



Canada

RF Test Report

As per

RSS-210, Issue 10:2020, Annex A & FCC Part 15 Subpart 15.231

Momentarily Operated Devices,
License Exempt Radio Apparatus
on the

CLiK64-TR1, CLiK64-TR2, CLiK64-TR4

Issued by:

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Testing produced for

Prepared by:

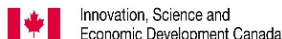
Amir Emami,
Project Engineer



Reviewed by:

Min Xie,
Sr. Project Engineer

See Appendix A for full client &
EUT details.



Registration #
6844A-3



Testing Laboratory
Certificate #2955.02



R-14023, G-20072
C-14498, T-20060



Registration #
CA6844

Client	Active Secure Inc.	
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

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Client	Active Secure Inc.	
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

Report Scope

This report addresses the Radio certification testing and test results of the **CLiK64-TR4**, and is herein referred to as EUT (Equipment Under Test). The EUT was tested for compliance against the following standards:

RSS-210 Issue 10, Annex A:2020

FCC Part 15 Subpart C 15.231

Test procedures, results, justifications, and engineering considerations, if any, follow later in this report.

This report does not imply product endorsement by any government, accreditation agency, or TÜV SÜD Canada Inc.

Opinions or interpretations expressed in this report, if any, are outside the scope of TÜV SÜD Canada Inc. accreditations. Any opinions expressed do not necessarily reflect the opinions of TÜV SÜD Canada Inc., unless otherwise stated.

Client	Active Secure Inc.	
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

Summary

The results contained in this report relate only to the item(s) tested.

EUT:	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4
FCC Certification #, FCC ID:	LW3-CLIK64TR
ISED Certification #, IC:	1747A-CLIK64TR
EUT passed all tests performed	Yes
Tests conducted by	Amir Emami
Report reviewed by	Min Xie

For testing dates, see "Testing Environmental Conditions and Dates".

Client	Active Secure Inc.	
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

Test Results Summary

Standard/Method	Description	Class/Limit	Result
FCC 15.203	Antenna Requirement	Unique	Pass See Justification
FCC 15.231(a) RSS-210(A.1.1)	Periodic Operation Requirements	---	Pass
FCC 15.231(b) RSS-210(A.1.2)	Intentional & Unintentional Fields Strength	---	Pass
FCC 15.231(c) RSS-210(A.1.3)	Emission Bandwidth	---	Pass
FCC 15.231(d)	40.66-40.70 MHz Band	---	N/A
FCC 15.231(e) RSS-210(A.1.4)	Reduced Field Strength	---	N/A
FCC 15.207 RSS-GEN (Table 3)	Power Line Conducted Emissions	Class B	N/A
FCC 15.209 RSS-GEN (Table 4)	Spurious Radiated Emissions	Class B	Pass
Overall Result			Pass

If the product as tested or otherwise complies with the specification, the EUT is deemed to comply with the requirement and is deemed a 'PASS' grade. If not 'FAIL' grade will be issued. Note that 'PASS' / 'FAIL' grade is independent of any measurement uncertainties. A 'PASS' / 'FAIL' grade within measurement uncertainty is marked with a '*'.

Client	Active Secure Inc.	
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
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Notes, Justifications, or Deviations

The following notes, justifications for tests not performed or deviations from the above listed specifications apply:

For the Antenna requirement specified in FCC 15.203, the unit uses a PCB trace antenna.

For the Restricted Bands of operation, the EUT is designed to only operate at 433.92MHz.

The EUT was mounted in three orthogonal axis. Worst case results were obtained with the EUT in the Y-axis. Worst case results are presented. See Appendix B for axis details.

The EUT is available in three models. The CLiK64-TR1, CLiK64-TR2, and CLiK64-TR4. All three models are electrically identical and the only difference between them is the plastic enclosure which corresponds to and enables access to 1, 2 or 4 buttons respectively. Therefore, only the CLiK64-TR4 was tested and is representative of the other models.

Power line conducted emissions was not applicable since the EUT is a battery operated device. It uses a CR2032 coin cell battery.

Sample Calculation(s)

Radiated Emission Test

Margin = Limit – (Received Signal + Antenna Factor + Cable Loss – Pre-Amp Gain)

Margin = 50.5dB μ V/m – (50dB μ V + 10dB + 2.5dB – 20dB)

Margin = 8.0 dB (pass)

Client	Active Secure Inc.	
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
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Applicable Standards, Specifications and Methods

- ANSI C63.4:2014 Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
- ANSI C63.10:2013 American National Standard For Testing Unlicensed Wireless Devices
- CFR 47 FCC 15 Subpart C Code of Federal Regulations – Radio Frequency Devices, Intentional Radiators
- RSS-GEN Issue 5 A1:2019 General Requirements and Information for the Certification of Radio Apparatus
- RSS-210 Issue 10:2020 Licence-Exempt Radio Apparatus: Category I Equipment
- ISO 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories

Client	Active Secure Inc.	
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

Document Revision Status

Revision	Date	Description	Initials
000	May 17, 2022	Initial Release	AE
-	-	-	-

Client	Active Secure Inc.	
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

Definitions and Acronyms

The following definitions and acronyms are applicable in this report.
See also ANSI C63.14.

AE – Auxiliary Equipment. A digital accessory that feeds data into or receives data from another device (host) that in turn, controls its operation.

BW – Bandwidth. Unless otherwise stated, this refers to the 6 dB bandwidth.

EMC – Electro-Magnetic Compatibility. The ability of an equipment or system to function satisfactorily in its electromagnetic environment without introducing intolerable electromagnetic disturbances to anything in that environment.

EMI – Electro-Magnetic Immunity. The ability to maintain a specified performance when the equipment is subjected to disturbance (unwanted) signals of specified levels.

EUT – Equipment Under Test. A device or system being evaluated for compliance that is representative of a product to be marketed.

ITE – Information Technology Equipment with a primary function(s) of entry, storage, display, retrieval, transmission, processing, switching, or control, of data.

LISN – Line Impedance Stabilization Network

NCR – No Calibration Required

RF – Radio Frequency

Client	Active Secure Inc.	
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

Testing Facility

Testing for EMC on the EUT was carried out at TÜV SÜD Canada testing lab near Toronto, Ontario. The testing lab has calibrated 3m semi-anechoic chambers which allow measurements on a EUT that has a maximum width or length of up to 2m and a height of up to 3m. The testing lab also has a calibrated 10m Open Area Test Site (OATS). The chambers are equipped with a turntable that is capable of testing devices up to 5000lb in weight and are equipped with a mast that controls the polarization and height of the antenna. Control of the mast occurs in the control room adjoining the shielded chamber. This facility is capable of testing products that are rated for single phase or 3-phase AC input and DC capability is also available. Radiated emission measurements are performed using a BiLog antenna and a Horn antenna where applicable. Conducted emissions, unless otherwise stated, are performed using a LISN and using the vertical ground plane if applicable.

Calibrations and Accreditations

The 3m semi-anechoic chamber is registered with Federal Communications Commission (FCC, CA6844), Innovation, Science and Economic Development Canada (ISED, 6844A-3) and Voluntary Control Council for Interference (VCCI, R-14023, G-20072, C-14498, and T-20060). This chamber was calibrated for Normalized Site Attenuation (NSA) using test procedures outlined in ANSI C63.4 "Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz". The chamber is lined with ferrite tiles and absorption cones to minimize any undesired reflections. The NSA data is kept on file at TÜV SÜD Canada. For radiated susceptibility testing, a 16 point field calibration has been performed on the chamber. The field uniformity data is kept on file at TÜV SÜD Canada. TÜV SÜD Canada Inc. is accredited to ISO 17025 by A2LA with Testing Certificate #2955.02. The laboratory's current scope of accreditation listing can be found as listed on the A2LA website. All measuring equipment is calibrated on an annual or biennial basis as listed for each respective test.

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Testing Environmental Conditions and Dates

Following environmental conditions were recorded in the facility during time of testing

Date	Test	Initials	Temperature (°C)	Humidity (%)	Pressure (kPa)
April 18, 2022	Radiated Emissions	AE	22.7	17.0	101.4

Client	Active Secure Inc.	 Canada
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Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

Detailed Test Results Section

Client	Active Secure Inc.	
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

Periodic Operational Requirements

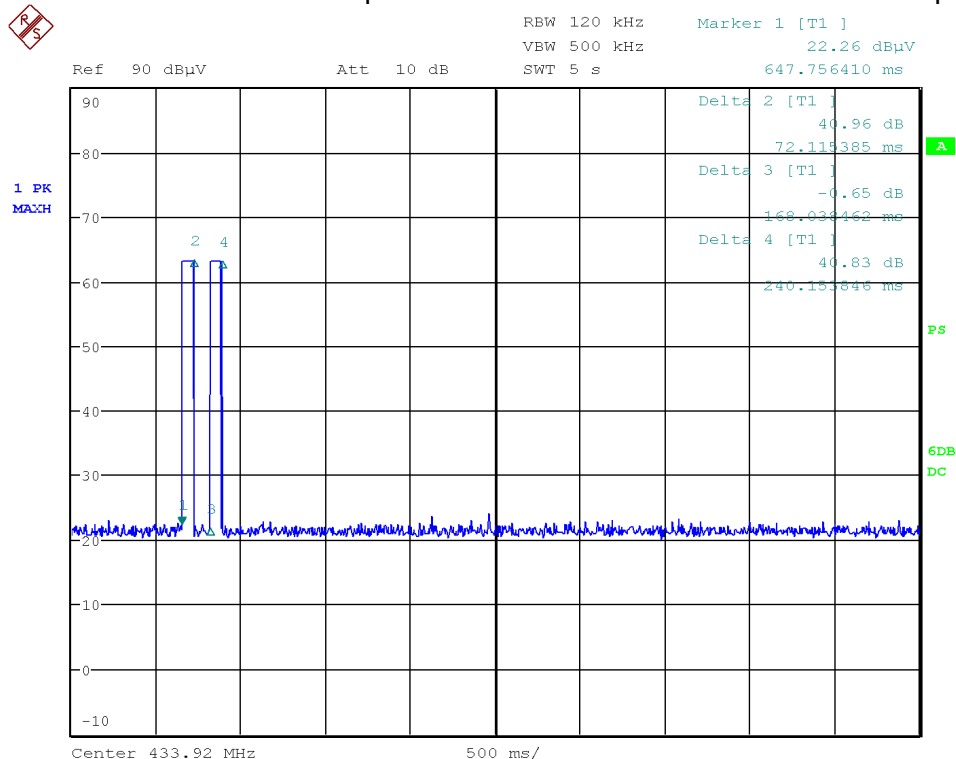
The limit is as specified in FCC 15.231(a) and RSS-210 (A.1.1).

The intentional radiator is restricted to the transmission of a control signal. Continuous transmissions, voice, video and the radio control of toys are not permitted.

FCC 15.231(a)(1)

A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds after being released.

Each key fob pushbutton initiates a single RF transmission sequence only. The transmitter was verified to stop transmission within 5 seconds of manual operation.



FCC 15.231(a)(2)

A transmitter activated automatically shall cease transmissions within 5 seconds after activation.

Not Applicable – The EUT does not activate automatically.

Client	Active Secure Inc.	
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FCC 15.231(a)(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.

Not Applicable – The EUT does not transmit periodically at predetermined intervals and does not transmit polling or supervision transmissions.

FCC 15.231(a)(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.

Not Applicable.

FCC 15.231(a)(5)

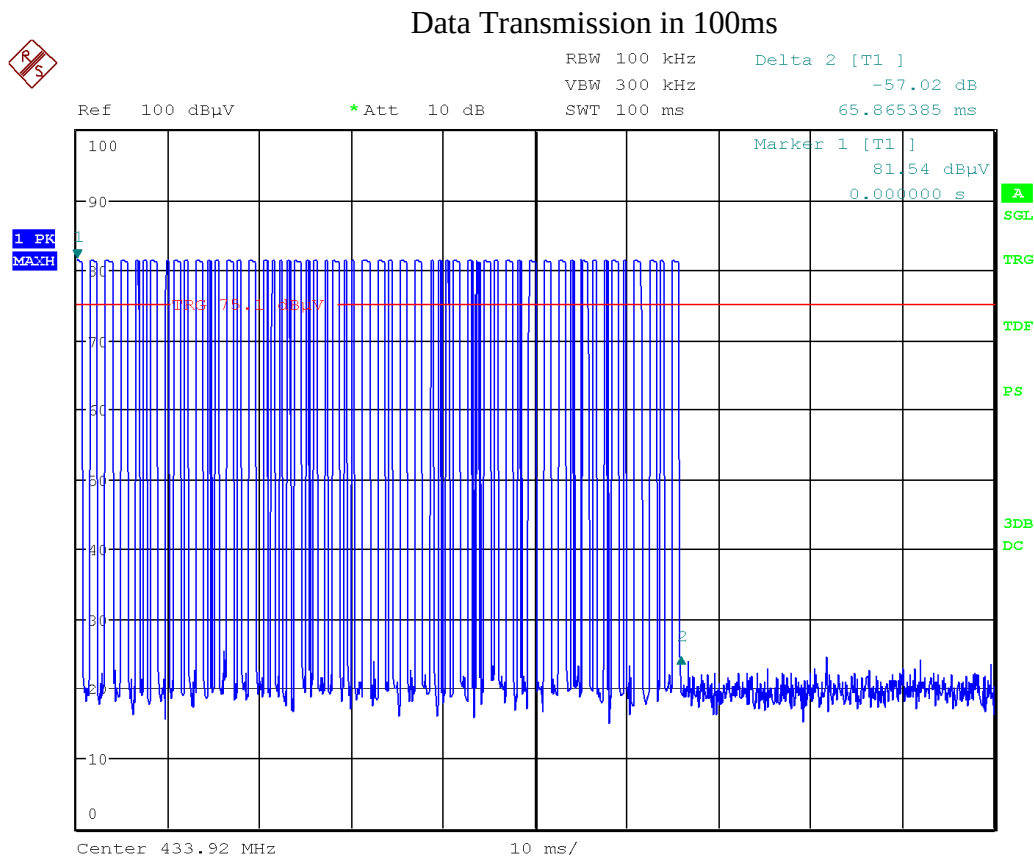
Transmissions of set up information for security systems may exceed the transmission duration limits in paragraphs (1) and (2) above, provided such transmissions are under the control of a professional installer and do not exceed 10 seconds after a manually operated switch is released or a transmitter is activated automatically. Such set up information may include data.

Not Applicable.

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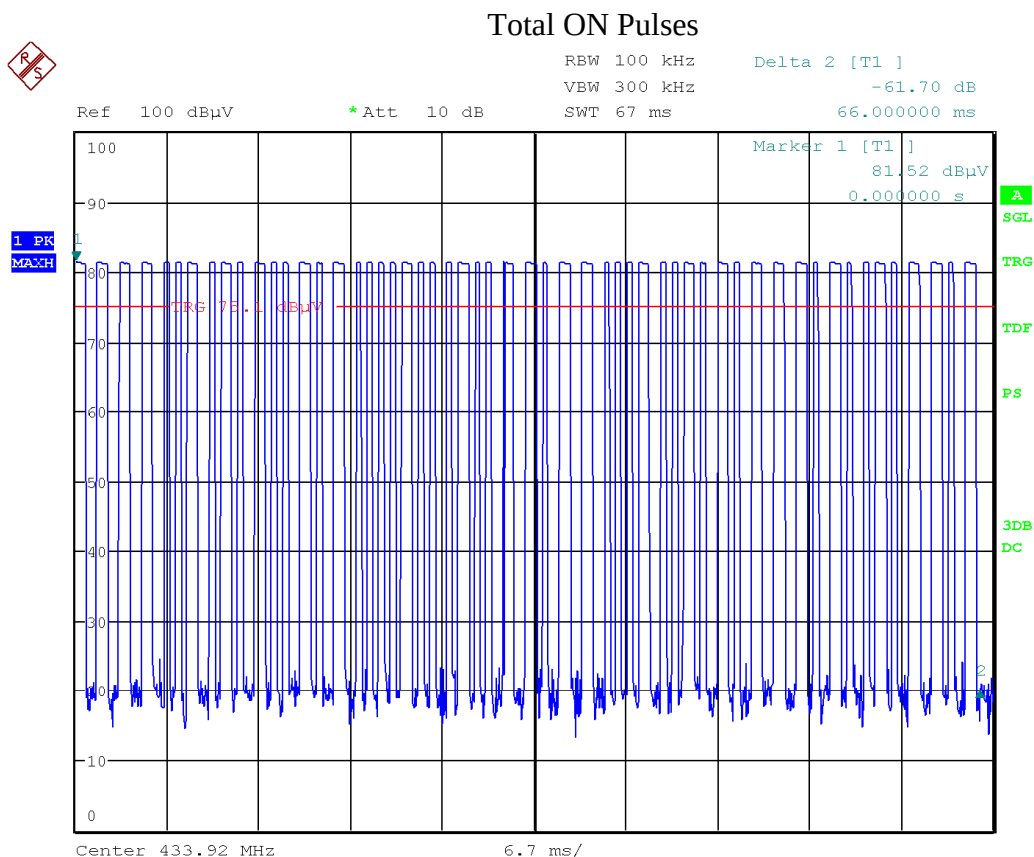
Duty Cycle Calculation

The transmitted data packet is a fixed length, OOK modulated packet. The packet contains two types of pulses. One with a long pulse width and another with a short pulse width.



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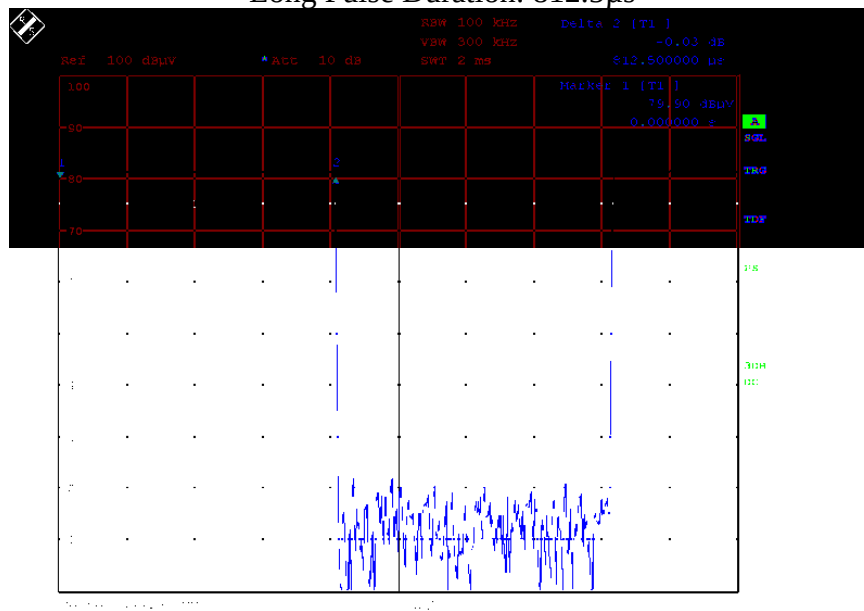
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Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	



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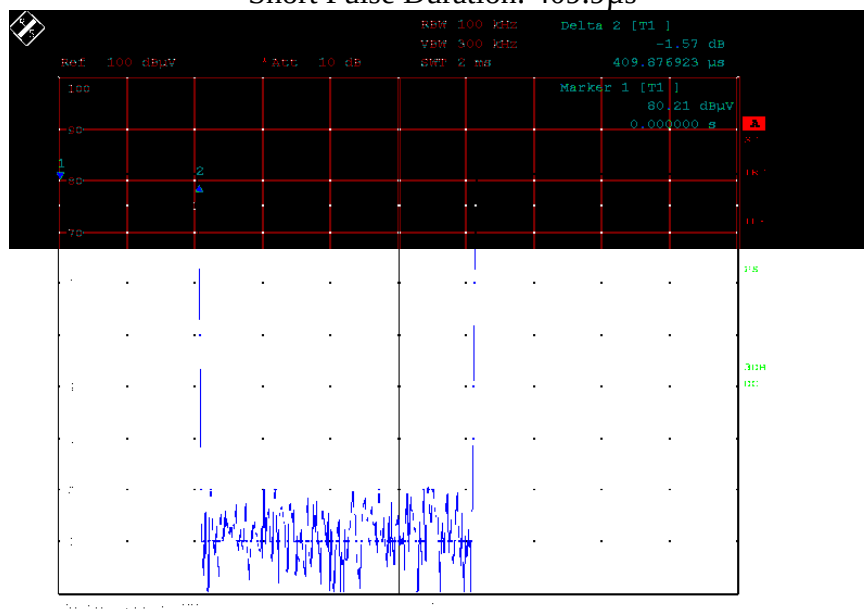
Client	Active Secure Inc.	 Canada
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

Long Pulse Duration: 812.5µs



Delta 2 Duration: 812.500 µs

Short Pulse Duration: 409.9µs



Delta 2 Duration: 409.877 µs

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There are a total of 26 long pulses and 29 short pulses in the pulse train.

The total ON time in the pulse train:

$(26 \times 812.5\mu s) + (29 \times 409.9\mu s)$

$21125.0\mu s + 11887.1\mu s = 33012.1\mu s = 33.012ms$ (Total ON time)

Duty Cycle correction factor:

$$20 \log \left(\frac{33.012ms}{100ms} \right) = -9.63 dB$$

Test Equipment List

Equipment	Model No.	Manufacturer	Last Calibration Date	Next Calibration Date	Asset #
Spectrum Analyzer	ESU 40	Rohde & Schwarz	Feb. 11, 2022	Feb. 11, 2024	GEMC 233
BiLog Antenna	3142-C	ETS-Lindgren	Nov. 25, 2020	Nov. 25, 2022	GEMC 8
Attenuator 6 dB	6N5W-06	Inmet	NCR	NCR	GEMC 345
Pre-Amp 9 kHz – 1 GHz	LNA 6901	Teseq	Feb. 12, 2021	Feb. 12, 2023	GEMC 168
RF Cable <1GHz	LMR-400	LexTec	NCR	NCR	GEMC 274
RF Cable <1GHz	Sucoflex 104A	Huber+Suhner	NCR	NCR	GEMC 271

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Tx Radiated Emissions

The field strength of emissions from momentarily operated intentional radiators shall not exceed the limits outlined in the table below based on the average value measured as per FCC 15.231(b) and RSS-210 (A.1.2).

Fundamental Frequency (MHz)	Field Strength of Fundamental ($\mu\text{V/m}$) at 3m	Field Strength of Spurious Emissions ($\mu\text{V/m}$) at 3m
40.66-40.70	2,250	225
70-130	1,250	125
130-174	¹ 1,250 to 3,750	¹ 125 to 375
174-260	3,750	375
260-470	¹ 3,750 to 12,500	¹ 375 to 1,250
Above 470	12,500	1,250

¹ Linear Interpolation

For a 433.92MHz transmitter, the linear interpolation is:

Fundamental Frequency (MHz)	Field Strength of Fundamental at 3m		Field Strength of Spurious Emissions at 3m	
	($\mu\text{V/m}$)	(dB $\mu\text{V/m}$)	($\mu\text{V/m}$)	(dB $\mu\text{V/m}$)
433.92	10965	80.8	1096.5	60.8

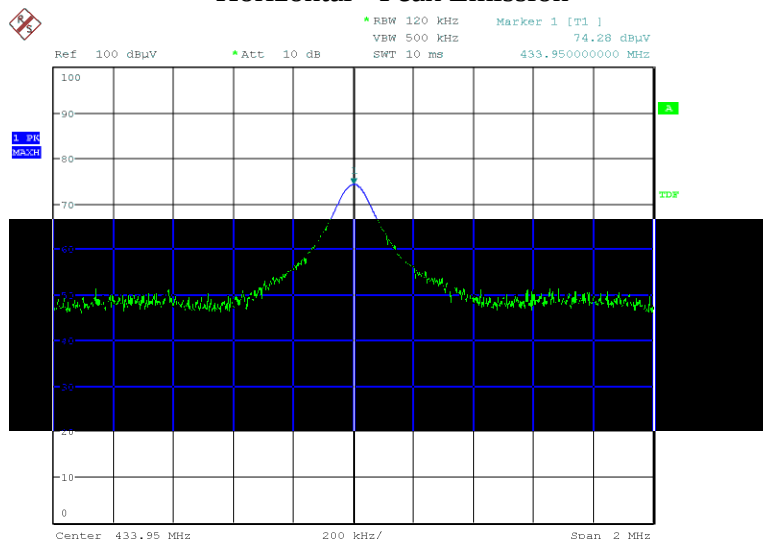
The transmitter is configured for continuous transmit with maximum duty cycle.

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Preliminary Graphs

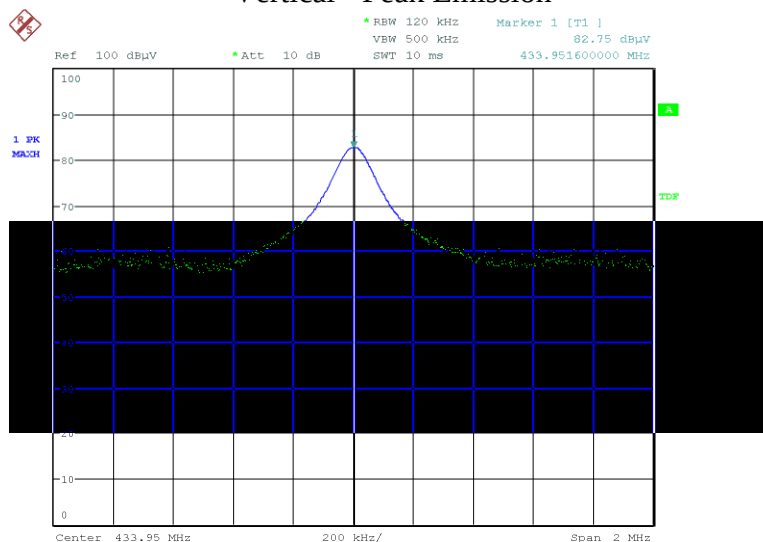
Peak plots are taken at a 3m measurement distance. Worst case was measured in the Y-Axis and are shown below. The marker shows the final value with the transducer factors loaded in.

Horizontal - Peak Emission



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Vertical - Peak Emission



Date: 18.APR.2022 14:03:43

Client	Active Secure Inc.	
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Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

Final Measurements and Results

The EUT passed. For the average radiated emission measurements, the duty cycle correction factor method was used. A duty cycle correction factor of -9.63 was applied to the peak measurement to obtain the average measurement.

The measurements were maximized by rotating the turn table over a full 0-360 rotation and the antenna height was varied from 1 m to 4 m.

Supply		Battery					
Frequency (MHz)	Detector	EUT Axis	Correction Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Test Result
Horizontal							
433.92	PEAK	Y	-2.7	74.3	100.8	26.5	Pass
433.92	AVG	Y	-2.7	64.7	80.8	16.2	Pass
433.92	PEAK	X	-2.7	78.1	100.8	22.7	Pass
433.92	AVG	X	-2.7	68.5	80.8	12.3	Pass
433.92	PEAK	Z	-2.7	82.5	100.8	18.3	Pass
433.92	AVG	Z	-2.7	72.9	80.8	7.9	Pass
867.84	PEAK	Y	6.5	41.4	80.8	39.4	Pass
867.84	AVG	Y	6.5	31.8	60.8	29.0	Pass
3037.44	PEAK	Y	3.2	47.2	80.8	33.6	Pass
3037.44	AVG	Y	3.2	37.6	60.8	23.2	Pass
3471.36	PEAK	Y	3.7	49.5	80.8	31.3	Pass
3471.36	AVG	Y	3.7	39.9	60.8	20.9	Pass

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(Continued)

Frequency (MHz)	Detector	EUT Axis	Correction Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Test Result
Vertical							
433.92	PEAK	Y	-2.7	82.8	100.8	18.1	Pass
433.92	AVG	Y	-2.7	73.1	80.8	7.7	Pass
433.92	PEAK	X	-2.7	82.1	100.8	18.7	Pass
433.92	AVG	X	-2.7	72.5	80.8	8.3	Pass
433.92	PEAK	Z	-2.7	69.8	100.8	31.0	Pass
433.92	AVG	Z	-2.7	60.2	80.8	20.6	Pass
867.84	PEAK	Y	6.5	54.6	80.8	26.2	Pass
867.84	AVG	Y	6.5	45.0	60.8	15.8	Pass
3037.44	PEAK	Y	3.2	48.6	80.8	32.2	Pass
3037.44	AVG	Y	3.2	39.0	60.8	21.8	Pass
3471.36	PEAK	Y	3.7	52.2	80.8	28.6	Pass
3471.36	AVG	Y	3.7	42.6	60.8	18.2	Pass
3905.30	PEAK	Y	4.9	58.2	80.8	22.6	Pass
3905.30	AVG	Y	4.9	48.6	60.8	12.2	Pass

Test Equipment List

Equipment	Model No.	Manufacturer	Last Calibration Date	Next Calibration Date	Asset #
Spectrum Analyzer	ESU 40	Rohde & Schwarz	Feb. 11, 2022	Feb. 11, 2024	GEMC 233
BiLog Antenna	3142-C	ETS-Lindgren	Nov. 25, 2020	Nov. 25, 2022	GEMC 8
Horn Antenna 1 – 18 GHz	3117	ETS-Lindgren	Mar. 11, 2022	Mar. 11, 2024	GEMC 340
Attenuator 6 dB	6N5W-06	Inmet	NCR	NCR	GEMC 345
Pre-Amp 9 kHz – 1 GHz	LNA 6901	Teseq	Feb. 12, 2021	Feb. 12, 2023	GEMC 168
Pre-Amp 1 – 26.5 GHz	HP 8449B	HP	Mar. 11, 2022	Mar. 11, 2024	GEMC 189
RF Cable <1GHz	LMR-400	LexTec	NCR	NCR	GEMC 274
RF Cable <1GHz	Sucoflex 104A	Huber+Suhner	NCR	NCR	GEMC 271
RF Cable >1GHz	EMC2	MegaPhase	NCR	NCR	GEMC 369

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Tx Spurious Radiated Emissions

Purpose

The purpose of this test is to ensure that the RF energy unintentionally emitted from the EUT does not exceed the limits listed below as defined in the applicable test standard, as measured from a receiving antenna. This helps protect broadcast radio services such as television, FM radio, pagers, cellular telephones, emergency services, and so on, from unwanted interference.

Limits and Method

The method is as defined in Section 12.2 of FCC KDB 558074 and ANSI C63.10.

The limits, as defined in 15.247(d) for unintentional radiated emissions, apply for those emissions that fall in the restricted bands, as defined in Section 15.205(a). These emissions must comply with the radiated emission limits specified in Section 15.209(a).

Frequency	Field Strength Limit ($\mu\text{V/m}$)	Field Strength at 3m (dB $\mu\text{V/m}$)
0.009 MHz – 0.490 MHz	2400/F(kHz) ^a (at 300m)	128.5 to 93.8 ^a
0.490 MHz – 1.705 MHz	24000/F(kHz) ^a (at 30m)	73.8 to 63.0 ^a
1.705 MHz – 30 MHz	30 ^a (at 30m)	69.5 ^a
30 MHz – 88 MHz	100 ^a (at 3m)	40.0 ^a
88 MHz – 216 MHz	150 ^a (at 3m)	43.5 ^a
216 MHz – 960 MHz	200 ^a (at 3m)	46.0 ^a
Above 960 MHz	500 ^a (at 3m)	54.0 ^a
Above 1000 MHz	500 ^b (at 3m)	54.0 ^b
Above 1000 MHz	5 mV/m ^c (at 3m)	74.0 ^c

^aLimit is with Quasi Peak detector with bandwidths as defined in CISPR-16-1-1

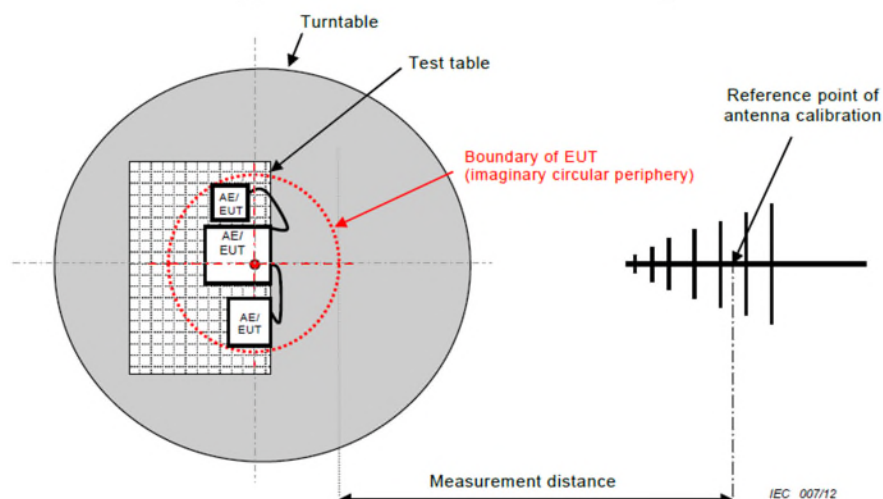
^bLimit is with 1 MHz measurement bandwidth and using an Average detector

^cLimit is with 1 MHz measurement bandwidth and using a Peak detector

Based on ANSI C63.4 Section 4.2, if the Peak detector measurements do not exceed the Quasi-Peak limits, where defined, then the EUT is deemed to have passed the requirements.

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Typical Radiated Emissions Setup



Measurement Uncertainty

The expanded measurement uncertainty is calculated in accordance with CISPR 16-4-2 and is $\pm 4.25\text{dB}$ for 30MHz – 1GHz and $\pm 4.93\text{dB}$ for 1GHz – 18GHz with a 'k=2' coverage factor and a 95% confidence level.

Preliminary Graphs

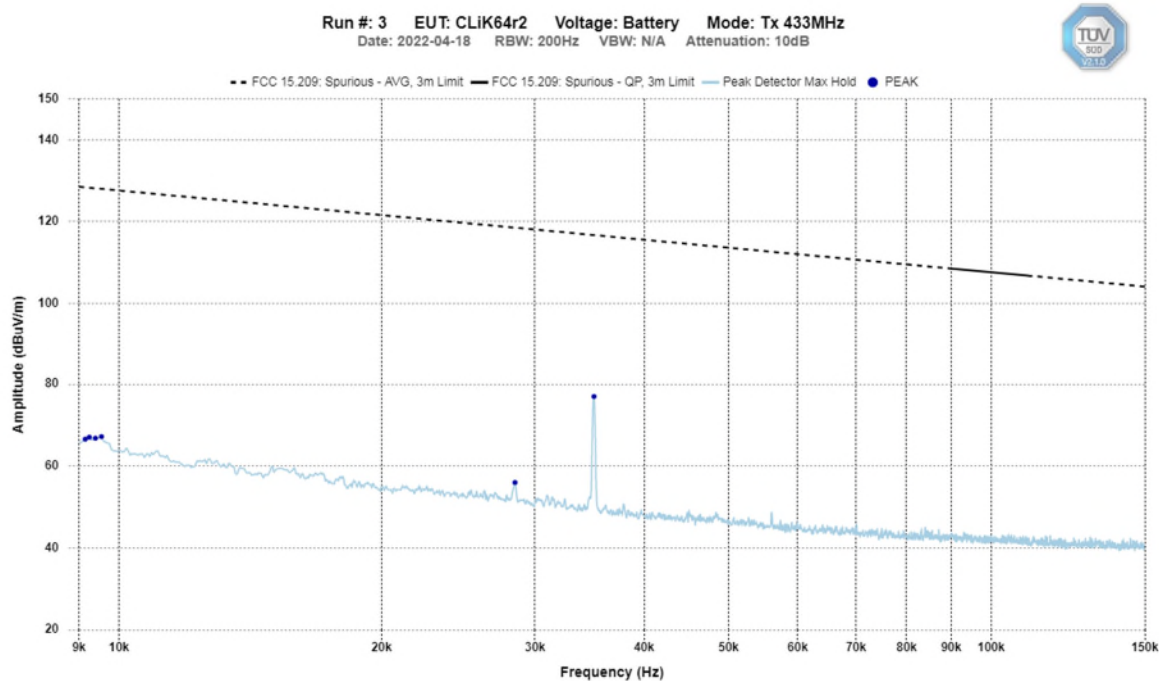
The graphs shown below are maximized peak measurement graphs measured with a resolution bandwidth greater than or equal to the final required detector over a full 0-360°. This peaking process is done as a worst case measurement and enables the detection of frequencies of concern for final measurement. For final measurements with the appropriate detector, where applicable, please refer to the tables under Final Measurements.

In accordance with FCC Part 15, Subpart A, Section 15.33, the device was scanned to the 10th harmonic (a minimum of 4339.2 MHz).

Devices scanned may be scanned at alternate test distances and in accordance with FCC Part 15, Subpart A, Section 15.31, an extrapolation factor of 20 dB/decade was used above 30 MHz and 40 dB/decade below 30 MHz. For example for 1 meter measurements, an extrapolation factor 9.5 dB from 20 Log (1m / 3m) is applied.

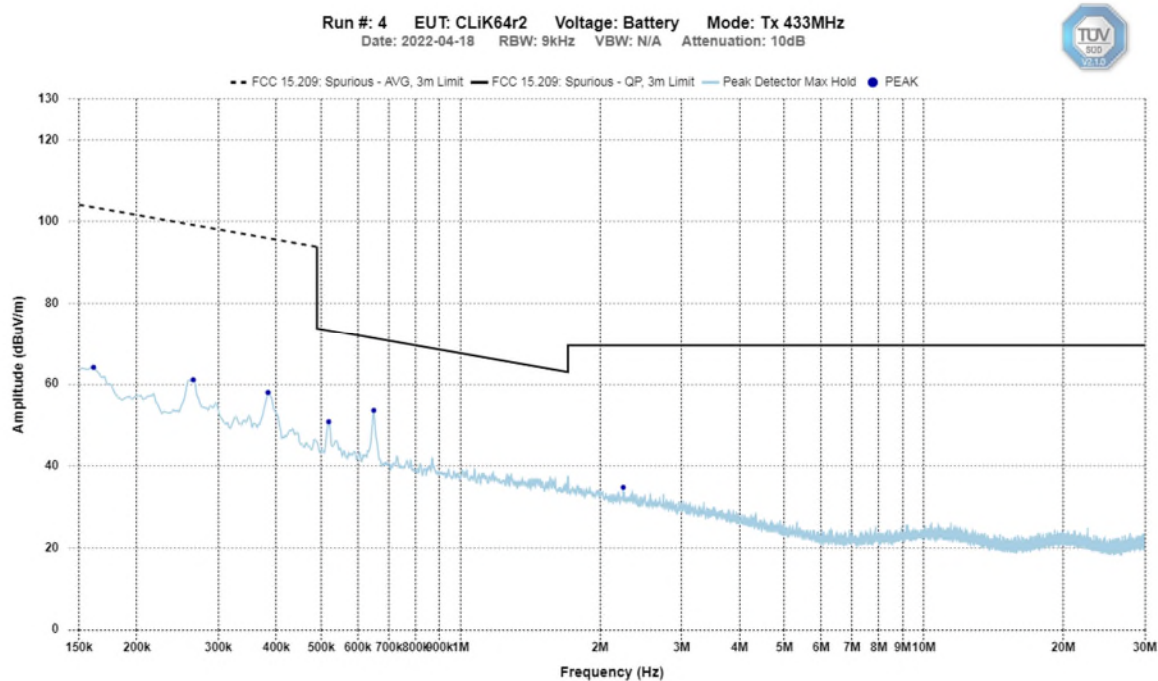
Client	Active Secure Inc.	 Canada
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

9 kHz – 150 kHz
Peak Emission Graph



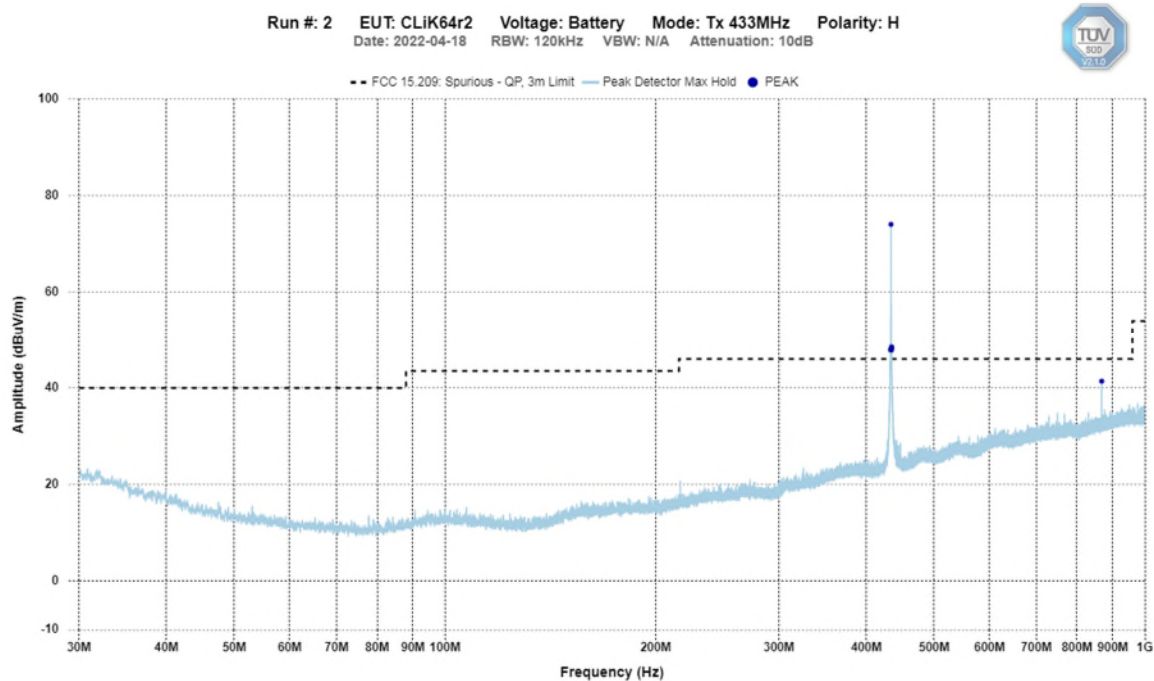
Client	Active Secure Inc.	 Canada
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

150 kHz – 30 MHz Peak Emission Graph



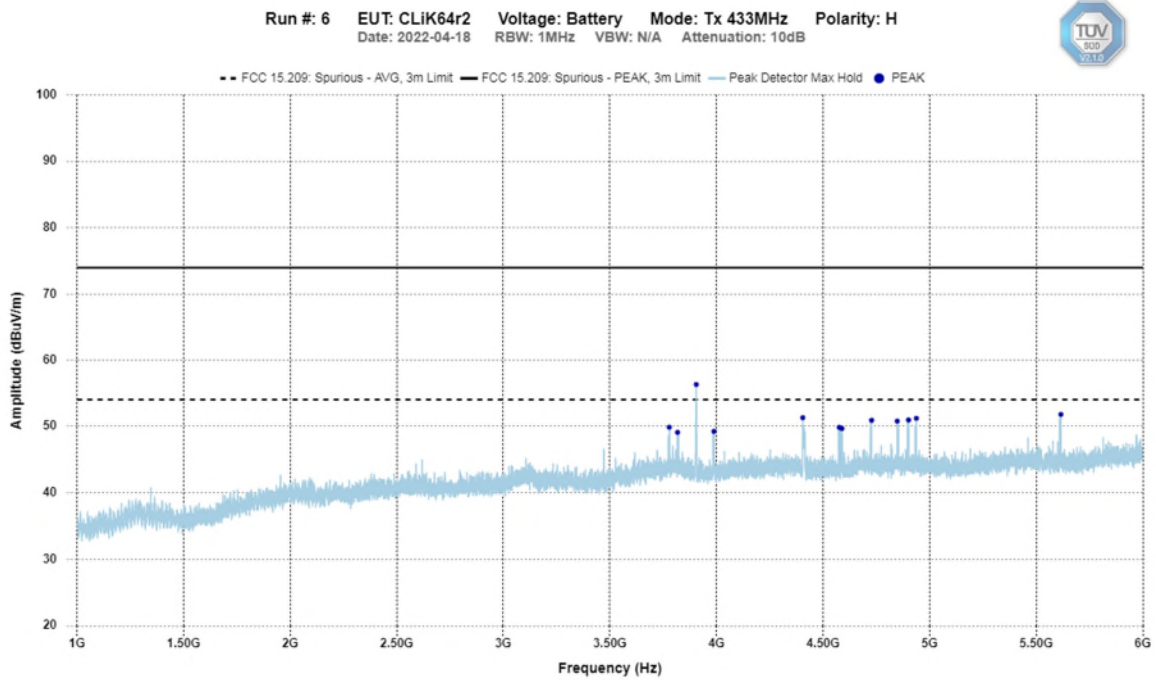
Client	Active Secure Inc.	 Canada
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

30 MHz – 1 GHz Horizontal - Peak Emission Graph



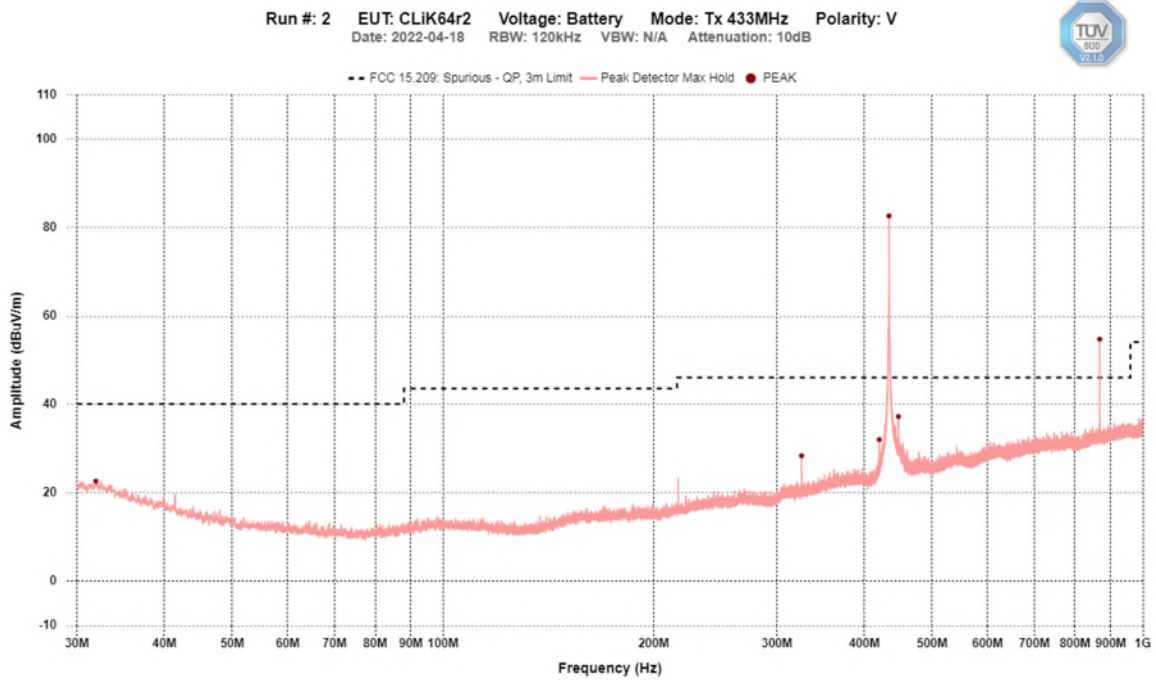
Client	Active Secure Inc.	 Canada
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

1 GHz – 6 GHz Horizontal - Peak Emission Graph



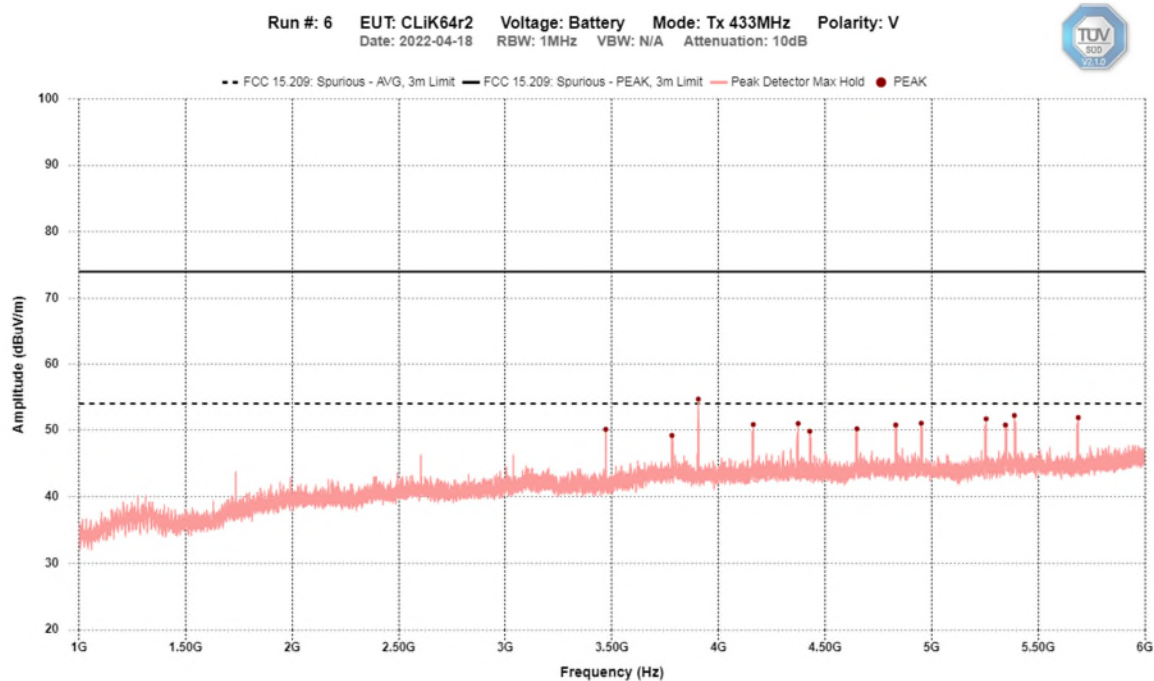
Client	Active Secure Inc.	 Canada
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

30 MHz – 1 GHz
Vertical - Peak Emission Graph



Client	Active Secure Inc.	 Canada
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

1 GHz – 6 GHz
Vertical - Peak Emission Graph



Client	Active Secure Inc.	
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

Final Measurements and Results

The EUT passed.

In accordance with 15.247(d), only frequencies exceeding the 15.209 limit that occur within the bands listed in 15.205 need to be verified with a final detector. Emissions outside the restricted bands were measured for informational purposes.

The measurements were maximized by rotating the turn table over a full 0-360 rotation and the antenna height was varied from 1 m to 4 m.

Supply		Battery				
Frequency (Hz)	Detector	Correction Factor (dB)	Level (dBuV/m)	AVG Limit (dBuV/m)	AVG Margin (dB)	Test Result
Horizontal						
5.616G	AVG	7.4	34.4	54.0	19.6	Pass
4.405G	AVG	5.7	33.7	54.0	20.3	Pass
4.938G	AVG	6.5	34.0	54.0	20.0	Pass
4.902G	AVG	6.4	34.0	54.0	20.0	Pass
4.728G	AVG	6.7	33.9	54.0	20.1	Pass
4.848G	AVG	6.4	33.9	54.0	20.1	Pass
3.779G	AVG	5.3	33.5	54.0	20.5	Pass
4.576G	AVG	5.9	33.3	54.0	20.7	Pass
4.589G	AVG	5.9	33.4	54.0	20.6	Pass
3.989G	AVG	5.2	33.1	54.0	20.9	Pass
3.818G	AVG	5.3	33.6	54.0	20.4	Pass
Vertical						
5.388G	AVG	7.5	34.4	54.0	19.6	Pass
5.688G	AVG	7.6	34.2	54.0	19.8	Pass
5.256G	AVG	7.2	33.7	54.0	20.3	Pass
4.952G	AVG	6.6	33.9	54.0	20.1	Pass
4.374G	AVG	5.8	33.6	54.0	20.4	Pass
4.163G	AVG	5.7	33.2	54.0	20.8	Pass
4.832G	AVG	6.5	33.8	54.0	20.2	Pass
5.346G	AVG	7.4	34.3	54.0	19.7	Pass
4.650G	AVG	6.4	33.7	54.0	20.3	Pass
4.428G	AVG	5.8	33.5	54.0	20.5	Pass
3.782G	AVG	5.3	33.3	54.0	20.7	Pass

Client	Active Secure Inc.	
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

Test Equipment List

Equipment	Model No.	Manufacturer	Last Calibration Date	Next Calibration Date	Asset #
Spectrum Analyzer	ESU 40	Rohde & Schwarz	Feb. 11, 2022	Feb. 11, 2024	GEMC 233
Loop Antenna	EM 6871	Electro-Metrics	Feb 26, 2021	Feb 26, 2023	GEMC 70
Loop Antenna	EM 6872	Electro-Metrics	Feb 26, 2021	Feb 26, 2023	GEMC 71
BiLog Antenna	3142-C	ETS-Lindgren	Nov. 25, 2020	Nov. 25, 2022	GEMC 8
Horn Antenna 1 – 18 GHz	3117	ETS-Lindgren	Mar. 11, 2022	Mar. 11, 2024	GEMC 340
Attenuator 6 dB	6N5W-06	Inmet	NCR	NCR	GEMC 345
Pre-Amp 9 kHz – 1 GHz	LNA 6901	Teseq	Feb. 12, 2021	Feb. 12, 2023	GEMC 168
Pre-Amp 1 – 26.5 GHz	HP 8449B	HP	Mar. 11, 2022	Mar. 11, 2024	GEMC 189
RF Cable <1GHz	LMR-400	LexTec	NCR	NCR	GEMC 274
RF Cable <1GHz	Sucoflex 104A	Huber+Suhner	NCR	NCR	GEMC 271
RF Cable >1GHz	EMC2	MegaPhase	NCR	NCR	GEMC 369
Emissions Software	V2.1.0	TUV SUD Canada, Inc.	NCR	NCR	GEMC 361

Client	Active Secure Inc.	
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

Occupied Bandwidth

Purpose

The purpose of this test is to ensure that the bandwidth occupied exceeds a stated minimum. This helps ensure the utilization of the frequency allocation is sufficiently wide. This also helps prevent corruption of data by ensuring adequate data separation to distinguish the reception of the intended information.

Limits and Method

The limit is as specified in FCC Part 15.231(c) and RSS-210 (A.1.3).

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

The method is given in ANSI C63.10.

Bandwidth Limit: $433.92\text{MHz} \times 0.25\% = 1084.8\text{kHz}$

Results

The EUT passed.

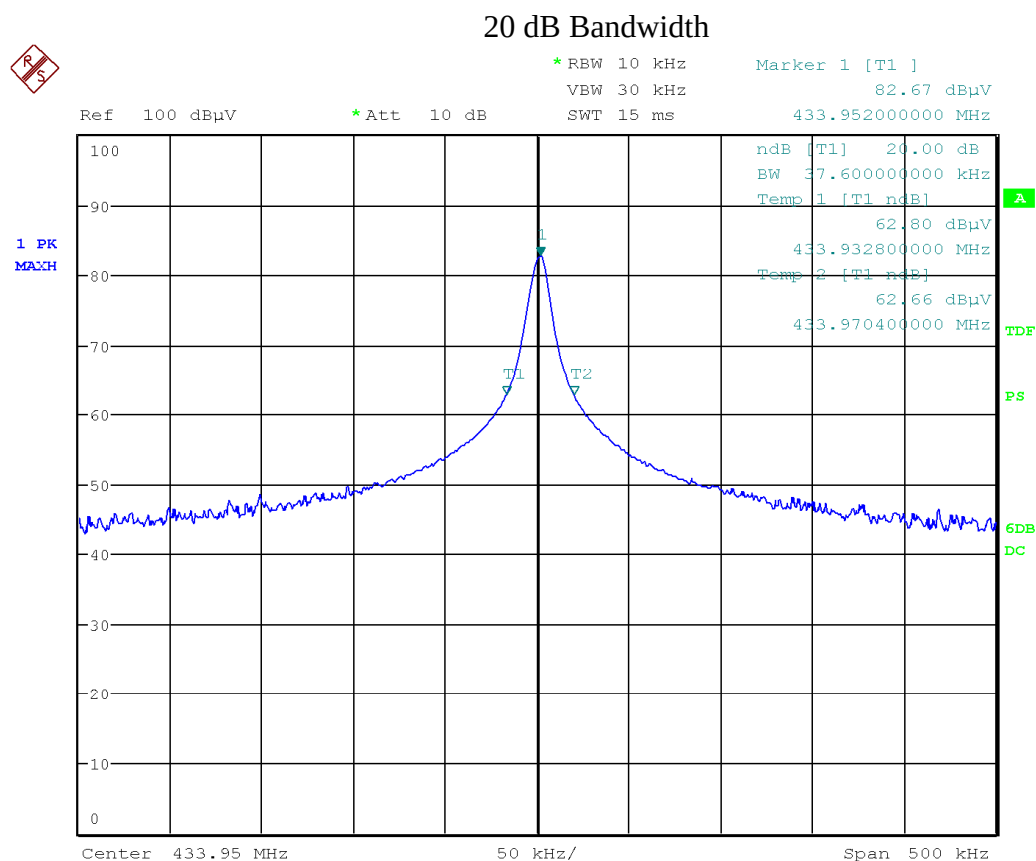
Frequency (MHz)	Modulation	20dB Bandwidth (kHz)	Limit: <0.25% of Center Frequency (kHz)
433.92	OOK	37.6	1084.8

Frequency (MHz)	Modulation	99% Occupied Bandwidth (kHz)	Limit: <0.25% of Center Frequency (kHz)
433.92	OOK	158.8	1084.8

Client	Active Secure Inc.	 Canada
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

Graphs

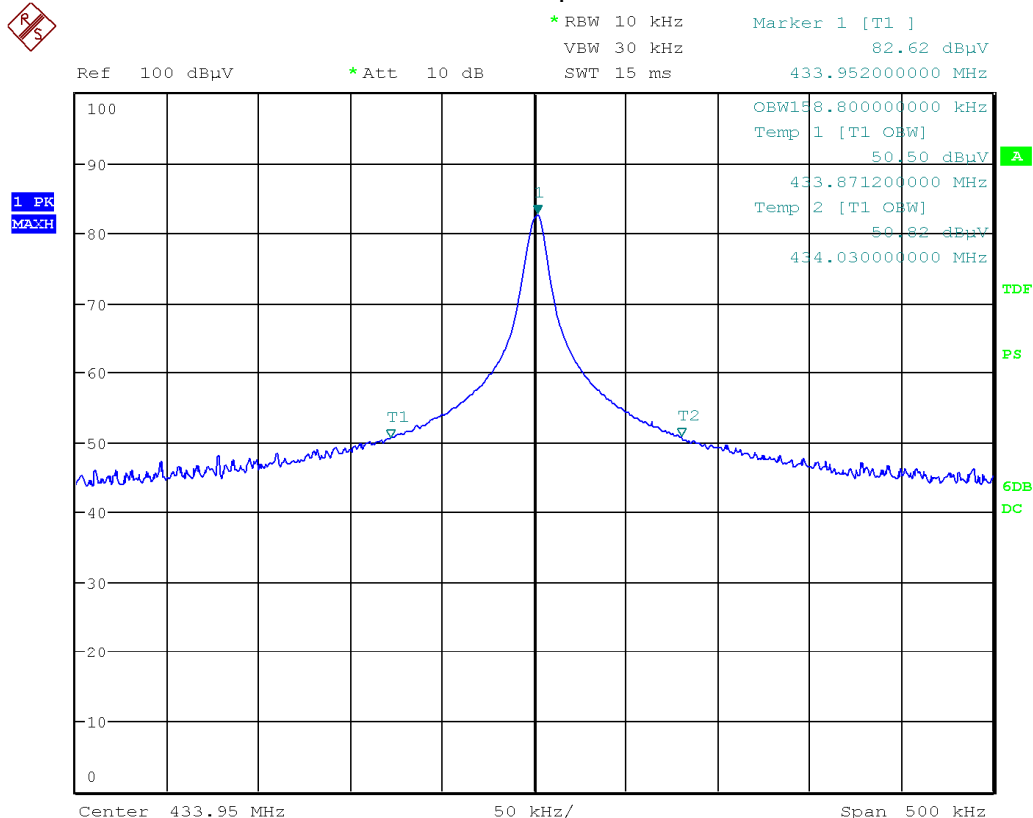
The graphs showed below show the OBW during the operation of the device. This is measured by a max hold on the spectrum analyzer and the highest resolution bandwidth that is sufficiently low to exhibit the 20 dB bandwidth of a channel during operation of the EUT. Max hold is performed for a duration of not less than 1 minute.



Date: 18.APR.2022 14:33:00

Client	Active Secure Inc.	 Canada
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

99% Occupied Bandwidth



Date: 18.APR.2022 14:47:39

Client	Active Secure Inc.	 Canada
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

Test Equipment List

Equipment	Model No.	Manufacturer	Last Calibration Date	Next Calibration Date	Asset #
Spectrum Analyzer	ESU 40	Rohde & Schwarz	Feb. 11, 2022	Feb. 11, 2024	GEMC 233
BiLog Antenna	3142-C	ETS-Lindgren	Nov. 25, 2020	Nov. 25, 2022	GEMC 8
Attenuator 6 dB	6N5W-06	Inmet	NCR	NCR	GEMC 345
Pre-Amp 9 kHz – 1 GHz	LNA 6901	Teseq	Feb. 12, 2021	Feb. 12, 2023	GEMC 168
RF Cable <1GHz	LMR-400	LexTec	NCR	NCR	GEMC 274
RF Cable <1GHz	Sucoflex 104A	Huber+Suhner	NCR	NCR	GEMC 271

Client	Active Secure Inc.	 Canada
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

Appendix A – EUT Summary

Client	Active Secure Inc.	
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

For further details for filing purposes, refer to filing package.

General EUT Description

Client	
Organization / Address	Active Secure Inc. 2828 Kingsway Drive, Unit 6 Oakville, ON, L6J 7M2 Canada
Contact	Terry Orr
Phone	(905) 635-2993
Email	torr@activesecure.ca
EUT Details	
EUT Name	CLiK64-TR
FCC ID	LW3-CLIK64TR
ISED	1747A-CLIK64TR
Equipment Category	Periodic Operation Transmitter
Basic EUT Functionality	Wireless transmitter for door operations (key fob)
Input Voltage	2.5 - 3.1V DC from Coin Cell Battery
Rated Input Current	0.015A
Connectors available on EUT	None
Peripherals Required for Test	None
Release type	Production
Intentional Radiator Frequency	433.92 MHz for Periodic Operation
Modulation	OOK
EUT Configuration	Wireless configured to transmit continuously at max duty cycle

Note the EUT is considered to have been received the date of the commencement of the first test, unless otherwise stated. For a close-up picture of the EUT, see 'Appendix B – EUT and Test Setup Photos'.

Client	Active Secure Inc.	 Canada
Product	CLiK64-TR1, CLiK64-TR2, CLiK64-TR4	
Standard(s)	RSS 210 Issue 10:2020, Annex A FCC Part 15 Subpart 15.231	

Appendix B – EUT and Test Setup Photos

Refer to the files separate from this test report