EMC Test Report

Class I Permissive Change

Project Number: 4378590

Report Number: 4378590EMC01 **Revision Level:** 0

Client: 3SI Security Systems Inc.

Equipment Under Test: Wireless Tracking Device

Model Number: AT170503US

FCC ID: Q6KAT170503A

IC ID: 5043A-AT170503A

FCC Rule Parts: FCC 47 CFR Part 95

RSS-210, Issue 9

RSS-GEN, Issue 4

ANSI C63.26-2015

Report issued on: 30 October 2018

Test Result: Compliant

Tested by: _____
Shawn McGuinness EMC Engineering Leader

Reviewed by: _____
David Schramm, Operations Manager

Remarks: This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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1 Summary of Test Results

Test Description	Test Specification		Test Result
ERP	FCC 47 CFR §95.2167(a)	RSS-210 Annex C.2(a)	Compliant
Radiated Spurious Emissions	FCC 47 CFR §95.2179	RSS-210 Annex C.2(d)	Compliant

1.1 *Modifications Required for Compliance*

None

2 General Information

2.1 *Client Information*

Name:	3SI Security Systems Inc.
Address:	2055 N Brown Rd, Ste 225
City, State, Zip, Country:	Lawrenceville, GA 30043, USA

2.2 *Test Laboratory*

Name:	SGS North America, Inc.
Address:	620 Old Peachtree Road NW, Suite 100
City, State, Zip, Country:	Suwanee, GA 30024, USA

Environmental Conditions over duration of testing

	Min	Max
Temperature:	24.5 °C	25.6 °C
Relative Humidity:	46.8 %	53.9%

2.3 *General Information of EUT*

Type of Product:	Wireless Tracking Device
Model Name:	CashTracker
Model Number:	AT170503U1 (A Variant of AT170503USthat integrates a Ublox LTE modem, which was deactivated)
IMEI:	352753090915750
FW REV:	13.1.35793
Transmit Frequency:	216.475 MHz
Antenna:	PCB Trace
Rated Voltage:	3.7Vdc Battery
Tested Voltage:	3.7Vdc Battery
Sample Received Date:	30 October 2018
Dates of testing:	30 October 2018

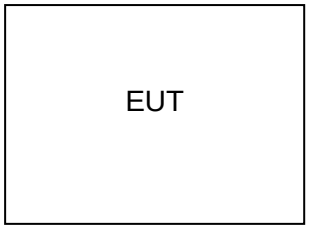
2.4 *Operating Modes and Conditions*

During testing, the device was placed in test mode to transmit continuously at 100% duty cycle.
The device output power in test mode is equivalent to normal operation
Normal operation uses a 20% duty cycle, (200ms on 800ms off).

2.5 *Modifications Required to Compliance*

Manufacturer adjusted output power to a lower power level value so as not to exceed previously filed Peak ERP data. Conducted power was set at-0.5dBm

2.6 *EUT Connection Block Diagram*



2.7 *System Configurations*

Device reference	Manufacturer	Description	Model Number	IME
A	3SI Security	Wireless Tracking Device	AT170503U1	352753090915750

2.8 *Cable List*

Cable reference	Port Name	Start	End	Cable Length (m)	Ferrite installed?	Shielded?
None						

2.9 *Test Photograph*

2.10 *Test Equipment*

Test End Date: 30-Oct-2018 Tester: SKM

Equipment	Model	Manufacturer	Asset Number	Cal Due Date
EMI TEST RECEIVER	ESU8	FLORIDA RF LABS	B085759	17-Aug-2019
RF CABLE	NMS-290-236.2-NMS	FLORIDA RF LABS	B095020	23-Jul-2019
RF CABLE	NFS-290-78.7-NFS	FLORIDA RF LABS	B095019	24-Jul-2019
RF CABLE	SF106	HUBER & SUHNER	B079659	23-Jul-2019
RF CABLE	SUCOFLEX 100	HUBER & SUHNER	B108523	24-Jul-2019
LOW NOISE AMPLIFIER	TS-PR18	ROHDE & SCHWARZ	15003	27-Jul-2019
ANTENNA, BILOG	JB6	SUNOL	B079690	29-Nov-2018

Note: The equipment calibration period is 1 year.

3 Effective Radiated Power

3.1 *Test Result*

Test Description	Test Specification	Test Result
Effective Radiated Power	§95.2167(a) RSS-210 Annex C.2(a)	Compliant

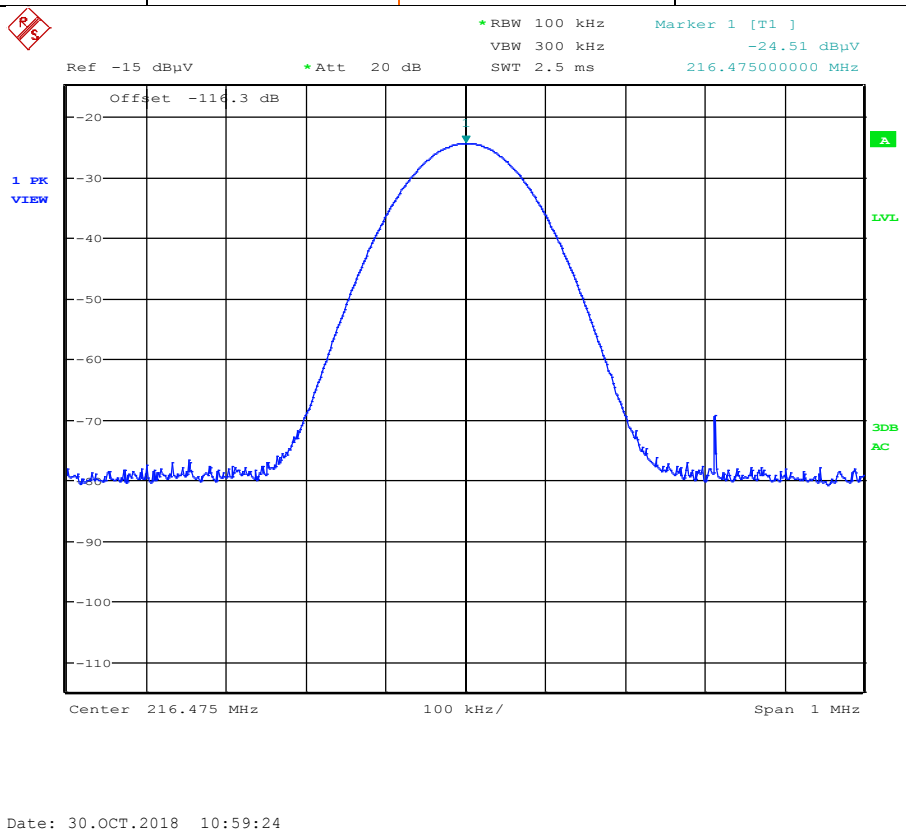
3.2 *Test Method*

Radiated ERP measurements were performed according to ANSI C63.26-2015, Section 5.2.7.
Limit.
For compliance with the FCC rules, the ERP of an LPRS transmitter, other than an LPRS transmitter used with an AMTS station, must not exceed 100 mW e.i.r.p.

For compliance with RSS-210, the peak output power and e.i.r.p. shall not exceed 100 mW and 160 mW, respectively.

3.3 *Test Data*

Beacon Signal Frequency, (MHz)	Measured ERP (dBm)	Limit (mW) FCC / ISED	Limit (dBm) FCC / ISED	Margin (dB) FCC / ISED
216.475	-24.5	100 / 160	20 / 22	-44.3 / -46.3



In addition to the amplifer, cables, and antenna factors, the offset includes a -95.2dB adjustment to convert dBµV/m field strength at 3 meters to an ERP measurement in dBm.

4 Radiated Spurious Emissions

4.1 *Test Result*

Test Description	Test Specifications	Test Result
Radiated spurious emissions	§95.2179 RSS-210 Annex C.2(d)	Compliant

4.2 *Test Method*

Radiated spurious emissions measurements were performed according to ANSI C63.26-2015, Section 5.5. EUT was tested at 3 meters distance.

Limit:
The attenuation requirements are:

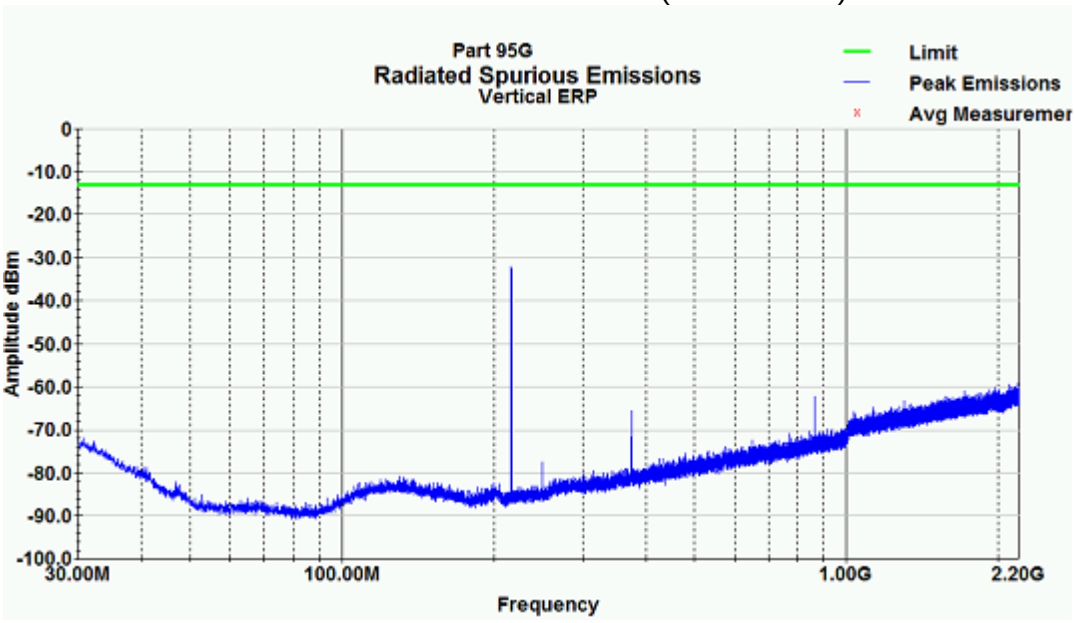
1) 43 + 10 log (P) dB on any frequency removed from the channel center frequency by more than 35 kHz (Per Section 95.2179 of the FCC rules)
2) 55 + 10 log10 p dB or to the general field strength limits specified in RSS-Gen, whichever is less stringent, for emissions at frequencies more than 35 kHz away from the channel center frequency. (Per RSS-210, Annex C.2)

4.3 *Test Site*

10m Absorber Lined Shielded Enclosure (ALSE), Suwanee, GA

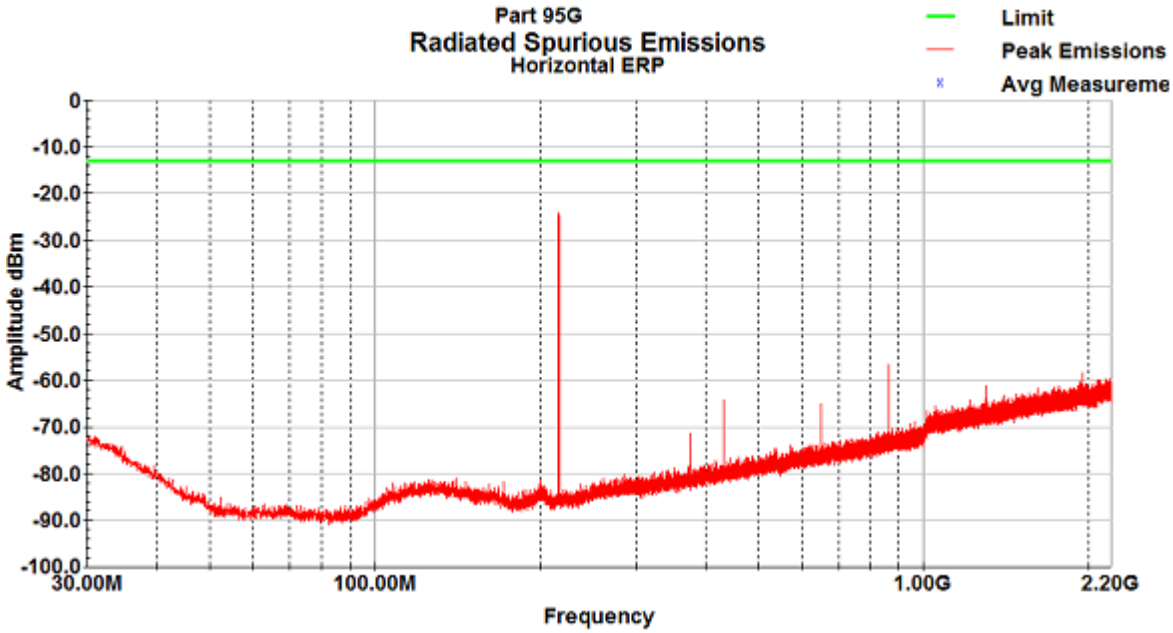
4.4 *Test Data*

Vertical Radiated Emissions Plot (30-2200MHz)



No spurious emissions within 20dB of the limit
Worst-case spurious emission was -62.28dBm @ 865.884MHz

Horizontal Radiated Emissions Plot (30-2200MHz)



No spurious emissions within 20dB of the limit
Worst-case spurious emission was -55.65dBm @ 865.884MHz

5 Revision History

Revision Level	Description of changes	Revision Date
0	Initial release	30 October 2018