



FCC Part 15C Test Report

FCC ID: 2A082-T80

Product Name:	RF Silent Disco Wireless Transmitters
Trademark:	INDA
Model Name :	T80
Prepared For :	Shenzhen Changyin Electronic Co., Ltd
Address :	4/F, Bldg1, Guanfeng Industrial Park, Jiuwei New Village, Xixiang, Bao'an District, Shenzhen, 518126, China
Prepared By :	Shenzhen BCTC Testing Co., Ltd.
Address :	BCTC Building & 1-2F, East of B Building, Pengzhou Industrial, Fuyuan 1st Road, Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China
Test Date:	Mar. 08 – Mar. 15, 2018
Date of Report :	Mar. 15, 2018
Report No.:	BCTC-FY180300972E



TEST RESULT CERTIFICATION

Applicant's name..... : Shenzhen Changyin Electronic Co., Ltd
Address..... : 4/F, Bldg1, Guanfeng Industrial Park, Jiuwei New Village, Xixiang,
Bao'an District, Shenzhen, 518126, China
Manufacture's Name..... : Shenzhen Changyin Electronic Co., Ltd
Address..... : 4/F, Bldg1, Guanfeng Industrial Park, Jiuwei New Village, Xixiang,
Bao'an District, Shenzhen, 518126, China

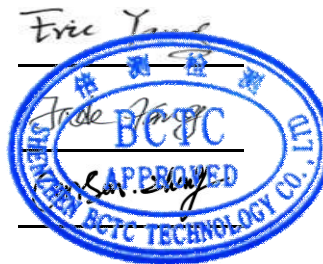
Product description

Product name..... : RF Silent Disco Wireless Transmitters
Model and/or type reference : T80
Serial Model..... : N/A
Test Standards..... : FCC Part15.249
ANSI C63.10-2013

This device described above has been tested by BCTC, 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 BCTC, this document may be altered or revised by BCTC, personal only, and shall be noted in the revision of the document.

Prepared by(Engineer): Eric Yang
Reviewer(Supervisor): Jade Yang
Approved(Manager): Carson Zhang



**Table of Contents**

	Page
1 . SUMMARY OF TEST RESULTS	5
1.1 TEST FACILITY	6
1.2 MEASUREMENT UNCERTAINTY	6
2 . GENERAL INFORMATION	7
2.1 GENERAL DESCRIPTION OF EUT	7
2.2 DESCRIPTION OF TEST MODES	8
2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	9
2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)	9
2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS	10
3 . EMC EMISSION TEST	11
3.1 CONDUCTED EMISSION MEASUREMENT	11
3.1.1 POWER LINE CONDUCTED EMISSION LIMITS	11
3.1.2 TEST PROCEDURE	11
3.1.3 DEVIATION FROM TEST STANDARD	11
3.1.4 TEST SETUP	12
3.1.5 EUT OPERATING CONDITIONS	12
3.1.6 TEST RESULTS	13
3.2 RADIATED EMISSION MEASUREMENT	15
3.2.1 RADIATED EMISSION LIMITS	15
3.2.2 TEST PROCEDURE	16
3.2.3 DEVIATION FROM TEST STANDARD	16
3.2.4 TEST SETUP	17
3.2.5 EUT OPERATING CONDITIONS	18
3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)	19
3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)	20
3.2.8 TEST RESULTS (ABOVE 1000 MHZ)	22
4 . 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE	25
4.1 DEVIATION FROM STANDARD	25
4.2 TEST SETUP	25
4.3 EUT OPERATION CONDITIONS	25
4.4 TEST RESULTS	25
5 . BANDWIDTH TEST	28
5.1 APPLIED PROCEDURES / LIMIT	28



Table of Contents

	Page
5.1.1 TEST PROCEDURE	28
5.1.2 DEVIATION FROM STANDARD	28
5.1.3 TEST SETUP	28
5.1.4 EUT OPERATION CONDITIONS	28
5.1.5 TEST RESULTS	29
6 . ANTENNA REQUIREMENT	31
6.1 STANDARD REQUIREMENT	31
6.2 EUT ANTENNA	31
7 . EUT TEST PHOTO	32
8 . PHOTO OF THE EUT	34



1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.249) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.249 (a)(2)	20dB Bandwidth	PASS	
15.249	Fundamental &Radiated Spurious Emission Measurement	PASS	
15.205	Band Edge Emission	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report



1.1 TEST FACILITY

Shenzhen BCTC Testing Co., Ltd.

Add. : BCTC Building & 1-2F, East of B Building, Pengzhou Industrial, Fuyuan 1st Road, Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 712850

IC Registered No.: 23583

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	RF Silent Disco Wireless Transmitters	
Trade Name	INDA	
Model Name	T80	
Serial Model	N/A	
Model Difference	N/A	
Product Description	The EUT is a RF Silent Disco Wireless Transmitters	
	Operation Frequency:	920.1-925.9MHz
	Modulation Type:	FM
	Number Of Channel	10CH
	Antenna Designation:	Please see Note 3.
	Antenna Gain (dBi)	5dbi
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.	
Power	Main unit: DC 3.7V External adaptor: Input: AC100-240V 50/60Hz Output: DC 9V 1A	
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.

Channel List for 902-928MHz							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	920.1	04	921.9	07	923.4	10	925.9
02	920.7	05	922.3	08	924.2		
03	921.2	06	922.8	09	924.7		

3.

Table for Filed Antenna

An.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
A	N/A	N/A	External antenna	N/A	5	



2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

For Radiated Emission	
Final Test Mode	Description
Mode 1	TX Mode

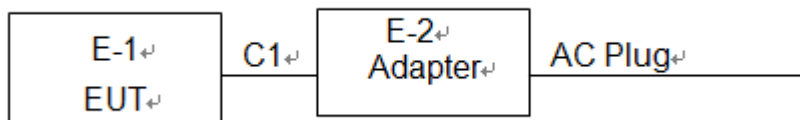
Note:

- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

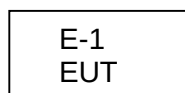


2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted Emission Test



Radiated Spurious 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	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	RF Silent Disco Wireless Transmitters	INDA	T80	N/A	EUT
E-1	Adapter	N/A	8XY-0901000M	N/A	INPUT:AC 100-240~50/60Hz OUTPUT:9V1A

Item	Shielded Type	Ferrite Core	Length	Note
C1	NO	NO	0.8M	DC cable unshielded

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	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4407B	MY45108040	2017.08.27	2018.08.26
2	Test Receiver (9kHz-7GHz)	R&S	ESPI	101318	2017.08.27	2018.08.26
3	Bilog Antenna (30MHz-1GHz)	R&S	VULB 9168	VULB91 68-438	2017.08.27	2018.08.26
4	Horn Antenna (1GHz-18GHz)	SCHWARZBECK	BBHA9120D	1201	2017.09.03	2018.09.02
5	Horn Antenna (14GHz-40GHz)	SCHWARZBECK	BBHA 9170	9170-181	2017.09.03	2018.09.02
6	Amplifier (9KHz-6GHz)	SCHWARZBECK	BBV9744	9744-0037	2017.08.27	2018.08.26
7	Amplifier (1GHz-18GHz)	SCHWARZBECK	BBV9718	9718-309	2017.08.27	2018.08.26
8	Amplifier (18GHz-40GHz)	SCHWARZBECK	BBV 9721	9721-205	2017.08.27	2018.08.26
9	Loop Antenna (9KHz-30MHz)	SCHWARZBECK	FMZB1519B	00014	2017.09.03	2018.09.02
10	RF cables1 (9kHz-1GHz)	R&S	R203	R20X	2017.08.27	2018.08.26
11	RF cables2 (1GHz-40GHz)	R&S	R204	R21X	2017.08.27	2018.08.26
12	Antenna connector	Florida RF Labs	N/A	RF 01#	2017.08.27	2018.08.26
13	Power Metter	ANRITSU	ML2487A	6K00001568	2017.08.27	2018.08.26
14	Power Sensor (AV)	ANRITSU	ML2491A	030989	2017.08.27	2018.08.26
15	Signal Analyzer 9kHz-26.5GHz	Agilent	N9010A	MY48030494	2017.08.27	2018.08.26
16	Test Receiver 20kHz-40GHz	R&S	ESU 40	100376	2017.08.27	2018.08.26
17	D.C. Power Supply	LongWei	PS-305D	010964729	2017.08.27	2018.08.26

Conduction Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Test Receiver	R&S	ESCI	1166.5950K03-1011 65-ha	2017.08.27	2018.08.26
2	LISN	SCHWARZBECK	NSLK8127	8127739	2017.08.27	2018.08.26
3	LISN	R&S	NSLK8126	8126487	2017.08.27	2018.08.26
4	RF cables	R&S	R204	R20X	2017.08.27	2018.08.26
5	Attenuator	R&S	ESH3-Z2	143206	2017.08.27	2018.08.26



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

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

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	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

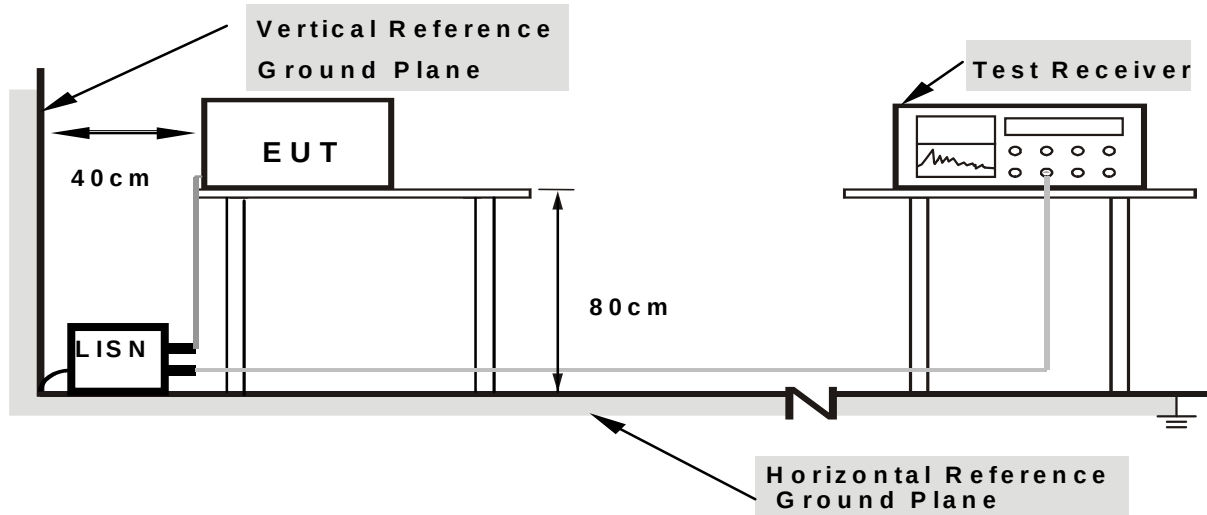
3.1.2 TEST PROCEDURE

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

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 cm from other units and other metal planes

3.1.5 EUT OPERATING CONDITIONS

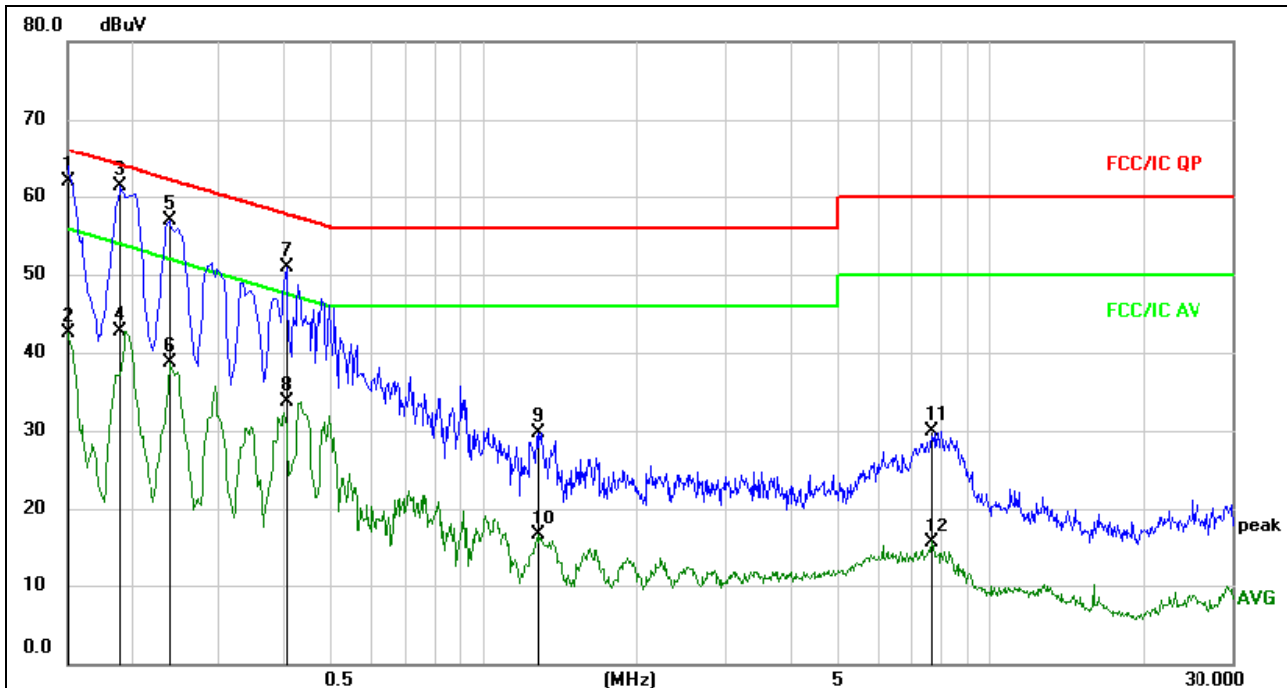
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

We pretest AC 120V and AC 240V, the worst voltage was AC 120V and the data recording in the report



3.1.6 TEST RESULTS

Temperature :	25℃	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	L
Test Voltage :	AC120V/60Hz	Test Mode :	Mode 1



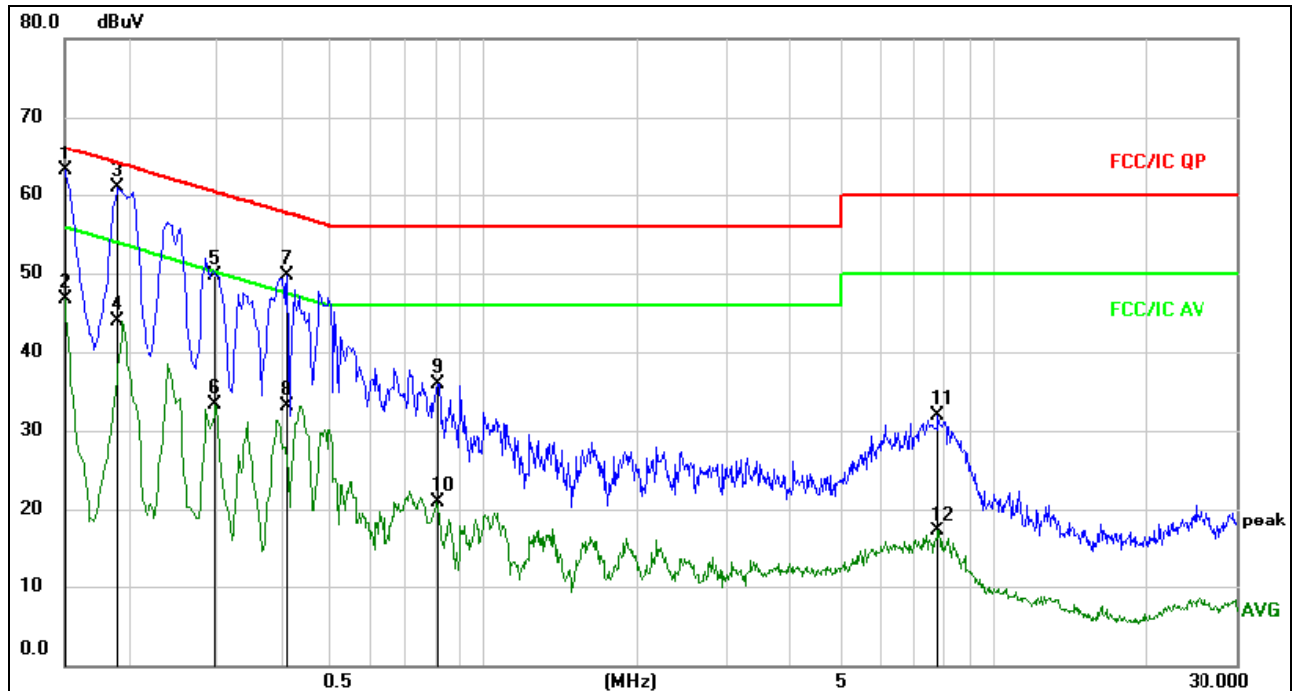
Remark:

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

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1500	52.31	9.67	61.98	66.00	-4.02	QP	
2		0.1500	32.92	9.67	42.59	56.00	-13.41	AVG	
3	*	0.1905	51.57	9.65	61.22	64.01	-2.79	QP	
4		0.1905	33.08	9.65	42.73	54.01	-11.28	AVG	
5		0.2400	47.25	9.65	56.90	62.10	-5.20	QP	
6		0.2400	29.09	9.65	38.74	52.10	-13.36	AVG	
7		0.4065	41.14	9.67	50.81	57.72	-6.91	QP	
8		0.4065	24.12	9.67	33.79	47.72	-13.93	AVG	
9		1.2839	20.10	9.70	29.80	56.00	-26.20	QP	
10		1.2839	6.86	9.70	16.56	46.00	-29.44	AVG	
11		7.6470	20.03	9.81	29.84	60.00	-30.16	QP	
12		7.6470	5.79	9.81	15.60	50.00	-34.40	AVG	



Temperature :	25℃	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	N
Test Voltage :	AC120V/60Hz	Test Mode :	Mode 1



Remark:

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

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1500	53.50	9.67	63.17	66.00	-2.83	QP	
2		0.1500	37.11	9.67	46.78	56.00	-9.22	AVG	
3		0.1905	51.28	9.65	60.93	64.01	-3.08	QP	
4		0.1905	34.25	9.65	43.90	54.01	-10.11	AVG	
5		0.2985	39.99	9.66	49.65	60.28	-10.63	QP	
6		0.2985	23.62	9.66	33.28	50.28	-17.00	AVG	
7		0.4110	39.94	9.67	49.61	57.63	-8.02	QP	
8		0.4110	23.34	9.67	33.01	47.63	-14.62	AVG	
9		0.8070	26.27	9.69	35.96	56.00	-20.04	QP	
10		0.8070	11.13	9.69	20.82	46.00	-25.18	AVG	
11		7.7820	22.02	9.81	31.83	60.00	-28.17	QP	
12		7.7820	7.33	9.81	17.14	50.00	-32.86	AVG	



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 (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Limit (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

- 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.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; 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.
- 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.
- 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.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

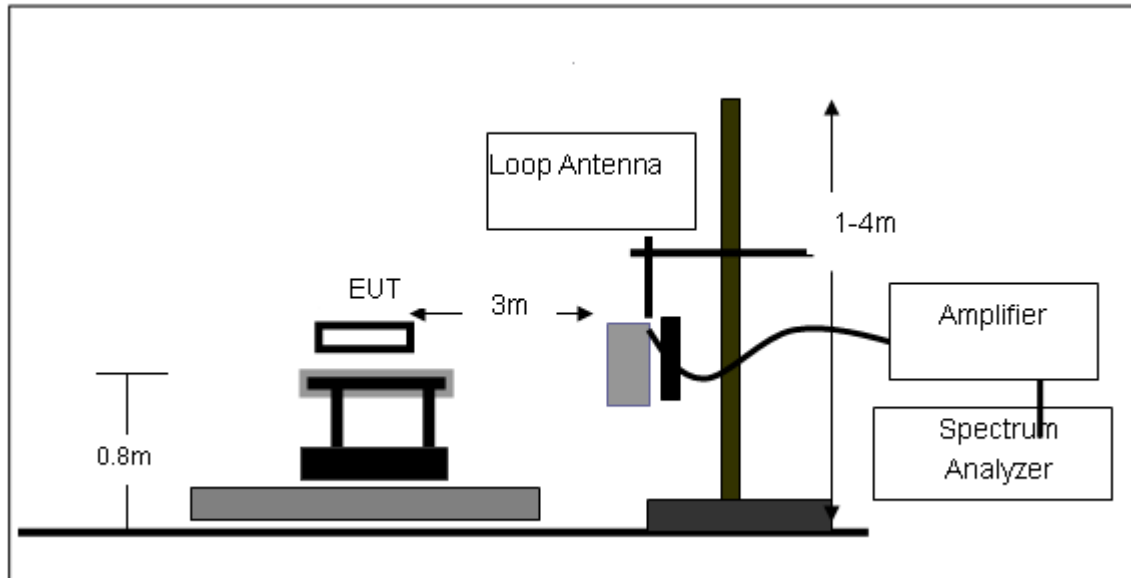
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

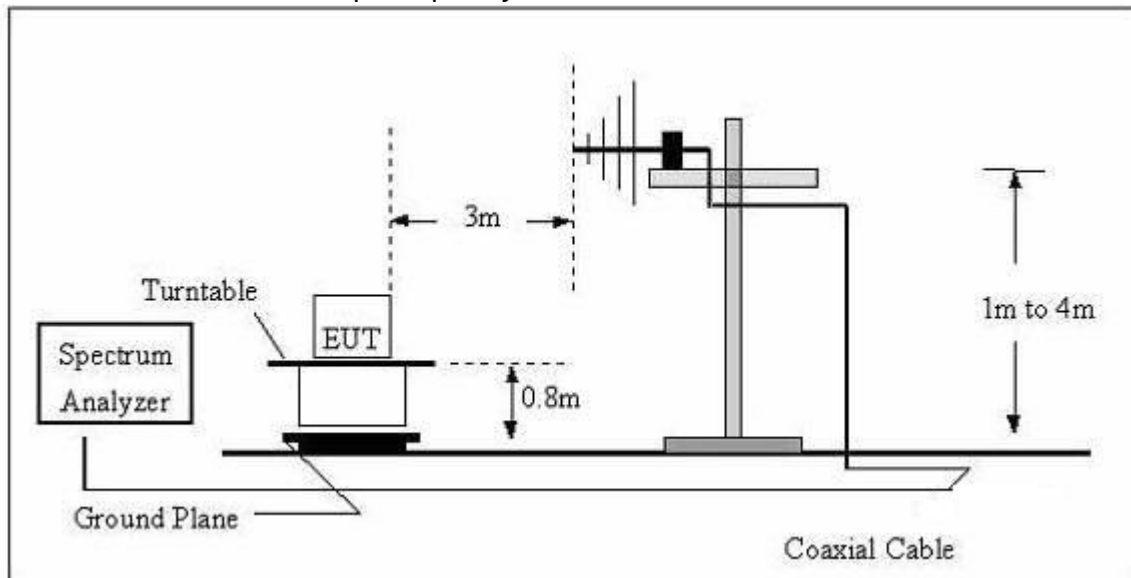
No deviation

3.2.4 TEST SETUP

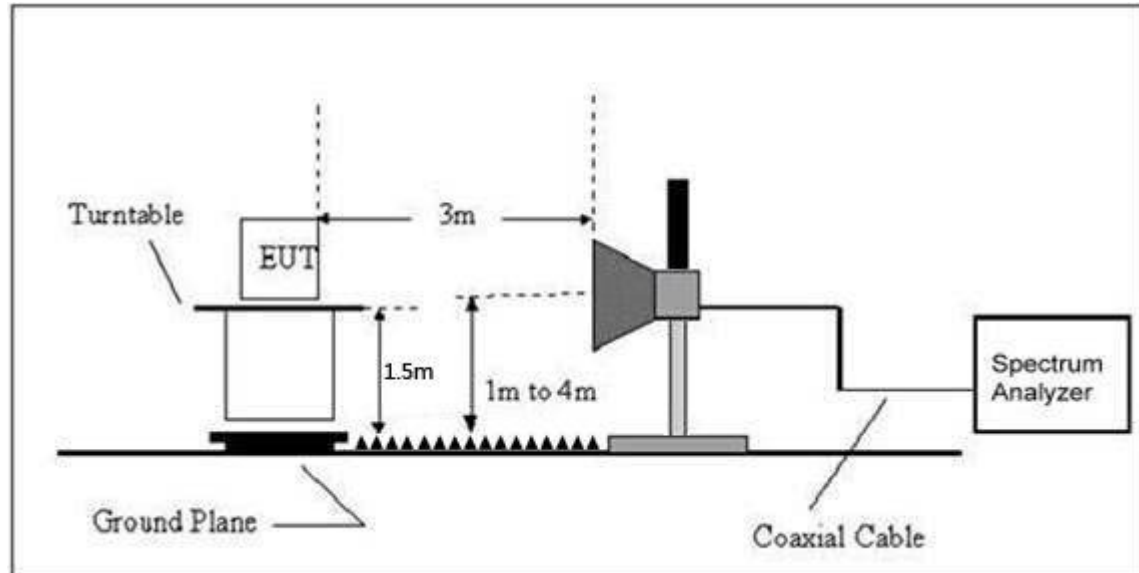
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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:	RF Silent Disco Wireless Transmitters	Model Name. :	T80
Temperature:	20℃	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX	Polarization :	--

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

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

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

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

EUT :	RF Silent Disco Wireless Transmitters	Model Name :	T80
Temperature :	26°C	Relative Humidity :	54%
Pressure :	1010 hPa	Polarization :	Horizontal
Test Voltage :	DC 3.7V		
Test Mode :	TX		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
37.9450	28.02	-15.45	12.57	40.00	-27.43	QP
52.5753	27.84	-14.37	13.47	40.00	-26.53	QP
111.7380	25.64	-16.04	9.60	43.50	-33.90	QP
304.6099	24.04	-13.49	10.55	46.00	-35.45	QP
490.7447	23.25	-9.76	13.49	46.00	-32.51	QP
627.2738	24.82	-6.50	18.32	46.00	-27.68	QP
920.1000	74.54	-2.28	92.26	94.00	-21.74	QP

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

All interfaces was connected, and TX mode



EUT :	RF Silent Disco Wireless Transmitters	Model Name :	T80
Temperature :	26°C	Relative Humidity :	54%
Pressure :	1010 hPa	Polarization :	Vertical
Test Voltage :	DC 3.7V		
Test Mode :	TX		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
37.0248	28.84	-15.78	13.06	40.00	-26.94	
52.3912	28.21	-14.35	13.86	40.00	-26.14	QP
103.4421	24.88	-15.61	9.27	43.50	-34.23	QP
219.8449	24.32	-16.17	8.15	46.00	-37.85	QP
355.4273	24.20	-12.18	12.02	46.00	-33.98	QP
601.4265	23.45	-6.72	16.73	46.00	-29.27	QP
920.1000	64.21	-2.28	91.93	94.00	-32.07	QP

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

All interfaces was connected, and TX mode

**3.2.8 TEST RESULTS (ABOVE 1000 MHZ)**

Normal Voltage 920.1MHz

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	1840.2	59.86	-3.57	56.29	74	-17.71	Pk
V	1840.2	48.19	-3.57	44.62	54	-9.38	AV
V	2760.3	58.74	-3.84	54.90	74	-19.10	Pk
V	2760.3	48.08	-3.84	44.24	54	-9.76	AV
V	3680.4	58.19	-4.59	53.60	74	-20.40	Pk
V	3680.4	48.85	-4.59	44.26	54	-9.74	AV
H	1840.2	61.78	-3.62	58.16	74	-15.84	Pk
H	1840.2	49.49	-3.62	45.87	54	-8.13	AV
H	2760.3	61.64	-3.93	57.71	74	-16.29	Pk
H	2760.3	50.43	-3.93	46.50	54	-7.50	AV
H	3680.4	60.24	-3.57	56.67	74	-17.33	Pk
H	3680.4	48.07	-3.57	44.50	54	-9.50	AV

Remark:

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

Other harmonics emissions are lower than 20dB below the allowable limit.

Normal Voltage 922.3MHz

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	1844.6	59.25	-3.57	55.68	74	-18.32	Pk
V	1844.6	47.70	-3.57	44.13	54	-9.87	AV
V	2766.9	58.14	-3.84	54.30	74	-19.70	Pk
V	2766.9	47.59	-3.84	43.75	54	-10.25	AV
V	3689.2	57.59	-4.59	53.00	74	-21.00	Pk
V	3689.2	48.35	-4.59	43.76	54	-10.24	AV
H	1844.6	61.15	-3.62	57.53	74	-16.47	Pk
H	1844.6	48.98	-3.62	45.36	54	-8.64	AV
H	2766.9	61.01	-3.93	57.08	74	-16.92	Pk
H	2766.9	49.92	-3.93	45.99	54	-8.01	AV
H	3689.2	59.63	-3.57	56.06	74	-17.94	Pk
H	3689.2	47.58	-3.57	44.01	54	-9.99	AV

Remark:

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

Other harmonics emissions are lower than 20dB below the allowable limit.



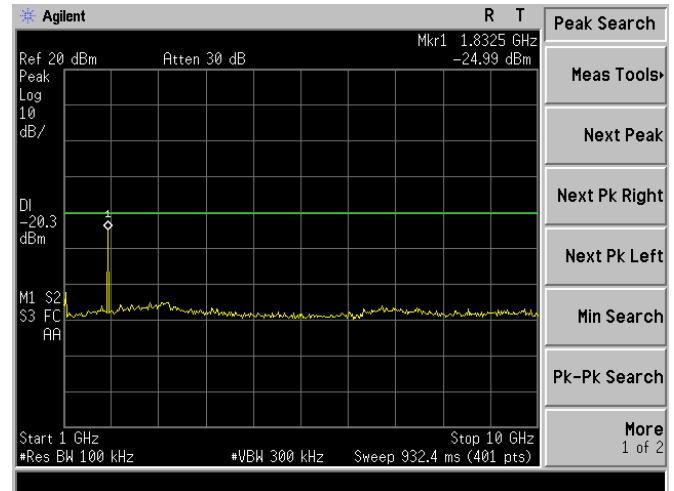
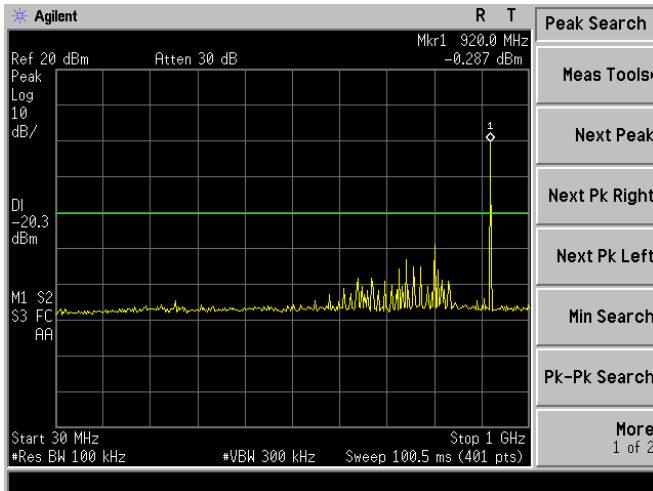
Normal Voltage 925.9MHz

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	1851.8	58.03	-3.57	54.46	74	-19.54	Pk
V	1851.8	46.71	-3.57	43.14	54	-10.86	AV
V	2777.7	56.94	-3.84	53.10	74	-20.90	Pk
V	2777.7	46.61	-3.84	42.77	54	-11.23	AV
V	3703.6	56.40	-4.59	51.81	74	-22.19	Pk
V	3703.6	47.36	-4.59	42.77	54	-11.23	AV
H	1851.8	59.88	-3.62	56.26	74	-17.74	Pk
H	1851.8	47.97	-3.62	44.35	54	-9.65	AV
H	2777.7	59.75	-3.93	55.82	74	-18.18	Pk
H	2777.7	48.88	-3.93	44.95	54	-9.05	AV
H	3703.6	58.39	-3.57	54.82	74	-19.18	Pk
H	3703.6	46.60	-3.57	43.03	54	-10.97	AV
Remark: Absolute Level= ReadingLevel+ Factor, Margin= Limit- Absolute Level Other harmonics emissions are lower than 20dB below the allowable limit.							

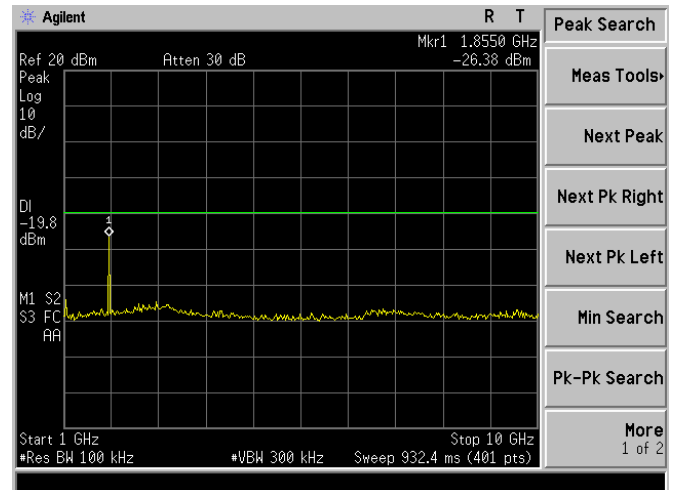
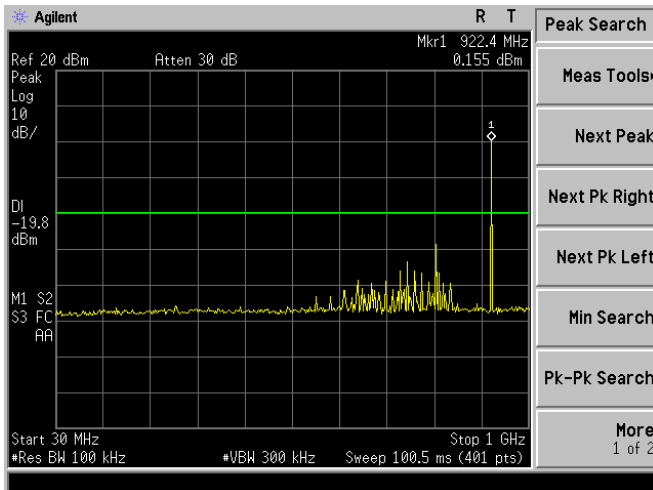


CONDUCTED EMISSION MEASUREMENT

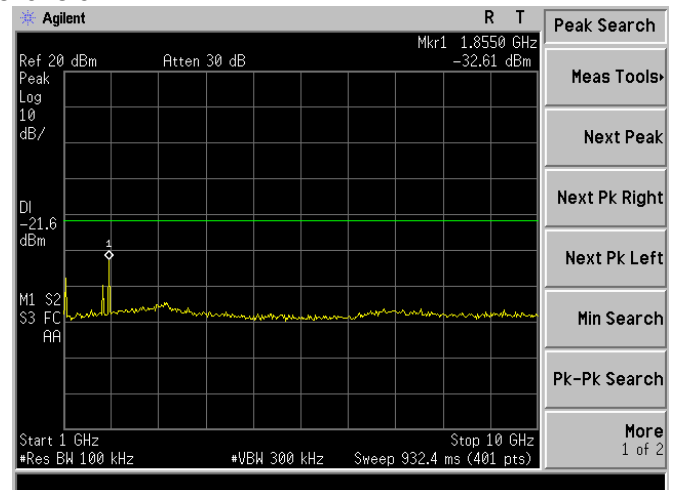
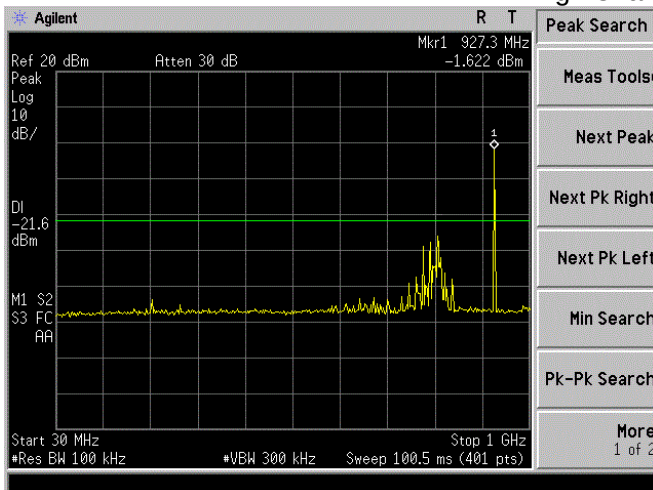
Low Channel 920.1MHz



Middle Channel 922.3MHz



High Channel 925.9MHz





4. 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE

APPLICABLE STANDARD

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation

TEST PROCEDURE

- a) Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b) Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
- c) i) VBW for Peak, Quasi-peak, or Average Detector Function: $3 \times \text{RBW}$
- d) Repeat above procedures until all measured frequencies were complete.

Note:

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

4.1 DEVIATION FROM STANDARD

No deviation.

4.2 TEST SETUP

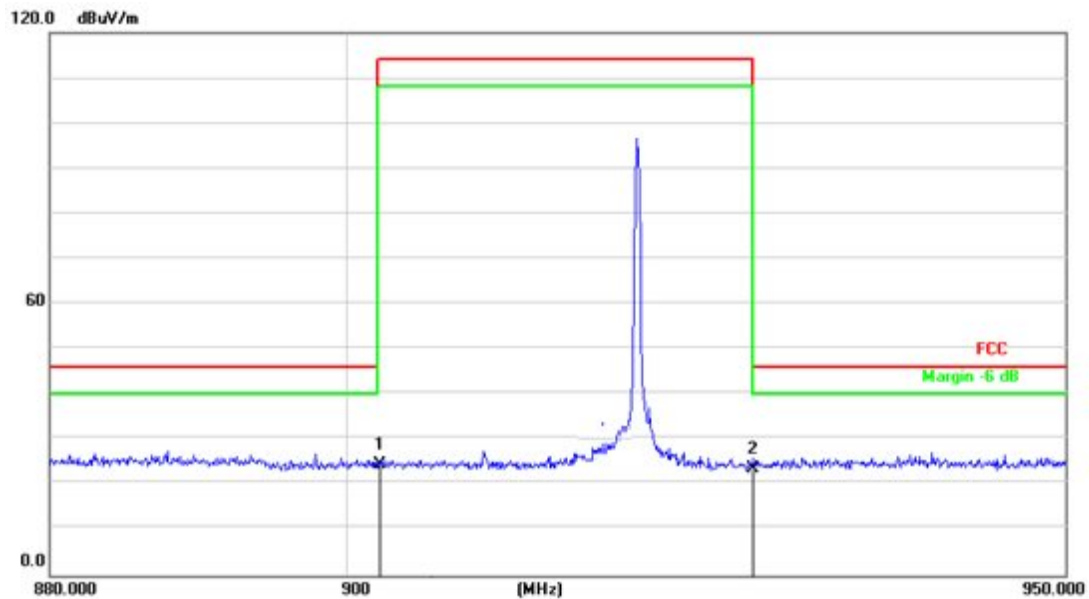
4.3 EUT OPERATION CONDITIONS

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.

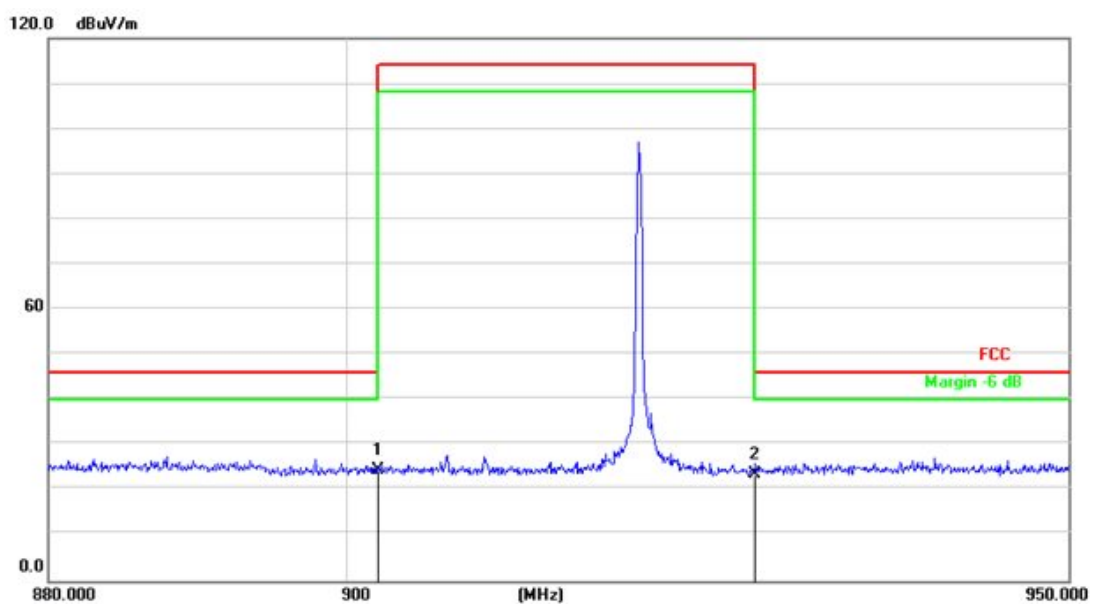
4.4 TEST RESULTS



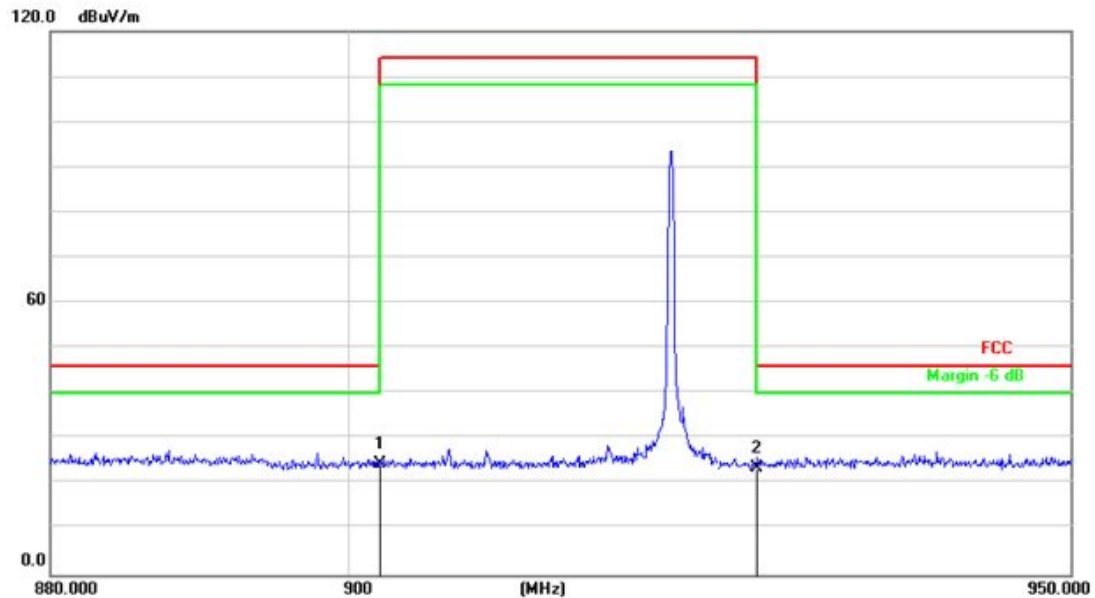
EUT :	Balight	Model Name :	T80
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX Mode		

920.1MHz Horizontal

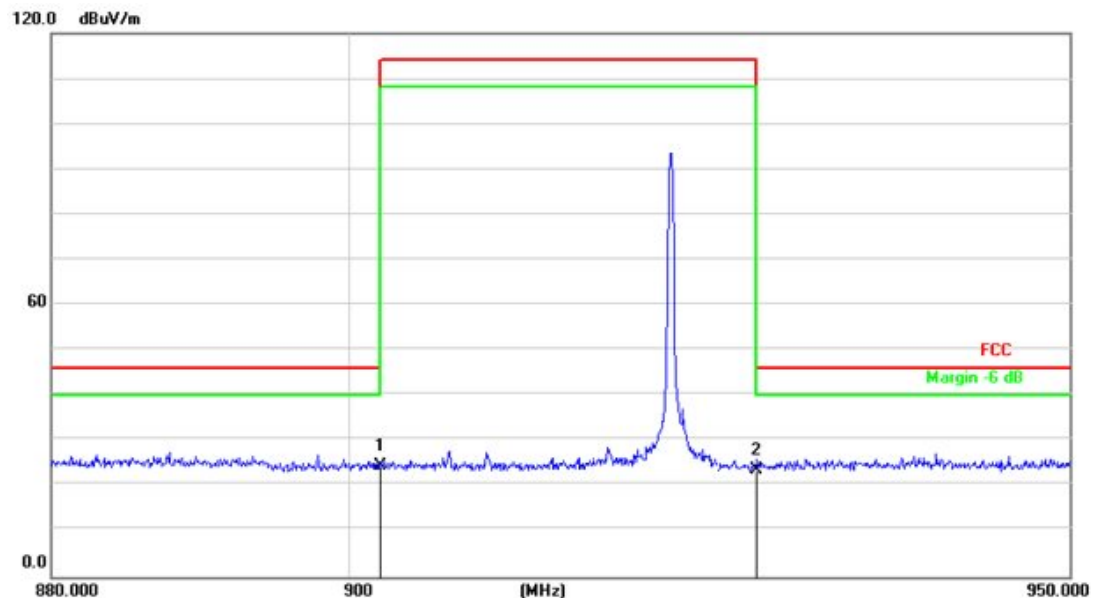
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	920.0000	24.36	0.72	25.08	46.00	-20.92	peak
2	928.0000	23.62	1.02	24.64	46.00	-21.36	peak

920.1MHz Vertical

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	902.0000	26.89	0.72	27.61	46.00	-18.39	peak
2	928.0000	25.45	1.02	26.47	46.00	-19.53	peak

**925.9MHz Horizontal**

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	920.0000	23.14	0.72	23.86	46.00	-22.14	peak
2	928.0000	23.03	1.02	24.05	46.00	-21.95	peak

925.9MHz Vertical

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	920.0000	25.74	0.72	26.46	46.00	-19.54	peak
2	928.0000	23.67	1.02	24.69	46.00	-21.31	peak



5. BANDWIDTH TEST

5.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.249) , Subpart C			
Section	Test Item	Frequency Range (MHz)	Result
15.249	Bandwidth	900~928	PASS

5.1.1 TEST PROCEDURE

1. Set resolution bandwidth (RBW) = 1-5% or DTS BW, not to exceed 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

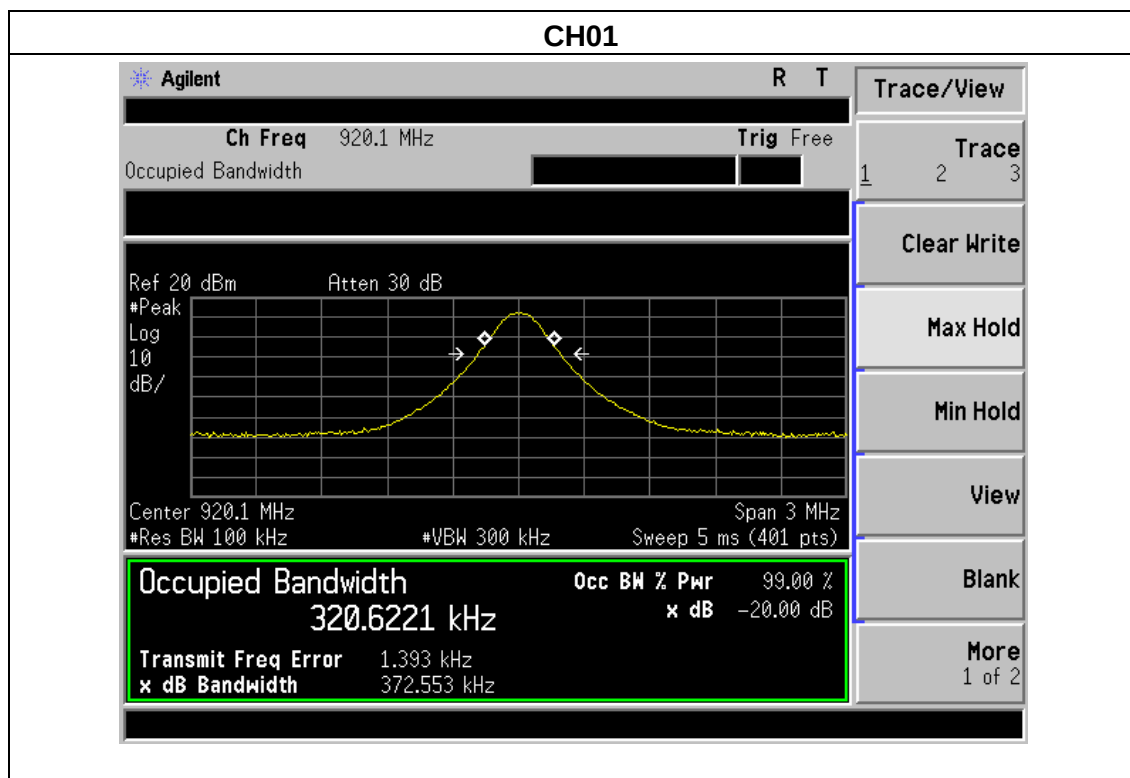
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.



5.1.5 TEST RESULTS

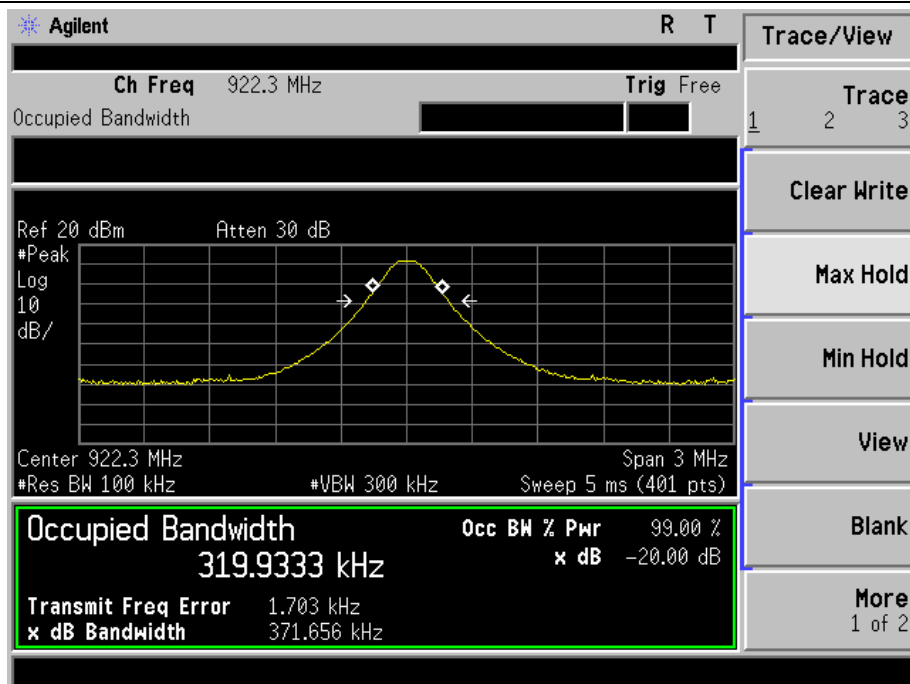
EUT :	RF Silent Disco Wireless Transmitters	Model Name :	T80
Temperature :	25°C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX Mode		

Channel	Frequency (MHz)	20dB bandwidth (MHz)
01	920.1	0.373
05	922.3	0.372
10	925.9	0.372

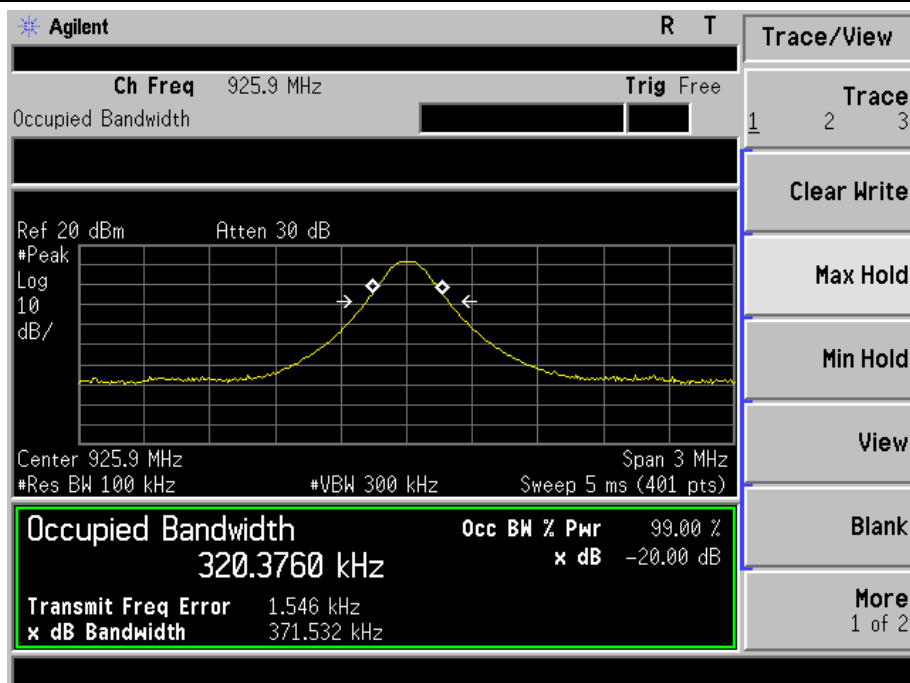




CH05



CH10





6. ANTENNA REQUIREMENT

6.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 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.

6.2 EUT ANTENNA

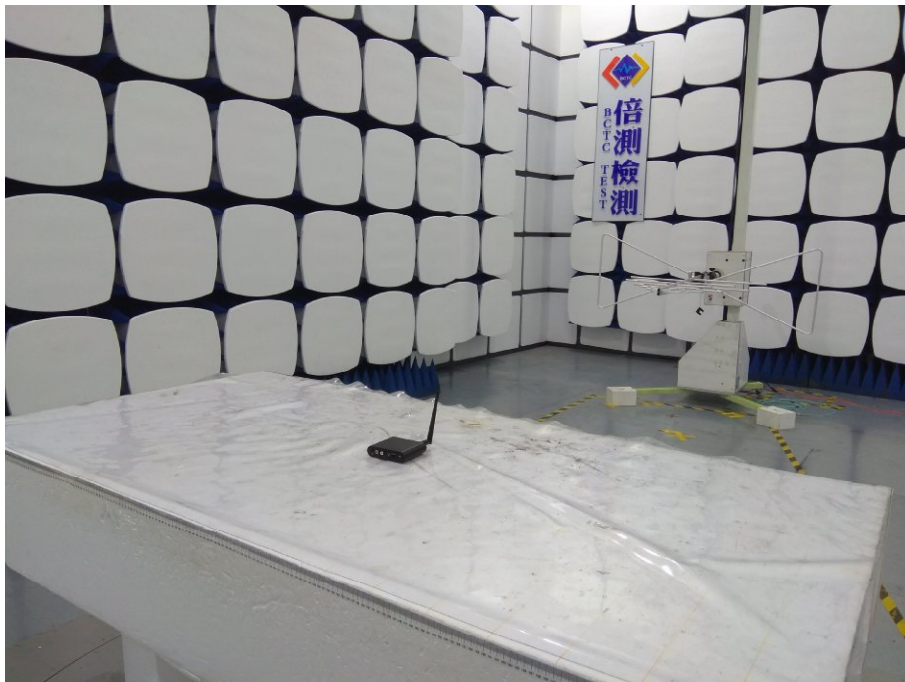
The EUT antenna is External antenna. It comply with the standard requirement.

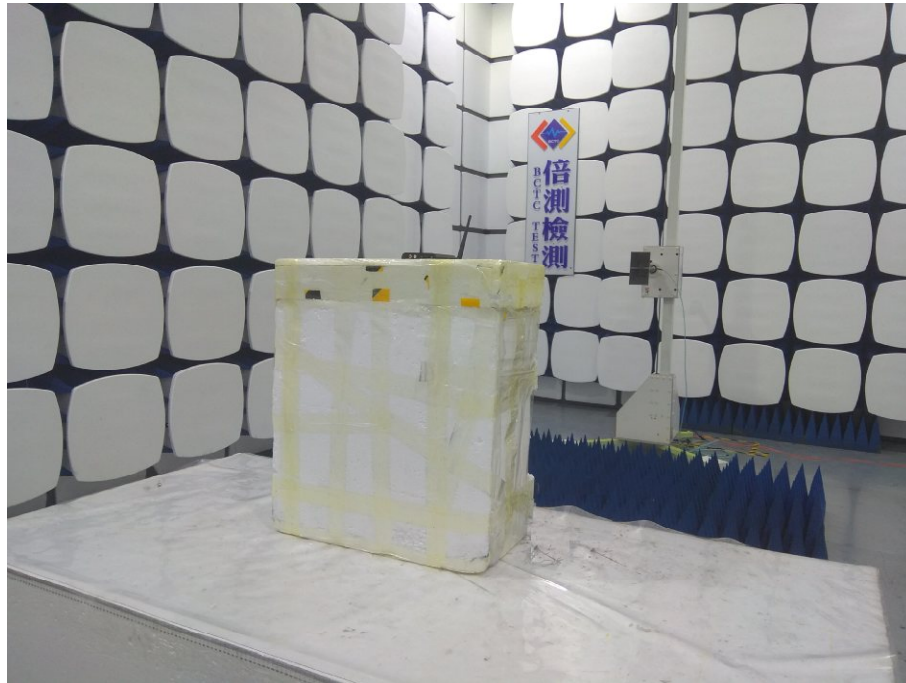
7. EUT TEST PHOTO

Conducted Measurement Photos



Radiated Measurement Photos





8. PHOTO OF THE EUT



