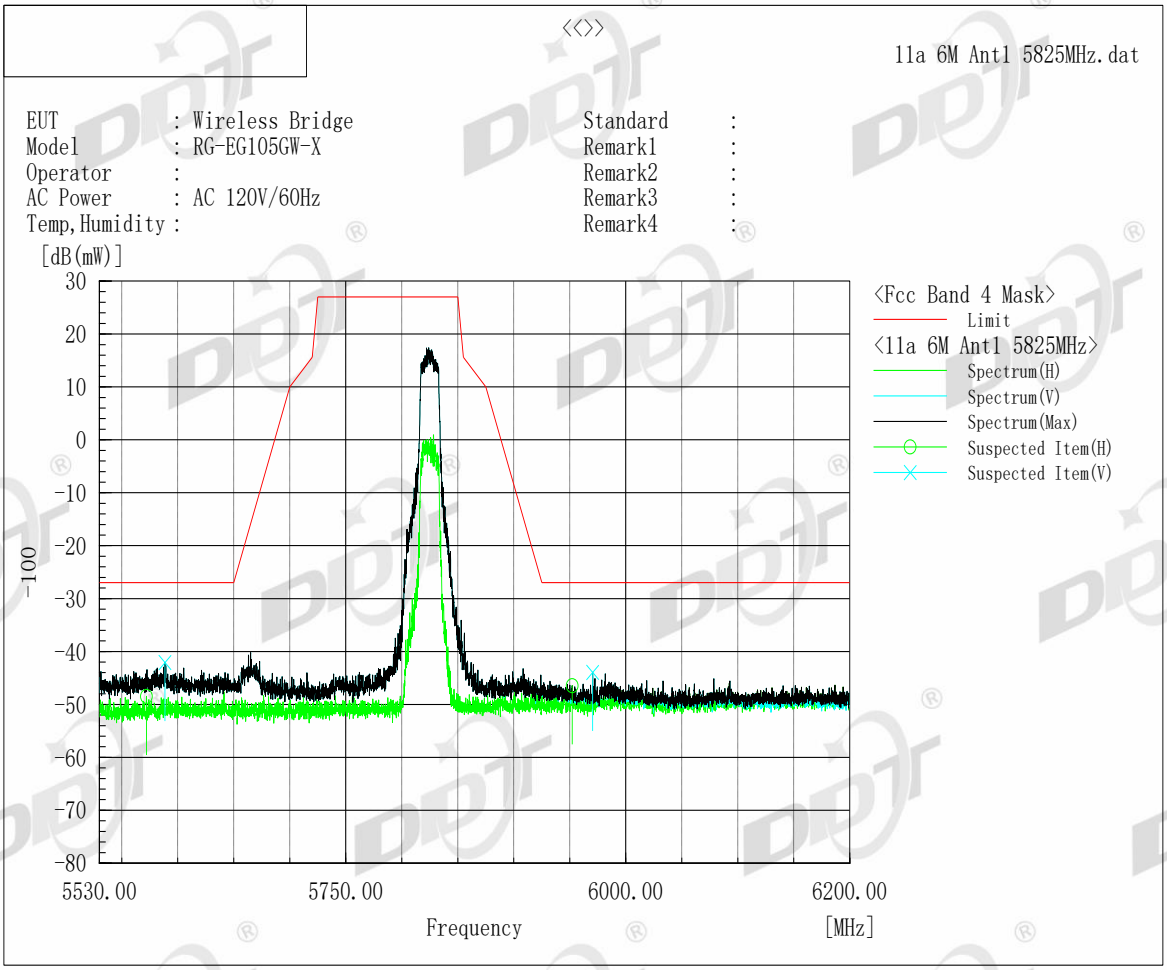
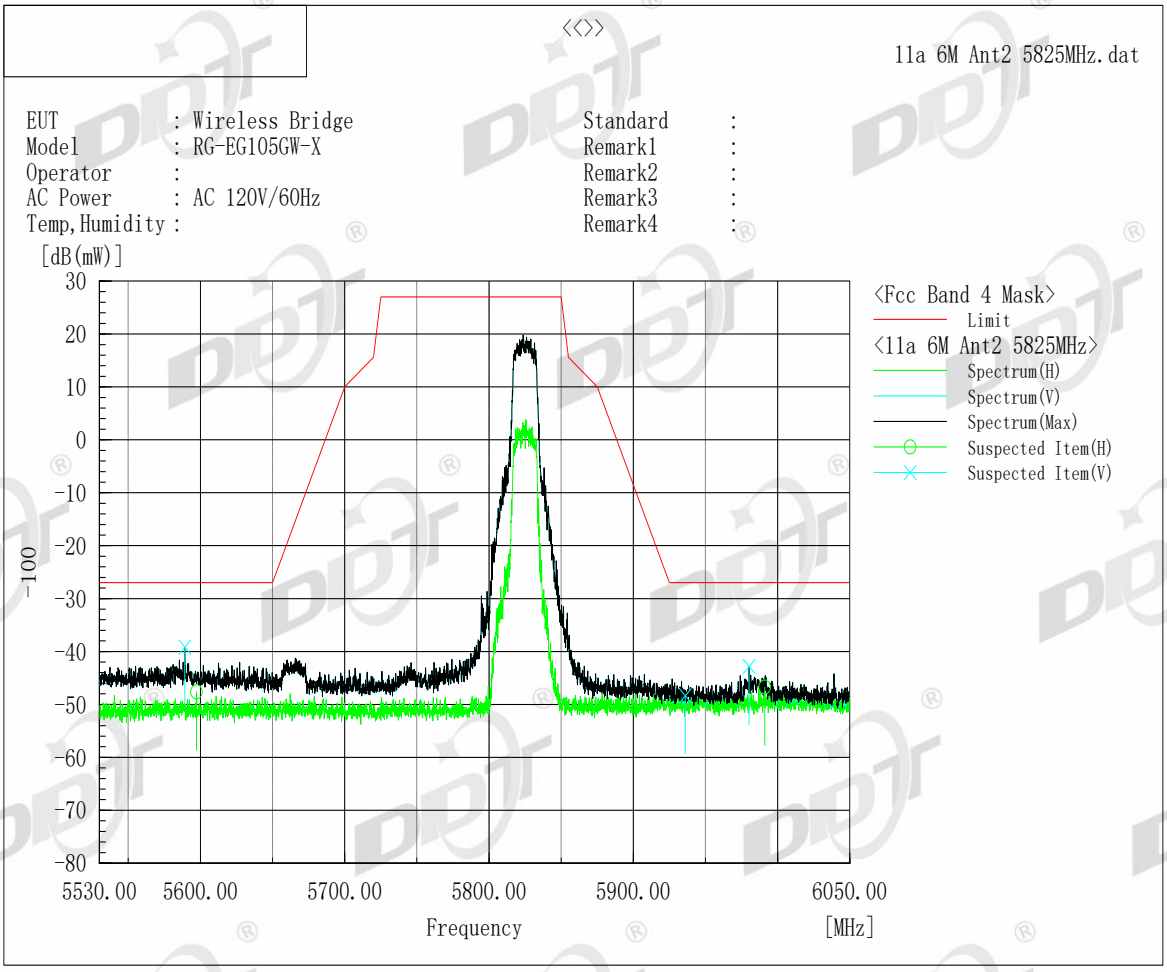
Radiated Emission Test Result



Frequency [MHz]	Pol	Reading (dBm)	Space Loss [dB]	Level (dBm)	Limit (dBm)	Margin [dB]	Azimuth [°]
5572.044	H	-67.1	18.6	-48.5	-27	21.5	344.9
5952.155	H	-65.9	19.4	-46.5	-27	19.5	240
5588.485	V	-61.1	19	-42.1	-27	15.1	265.7
5970.396	V	-63.6	19.7	-43.9	-27	16.9	336.8

Note: 1. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
2. Margin = Limit - Reading Level.

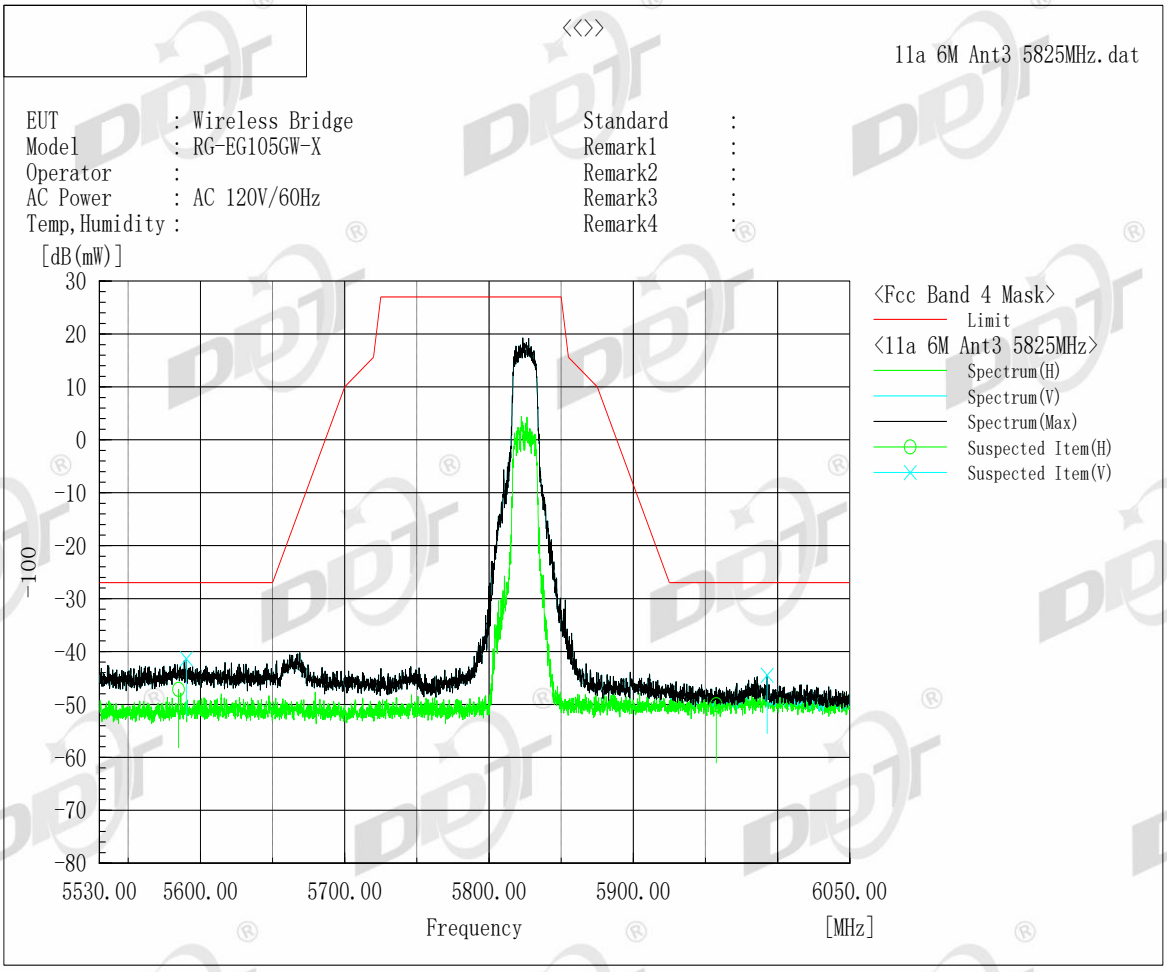
Radiated Emission Test Result



Frequency [MHz]	Pol	Reading (dBm)	Space Loss [dB]	Level (dBm)	Limit (dBm)	Margin [dB]	Azimuth [°]
5597.294	H	-66.5	18.8	-47.7	-27	20.7	301.5
5991.023	H	-66.7	19.9	-46.8	-27	19.8	307.1
5589.168	V	-58.2	19	-39.2	-27	12.2	186.7
5935.919	V	-67.7	19.4	-48.3	-27	21.3	211.9
5980.231	V	-62.7	19.9	-42.8	-27	15.8	337.1

Note: 1. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
2. Margin = Limit - Reading Level.

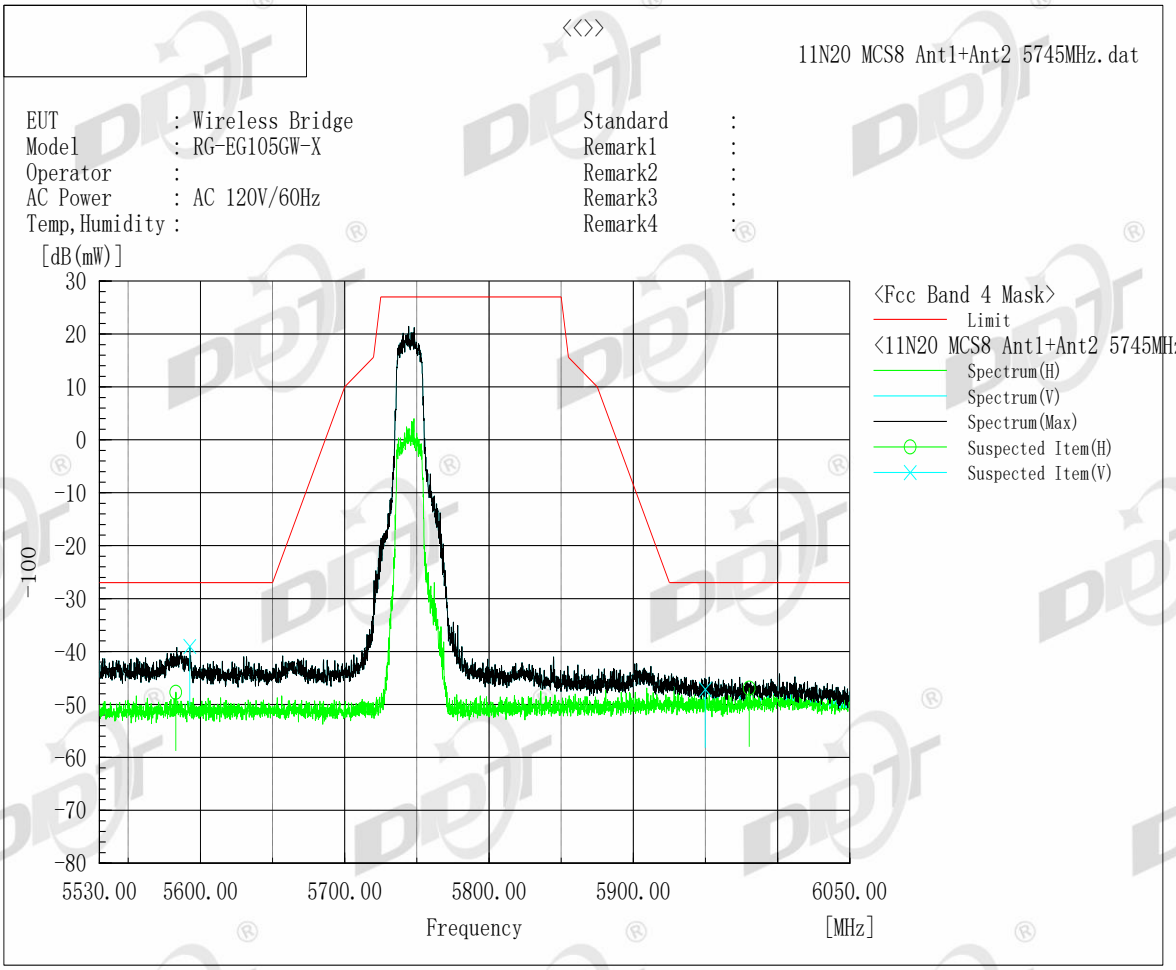
Radiated Emission Test Result



Frequency [MHz]	Pol	Reading (dBm)	Space Loss [dB]	Level (dBm)	Limit (dBm)	Margin [dB]	Azimuth [°]
5584.851	H	-65.9	18.7	-47.2	-27	20.2	250.7
5957.504	H	-69.5	19.4	-50.1	-27	23.1	301.4
5590.247	V	-60.4	19	-41.4	-27	14.4	20.2
5992.737	V	-64.6	20.1	-44.5	-27	17.5	76.7

Note: 1. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
2. Margin = Limit - Reading Level.

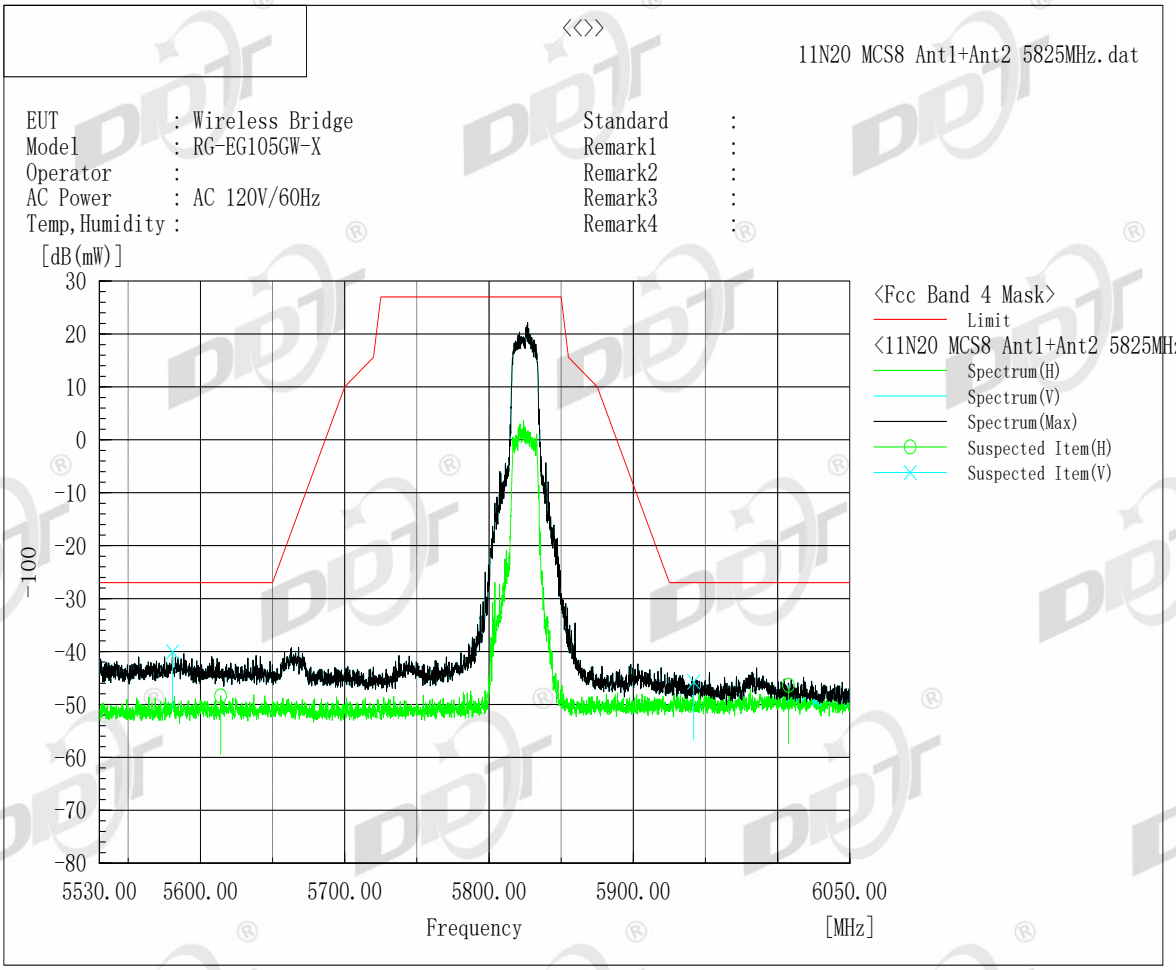
Radiated Emission Test Result



Frequency [MHz]	Pol	Reading (dBm)	Space Loss [dB]	Level (dBm)	Limit (dBm)	Margin [dB]	Azimuth [°]
5583.01	H	-66.4	18.7	-47.7	-27	20.7	221.7
5980.358	H	-66.8	19.8	-47	-27	20	350.9
5592.596	V	-58	19	-39	-27	12	17.1
5949.885	V	-66.5	19.4	-47.1	-27	20.1	324.9

Note: 1. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
2. Margin = Limit - Reading Level.

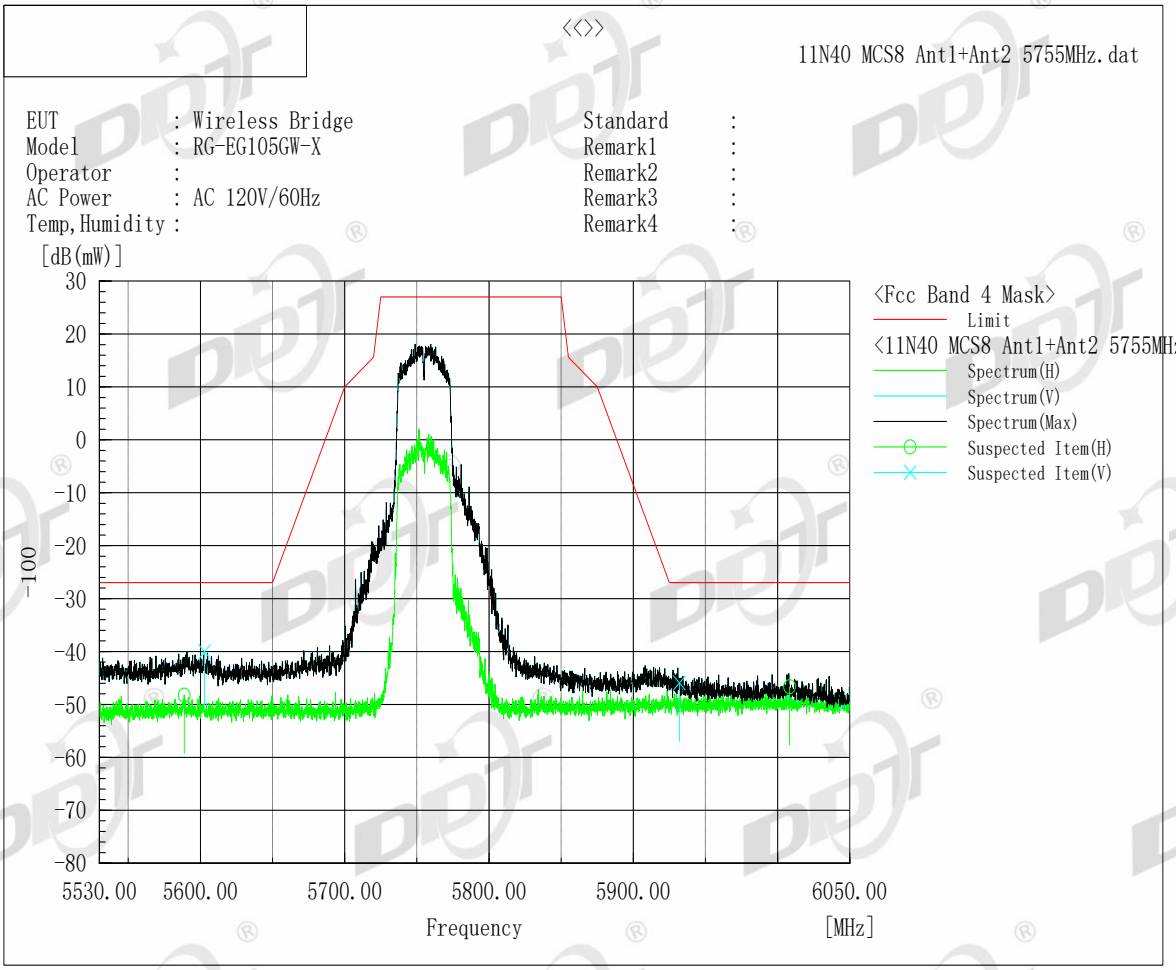
Radiated Emission Test Result



Frequency [MHz]	Pol	Reading (dBm)	Space Loss [dB]	Level (dBm)	Limit (dBm)	Margin [dB]	Azimuth [°]
5613.99	H	-67.2	18.8	-48.4	-27	21.4	239.3
6007.529	H	-66.3	19.9	-46.4	-27	19.4	174.7
5580.661	V	-58.9	18.8	-40.1	-27	13.1	254.8
5941.759	V	-65.1	19.4	-45.7	-27	18.7	246.7

Note: 1. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
2. Margin = Limit - Reading Level.

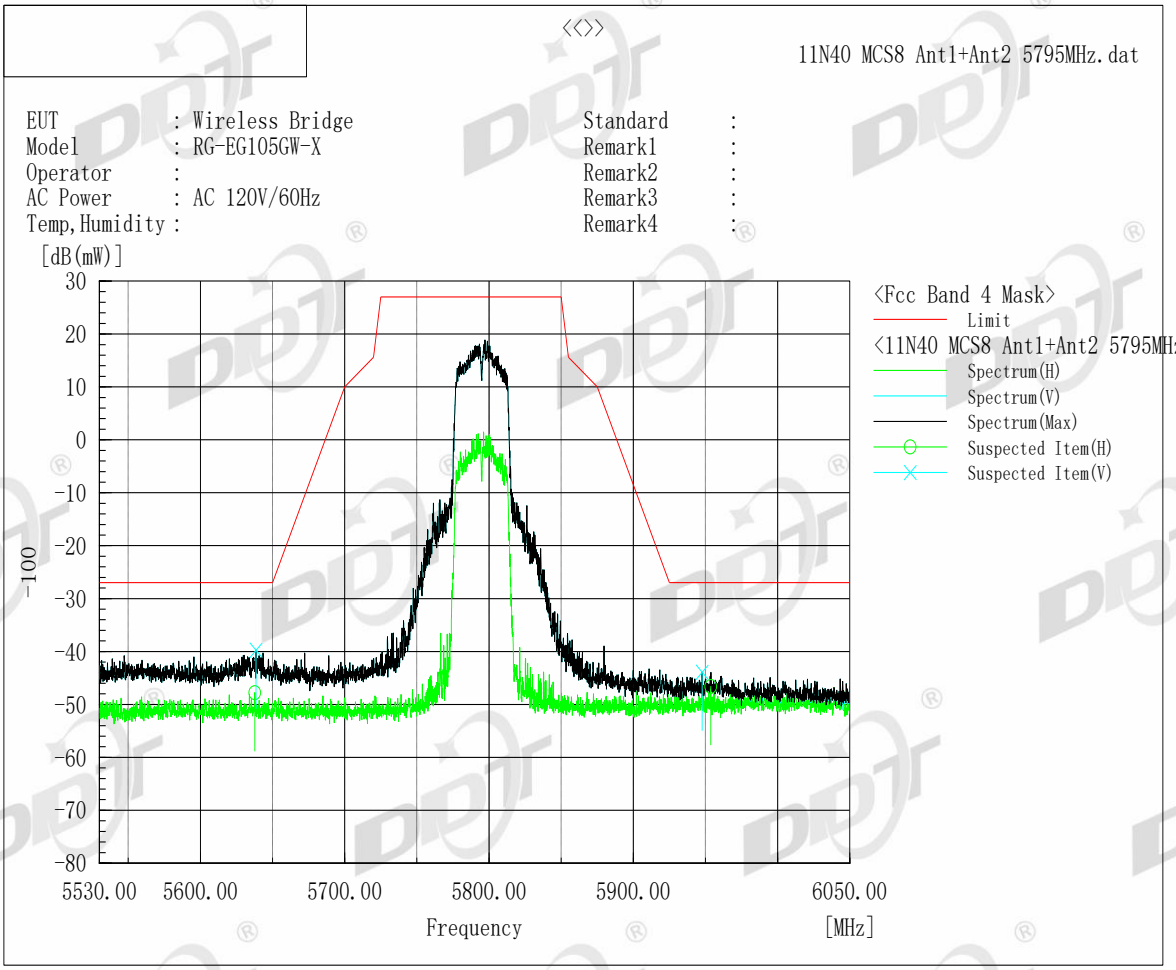
Radiated Emission Test Result



Frequency [MHz]	Pol	Reading (dBm)	Space Loss [dB]	Level (dBm)	Limit (dBm)	Margin [dB]	Azimuth [°]
5588.787	H	-67.1	18.8	-48.3	-27	21.3	325.5
6008.291	H	-66.6	19.9	-46.7	-27	19.7	345.7
5602.753	V	-59.1	19.1	-40	-27	13	298.8
5931.919	V	-65.3	19.4	-45.9	-27	18.9	307.8

Note: 1. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
2. Margin = Limit - Reading Level.

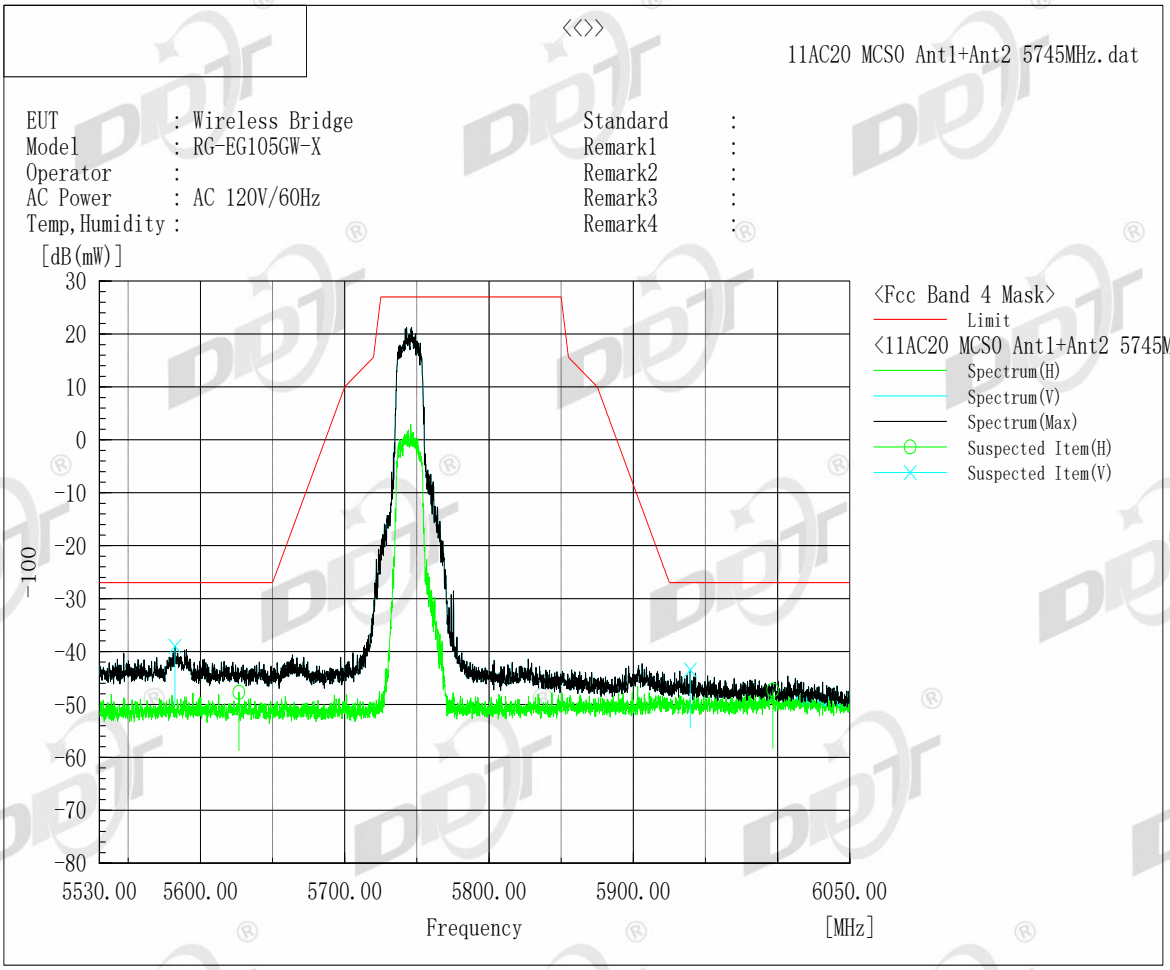
Radiated Emission Test Result



Frequency [MHz]	Pol	Reading (dBm)	Space Loss [dB]	Level (dBm)	Limit (dBm)	Margin [dB]	Azimuth [°]
5637.67	H	-66.5	18.7	-47.8	-27	20.8	102.6
5953.695	H	-66	19.4	-46.6	-27	19.6	256.8
5638.495	V	-58.5	18.8	-39.7	-27	12.7	268.3
5947.664	V	-63.3	19.4	-43.9	-27	16.9	287.7

Note: 1. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
2. Margin = Limit - Reading Level.

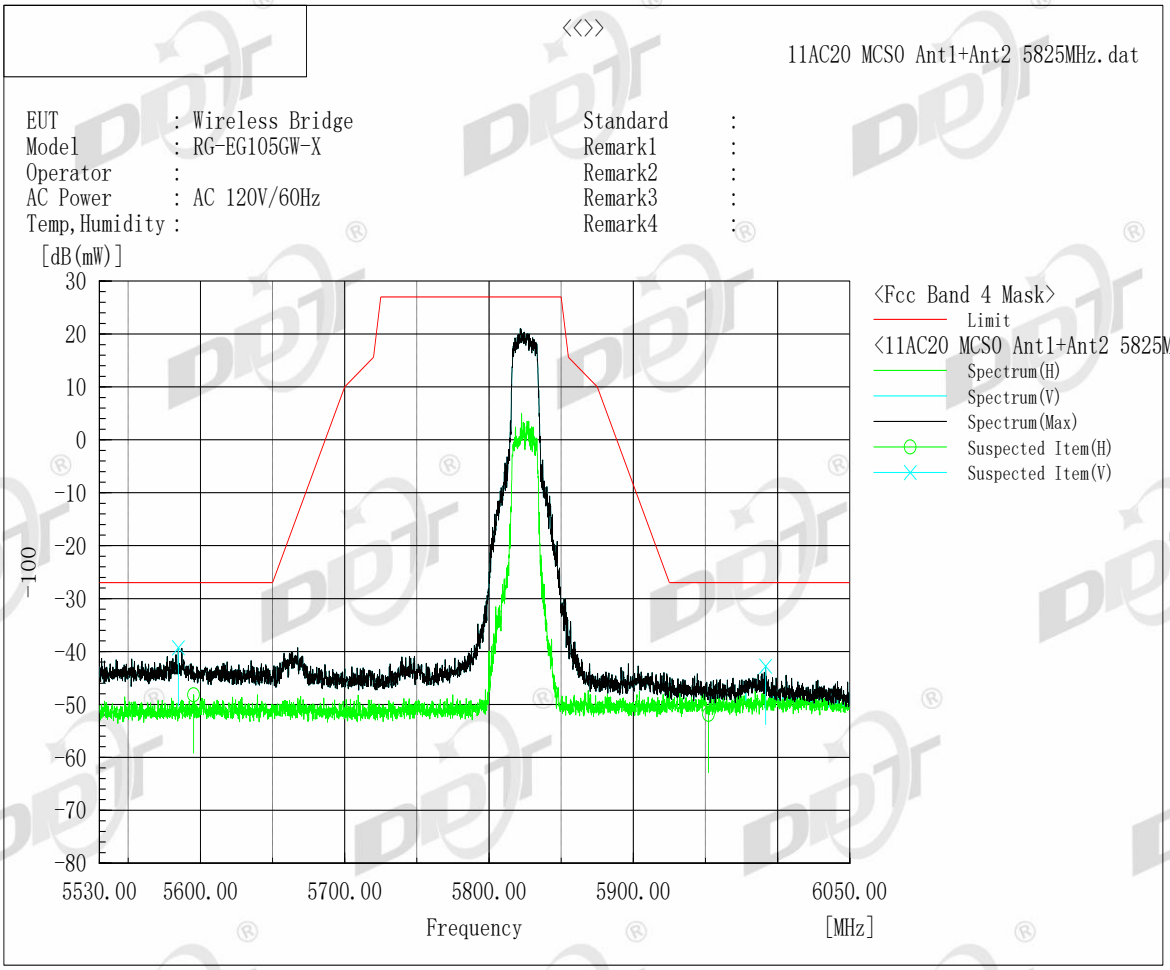
Radiated Emission Test Result



Frequency [MHz]	Pol	Reading (dBm)	Space Loss [dB]	Level (dBm)	Limit (dBm)	Margin [dB]	Azimuth [°]
5626.687	H	-66.5	18.8	-47.7	-27	20.7	241.4
5996.673	H	-67.3	20	-47.3	-27	20.3	161.5
5582.375	V	-57.9	18.9	-39	-27	12	14.7
5939.411	V	-62.9	19.4	-43.5	-27	16.5	331.3

Note: 1. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
2. Margin = Limit - Reading Level.

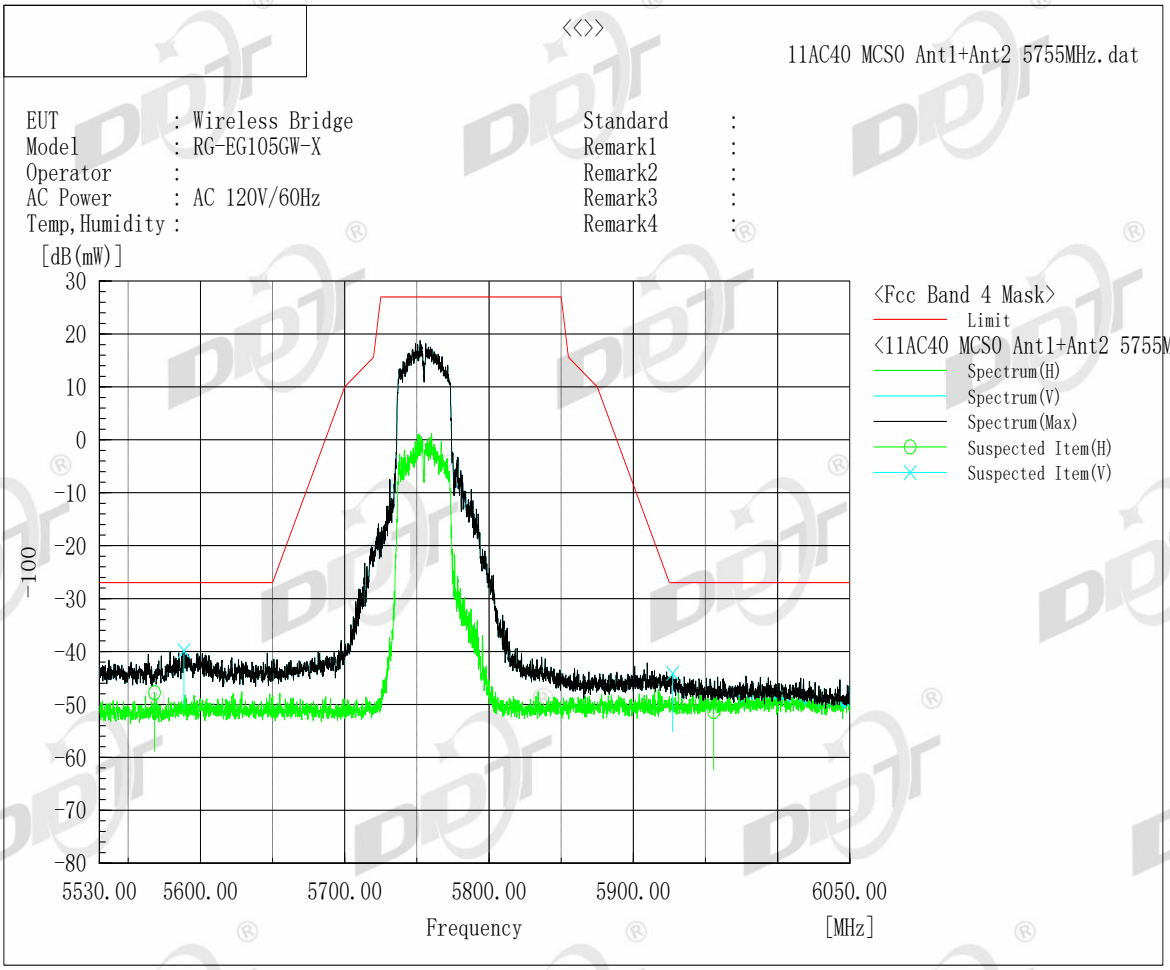
Radiated Emission Test Result



Frequency [MHz]	Pol	Reading (dBm)	Space Loss [dB]	Level (dBm)	Limit (dBm)	Margin [dB]	Azimuth [°]
5595.326	H	-67	18.8	-48.2	-27	21.2	347.2
5952.107	H	-71.3	19.4	-51.9	-27	24.9	98.6
5584.724	V	-58.2	18.9	-39.3	-27	12.3	197.2
5991.658	V	-62.9	20.1	-42.8	-27	15.8	310.4

Note: 1. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
2. Margin = Limit - Reading Level.

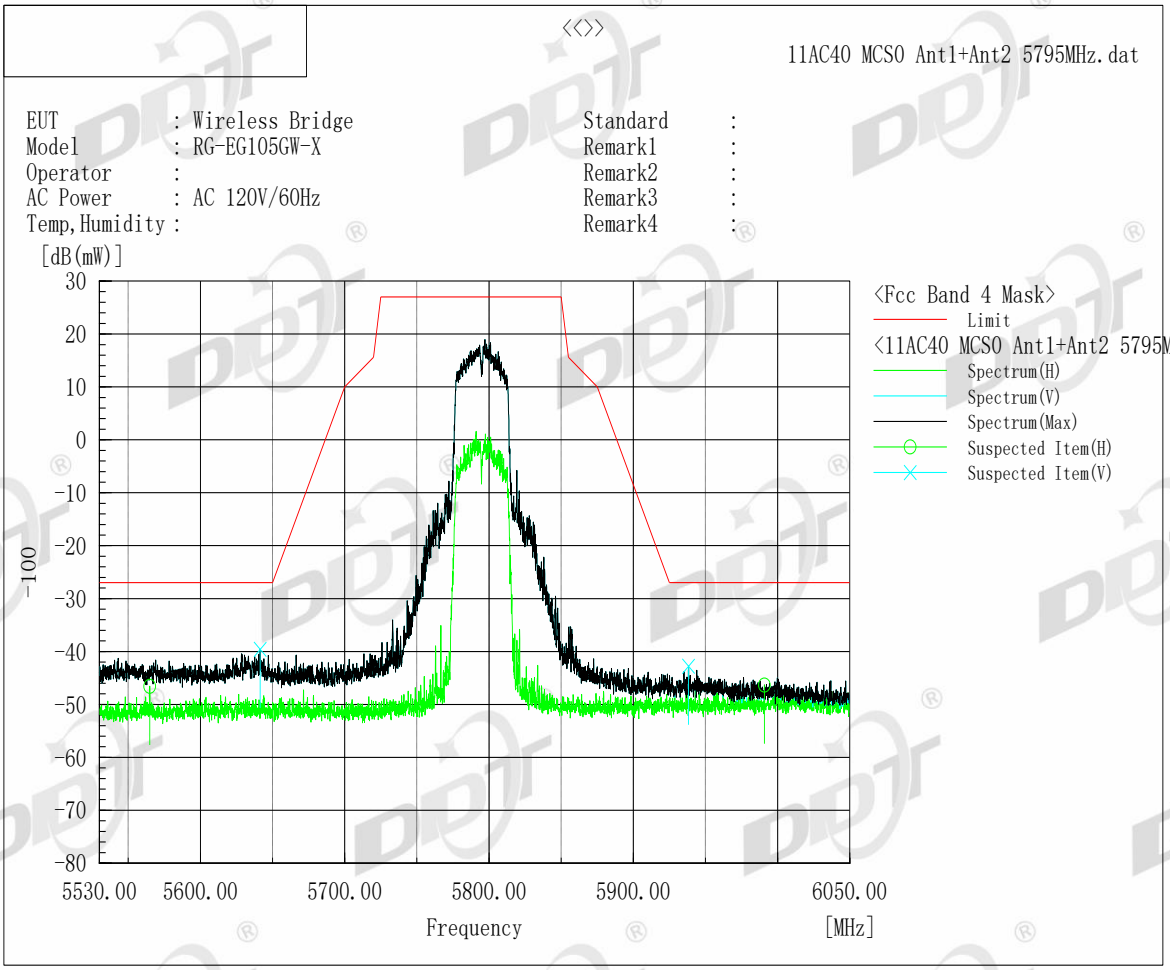
Radiated Emission Test Result



Frequency [MHz]	Pol	Reading (dBm)	Space Loss [dB]	Level (dBm)	Limit (dBm)	Margin [dB]	Azimuth [°]
5568.218	H	-66.3	18.5	-47.8	-27	20.8	241.1
5955.726	H	-70.8	19.4	-51.4	-27	24.4	277.4
5588.596	V	-58.9	19	-39.9	-27	12.9	129.3
5927.222	V	-63.6	19.4	-44.2	-27	17.2	168.7

Note: 1. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
2. Margin = Limit - Reading Level.

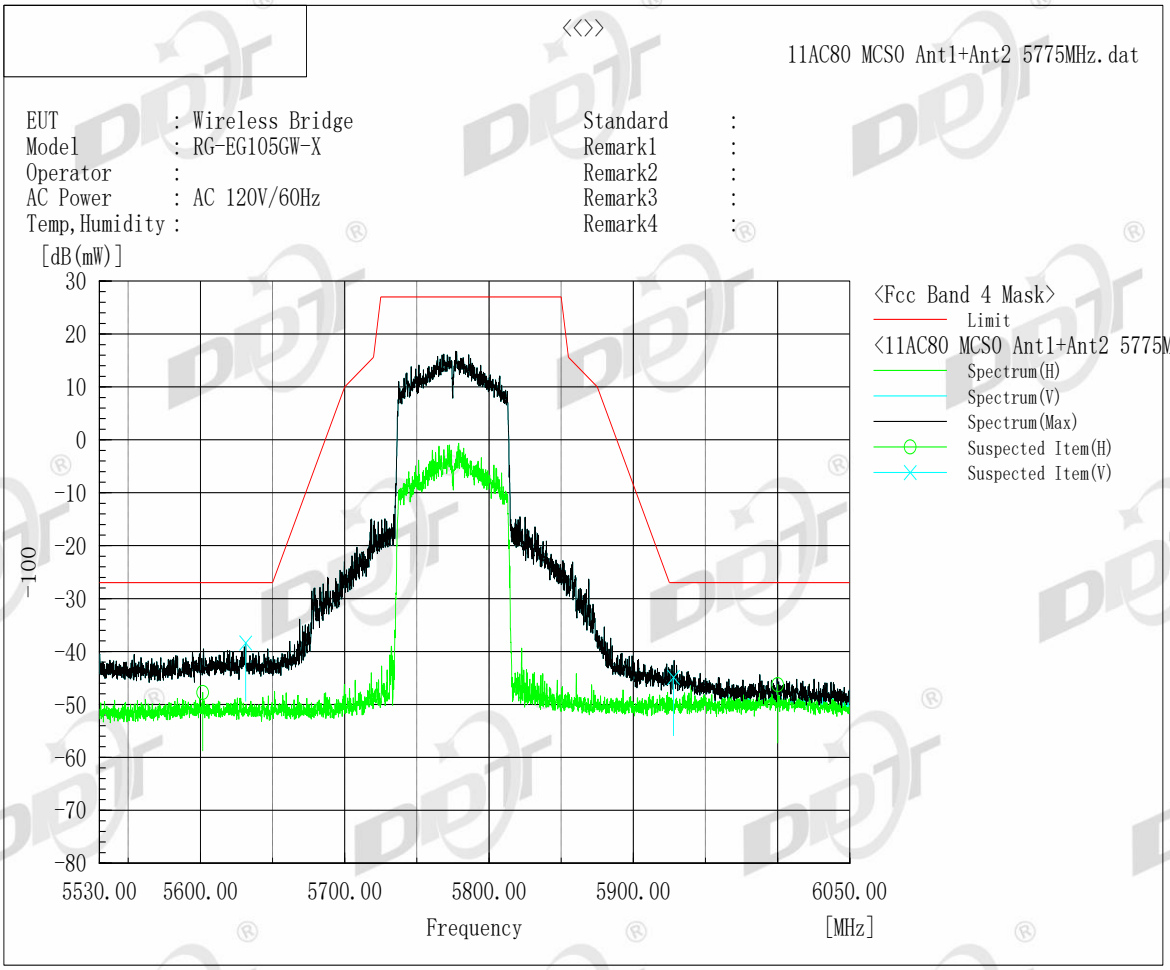
Radiated Emission Test Result



Frequency [MHz]	Pol	Reading (dBm)	Space Loss [dB]	Level (dBm)	Limit (dBm)	Margin [dB]	Azimuth [°]
5564.853	H	-65.1	18.5	-46.6	-27	19.6	231.9
5990.833	H	-66.3	19.9	-46.4	-27	19.4	242.4
5641.415	V	-58.4	18.8	-39.6	-27	12.6	197.6
5938.268	V	-62.2	19.4	-42.8	-27	15.8	9.6

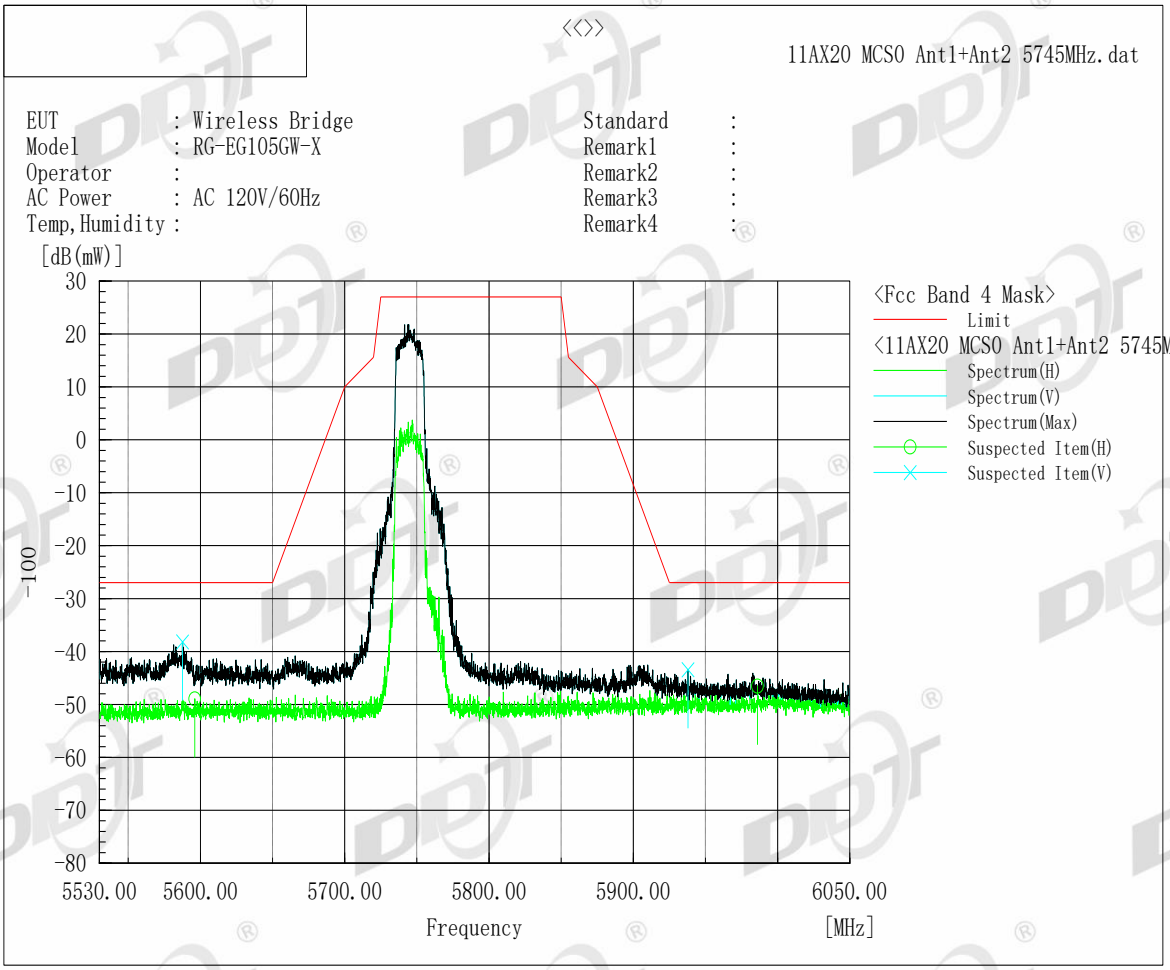
Note: 1. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
2. Margin = Limit - Reading Level.

Radiated Emission Test Result



Frequency [MHz]	Pol	Reading (dBm)	Space Loss [dB]	Level (dBm)	Limit (dBm)	Margin [dB]	Azimuth [°]
5601.547	H	-66.6	18.8	-47.8	-27	20.8	169.3
5999.975	H	-66.3	20	-46.3	-27	19.3	57
5631.321	V	-57.3	18.9	-38.4	-27	11.4	321
5927.856	V	-64.3	19.4	-44.9	-27	17.9	312.8

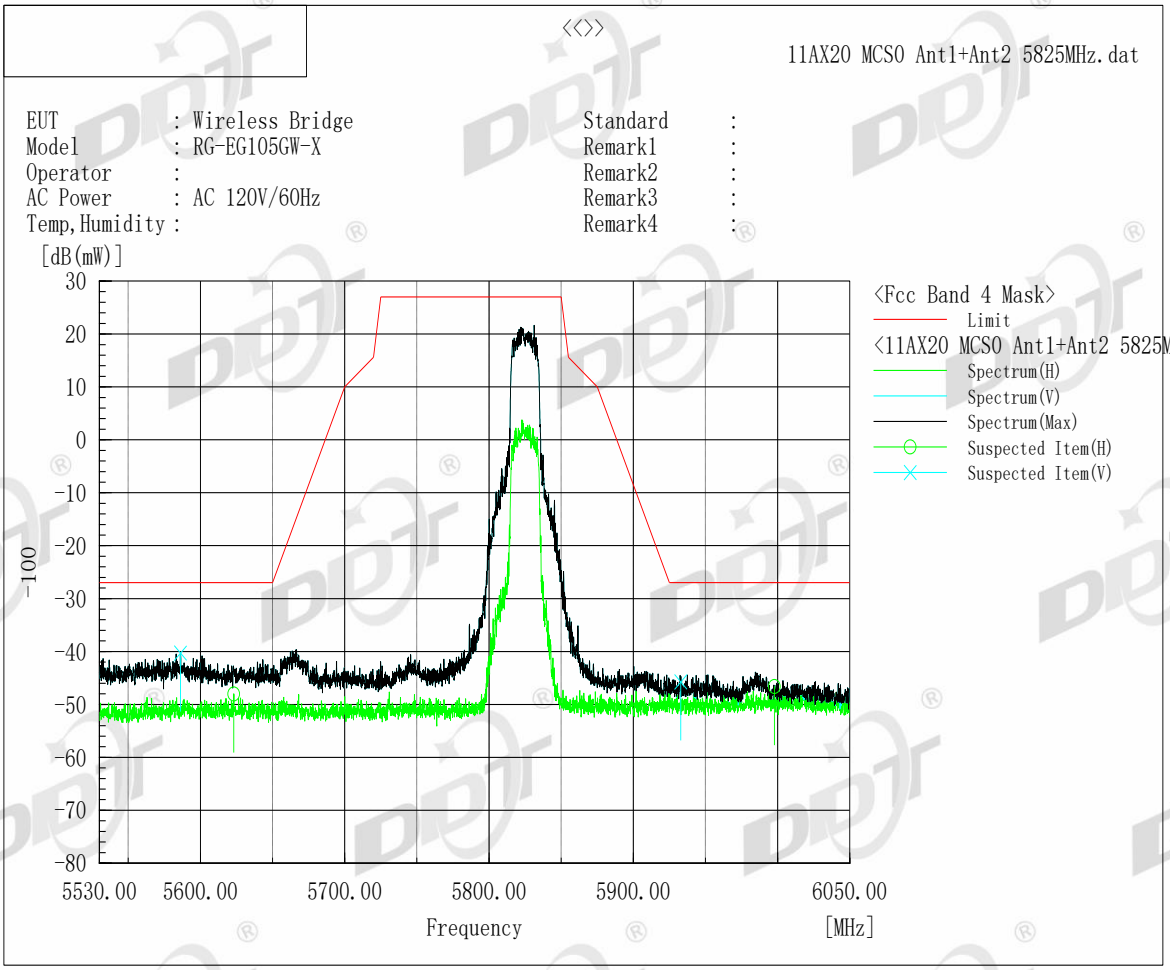
Radiated Emission Test Result



Frequency [MHz]	Pol	Reading (dBm)	Space Loss [dB]	Level (dBm)	Limit (dBm)	Margin [dB]	Azimuth [°]
5596.151	H	-67.8	18.8	-49	-27	22	265.6
5986.072	H	-66.5	19.9	-46.6	-27	19.6	208.3
5587.644	V	-57.2	19	-38.2	-27	11.2	198.6
5937.823	V	-62.9	19.4	-43.5	-27	16.5	12.1

Note: 1. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
2. Margin = Limit - Reading Level.

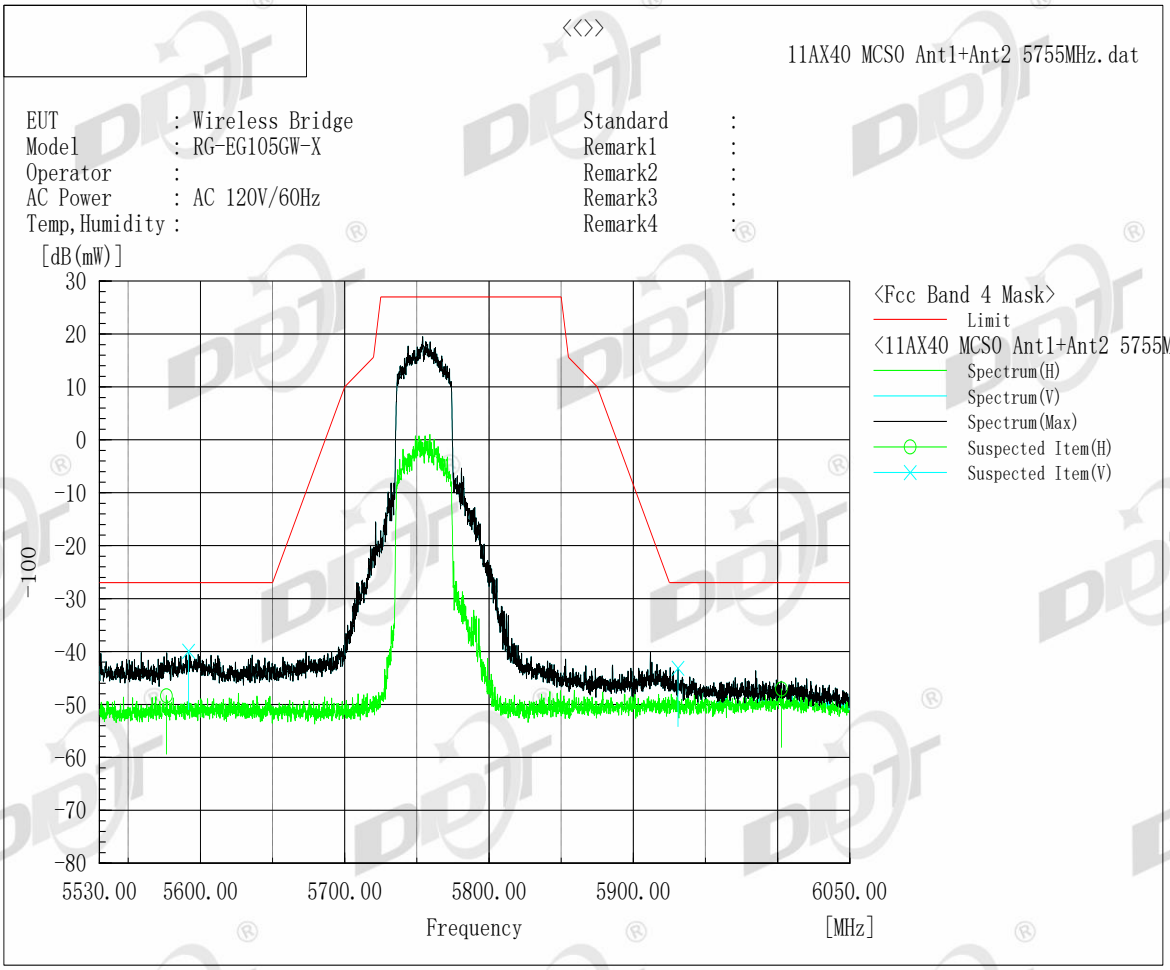
Radiated Emission Test Result



Frequency [MHz]	Pol	Reading (dBm)	Space Loss [dB]	Level (dBm)	Limit (dBm)	Margin [dB]	Azimuth [°]
5623.132	H	-66.8	18.8	-48	-27	21	305.2
5997.816	H	-66.6	20	-46.6	-27	19.6	354.5
5586.184	V	-59.2	18.9	-40.3	-27	13.3	146.4
5932.808	V	-65.1	19.4	-45.7	-27	18.7	331.5

Note: 1. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
2. Margin = Limit - Reading Level.

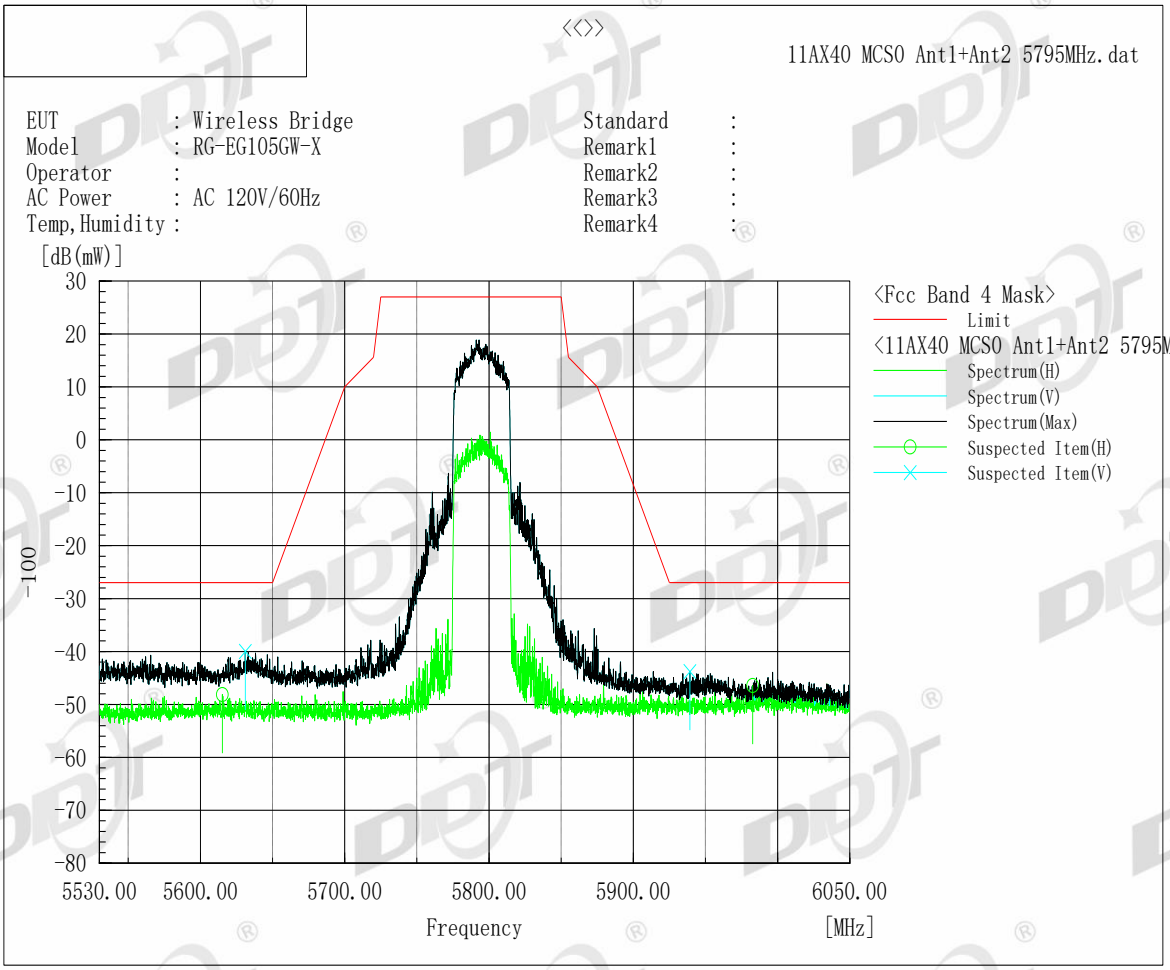
Radiated Emission Test Result



Frequency [MHz]	Pol	Reading (dBm)	Space Loss [dB]	Level (dBm)	Limit (dBm)	Margin [dB]	Azimuth [°]
5576.471	H	-67	18.6	-48.4	-27	21.4	319.1
6002.704	H	-67.1	20	-47.1	-27	20.1	93
5591.77	V	-59	19	-40	-27	13	188.8
5930.967	V	-62.6	19.4	-43.2	-27	16.2	311

Note: 1. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
2. Margin = Limit - Reading Level.

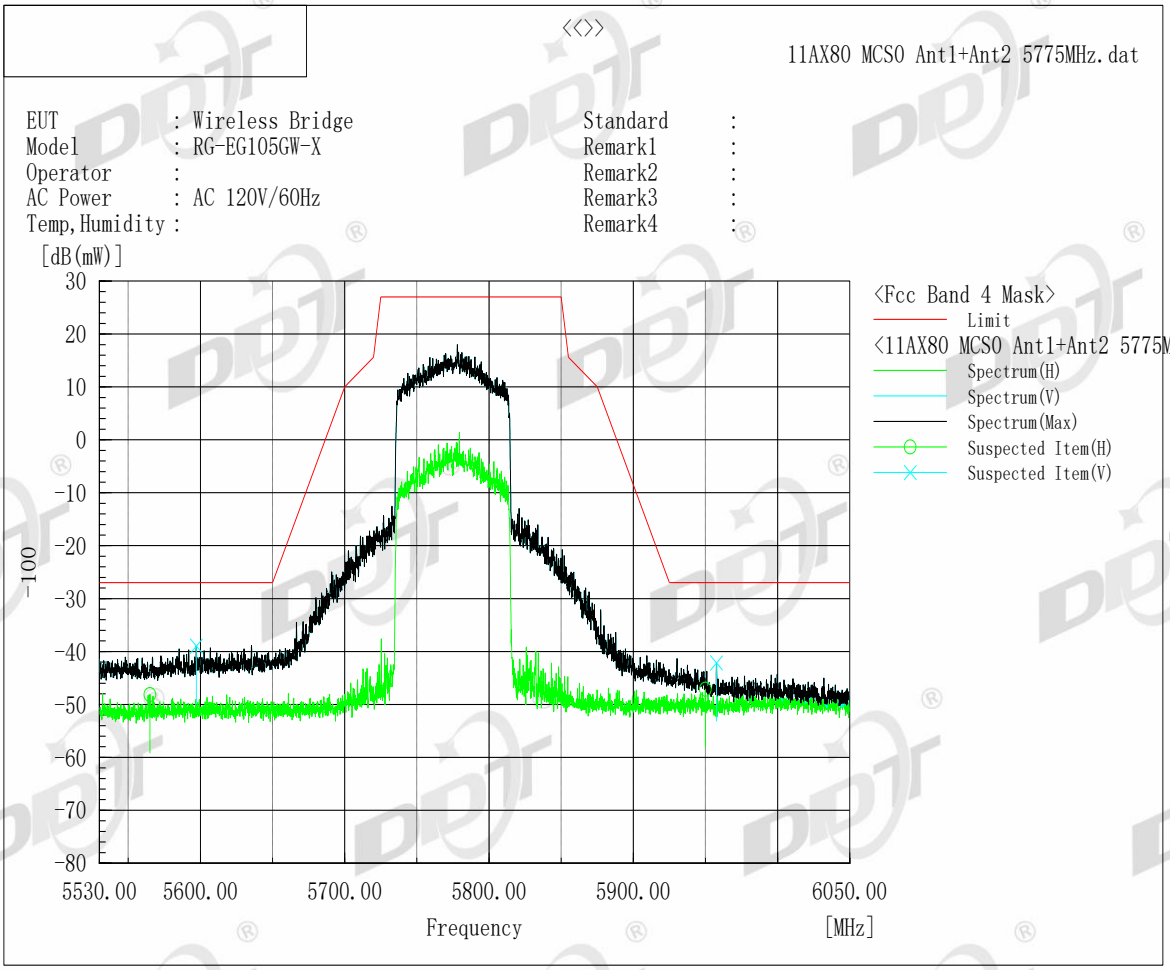
Radiated Emission Test Result



Frequency [MHz]	Pol	Reading (dBm)	Space Loss [dB]	Level (dBm)	Limit (dBm)	Margin [dB]	Azimuth [°]
5615.26	H	-67	18.8	-48.2	-27	21.2	177.9
5982.643	H	-66.3	19.8	-46.5	-27	19.5	354
5631.131	V	-58.9	18.9	-40	-27	13	255.2
5939.157	V	-63.2	19.4	-43.8	-27	16.8	231.8

Note: 1. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
2. Margin = Limit - Reading Level.

Radiated Emission Test Result

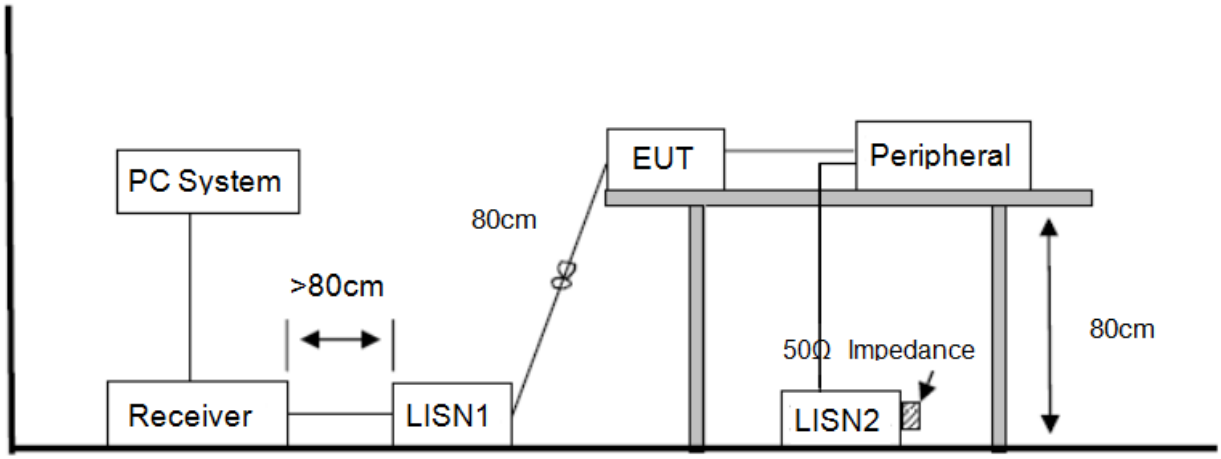


Frequency [MHz]	Pol	Reading (dBm)	Space Loss [dB]	Level (dBm)	Limit (dBm)	Margin [dB]	Azimuth [°]
5564.98	H	-66.7	18.5	-48.2	-27	21.2	166.4
5949.949	H	-66.5	19.4	-47.1	-27	20.1	222.9
5597.167	V	-58.1	19.1	-39	-27	12	322.3
5957.631	V	-61.6	19.5	-42.1	-27	15.1	308.5

Note: 1. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
2. Margin = Limit - Reading Level.

11. Power Line Conducted Emission

11.1. Block diagram of test setup



11.2. Power Line Conducted Emission Limits (Class B)

Frequency	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150 kHz ~ 500 kHz	66 ~ 56*	56 ~ 46*
500 kHz ~ 5 MHz	56	46
5 MHz ~ 30 MHz	60	50

Note 1: * Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

11.3. Test Procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm above the ground plane.

Configuration EUT to simulate typical usage as described in clause 2.3 and test equipment as described in clause 10.2 of this report.

All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

The test mode(s) described in clause 2.3 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level.

The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.
EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions.

Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

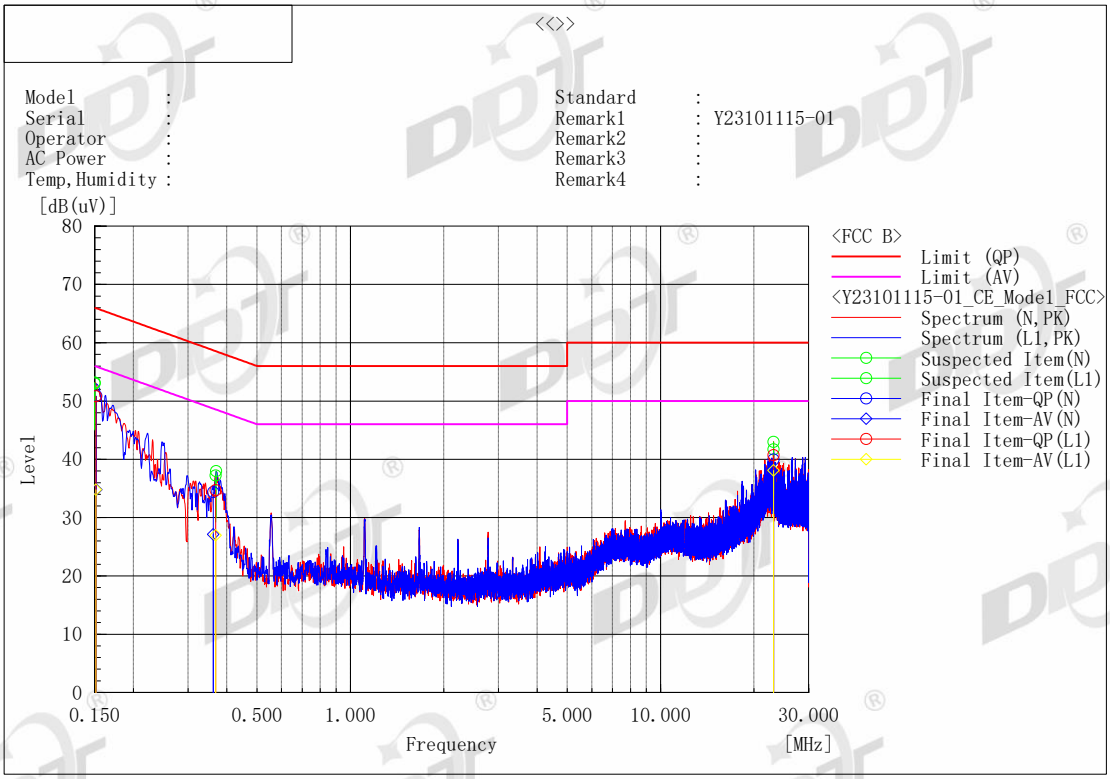
The test data of the worst-case condition(s) was recorded.

The bandwidth of test receiver is set at 9 kHz.

11.4. Test Result

Note1: All emissions not reported below are too low against the prescribed limits.
Note2: Pre-test AC conducted emission at all mode, only the worst case was recorded in this report.

Conducted Emission Test Result



Final Result

--- N Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Margin QP [dB]	Margin CAV [dB]	Remark
1	0.15199	41.2	25.2	9.6	50.8	34.8	65.9	55.9	15.1	21.1	
2	0.36181	24.8	17.5	9.6	34.4	27.1	58.7	48.7	24.3	21.6	
3	23.12715	29.8	27.4	10.2	40.0	37.6	60.0	50.0	20.0	12.4	

--- L1 Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Margin QP [dB]	Margin CAV [dB]	Remark
1	0.15131	41.2	25.2	9.6	50.8	34.8	65.9	55.9	15.1	21.1	
2	0.368	25.1	17.3	9.6	34.7	26.9	58.5	48.5	23.8	21.6	
3	23.12692	30.5	27.9	10.2	40.7	38.1	60.0	50.0	19.3	11.9	

Note1) Level (Quasi-Peak and/or C/Average) = Meter Reading + Factor
Note2) Line = Polarity of input power (Live or Neutral)
N : Abbreviation of Neutral Polarity, L1 : Abbreviation of Live Polarity,
Note3) Factor = LISN Insertion Loss + Cable Loss
Note4) Margin = Limit – Level (Quasi-Peak and/or C/Average)
Note5) C/Average : Abbreviation of CISPR Average

12. Antenna Requirements

12.1. Limit

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

12.2. Result

The device support equips three antennas, this product was dedicated PCB antennas and other than that furnished by the responsible party shall be used with the device.