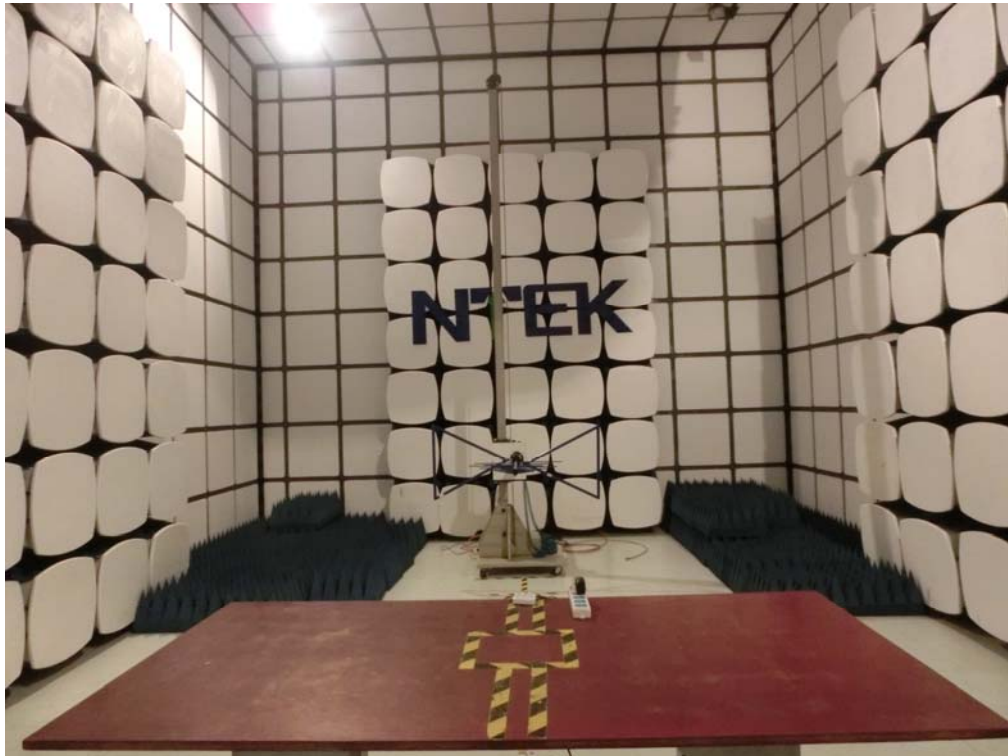
|               |                 |                     |                                   |
|---------------|-----------------|---------------------|-----------------------------------|
| EUT :         | Refer to Page 6 | Model Name :        | SBWD100B                          |
| Temperature : | 20 °C           | Relative Humidity : | 48%                               |
| Pressure :    | 1010 hPa        | Test Voltage :      | DC 5V From adapter<br>AC120V/60Hz |
| Test Mode :   | TX (2.4G)       |                     |                                   |

| Polar<br>(H/V)                    | Frequency<br>(MHz) | Meter<br>Reading<br>(dBuV) | Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Detector<br>Type |
|-----------------------------------|--------------------|----------------------------|----------------|-------------------------------|--------------------|----------------|------------------|
| Low Channel (2412 MHz)-Above 1G   |                    |                            |                |                               |                    |                |                  |
| Vertical                          | 4824.012           | 46.13                      | 10.44          | 56.57                         | 74                 | -17.43         | Pk               |
| Vertical                          | 4824.012           | 36.04                      | 10.44          | 46.48                         | 54                 | -7.52          | AV               |
| Vertical                          | 7236               | 38.15                      | 12.39          | 50.54                         | 74                 | -23.46         | pk               |
| Horizontal                        | 4824.012           | 44.03                      | 10.44          | 54.47                         | 74                 | -19.53         | pk               |
| Horizontal                        | 4824.012           | 36.51                      | 10.44          | 46.95                         | 54                 | -7.05          | AV               |
| Horizontal                        | 7236               | 32.05                      | 12.39          | 44.44                         | 74                 | -29.56         | pk               |
| Mid Channel (2437 MHz)-Above 1G   |                    |                            |                |                               |                    |                |                  |
| Vertical                          | 4874.043           | 46.25                      | 10.4           | 56.65                         | 74                 | -17.35         | pk               |
| Vertical                          | 4874.043           | 36.51                      | 10.4           | 46.91                         | 54                 | -7.09          | AV               |
| Vertical                          | 7311.147           | 35.13                      | 12.75          | 47.88                         | 74                 | -26.12         | Pk               |
| Horizontal                        | 4874.043           | 45.72                      | 10.4           | 56.12                         | 74                 | -17.88         | Pk               |
| Horizontal                        | 4874.043           | 35.19                      | 10.4           | 45.59                         | 54                 | -8.41          | AVk              |
| Horizontal                        | 7311.147           | 31.29                      | 12.75          | 44.04                         | 74                 | -29.96         | Pk               |
| High Channel (2462 MHz)- Above 1G |                    |                            |                |                               |                    |                |                  |
| Vertical                          | 4924.124           | 48.15                      | 10.39          | 58.54                         | 74                 | -15.46         | pk               |
| Vertical                          | 4924.124           | 36.24                      | 10.39          | 46.63                         | 54                 | -7.37          | AV               |
| Vertical                          | 7386.076           | 38.42                      | 12.68          | 51.1                          | 74                 | -22.9          | pk               |
| Horizontal                        | 4924.124           | 46.51                      | 10.39          | 56.9                          | 74                 | -17.1          | pk               |
| Horizontal                        | 4924.124           | 34.06                      | 10.39          | 44.45                         | 54                 | -9.55          | AV               |
| Horizontal                        | 7386.033           | 32.42                      | 12.68          | 45.1                          | 74                 | -28.9          | pk               |

Note: "802.11b" mode is the worst mode. When PK value is lower than the Average value limit, average didn't record.

#### 4. EUT TEST PHOTO

##### Radiated Measurement Photos



**Conducted Measurement Photos**