



FCC Radio Test Report

FCC ID: 2ABQU-STRC1009

FCC 47 CFR Part 15 Subpart C

Product: SONTE Remote

Trade Name: SONTE

Model Number: STRC1009

Issued for

SONTE Limited

Unit 1205, Cyberport 2, 100 Cyberport Road, Pokfulam, Hong Kong

Issued by

Shenzhen STONE Testing Technology Co., Ltd.

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

Tel.: +86-0755-26582862 Fax.: +86-0755-61673854 Website: www.stt-lab.org

Note: This report shall not be reproduced except in full, without the written approval of Shenzhen STONE Testing Technology Co., Ltd.. This document may be altered or revised by Shenzhen STONE Testing Technology Co., Ltd. personnel only, and shall be noted in the revision section of the document. The test results in the report only apply to the tested sample.

Version: STT-FCCRF-13V01

Report No.: STT2014091524R

Page 2 of 31 Report No.: STT2014091524R

TEST RESULT CERTIFICATION

Product	:	SONTE Remote			
Applicant	:	SONTE Limited			
Address	:	Unit 1205, Cyberport 2, Kong	100 Cyb	erpo	rt Road, Pokfulam, Hong
Manufacturer	::	SONTE Limited			
Address	:	Unit 1205, Cyberport 2, Kong	100 Cyb	erpo	rt Road, Pokfulam, Hong
Model No	:	STRC1009			
Standards	:	FCC Part 15 Subpar	t C (15.	231)	
Test Method	:	ANSI C63.4: 2003			
and found complia mentioned above. which was tested. due to production t Test	nce with the The results Other similated and the colorance and the titem are considered and the colorance of test	ne requirements set for sof testing in this reportant lar equipment will not remained measurement uncertained	th in the rt apply necessa ertainties	tech only rily p	sting Technology Co., Ltd. nnical standards to the product/system, roduce the same results
Testing by	:	(Linna Liu)	Date	: _	2014-09-16
Check by	:	Andy Huang (Andy Huang)	Date	: _	2014-09-18
Approved by	:	Othan chen (Ethan Chen)	Date	: _	2014-09-19

Page 3 of 31 Report No.: STT2014091524R

Table of Contents	Page
1 . TEST SUMMARY	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 DESCRIPTION OF TEST SETUP	9
2.4 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL	10
2.5 EUT Exercise Software	10
3 . CONDUCTED EMISSION TEST	11
3.1 CONDUCTED EMISSION MEASUREMENT (Frequency Range 150KHz-	30MHz)11
3.2 TEST PROCEDURE	11
3.3 TEST SETUP	12
3.4 TEST INSTRUMENTS	12
3.5 EUT OPERATING CONDITIONS	12
3.6 TEST RESULTS	13
4 . FUNDAMENTAL AND SPURIOUS EMISSION MEASUREMENT	15
4.1 RADIATED EMISSION LIMIT	15
4.2 TEST PROCEDURE	16
4.3 TEST SETUP	16
4.4 TEST INSTRUMENTS 4.5 EUT OPERATING CONDITIONS	17 18
4.6 DUTY CYCLE TEST	18
4.7 TEST RESULTS	22
5 . BANDWIDTH MEASUREMENT	<u></u> 27
5.1 LIMITS	27
5.2 TEST PROCEDURE	27
5.3 TEST SETUP	27
5.4 TEST INSTRUMENTS	27
5.5 EUT OPERATING CONDITIONS	27
5.6 TEST RESULTS	27

Page 4 of 31 Report No.: STT2014091524R

Table of Contents	Page
6 . DEACTIVATING TIME	29
6.1 LIMITS	29
6.2 TEST PROCEDURE	29
6.3 TEST SETUP	29
6.4 TEST INSTRUMENTS	29
6.5 EUT OPERATING CONDITIONS	30
6.6 TEST RESULTS	30
7 . ANTENNA REQUIREMENT	31
7.1 REQUIREMENT	31
7.2 ANTENNA CONNECTOR CONSTRUCTION	31

Page 5 of 31 Report No.: STT2014091524R

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.

Page 6 of 31 Report No.: STT2014091524R

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 $\mathbf{y} \pm \mathbf{U}$, where expended uncertainty \mathbf{U} is based on a standard uncertainty multiplied by a coverage factor of $\mathbf{k=2}$, providing a level of confidence of approximately 95 %.

A. Conducted Emission:

The measurement uncertainty is evaluated as \pm 3.2 dB.

B. Radiated Measurement:

The measurement uncertainty is evaluated as \pm 3.7 dB.

Report No.: STT2014091524R

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	SONTE Remote
Model Name	STRC1009
Additional Model	N/A
Number(s)	IVA
Model Difference	N/A
Frequency Range	434.02 MHz
Modulation Type	ASK
RF Output Power	Peak: 82.19 dBuV/m @3m Average: 74.38 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.

Page 8 of 31 Report No.: STT2014091524R

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	1
Mode 3	/

For Conducted Test			
Final Test Mode	Description		
/	/		
/	/		

For Radiated Test				
Final Test Mode	Description			
Mode 1	TX Mode			
Mode 2	1			
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 "Z 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.

Report No.: STT2014091524R

Page 9 of 31 2.3 DESCRIPTION OF TEST SETUP Radiated Emission 0.8m E-1 **EUT** Table 1.5m

Page 10 of 31 Report No.: STT2014091524R

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	Adapter	/	S70RPL001H	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 <code>[Length_]</code> column.
- (3) "YES" means "shielded" "with core"; "NO" means "unshielded" "without core".

2.5 EUT Exercise Software

Test Software: N/A

Page 11 of 31 Report No.: STT2014091524R

3. CONDUCTED EMISSION TEST

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

FREQUENCY (MHz)	Quasi-peak	Average
PREQUENCY (MINZ)	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.

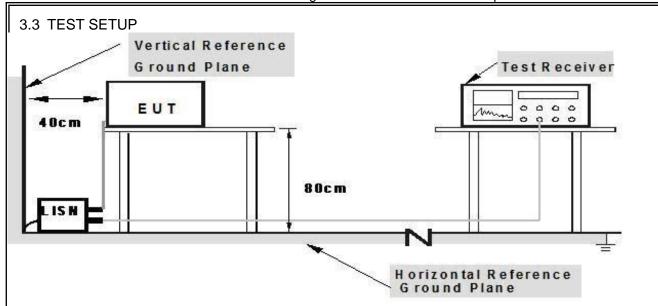
The following table is the setting of the receiver

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.

Page 12 of 31 Report No.: STT2014091524R



Note: 1.Support units were connected to second LISM.

2.Both of LISMs (AMM) are 80 cm from EUT and at least 80 from other units and other metal planes

3.4 TEST INSTRUMENTS

<u> </u>	OH TEST INSTROMENTS						
Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period	
LISN	R&S	NSLK81	8126466	Jul. 06, 2014	Jul. 05. 2015	1 year	
LISN	R&S	NSLK81	8126487	Dec. 25, 2013	Dec. 24, 2014	1 year	
50Ω Switch	ANRITSU CORP	MP59B	6200983704	Jul. 06, 2014	Jul. 05. 2015	1 year	
Test Cable	N/A	C01	N/A	Jul. 06, 2014	Jul. 05. 2015	1 year	
Test Cable	N/A	C02	N/A	Jul. 06, 2014	Jul. 05. 2015	1 year	
Test Cable	N/A	C03	N/A	Jul. 06, 2014	Jul. 05. 2015	1 year	
EMI Test Receiver	R&S	ESCI	1166.595	Jul. 06, 2014	Jul. 05. 2015	1 year	
Passive Voltage Probe	ESH2-Z3	R&S	100196	Jul. 06, 2014	Jul. 05. 2015	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.



Page 13 of 31 Report No.: STT2014091524R

3.6 TEST RESULTS

EUT:	SONTE Remote	Model Name. :	STRC1009			
Temperature:	22 ℃	Relative Humidity:	56%			
Pressure:	1010 hPa	Test Date :	2014-09-11			
Test Mode:		Phase :	Line			
Test Voltage :	Test Voltage :					
Note: The EUT was powered by DC battery.						

Page 14 of 31 Report No.: STT2014091524R

EUT:	SONTE Remote	Model Name. :	STRC1009			
Temperature:	22 ℃	Relative Humidity:	56%			
Pressure:	1010 hPa	Test Date :	2014-09-11			
Test Mode:		Phase :	Neutral			
Test Voltage :	Voltage :					
Note:	The EUT was powered by DC battery.					

Page 15 of 31 Report No.: STT2014091524R

4. FUNDAMENTAL AND SPURIOUS EMISSION MEASUREMENT

4.1 RADIATED EMISSION LIMIT

LIMITS OF RADIATED EMISSION MEASUREMENT (FCC 15.231)

Fundamental Frequency	Fundamental Limit	Spurious Limit
(MHz)	uv/m (at 3 m)	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 Average Limit Peak Limit						
(MHz)	(dBuv/m)@3m					
434.02	80.83	100.83				

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	Measurement Distance
TINEQUEINOT (IVII 12)	(uV/m at meter)	(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

Page 16 of 31 Report No.: STT2014091524R

RADIATED EMISSION LIMITS (Above 1000MHz)

FREQUENCY (MHz)	Class A (dBuV/m)(at 3 M)		Class B (dBuV/m)(at 3 M)	
TREQUENCT (MITZ)	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:

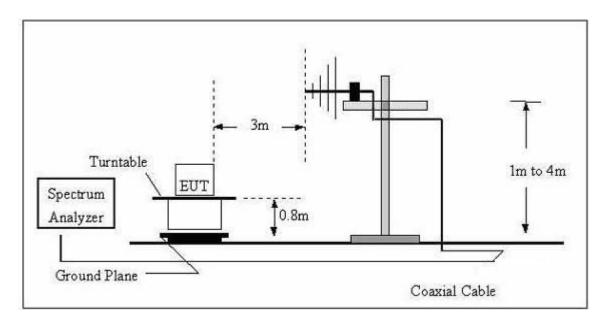
Both horizontal and vertical antenna polarities were tested.

And performed pretest to three orthogonal axis. The worst case emissions were reported.

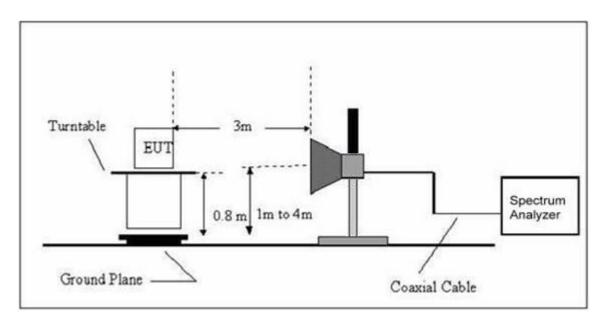
4.3 TEST SETUP



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



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



4.4 TEST INSTRUMENTS

7.7 1LO1	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, 2014	Jul. 05. 2015	1 year
Test Cable	N/A	R-01	N/A	Dec. 25, 2013	Dec. 24, 2014	1 year
Test Cable	N/A	R-02	N/A	Dec. 25, 2013	Dec. 24, 2014	1 year
EMI Test Receiver	R&S	ESCI	101324	Jul. 06, 2014	Jul. 05. 2015	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

Version: STT-FCCRF-13V01

Report No.: STT2014091524R



Page 18 of 31 Report No.: STT2014091524R

50Ω Switch	Anritsu Corp	MP59B	6200983705	Jul. 06, 2014	Jul. 05. 2015	1 year
Spectrum Analyzer	R&S	FSP40	100154	Jul. 06, 2014	Jul. 05. 2015	1 year
Horn Antenna	R&S	HF906	10029	Jul. 06, 2014	Jul. 05. 2015	1 year
Amplifier	EM	EM-30180	060538	Jul. 06, 2014	Jul. 05. 2015	1 year

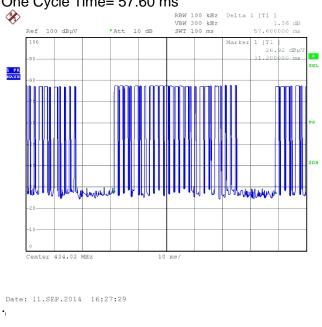
4.5 EUT OPERATING CONDITIONS

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.

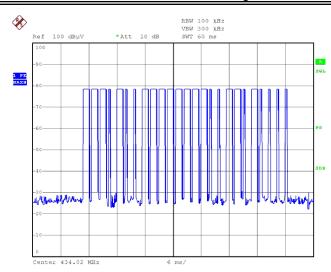
4.6 DUTY CYCLE TEST

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= 57.60 ms

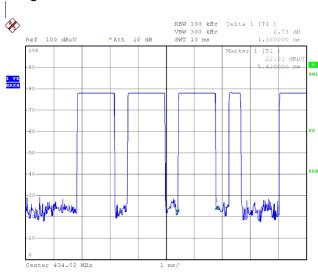


Page 19 of 31 Report No.: STT2014091524R



Date: 11.SEP.2014 16:29:04

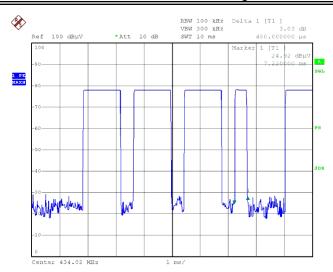
- (2) One Cycle contains 15 long pulses and 10 short pulses.
- (3) Long Pulse Time= 1.38 ms



Date: 11.SEP.2014 16:29:49

(4) Short Pulse Time= 0.480 ms

Page 20 of 31 Report No.: STT2014091524R



Date: 11.SEP.2014 16:30:08

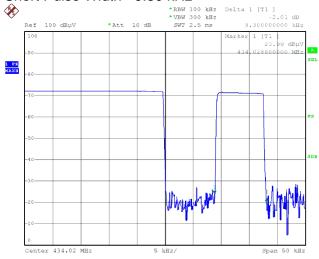
- (5) Total On Time of One Cycle=(15*1.38)+(10*0.48)=25.50 ms
- (6) Worst Case : Total on Time=25*1.38=34.50 Duty Cycle=34.50/57.60*100%=59.89% Average Factor=20log(Duty Cycle) = -4.45 dB

So Average=Peak-4.45



Report No.: STT2014091524R

(7) PDCF Evaluated Short Pulse Width= 9.30 kHz



Date: 11.SEP.2014 16:34:47

1/PW=1/9.30= 0.11 kHz<100kHz

So no requirement for PDCF measuring.



4.7 TEST RESULTS

4.7.1 TEST RESULTS (Bellow 1GHz)

EUT:	SONTE Remote	Model Name. :	STRC1009
Temperature:	22 ℃	Relative Humidity:	56%
Pressure:	1010 hPa	Test Date :	2014-09-11
Test Mode :	TX Mode	Polarization :	Horizontal
Test Power :	DC 12V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	,	168.2500	42.99	-16.63	26.36	43.50	-17.14	peak	
2	2	246.3000	41.29	-12.82	28.47	46.00	-17.53	peak	
3	4	468.9100	37.11	-8.49	28.62	46.00	-17.38	peak	
4	ļ	521.0400	36.77	-7.47	29.30	46.00	-16.70	peak	
5		765.2100	34.36	-4.08	30.28	46.00	-15.72	peak	
6	* (865.2400	34.45	-3.09	31.36	46.00	-14.64	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

Page 23 of 31 Report No.: STT2014091524R

EUT:	SONTE Remote	Model Name. :	STRC1009
Temperature:	22 ℃	Relative Humidity:	56%
Pressure:	1010 hPa	Test Date :	2014-09-11
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	265.0500	41.47	-12.69	28.78	46.00	-17.22	peak	
2	326.2100	39.41	-11.05	28.36	46.00	-17.64	peak	
3	398.4100	39.12	-9.41	29.71	46.00	-16.29	peak	
4	562.1400	37.16	-7.02	30.14	46.00	-15.86	peak	
5	657.3900	36.74	-5.44	31.30	46.00	-14.70	peak	
6 *	815.7700	36.25	-3.80	32.45	46.00	-13.55	peak	

Remark:

Factor = Antenna Factor + Cable Loss.



4.7.2 FUNDAMENTAL AND HARMONICS EMISSIONS

A. Below 1 GHz

EUT:	SONTE Remote	Model Name. :	STRC1009
Temperature:	22 ℃	Relative Humidity:	56%
Pressure:	1010 hPa	Test Date :	2014-09-11
Test Mode :	TX Mode	Polarization:	Horizontal
Test Power :	DC 12V		

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	434.0200	86.88	-8.83	78.05	46.00	32.05	peak	Fundamental
2	Χ	434.0200	82.47	-8.83	73.64	46.00	27.64	AVG	Fundamental
3	Χ	868.0400	53.19	-3.05	50.14	46.00	4.14	peak	Harmonics
4		868.0400	48.78	-3.05	45.73	46.00	-0.27	AVG	Harmonics

Remark:

Factor = Antenna Factor + Cable Loss. Average=Peak-4.41

EUT:	SONTE Remote	Model Name. :	STRC1009
Temperature:	22 ℃	Relative Humidity:	56%
Pressure :	1010 hPa	Test Date :	2014-09-11
Test Mode :	TX Mode	Polarization :	Vertical
Test Power :	DC 12V		

No.	Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	434.0200	82.99	-8.83	74.16	46.00	28.16	peak	Fundamental
2	Χ	434.0200	78.58	-8.83	69.75	46.00	23.75	AVG	Fundamental
3	Χ	868.0400	54.07	-3.05	51.02	46.00	5.02	peak	Harmonics
4	Χ	868.0400	49.66	-3.05	46.61	46.00	0.61	AVG	Harmonics

Remark:

Factor = Antenna Factor + Cable Loss. Average=Peak-4.41

Version: STT-FCCRF-13V01

Report No.: STT2014091524R

Page 25 of 31 Report No.: STT2014091524R

B. Above 1 GHz

EUT:	SONTE Remote	Model Name. :	STRC1009
Temperature:	22 ℃	Relative Humidity:	56%
Pressure:	1010 hPa	Test Date :	2014-09-11
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		1302.060	47.73	5.32	53.05	74.00	-20.95	peak	Harmonics
2	*	1302.060	43.32	5.32	48.64	54.00	-5.36	AVG	Harmonics
3		1736.080	44.63	5.53	50.16	74.00	-23.84	peak	Harmonics
4		1736.080	40.22	5.53	45.75	54.00	-8.25	AVG	Harmonics
5		2170.100	43.34	5.72	49.06	74.00	-24.94	peak	Harmonics
6		2170.100	38.93	5.72	44.65	54.00	-9.35	AVG	Harmonics

Remark:

Factor = Antenna Factor + Cable Loss. Average=Peak-4.41

Page 26 of 31 Report No.: STT2014091524R

EUT:	SONTE Remote	Model Name. :	STRC1009	
Temperature:	22 ℃	Relative Humidity:	56%	
Pressure:	1010 hPa	Test Date :	2014-09-11	
Test Mode :	TX Mode	Polarization:	Vertical	
Test Power :	DC 12V			

No. N	Mk. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	1302.060	43.97	7.34	51.31	74.00	-22.69	peak	Harmonics
2 '	* 1302.060	39.56	7.34	46.90	54.00	-7.10	AVG	Harmonics
3	1736.080	42.03	7.50	49.53	74.00	-24.47	peak	Harmonics
4	1736.080	37.62	7.50	45.12	54.00	-8.88	AVG	Harmonics
5	2170.100	40.66	7.69	48.35	74.00	-25.65	peak	Harmonics
6	2170.100	36.25	7.69	43.94	54.00	-10.06	AVG	Harmonics

Remark:

Factor = Antenna Factor + Cable Loss. Average=Peak-4.41

Page 27 of 31 Report No.: STT2014091524R

5. BANDWIDTH MEASUREMENT

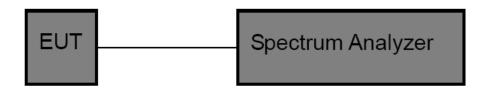
5.1 LIMITS

	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,
20dB Bandwidth	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	434.02 MHz*0.25%= 1.085 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, 2014	Jul. 05. 2015	1 year

5.5 EUT OPERATING CONDITIONS

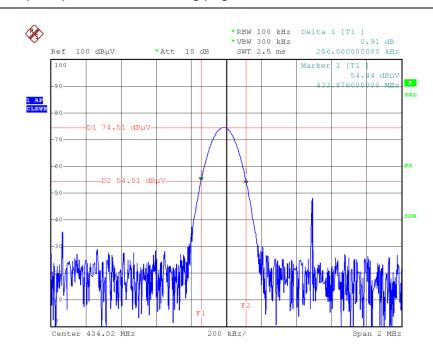
The EUT was set to continuously transmitting in the maximum power during the test. During testing the equipment operating with new battery.

5.6 TEST RESULTS



TX Mode (434.02 MHz)				
Frequency (MHz)	20dB Bandwidth (kHz)	Limit		
434.0200	256.00	1085.05		

Note: Test plots please refer following pages.



Date: 11.SEP.2014 16:37:22

Version: STT-FCCRF-13V01

Report No.: STT2014091524R

Page 29 of 31 Report No.: STT2014091524R

6. DEACTIVATING TIME

6.1 LIMITS

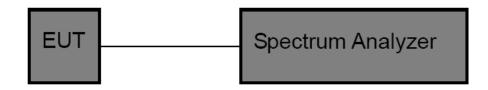
	A manually operated transmitter shall employ a switch that		
1	will automatically deactivate the transmitter within not more		
	than 5 seconds of being released.		
2	A transmitter activated automatically shall cease transmission	within	second
2	after activation.		
	Periodic transmissions at regular predetermined intervals		
	are not permitted. However, polling or supervision		
	transmissions, including data, to determine system integrity		
	of transmitters used in security or safety applications are		
3	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		
	Intentional radiators which are employed for radio control		
4	purposes during emergencies involving fire, security, and		
4	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, 2014	Jul. 05. 2015	1 year

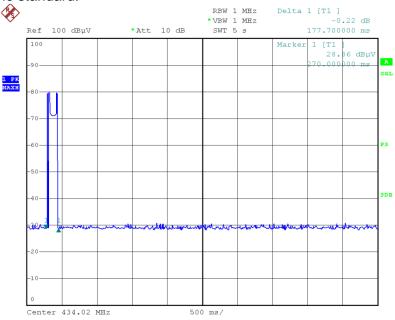


6.5 EUT OPERATING CONDITIONS

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 with the standard.



Date: 11.SEP.2014 16:32:42

Version: STT-FCCRF-13V01

Report No.: STT2014091524R

Page 31 of 31 Report No.: STT2014091524R

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.