FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

Square Inc.

Cash Register

Model No.: SPB1-01

FCC ID: 2AF3K-SPB1

Prepared for : Square Inc.
1455 Market St. Suite 600 San Francisco, California
United States 94103

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
No. 6, Kefeng Road, Science & Technology Park,
Nanshan District , Shenzhen, Guangdong, China

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Report Number	:	ACS-F17141
Date of Test	:	Jul.08~11, 2017
Date of Report	:	Jul.11, 2017

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TEST REPORT CERTIFICATION

Applicant	:	Square Inc.
Manufacture	:	Square Inc.
EUT Description	:	Cash Register
FCC ID	:	2AF3K-SPB1

(A) Model No. : SPB1-01
(B) Serial No. : N/A
(C) Test Voltage : AC 120V/60Hz

Tested for comply with:
FCC CFR 47 Part 15 Subpart C

Test procedure used:
ANSI C63.10:2013

The device described above is tested by AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. to confirm comply with all the FCC Part 15 Subpart C requirements.

The test results are contained in this test report and AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. is assumed full responsibility for the accuracy and completeness of these tests. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC and IC requirements.

This Report is made under FCC Part 2.1075. No modifications were required during testing to bring this product into compliance.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

Date of Test : Jul.08~11, 2017 Report of date: Jul.11, 2017

Prepared by : Monica Liu Reviewer by :

Monica Liu / Assistant Sunny Lu / Deputy Manager

AUDIX® 信華科技（深圳）有限公司
Audix Technology (Shenzhen) Co., Ltd.
EMC 部門報告專用章
Stamp only for EMC Dept. Report

Approved & Authorized Signer Signature: David Jin

David Jin / Manager

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	**Standard**	**Results**
Conducted Emission Test	FCC Part 15: 15.207 ANSI C63.10: 2013	PASS
Radiated Emission Test	FCC Part 15: 15.205, 15.209 FCC Part 15: 15.225(a)(b)(c)(d) ANSI C63.10: 2013	PASS
Frequency Stability Test	FCC Part 15: 15.225(e)	PASS
20dB Bandwidth Test	FCC Part 15: 15.215	PASS

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

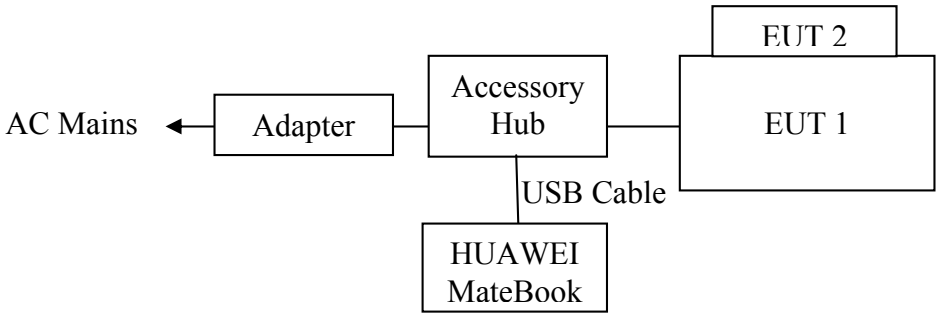
Product	: Cash Register
Square Register Model No.	: SPB1-01
Customer Display Model No.	: SPB4-01
FCC ID	: 2AF3K-SPB1
Radio	: IEEE802.11 a/b/g/n/ac; Bluetooth V3.0+EDR; Bluetooth V4.0; NFC
Operation Frequency	: IEEE 802.11a: 5180MHz—5240MHz; 5260MHz—5320MHz 5500MHz—5700MHz; 5745MHz—5825MHz IEEE 802.11ac VHT20: 5180MHz—5240MHz; 5260MHz—5320MHz 5500MHz—5700MHz; 5745MHz—5825MHz IEEE 802.11ac VHT40: 5190MHz—5230MHz; 5270MHz—5310MHz 5510MHz—5670MHz; 5755MHz—5795MHz IEEE 802.11ac VHT80: 5210MHz, 5290MHz; 5530MHz—5690MHz; 5775MHz IEEE 802.11b: 2412MHz—2462MHz IEEE 802.11g: 2412MHz—2462MHz IEEE802.11nHT20: 2412MHz—2462MHz; 5180MHz—5240MHz; 5260MHz—5320MHz 5500MHz—5700MHz; 5745MHz—5825MHz IEEE802.11nHT40: 2422MHz—2452MHz; 5190MHz—5230MHz; 5270MHz—5310MHz 5510MHz—5670MHz; 5755MHz—5795MHz Bluetooth : 2402-2480MHz NFC: 13.56MHz
Modulation Technology	: IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE 802.11a/g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac VHT20, VHT40, VHT80: OFDM(16QAM, 64QAM, 256QAM, QPSK, BPSK) IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM,QPSK,BPSK) Bluetooth V3.0+EDR: GFSK, π/4DQPSK,8-DPSK Bluetooth V4.0:GFSK NFC: ASK

Antenna Assembly Gain	: Antenna Type: PIFA Bluetooth: 2.77dBi WIFI 2.4GHz:ANT 0: -1.95dBi; ANT 1: 2.77dBi WIFI 5GHz: Band 1: ANT 0: -2.39dBi; ANT 1: 6.13dBi Band 2: ANT 0: -1.76dBi; ANT 1: 6.74dBi Band 3: ANT 0: 1.42dBi; ANT 1: 6.92dBi Band 4: ANT 0: 0.55dBi; ANT 1: 6.98dBi
Applicant	: Square Inc. 1455 Market St. Suite 600 San Francisco, California United States 94103
Manufacturer	: Square Inc. 1455 Market St. Suite 600 San Francisco, California United States 94103
Factory	: Fu Tai Hua Industry (ShenZhen) Co., Ltd. 4/F, Building 3, K1 Area, No. 2, 2nd Donghuan Road, Longhua District, Shenzhen, Guangdong Province, P.R. China
Power Adapter	: Manufacturer: Square, Inc., M/N: SWB2-01; Cable: Unshielded, Detachable, 1.2m
Accessory Hub	: Manufacturer: Square, Inc., M/N: SHB3-01; Cable: Unshielded, Detachable, 1.25m
Micro USB Cable	: Shielded, Detachable, 1.0m
Power Cable	: Unshielded, Detachable, 1.3m
Date of Test	: Jul.08~11, 2017
Date of Receipt	: Jun.24, 2017

2.2. Tested Supporting System Details

No.	Description	ACS No.	Manufacturer	Model	Serial Number
1.	HUAWEI MateBook	---	HUAWEI	G2-MLB	---

2.3. Block diagram of connection between the EUT and simulators



EUT 1: Square Register
EUT 2: Customer Display

(EUT: Cash Register)

2.4. Test Facility

Site Description

Name of Firm : Audix Technology (Shenzhen) Co., Ltd.
No. 6, Kefeng Road, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China

EMC Lab. : Certificated by Industry Canada
Registration Number: IC 5183A-1
Valid Date: May.07, 2020

: Certificated by DAkkS, Germany
Registration No: D-PL-12151-01-00
Valid Date: Dec.07, 2021

Accredited by NVLAP, USA
NVLAP Code: 200372-0
Valid Date: Mar.31, 2018

2.5. Measurement Uncertainty (95% confidence levels, k=2)

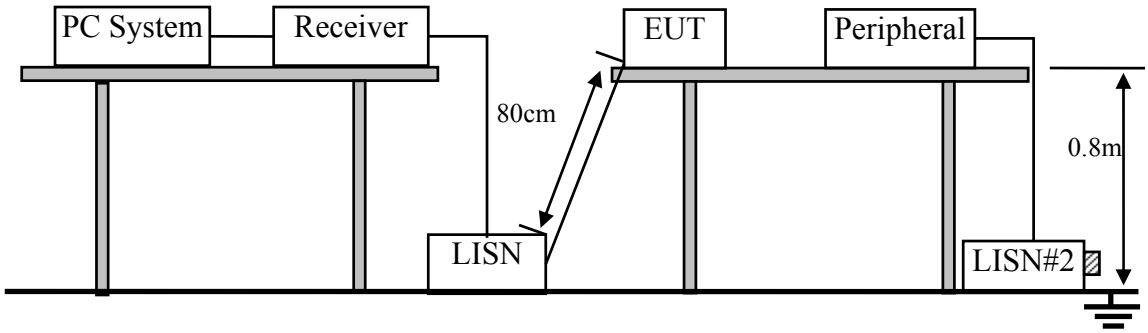
Test Item	Uncertainty
Uncertainty for Conduction emission test in No. 1 Conduction	3.6dB (150KHz to 30MHz)
Uncertainty for Radiation Emission test in 3m chamber	2.8dB (30~200MHz, Polarization: H)
	2.8dB (30~200MHz, Polarization: V)
	3.0dB (200M~1GHz, Polarization: H)
	3.0dB (200M~1GHz, Polarization: V)
Uncertainty for Frequency range test	$7x10^{-8}$
Uncertainty for Bandwidth test	83 kHz
Uncertainty for DC power test	0.1 %
Uncertainty for test site temperature and humidity	0.6℃
	3%

3. POWER LINE CONDUCTED EMISSION TEST

3.1.Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	1# Shielding Room	AUDIX	N/A	N/A	Apr.17,17	1 Year
2.	Test Receiver	Rohde & Schwarz	ESCI	100842	Apr.22,17	1 Year
3.	L.I.S.N.	Rohde & Schwarz	ENV216	102160	Mar.06.17	1 Year
4.	L.I.S.N.#2	Kyoritsu	K NW-403D	8-1750-2	Apr.22,17	1 Year
5.	I.S.N.	TESEQ	S751	24559	Mar.06.17	1.year
6.	Terminator	Hubersuhner	50Ω	No.1	Apr.23,17	1 Year
7.	Terminator	Hubersuhner	50Ω	No.2	Apr.23,17	1 Year
8.	RF Cable	Fujikura	RG55/U	NO.2	Apr.22,17	1Year
9.	Coaxial Switch	Anritsu	MP59B	6201397223	Apr.22,17	1 Year
10.	Test Software	AUDIX	e3	6.100913a	N/A	N/A
Note: N/A means Not applicable.						

3.2.Block Diagram of Test Setup



▨ :50Ω Terminator

3.3.Power Line Conducted Emission Test Limits

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

Notes: 1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

3.4. Configuration of EUT on Test

The following equipment are installed on Power Line Conducted Emission Test to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

3.4.1. Cash Register (EUT)

Model Number : SPB1-01
Serial Number : N/A

3.4.2. Support Equipment: As Tested Supporting System Details, in Section 2.2.

3.5. Operating Condition of EUT

3.5.1. Setup the EUT and simulator as shown as Section 3.2.

3.5.2. Turn on the power of all equipments.

3.5.3. PC run test software to control EUT work in Tx mode.

3.6. Test Procedure

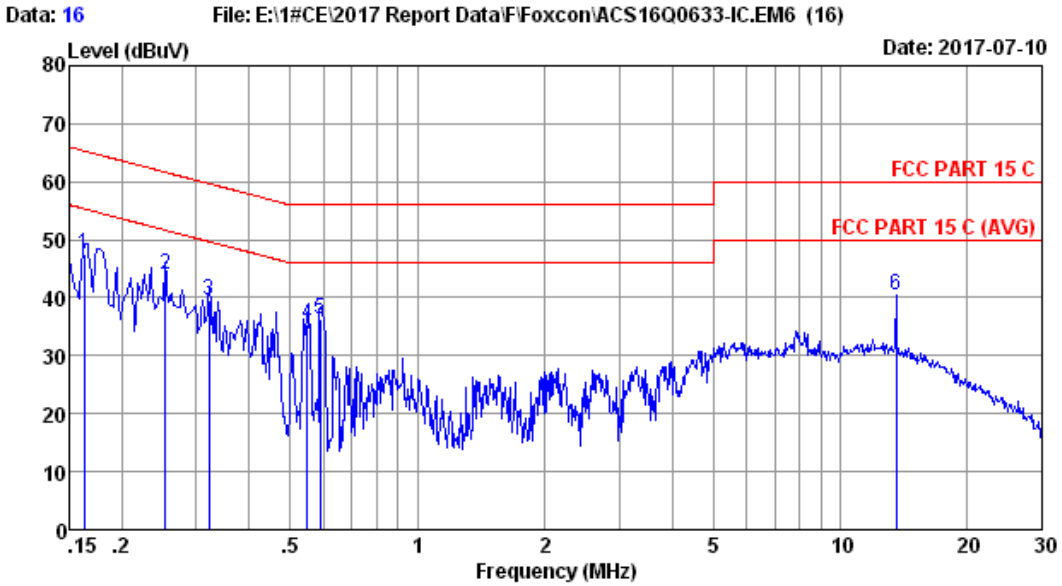
The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power Via PC connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm coupling impedance for the EUT (Please refer the block diagram of the test setup and photographs). The AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10: 2013 on Conducted Emission Test.

The bandwidth of test receiver (R & S ESCI) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

3.7. Power Line Conducted Emission Test Results

PASS. **(**All emissions not reported below are too low against the prescribed limits.)

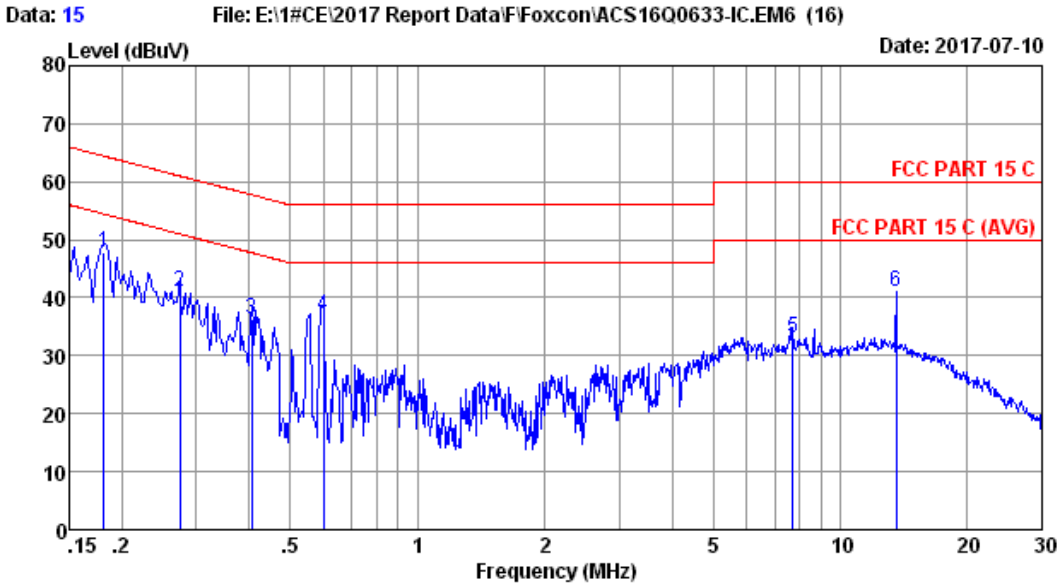


Site no :1# CE
Dis./Lisn :2017 LISN ENV216-L
Limit :FCC PART 15 C
Env./Ins. :22.5*C/53%
EUT :Cash Register M/N:SPB1-01
Power Rating :AC 120V/60Hz
Test Mode :NFC Mode

Data No :16
LISN phase:
Engineer :Garry

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.162	9.52	0.02	37.86	47.40	65.34	17.94	QP
2	0.253	9.24	0.02	34.67	43.93	61.64	17.71	QP
3	0.322	9.12	0.03	30.52	39.67	59.66	19.99	QP
4	0.549	9.50	0.03	25.91	35.44	56.00	20.56	QP
5	0.589	9.50	0.03	26.86	36.39	56.00	19.61	QP
6	13.551	9.58	0.12	30.78	40.48	60.00	19.52	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss+Reading.
2.If the average limit is met when using a quasi-peak detector. the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



Site no :1# CE
Dis./Lisn :2017 LISN ENV216-N
Limit :FCC PART 15 C
Env./Ins. :22.5*C/53%
EUT :Cash Register M/N:SPB1-01
Power Rating :AC 120V/60Hz
Test Mode :NFC Mode

Data No :15
LISN phase:
Engineer :Garry

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.182	9.47	0.02	38.28	47.77	64.42	16.65	QP
2	0.274	9.42	0.03	31.71	41.16	60.98	19.82	QP
3	0.406	9.41	0.03	26.90	36.34	57.73	21.39	QP
4	0.598	9.31	0.04	27.44	36.79	56.00	19.21	QP
5	7.728	9.43	0.10	23.44	32.97	60.00	27.03	QP
6	13.551	9.49	0.12	31.48	41.09	60.00	18.91	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss+Reading.
2.If the average limit is met when using a quasi-peak detector. the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

4. RADIATED EMISSION TEST

4.1. Test Equipment

Frequency Range: 30-1000MHz

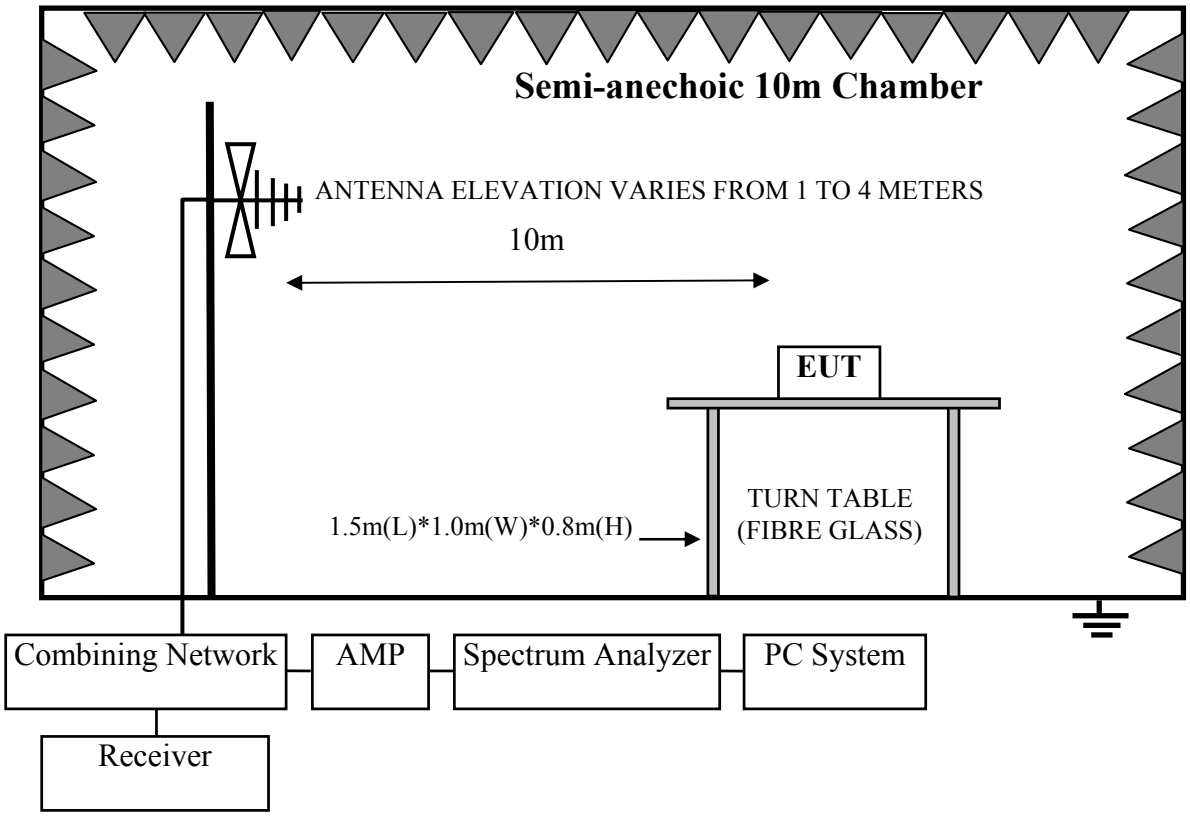
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	3#Chamber	AUDIX	N/A	N/A	Mar.28,17	1 Year
2.	Spectrum Analyzer	Agilent	E7405A	MY45116588	Oct.15,16	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESR7	101547	Apr.22,17	1 Year
4.	Amplifier	HP	8447D	2648A04738	Apr.22,17	1 Year
5.	Bi-log Antenna	TESEQ	CBL6112D	35375	Aug.03,16	1 Year
6.	RF Cable	MIYAZAKI	CFD400NL-LW	No.3	Sep.26.16	1 Year
7.	Coaxial Switch	Anritsu	MP59B	6201397222	Apr.22,17	1 Year
8.	Attenuator	EMCI	EMCI-N-6-06	AT-N0639	Sep.26.16	1 Year
9.	Test Software	AUDIX	e3	6.2009-5-21a(n)	N/A	N/A
Note: N/A means Not applicable.						

Frequency Range: 1.705-30MHz

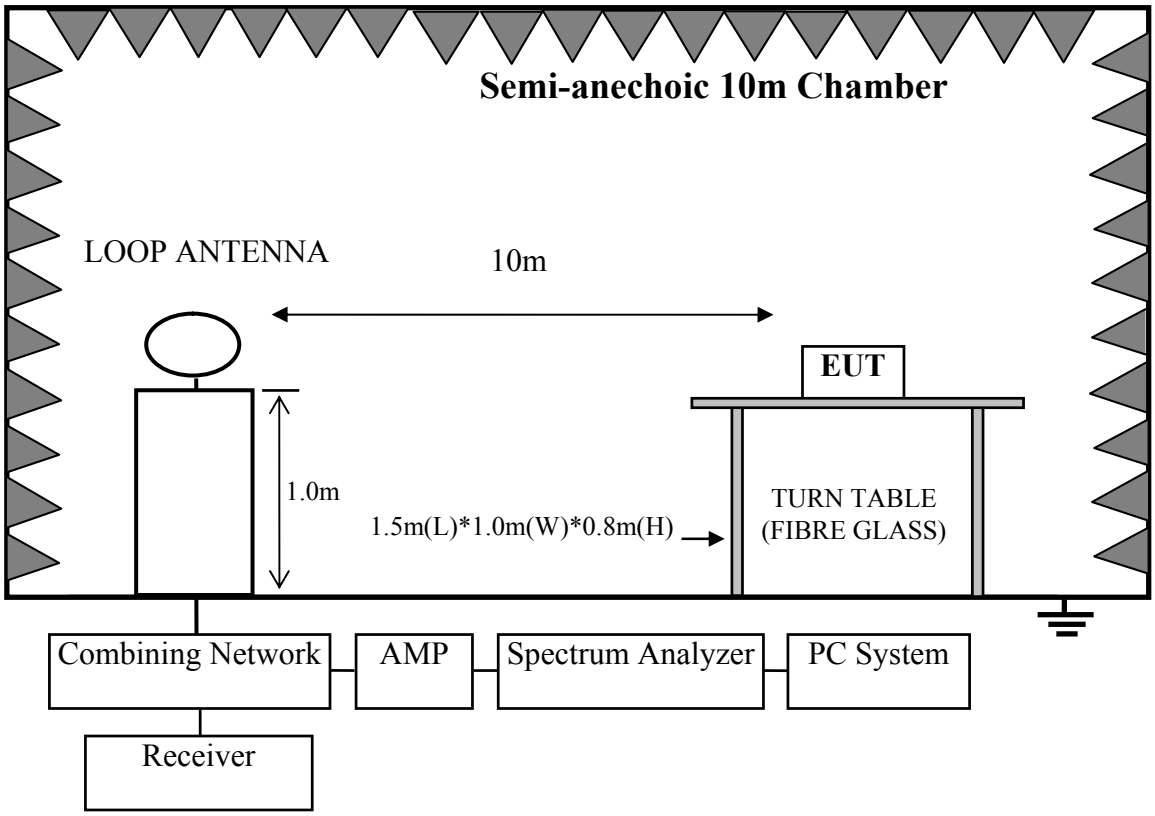
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	10m Chamber	AUDIX	N/A	N/A	Mar.22,17	1 Year
2.	Signal Analyzer	R&S	FSV30	103670	Nov.02.16	1 Year
3.	Test Receiver	Rohde & Schwarz	ESCI	100843	Oct.15,16	1 Year
4.	Amplifier	EMCI	EMC9135	980348	Sep.26,16	1 Year
5.	Loop Antenna	Chase	HLA6120	1062	Sep.25,16	1 Year
6.	RF Cable	MIYAZAKI	CFD400-LW(22M)	10m Chamber No.5	Sep.26,16	1 Year
7.	Coaxial Switch	Anritsu	MP59B	6201397221	Apr.22,17	1 Year
8.	Coaxial Switch	Anritsu	MP59B	6201397220	Apr.22,17	1 Year
9.	Test Software	AUDIX	e3	6.100913a	N/A	N/A
Note: N/A means Not applicable.						

4.2. Block Diagram of Test Setup

Frequency Range: 30-1000MHz



Frequency Range: 1.705-30MHz



4.3. Radiated Emission Limit

(a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

(b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

(d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.

Remark：(1) Emission level dBμV = 20 log Emission level μV/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

4.4. 15.205 Restricted bands of operation

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

4.5. EUT Configuration on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.6. Operating Condition of EUT

4.6.1.Setup the EUT as shown in Section 4.2.

4.6.2.Turn on the power of all equipments.

4.6.3.Let the EUT worked in test mode (Tx Mode) and tested it.

4.7. Test Procedure

EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 10 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna are set on test.

For frequency range below 30MHz the Loop antenna was used at 10m measurement distance with antenna heights of 1m and antenna loop front and side faced to the EUT.
The axis of the antenna was rotated to maximize the emission. A CISPR quasi-peak detector is used for measurements below 30MHz and RBW/VBW is 9kHz/30kHz.

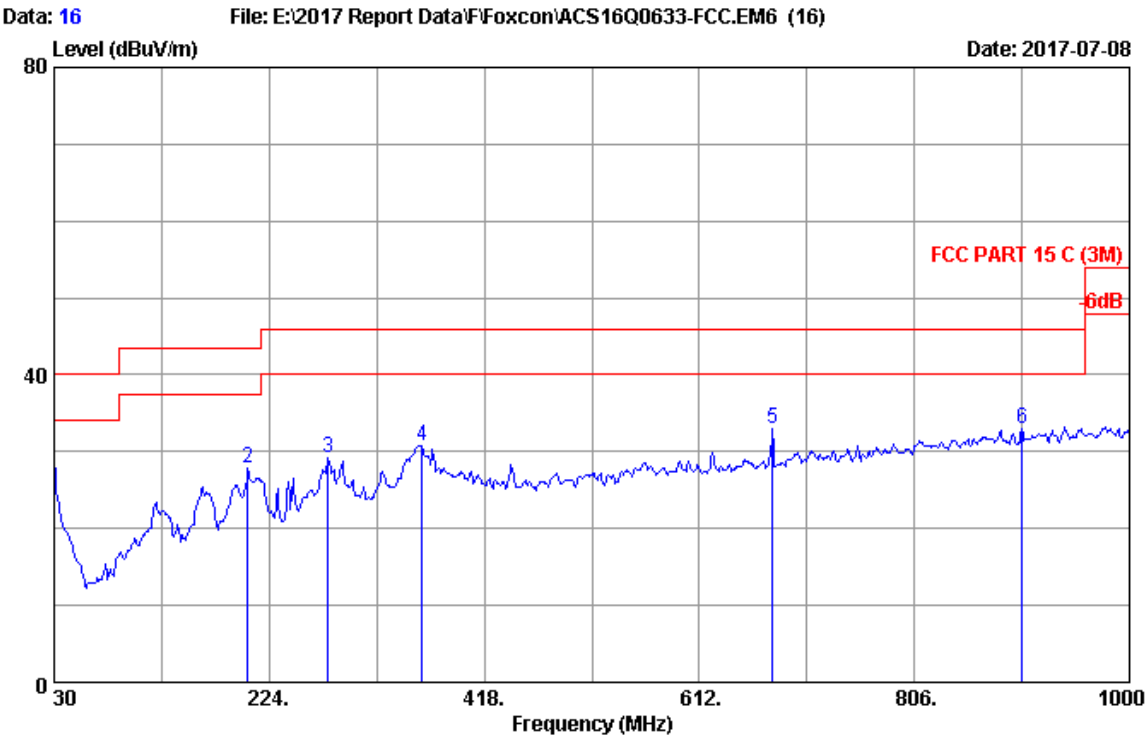
The limit 1.705MHz to 30MHz in clause 4.3 are specified at 30 meters, and measurements were made at 10 meters, the limit is translated to 10 meters by using a formula as follows:
$Limit_{30m} = Limit_{10m} + 40\log(30m/10)$

4.8. Radiated Emission Test Results

PASS.

The frequency range from 30MHz to 1000MHz and 1.705MHz to 30MHz is investigated. Please see the following pages.

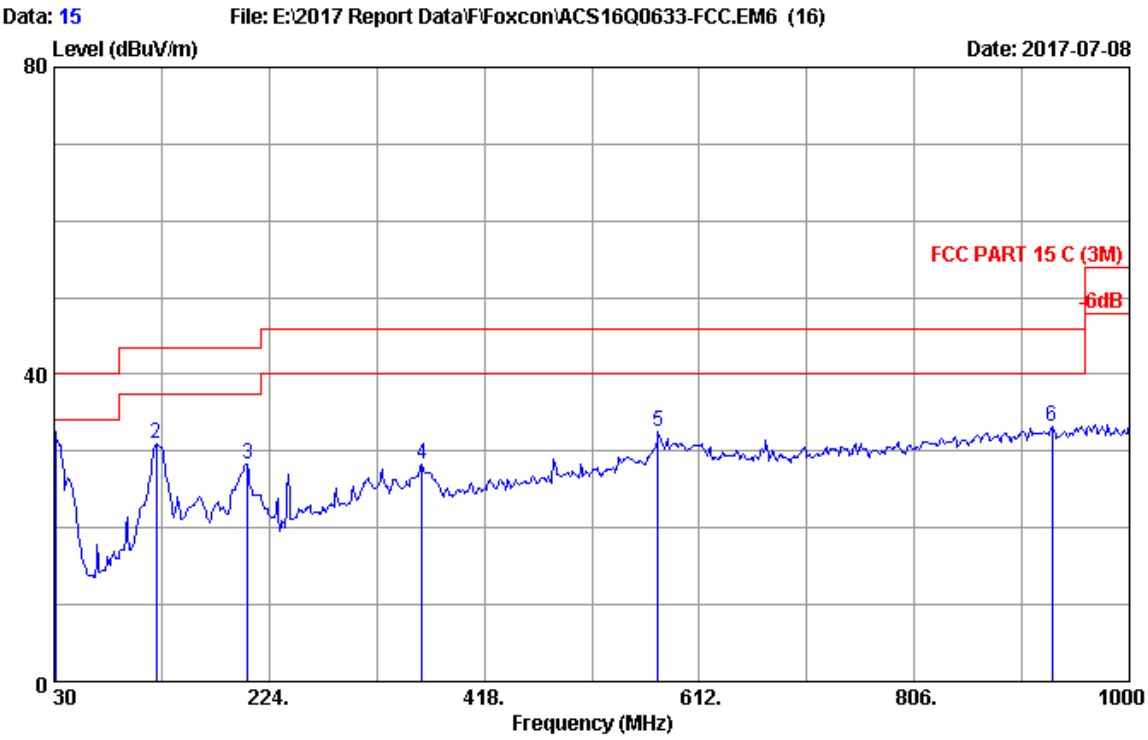
Note: According to exploratory test, 9kHz to 1.705MHz no obvious signal can be detected.



Site no. : 3m Chamber
Data no. : 16
Dis. / Ant. : 3m 2017 CBL6112D 35375
Ant. pol. : HORIZONTAL
Limit : FCC PART 15 C (3M)
Env. / Ins. : 21.8*C/54%
Engineer : Garry
EUT : Cash Register M/N:SPB1-01
Power rating : AC 120V/60Hz
Test Mode : NFC Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	18.90	6.57	3.60	29.07	40.00	10.93	QP
2	204.600	10.62	7.40	9.81	27.83	43.50	15.67	QP
3	277.350	13.87	7.69	7.71	29.27	46.00	16.73	QP
4	361.740	15.82	8.05	6.98	30.85	46.00	15.15	QP
5	677.960	19.90	9.44	3.65	32.99	46.00	13.01	QP
6	903.000	21.92	10.43	0.57	32.92	46.00	13.08	QP

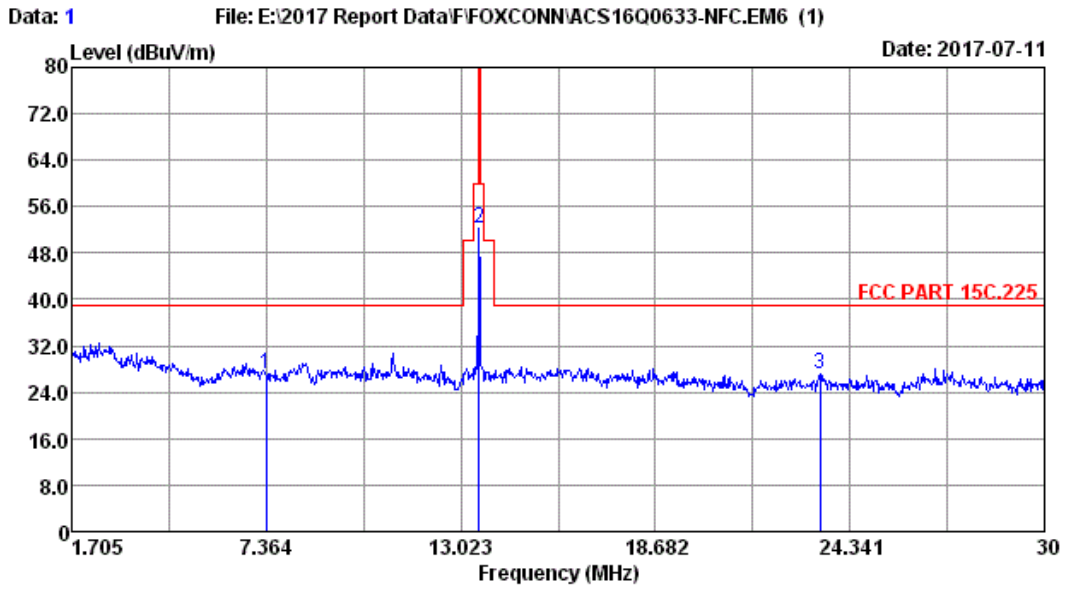
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 15
Dis. / Ant. : 3m 2017 CBL6112D 35375
Ant. pol. : VERTICAL
Limit : FCC PART 15 C (3M)
Env. / Ins. : 21.8*C/54%
Engineer : Garry
EUT : Cash Register M/N:SPB1-01
Power rating : AC 120V/60Hz
Test Mode : NFC Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.970	18.45	6.57	7.42	32.44	40.00	7.56	QP
2	122.150	13.51	7.01	10.37	30.89	43.50	12.61	QP
3	204.600	10.62	7.40	10.31	28.33	43.50	15.17	QP
4	361.740	15.82	8.05	4.42	28.29	46.00	17.71	QP
5	575.140	18.97	8.86	4.69	32.52	46.00	13.48	QP
6	930.160	22.08	10.46	0.58	33.12	46.00	12.88	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 10m Chamber Data no. : 1
Dis. / Ant. : 10m LOOP HLA6120 Ant. pol. :
Limit : FCC PART 15C.225
Env. / Ins. : 22.1*C/50.2% Engineer : Saxon
EUT : Cash Register M/N:SPB1-01
Power rating : AC 120V/60Hz
Test Mode : TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	7.36	20.82	0.45	4.12	25.39	39.00	13.61	QP
2	13.56	21.43	0.52	31.28	53.23	93.50	40.27	QP
3	23.46	21.96	0.54	1.08	23.58	39.00	15.42	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

5. FREQUENCY STABILITY TEST

5.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	Apr.22,17	1 Year
2.	RF Cable	Hubersuhner	Sucoflex104	274094/4	Apr.22,17	1 Year

5.2. Limits

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of –20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

5.3. Test Procedure

The EUT was placed in an environmental test chamber and powered such that control element received normal voltage and the transmitter provided maximum RF output.

5.4. Test result

EUT: Cash Register		
M/N: X2		
Test date: 2017-07-09	Pressure: 103.2±1.0 kpa	Humidity: 53.2±3.0%
Tested by: zack_zhu	Test site: RF site	Temperature:23.1±0.6 ℃

Frequency stability VS Voltage (Temperature:20℃)					
Supply Voltage(V)	Reading (MHz)	Target Frequency (MHz)	Result (ppm)	Limit (ppm)	Conclusion
10.2	13.56008	13.56	5.90	100	PASS
10.8	13.56008	13.56	5.90	100	
11.4	13.56017	13.56	12.54	100	
12	13.56025	13.56	18.44	100	
12.6	13.56017	13.56	12.54	100	
13.2	13.56017	13.56	12.54	100	
13.8	13.56017	13.56	12.54	100	
Frequency stability VS Voltage (Supply voltage 12V)					
Temperature (℃)	Reading (MHz)	Target Frequency (MHz)	Result (ppm)	Limit (ppm)	Conclusion
-20	13.56008	13.56	5.90	100	
-10	13.56008	13.56	5.90	100	PASS
0	13.56017	13.56	12.54	100	
10	13.56025	13.56	18.44	100	
20	13.56008	13.56	5.90	100	
30	13.56025	13.56	18.44	100	
40	13.56017	13.56	12.54	100	
50	13.56008	13.56	5.90	100	

6. 20 DB BANDWIDTH TEST

6.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Oct.15,16	1 Year
2.	RF Cable	Hubersuhner	Sucoflex104	274094/4	Apr.22,17	1 Year

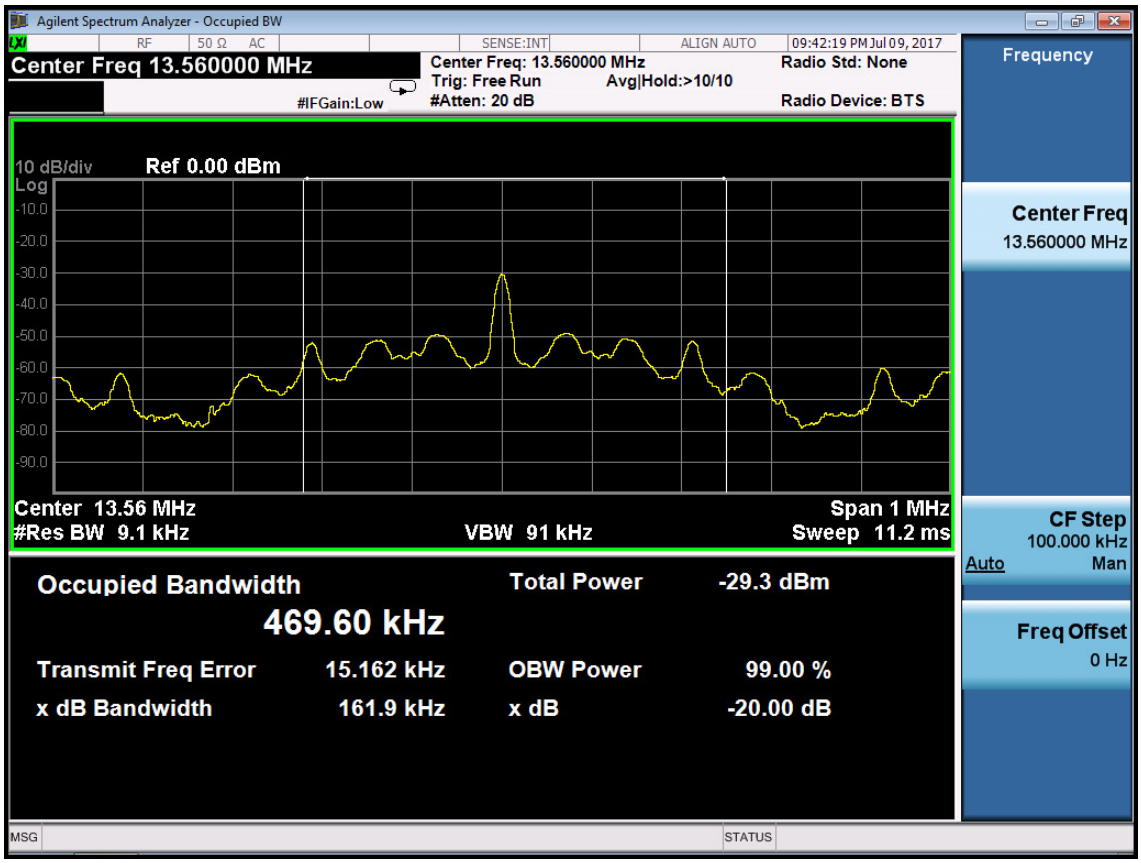
6.2.Limit

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

6.3. Test Results

EUT: Cash Register		
M/N: SPB1-01		
Test date: 2017-07-09	Pressure: 102.9±1.0 kpa	Humidity: 53.2±3.0%
Tested by: zack_zhu	Test site: RF site	Temperature:22.4±0.6 ℃

Frequency	20dB bandwidth (KHz)	Limit (KHz)
13.56MHz	161.9	N/A
Conclusion：PASS		


Agilent Spectrum Analyzer - Occupied BW
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
09:42:19 PM Jul 09, 2017
Center Freq 13.560000 MHz
Center Freq: 13.560000 MHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 20 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 0.00 dBm
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
Center 13.56 MHz
#Res BW 9.1 kHz
VBW 91 kHz
Span 1 MHz
Sweep 11.2 ms
Occupied Bandwidth
469.60 kHz
Total Power
-29.3 dBm
Transmit Freq Error
15.162 kHz
OBW Power
99.00 %
x dB Bandwidth
161.9 kHz
x dB
-20.00 dB
Center Freq
13.560000 MHz
CF Step
100.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

7. DEVIATION TO TEST SPECIFICATIONS

[NONE]