FCC Radio Test Report

FCC ID: 2ABBE-TX002

FCC 47 CFR Part 15 Subpart C

Product： TRANSFORMER

Trade Name： sunkey

Model Number： FY-TX002

Issued for

Yancheng Novelty Electronic Company Ltd.

No.28 Daqing East Road, Yancheng, Jiangsu, China

Issued by

Shenzhen STONE Testing Technology Co., Ltd.

F/6, Bldg.12, Zhongxing Industrial City, Chuangye Rd.,
Nanshan District, Shenzhen, Guangdong, China

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Website: www.stt-lab.org

TEST RESULT CERTIFICATION

Product	:	TRANSFORMER
Applicant	:	Yancheng Novelty Electronic Company Ltd.
Address	:	No.28 Daqing East Road, Yancheng, Jiangsu, China
Manufacturer	:	Yancheng Novelty Electronic Company Ltd.
Address	:	KaiChuang Road, New Developed Area, YanCheng City, JiangSu Province, China
Model No.	:	FY-TX002
Standards	:	FCC Part 15 Subpart C (15.231)
Test Method	:	ANSI C63.4: 2003

The above equipment has been tested by Shenzhen STONE Testing Technology Co., Ltd. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Test ..... :

Date of receipt of test item 2013-11-03

Date(s) of performance of test..... 2013-11-04 to 2013-11-12

Test Result..... : Pass

Testing by	:	Linna Liu	Date	:	2013-11-06
		(Linna Liu)			
Check by	:	Andy Huang	Date	:	2013-11-18
		(Andy Huang)			
Approved by	:	Ethan Chen	Date	:	2013-11-19
		(Ethan Chen)			

Table of Contents **Page**

Table of Contents **Page**

1. TEST SUMMARY

Test procedures according to the technical standards:

FCC Part 15 Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	AC Power Conducted Emission	PASS	
15.231(b)	Fundamental and Spurious Emissions	PASS	
15.205	Restrict Band Radiated Emission	PASS	
15.231(a)(1)	Deactivating Time	PASS	
15.231(C)	Emission Bandwidth	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

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

(2)The test results of this report relate only to the tested sample(s) identified in this report.

1.1 TEST FACILITY

Shenzhen STONE Testing Technology Co., Ltd.

Add. : F/6, Bldg.12, Zhongxing Industrial City, Chuangye Rd., Nanshan District, Shenzhen, Guangdong, China

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

FCC Registration No.: 323508

1.2 MEASUREMENT UNCERTAINTY

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

A. Conducted Emission :

The measurement uncertainty is evaluated as ± 3.2 dB.

B. Radiated Measurement :

The measurement uncertainty is evaluated as ± 3.7 dB.

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	TRANSFORMER
Model Name	FY-TX002
Additional Model Number(s)	N/A
Model Difference	N/A
Frequency Range	315.05 MHz
Modulation Type	ASK
RF Output Power	Peak: 83.09 dBuV/m @3m Average: 73.16 dBuV/m @3m
Antenna Type	Integral Antenna
Power Source	DC Power by Battery.
Power Rating	DC 12.0V Battery
Remark	More details of EUT technical specification, please refer to the User's Manual.

Note:

(1) This Test Report is FCC Part 15 Subpart C, 15.231 for Transmitter Equipment.

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	TX Mode
Mode 2	/
Mode 3	/

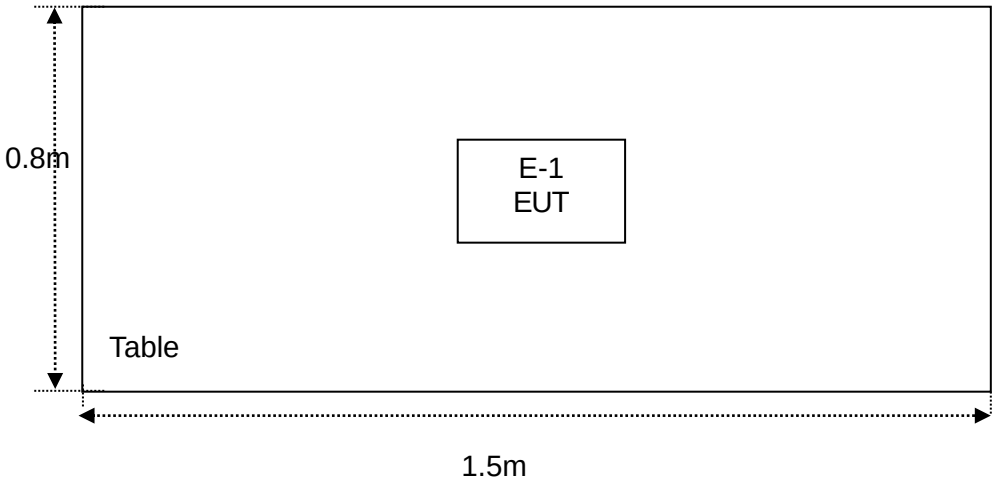
For Conducted Test	
Final Test Mode	Description
/	/
/	/

For Radiated Test	
Final Test Mode	Description
Mode 1	TX Mode
Mode 2	/
Mode 3	/

Note:
(1) The Equipment was set in continuously transmitting mode during testing.
(2) By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that “X axis” position was the worst, then the final test was executed the worst condition and test data were recorded in this report.
(3) During testing the Equipment was powered by new battery.

2.3 DESCRIPTION OF TEST SETUP

Radiated Emission



2.4 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

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	TRANSFORMER	sunkey	FY-TX002	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note

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.
(3) “YES” means “shielded” “with core”; “NO” means “unshielded” “without core”.

2.5 EUT Exercise Software

Test Software: N/A

3. CONDUCTED EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Quasi-peak	Average
	dBuV	dBuV
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

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

3.2 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.

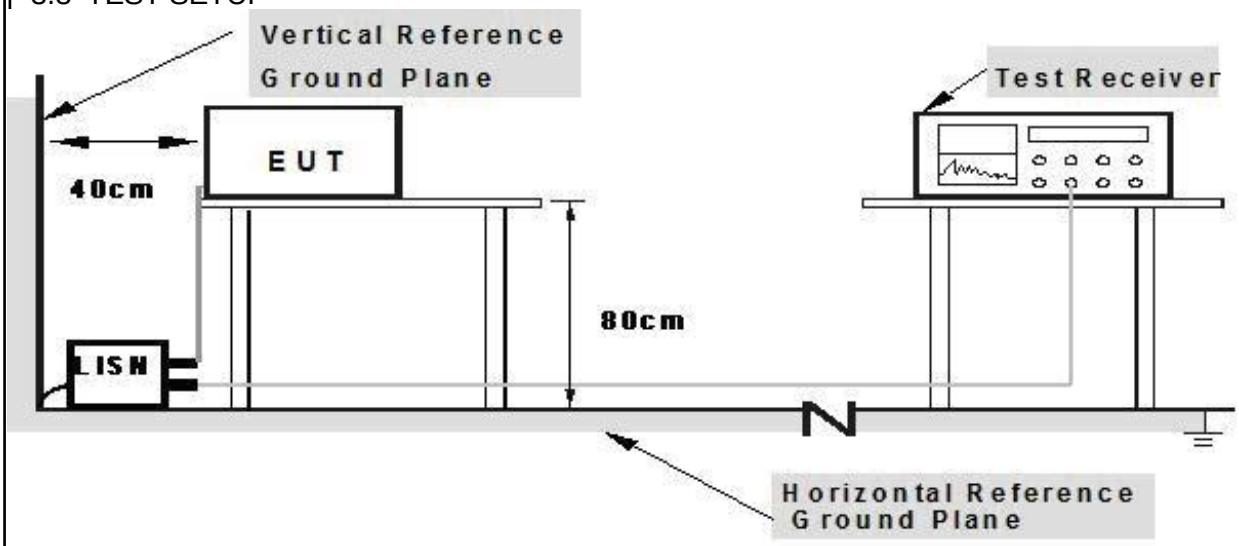
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

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.

3.3 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

3.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
LISN	R&S	NSLK81	8126466	Jul. 06, 2012	Jul. 05, 2014	1 year
LISN	R&S	NSLK81	8126487	Dec. 25, 2012	Dec. 24, 2013	1 year
50Ω Switch	ANRITSU CORP	MP59B	6200983704	Jul. 06, 2012	Jul. 05, 2014	1 year
Test Cable	N/A	C01	N/A	Jul. 06, 2012	Jul. 05, 2014	1 year
Test Cable	N/A	C02	N/A	Jul. 06, 2012	Jul. 05, 2014	1 year
Test Cable	N/A	C03	N/A	Jul. 06, 2012	Jul. 05, 2014	1 year
EMI Test Receiver	R&S	ESCI	1166.595	Jul. 06, 2012	Jul. 05, 2014	1 year
Passive Voltage Probe	ESH2-Z3	R&S	100196	Jul. 06, 2012	Jul. 05, 2014	1 year

3.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.

3.6 TEST RESULTS

EUT：	TRANSFORMER	Model Name. ：	FY-TX002
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date :	2013-11-08
Test Mode：		Phase :	Line
Test Voltage ：			
Note:	The EUT was powered by DC battery.		

EUT：	TRANSFORMER	Model Name. ：	FY-TX002
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date :	2013-11-08
Test Mode：	Mode 1	Phase :	Neutral
Test Voltage ：			
Note:	The EUT was powered by DC battery.		

4. FUNDAMENTAL AND SPURIOUS EMISSION MEASUREMENT

4.1 RADIATED EMISSION LIMIT

LIMITS OF RADIATED EMISSION MEASUREMENT (FCC 15.231)

Fundamental Frequency (MHz)	Fundamental Limit uv/m (at 3 m)	Spurious Limit uv/m (at 3 m)
40.66~40.70	2250	225
70~130	1250 to 3750**	125 to 375**
174~260	3750	375
260~470	**3750 to 12500****	**375 to 1250****
Above 470	125000	1250

(1) ** linear interpolations

[Where F is the frequency in MHz, the formulas for calculating the maximum, permitted fundamental field strengths are as follows: for the band 130-174 MHz, uV/m at 3 meters = 56.81818(F) - 6136.3636; for the band 260-470 MHz, uV/m at 3 meters = 41.6667(F) - 7083.3333. The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.]

(2) The limits on the field strength of the spurious emissions in the above table are based on the fundamental frequency of the intentional radiator. Spurious emissions shall be attenuated to the average (or, alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in 93 Section 15.209, whichever limit permits a higher field strength.

FCC Limit for EUT		
Operating Frequency (MHz)	**Average Limit (dBuv/m)@3m**	**Peak Limit (dBuv/m)@3m**
315.05	75.63	95.63

LIMITS OF RADIATED EMISSION

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.

FREQUENCY (MHz)	Field Strength (uV/m at 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

RADIATED EMISSION LIMITS (Above 1000MHz)

FREQUENCY (MHz)	Class A (dBuV/m)(at 3 M)		Class B (dBuV/m)(at 3 M)	
	Peak	Average		Peak
Above 1000	80	60	74	54

Note:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(2) Emission Level(dBuV/m)=20log Emission Level(uV/m)

The following table is the setting of the receiver

Receiver Parameter	Setting
Attenuation	Auto
Start Frequency~ Stop Frequency	9kHz~150kHz/ RB 200Hz for QP
Start Frequency~ Stop Frequency	150kHz~30MHz/ RB 9kHz for QP
Start Frequency~ Stop Frequency	30MHz~1000MHz/ RB120kHz for QP

The following table is the setting of the spectrum

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10^{th} carrier harmonic
RB/ VB (emission in restricted band)	1MHz/ 3 MHz for Peak, 1MHz/ 10Hz for Average

4.2 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 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.

c. 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.

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, above 1G Average detector mode will be instead.

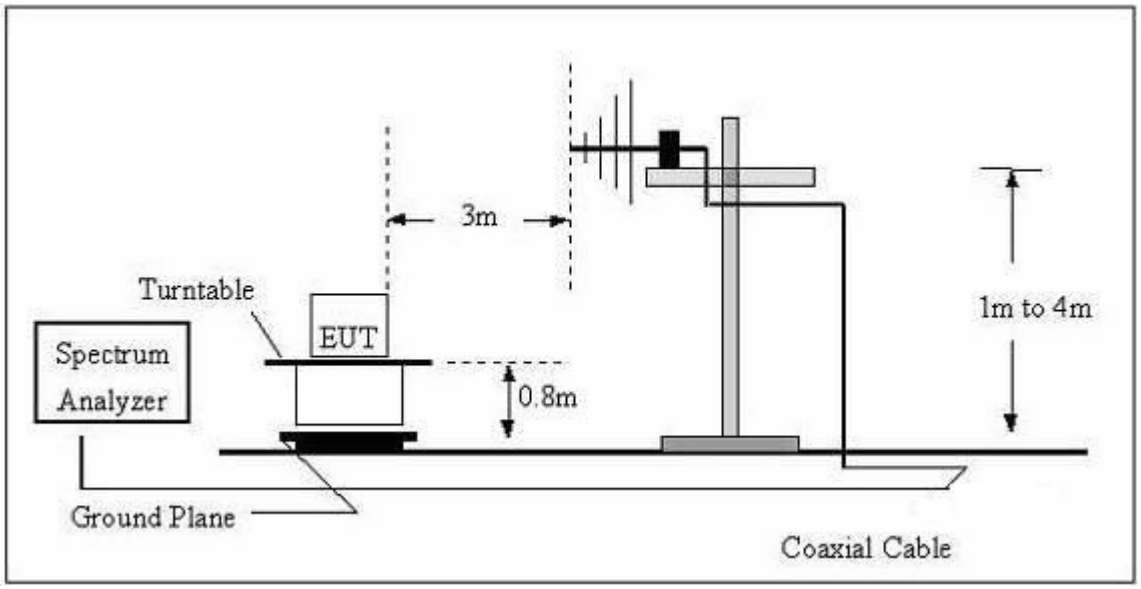
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.

f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

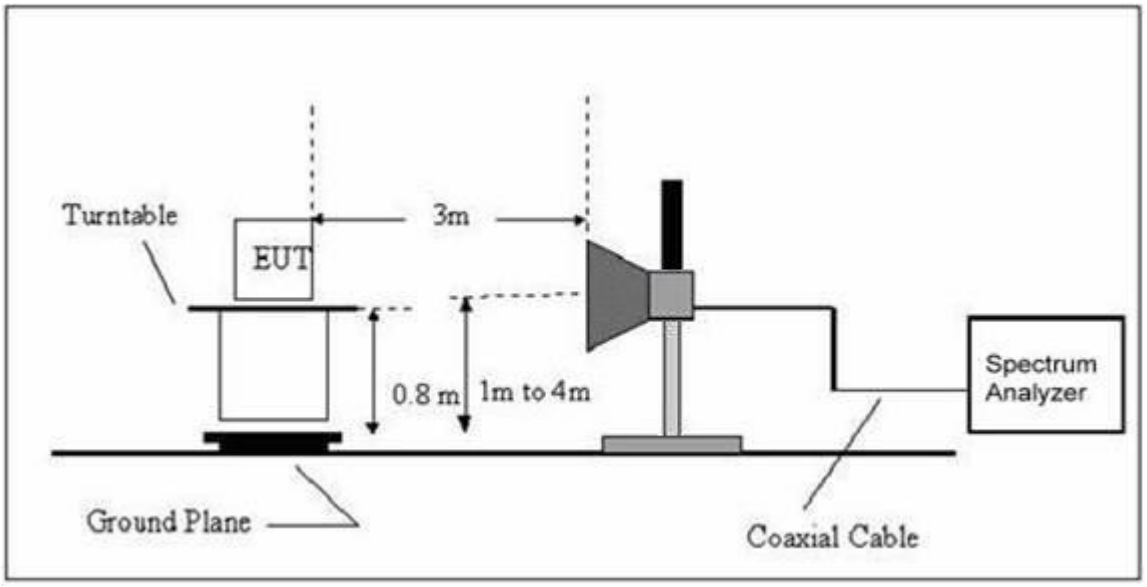
Note:
Both horizontal and vertical antenna polarities were tested.
And performed pretest to three orthogonal axis. The worst case emissions were reported.

4.3 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1GHz



4.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Broadband Antenna	R&S	VULB 9168	VULB 9168-456	Jul. 06, 2012	Jul. 05, 2014	1 year
Test Cable	N/A	R-01	N/A	Dec. 25, 2012	Dec. 24, 2013	1 year
Test Cable	N/A	R-02	N/A	Dec. 25, 2012	Dec. 24, 2013	1 year
EMI Test Receiver	R&S	ESCI	101324	Jul. 06, 2012	Jul. 05, 2014	1 year
Antenna Mast	EM	SC100_1	N/A	N/A	N/A	N/A
Turn Table	EM	SC100	060531	N/A	N/A	N/A

50Ω Switch	Anritsu Corp	MP59B	6200983705	Jul. 06, 2012	Jul. 05, 2014	1 year
Spectrum Analyzer	R&S	FSP40	100154	Jul. 06, 2012	Jul. 05. 2014	1 year
Horn Antenna	R&S	HF906	10029	Jul. 06, 2012	Jul. 05. 2014	1 year
Amplifier	EM	EM-30180	060538	Jul. 06, 2012	Jul. 05. 2014	1 year

4.5 EUT OPERATING CONDITIONS

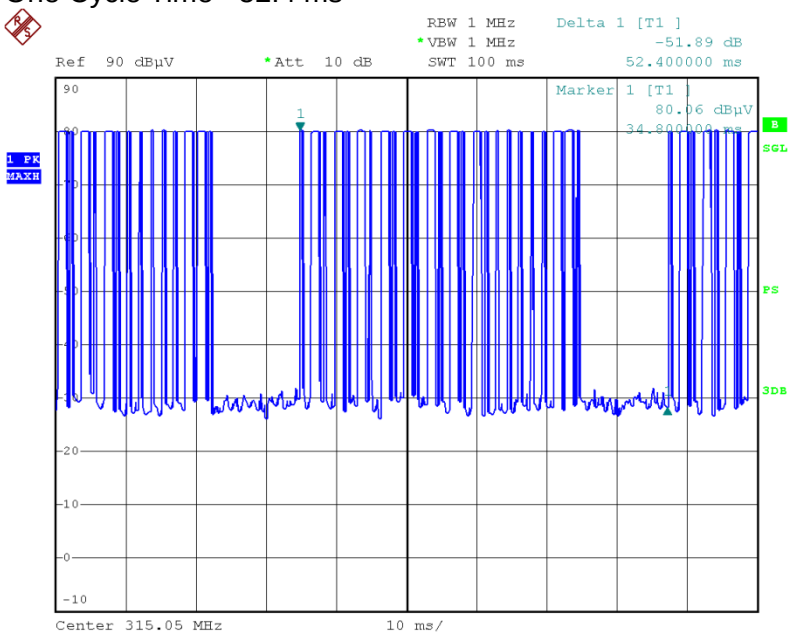
The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.

4.6 DUTY CYCLE TEST

15.35 (c) when the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds.

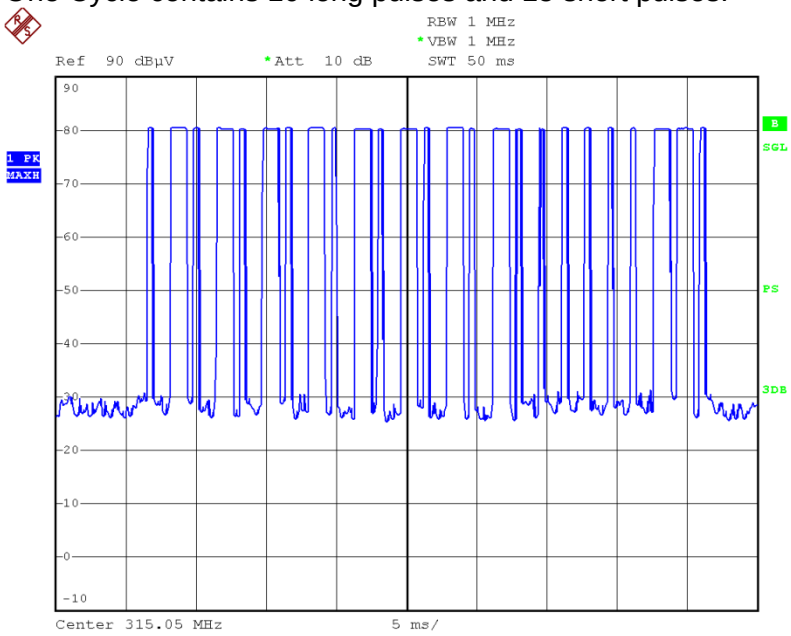
(1) 100ms Sweep Time:

One Cycle Time= 52.4 ms



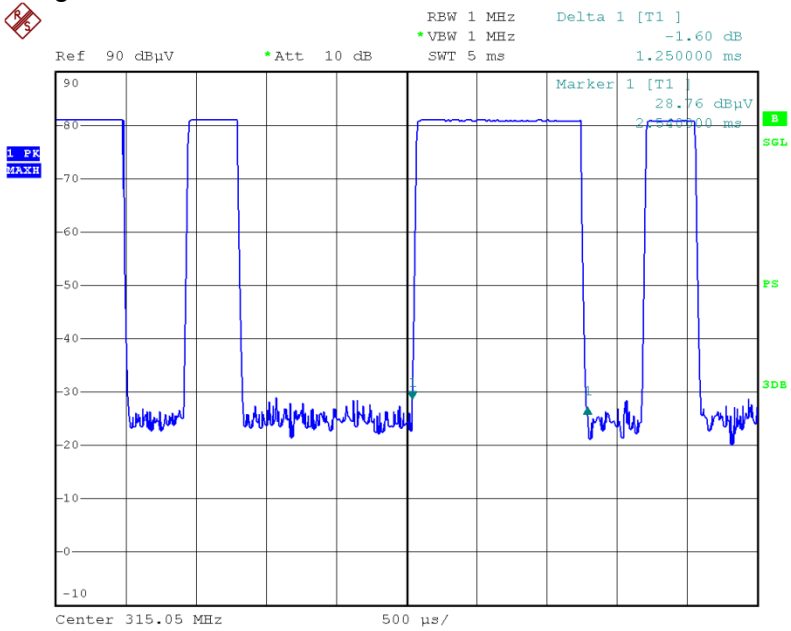
Date: 11.NOV.2013 10:05:30

(2) One Cycle contains 10 long pulses and 15 short pulses.



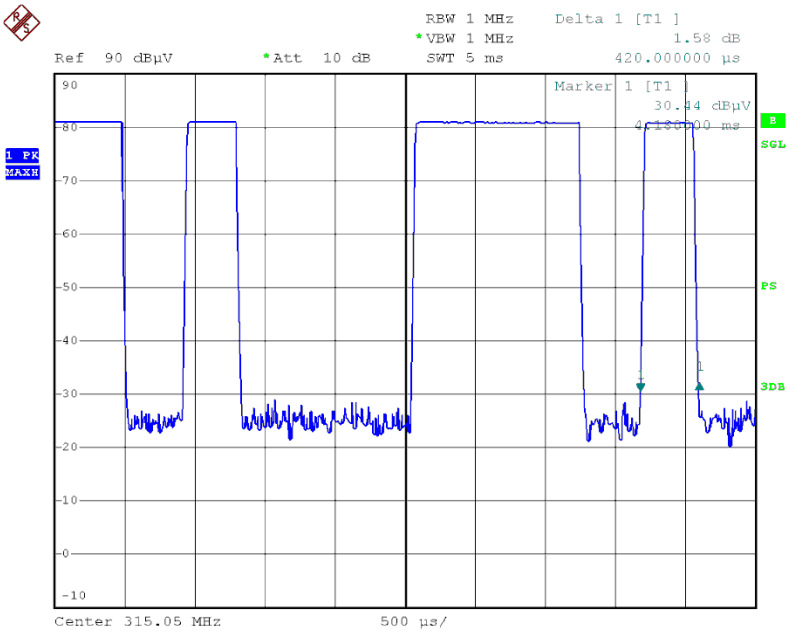
Date: 11.NOV.2013 10:06:11

(3) Long Pulse Time= 1.25 ms



Date: 11.NOV.2013 10:07:05

(4) Short Pulse Time= 0.420 ms



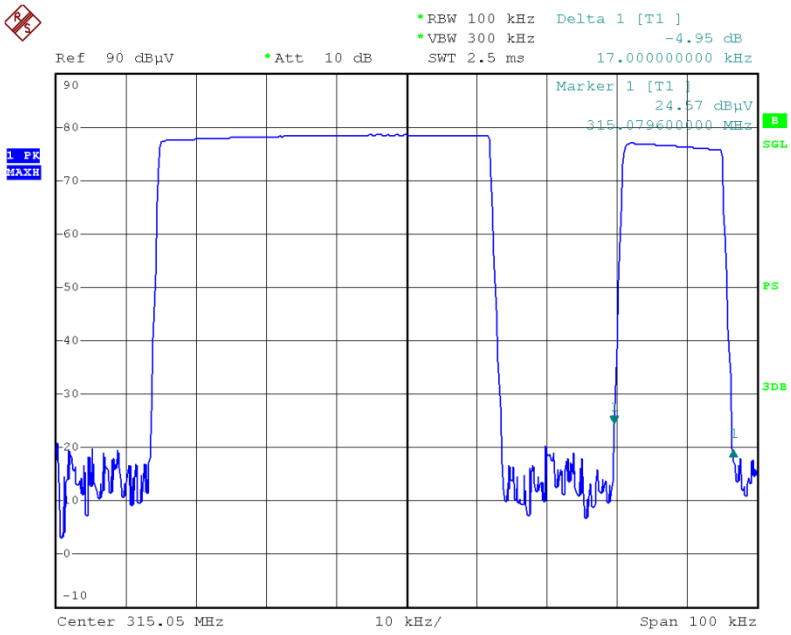
Date: 11.NOV.2013 10:07:35

(5) Total On Time of One Cycle=(10*1.25)+(15*0.42)=16.7 ms
Duty Cycle=16.7/52.4*100%=31.87%
Average Factor=20log(Duty Cycle) = -9.93 dB

So Average=Peak-9.93

(6) PDCF Evaluated

Short Pulse Width= 17.00 kHz



Date: 11.NOV.2013 10:10:38

1/PW=1/17= 0.058 kHz< 120kHz

So no need PDCF for measuring.

4.7 TEST RESULTS

4.7.1 TEST RESULTS (Bellow 1GHz)

EUT：	TRANSFORMER	Model Name. ：	FY-TX002
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date :	2013-11-11
Test Mode ：	TX Mode	Polarization :	Horizontal
Test Power ：	DC 12V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		235.4800	39.98	-13.12	26.86	46.00	-19.14	peak	
2		356.8700	36.89	-10.15	26.74	46.00	-19.26	peak	
3		425.0600	37.51	-8.89	28.62	46.00	-17.38	peak	
4	*	526.3000	41.23	-7.37	33.86	46.00	-12.14	peak	
5		714.4700	38.44	-4.92	33.52	46.00	-12.48	peak	
6		805.1300	35.39	-3.89	31.50	46.00	-14.50	peak	

Remark:
Factor = Antenna Factor + Cable Loss.

EUT：	TRANSFORMER	Model Name. ：	FY-TX002
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date :	2013-11-11
Test Mode ：	TX Mode	Polarization :	Vertical
Test Power ：	DC 12V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		185.0900	41.38	-15.26	26.12	43.50	-17.38	peak	
2		239.7000	41.09	-12.91	28.18	46.00	-17.82	peak	
3		405.8200	35.33	-9.24	26.09	46.00	-19.91	peak	
4		536.4700	36.49	-7.19	29.30	46.00	-16.70	peak	
5		704.8500	35.41	-5.13	30.28	46.00	-15.72	peak	
6	*	836.2100	36.08	-3.57	32.51	46.00	-13.49	peak	

Remark:
Factor = Antenna Factor + Cable Loss.

4.7.2 FUNDAMENTAL AND HARMONICS EMISSIONS

A. Below 1 GHz

EUT：	TRANSFORMER	Model Name. ：	FY-TX002
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date :	2013-11-11
Test Mode ：	TX Mode	Polarization :	Horizontal
Test Power ：	DC 12V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	315.0500	94.49	-11.40	83.09	46.00	37.09	peak	Fundamental
2	X	315.0500	84.56	-11.40	73.16	46.00	27.16	AVG	Fundamental
3	X	630.1100	67.56	-5.51	62.05	46.00	16.05	peak	Harmonics
4	X	630.1100	57.63	-5.51	52.12	46.00	6.12	AVG	Harmonics
5	X	945.1600	58.66	-2.58	56.08	46.00	10.08	peak	Harmonics
6	X	945.1600	48.73	-2.58	46.15	46.00	0.15	AVG	Harmonics

Remark:

Factor = Antenna Factor + Cable Loss.

Average=Peak-9.93

EUT：	TRANSFORMER	Model Name. ：	FY-TX002
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date :	2013-11-11
Test Mode ：	TX Mode	Polarization :	Vertical
Test Power ：	DC 12V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	315.0500	94.49	-11.40	83.09	46.00	37.09	peak	Fundamental
2	X	315.0500	84.56	-11.40	73.16	46.00	27.16	AVG	Fundamental
3	X	630.1100	67.56	-5.51	62.05	46.00	16.05	peak	Harmonics
4	X	630.1100	57.63	-5.51	52.12	46.00	6.12	AVG	Harmonics
5	X	945.1600	58.66	-2.58	56.08	46.00	10.08	peak	Harmonics
6	X	945.1600	48.73	-2.58	46.15	46.00	0.15	AVG	Harmonics

Remark:

Factor = Antenna Factor + Cable Loss.

Average=Peak-9.93

B. Above 1 GHz

EUT：	TRANSFORMER	Model Name. ：	FY-TX002
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date：	2013-11-11
Test Mode ：	TX Mode	Polarization：	Horizontal
Test Power ：	DC 12V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1260.200	35.56	24.69	60.25	74.00	-13.75	peak	Harmonics
2	*	1260.200	25.63	24.69	50.32	54.00	-3.68	AVG	Harmonics
3		1575.280	32.03	26.58	58.61	74.00	-15.39	peak	Harmonics
4		1575.280	22.10	26.58	48.68	54.00	-5.32	AVG	Harmonics
5		1890.300	26.38	28.24	54.62	74.00	-19.38	peak	Harmonics
6		1890.300	16.45	28.24	44.69	54.00	-9.31	AVG	Harmonics

Remark:
Factor = Antenna Factor + Cable Loss.
Average=Peak-9.93

EUT：	TRANSFORMER	Model Name. ：	FY-TX002
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date：	2013-11-11
Test Mode ：	TX Mode	Polarization：	Vertical
Test Power ：	DC 12V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1260.200	37.40	24.69	62.09	74.00	-11.91	peak	Harmonics
2	*	1260.200	27.47	24.69	52.16	54.00	-1.84	AVG	Harmonics
3		1575.280	30.61	26.58	57.19	74.00	-16.81	peak	Harmonics
4		1575.280	20.68	26.58	47.26	54.00	-6.74	AVG	Harmonics
5		1890.300	26.84	28.24	55.08	74.00	-18.92	peak	Harmonics
6		1890.300	16.91	28.24	45.15	54.00	-8.85	AVG	Harmonics

Remark:
Factor = Antenna Factor + Cable Loss.
Average=Peak-9.93

5. BANDWIDTH MEASUREMENT

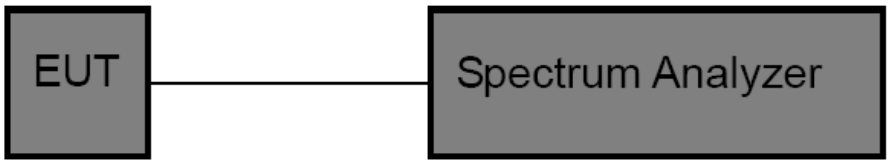
5.1 LIMITS

20dB Bandwidth	The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.
Limit	315.05 MHz*0.25%= 0.787 MHz

5.2 TEST PROCEDURE

The EUT was directly connected to the power meter and antenna output port as show in the block diagram as bellow.

5.3 TEST SETUP



5.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Spectrum Analyzer	R&S	FSP40	100154	Jul. 06, 2012	Jul. 05. 2014	1 year

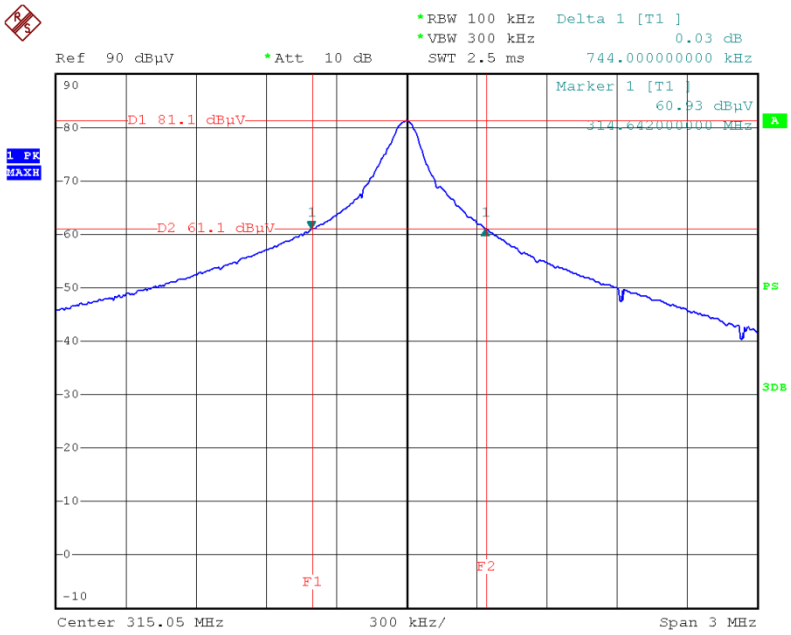
5.5 EUT OPERATING CONDITIONS

The EUT was set to continuously transmitting in the maximum power during the test. And operatting with new battery.

5.6 TEST RESULTS

TX Mode (315 MHz)		
Frequency (MHz)	**20dB Bandwidth (kHz)**	**Limit**
315.05	**744.00**	**787.0**

Note: Test plots please refer following pages.



6. DEACTIVATING TIME

6.1 LIMITS

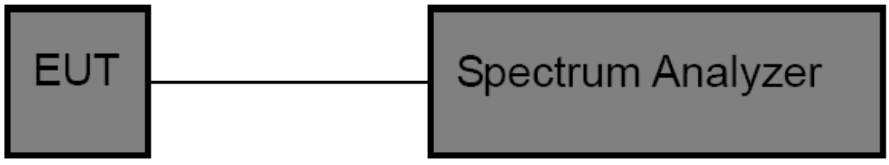
1	A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.
2	A transmitter activated automatically shall cease transmission within 5 second after activation.
3	Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed more than two seconds per hour for each transmitter. There is no limit on the number of individual transmissions, provided the total transmission time does not exceed two seconds per hour
4	Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm condition.

6.2 TEST PROCEDURE

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram as bellow.

a. Set span= 0 Hz.
b. Single sweep.
c. Sweep time=5s.

6.3 TEST SETUP



6.4 TEST INSTRUMENTS

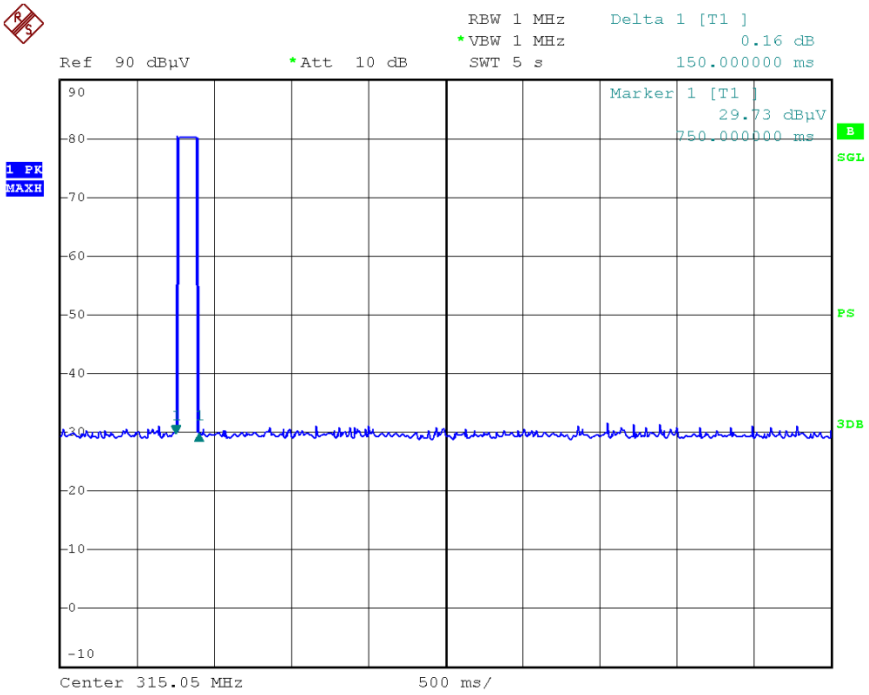
Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Spectrum Analyzer	R&S	FSP40	100154	Jul. 06, 2012	Jul. 05. 2014	1 year

6.5 EUT OPERATING CONDITIONS

The EUT set in trigger mode.

6.6 TEST RESULTS

The EUT has a manually activated transmitter, and the release time is 150ms has been measured. Comply the Limit.



7. ANTENNA REQUIREMENT

7.1 REQUIREMENT

Antenna Requirement (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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

7.2 ANTENNA CONNECTOR CONSTRUCTION

The EUT antenna is an Integral Antenna.
It complies with the standard requirement.