



Permissive Change **Wireless Test Report**

FCC ID: 2AL8DL191

FCC Rule Part: 15.247

TÜV SÜD Report Number: RD72130366.200

Manufacturer: Strato Innovations, Inc.
Model: Link-It L191

Test Begin Date: August 08, 2017

Test End Date: August 16, 2017

Report Issue Date: September 18, 2017



FOR THE SCOPE OF ACCREDITATION UNDER LAB Code AT-1921

This report must not be used by the client to claim product certification, approval, or endorsement by ANAB, ANSI, or any agency of the Federal Government.

Prepared by: 
Jean Tezil
EMC Engineer
TÜV SÜD America Inc.

Reviewed by: 
Randy Sherian
Lab Manager Durham (RTP)
TÜV SÜD America Inc.

This test report shall not be reproduced except in full. This report may be reproduced in part with prior written consent of TÜV SÜD America Inc. The results contained in this report are representative of the sample(s) submitted for evaluation.

TABLE OF CONTENTS

1	GENERAL	3
1.1	PURPOSE.....	3
1.2	PRODUCT DESCRIPTION	3
1.3	TEST METHODOLOGY AND CONSIDERATIONS	4
2	TEST FACILITIES.....	5
2.1	LOCATION	5
2.2	LABORATORY ACCREDITATIONS/RECOGNITIONS/CERTIFICATIONS	5
2.3	RADIATED EMISSIONS TEST SITE DESCRIPTION	6
2.3.1	<i>Semi-Anechoic Chamber Test Site</i>	6
2.4	CONDUCTED EMISSIONS TEST SITE DESCRIPTION	7
3	APPLICABLE STANDARD REFERENCES.....	8
4	LIST OF TEST EQUIPMENT	8
5	SUPPORT EQUIPMENT	9
6	EQUIPMENT UNDER TEST SETUP BLOCK DIAGRAM	9
7	SUMMARY OF TESTS.....	10
7.1	ANTENNA REQUIREMENT – FCC: 15.203.....	10
7.2	POWER LINE CONDUCTED EMISSIONS – FCC: 15.207	10
7.2.1	<i>Measurement Procedure</i>	10
7.2.2	<i>Measurement Results</i>	10
7.2.3	<i>Radiated Spurious Emissions – FCC: 15.205, 15.209</i>	12
7.2.3.1	Measurement Procedure	12
7.2.3.2	Duty Cycle Correction	12
7.2.3.3	Measurement Results	13
7.2.3.4	Sample Calculation:	16
8	MEASUREMENT UNCERTAINTY	17
9	CONCLUSION	17

1 GENERAL

1.1 Purpose

The purpose of this report is to demonstrate compliance with Part 15 Subpart C of the FCC's Code of Federal Regulations for a Class II Permissive Change.

The Link-it device integrates a RFID transceiver, FCC ID: 2AL8DL191, with a planar Inverted F type antenna.

1.2 Product description

The RFID module within the Link-it host performs as an interrogator with a wireless data link. The device hardware, comprised of two radio modules with a controller and a 3.8VDC battery, implements the required functions of interacting with passive RFID tags and maintaining a control and data link with a remote data terminal. The Bluetooth module FCC ID: A8TBM77SPPSYC2A, has been pre-approved and integrates its own antenna.

- RFID transmission is compliant with the GS1 Gen2 standard for wireless identification in the 860 MHz to 960 MHz frequency range. Further details provided in the references section of this document.
- Data transmission is via Bluetooth radio, Serial Port Profile, in the 2.4 GHz band.

The controller executes firmware which processes data and commands and also governs module operation. The firmware is configured to ensure that only one radio transmitter is active at any given moment.

Technical Information:

The 3 modes of operation are detailed as follows. All 3 modes are addressed in this report

Mode of Operation	Frequency Range (MHz)	Number of Channels	Modulation	Profiles
1	902.75-927.25	50	ASK	M4 250
2	902.75-927.25	50	ASK	FM0-40
3	902.75-927.25	50	ASK	FM0-400

Antenna Type: Planar Inverted F-Antenna design (PIFA)

Antenna Gain (@ 915MHz): 1.43 dBi

Operating Voltage: 3.8Vdc

Power Settings: Highest power by default

Manufacturer Information:

Strato Innovations, Inc.
9444 Singer Circle
Port Charlotte, FL 33981
USA

EUT Serial Numbers: L1910000001

Test Sample Condition: The test samples were provided in good working order with no visible defects.

1.3 Test Methodology and Considerations

For radiated emissions, The EUT was evaluated powered on a fully charged battery and programmed to transmit continuously on the single channel respectively. The low, mid, and high channels for each mode of operation were evaluated and are reported for the worse case orientation, which is the Z-plane.

Only radiated emissions and AC powerline conducted emissions were performed to demonstrate that the RFID module, integrated in the new host system with new antenna, complies with FCC Rule Part 15.247.

2 TEST FACILITIES

2.1 Location

The radiated and conducted emissions test sites are located at the following address:

TÜV SÜD America Inc.
2320 Presidential Drive, Suite 101
Durham, NC 27703
Phone: (919) 381-4235

2.2 Laboratory Accreditations/Recognitions/Certifications

TÜV SÜD America Inc. is accredited to ISO/IEC 17025 by ANSI-ASQ National Accreditation Board under their ANAB program and has been issued certificate number AT-1921 in recognition of this accreditation. Unless otherwise specified, all test methods described within this report are covered under the ISO/IEC 17025 scope of accreditation.

The Semi-Anechoic Chamber Test Site and Conducted Emissions Site have been fully described, submitted to, and accepted by the FCC and Innovation, Science and Economic Development (ISED) Canada.

FCC Registered Test Site Number: 637011
ISED Canada Test Site Registration Number: 20446

2.3 Radiated Emissions Test Site Description

2.3.1 Semi-Anechoic Chamber Test Site

The Semi-Anechoic Chamber Test Site consists of a 18' x 28' x 18' shielded enclosure. The chamber is lined with Samwha Electronics Co. LTD Ferrite Absorber, model number SFA300 (HSN-1). The ferrite tile is 10cm x 10 cm and weighs approximately 1.4lbs. These tiles are mounted on steel panels and installed directly on the inner walls of the chamber. On top of the ferrite tiles is DMAS HT-45 (Dutch Microwave Absorber Solutions) hybrid absorber on all walls except the wall behind the antenna mast which has a shorter DMAS HT-25 absorber.

The turntable is 1.50m in diameter and is located 150cm from the back wall of the chamber. The chamber is grounded via 1 - 8' copper ground rod, installed at the center of the back wall, it is bound to the ground plane using short #6 copper wire. The turntable is all steel, flush mounted table installed in an all steel frame. The table is remotely operated from inside the control room located 25' from the turntable. The turntable is electrically bonded to the surrounding ground plane via steel fingers installed on the edge of the turn table. The steel fingers make constant contact with the ground plane.

Behind the turntable is a 2' x 6' x 1.5' deep shielded pit used for support equipment if necessary. The pit is equipped with 2 - 4" PVC chase from the turntable to the pit that allow for cabling to the EUT if necessary. The underside of the turntable can be accessed from the pit so cables can be supplied to the EUT from the pit.

A diagram of the Semi-Anechoic Chamber Test Site is shown in Figure 2.3-1 below:

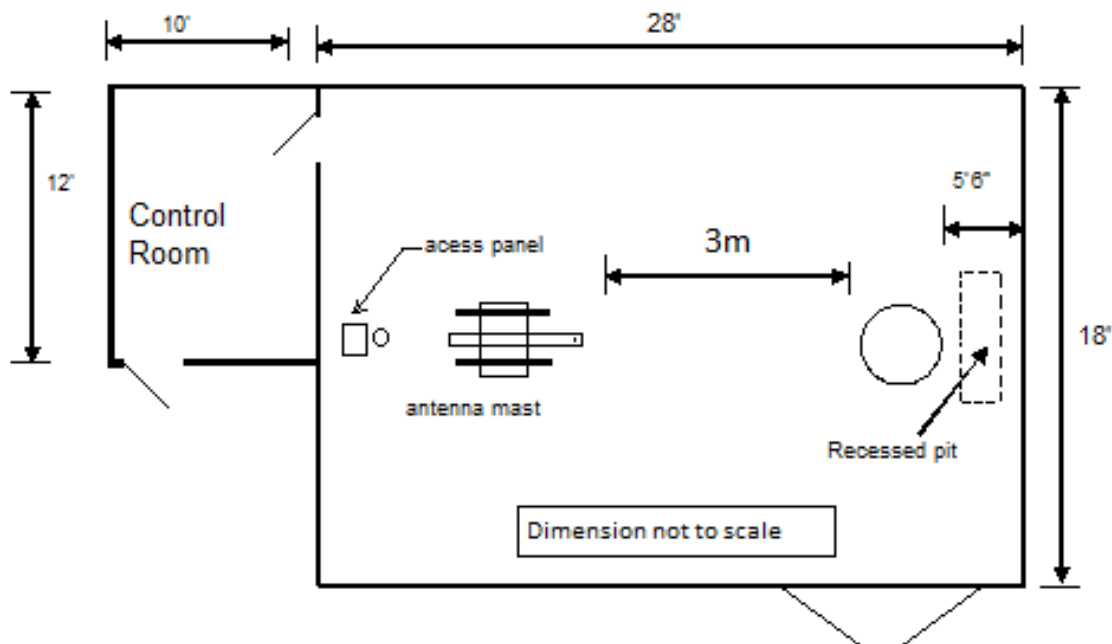


Figure 2.3-1: Semi-Anechoic Chamber Test Site

2.4 Conducted Emissions Test Site Description

The AC mains conducted EMI site is located in the main EMC lab. It consists of an 8' x 10' sheet galvanized steel horizontal ground reference plane (GRP) bonded every 6" to an 8' X 8' aluminum vertical ground plane.

A diagram of the room is shown below in figure 2.4-1:

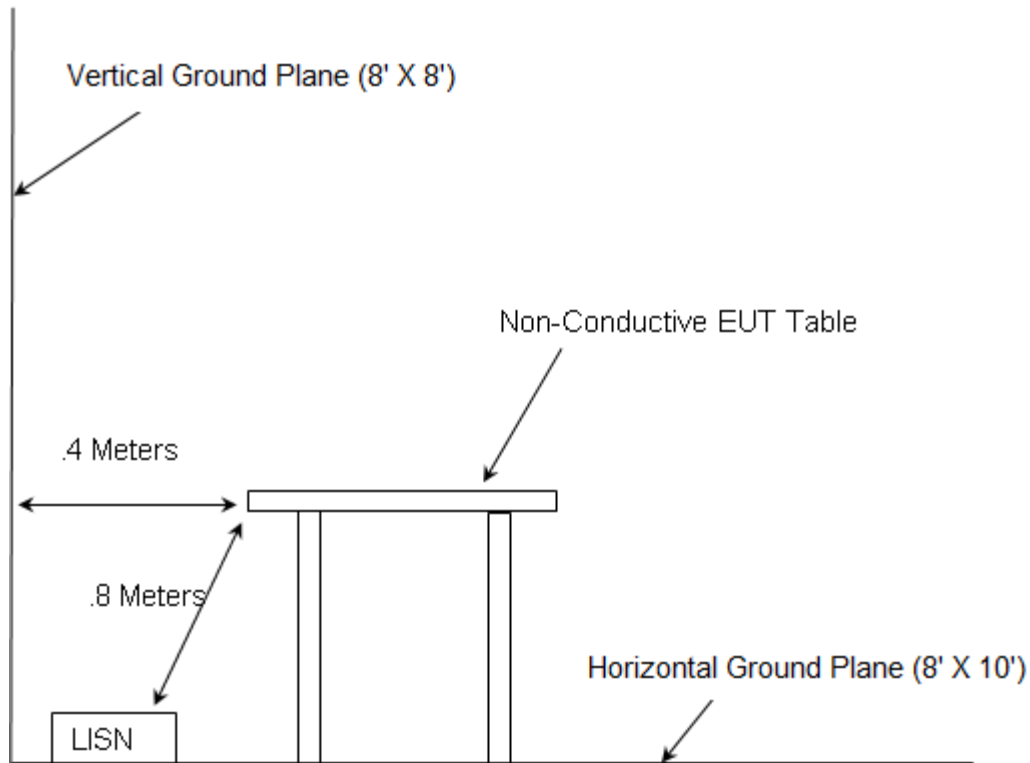


Figure 2.4-1: AC Mains Conducted EMI Site

3 APPLICABLE STANDARD REFERENCES

The following standards were used:

- ❖ ANSI C63.10-2013: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
- ❖ US Code of Federal Regulations (CFR): Title 47, Part 15, Subpart C: Radio Frequency Devices, Intentional Radiators, 2016

4 LIST OF TEST EQUIPMENT

The calibration interval of test equipment is annually or the manufacturer's recommendations. Where the calibration interval deviates from the annual cycle based on the instrument manufacturer's recommendations, it shall be stated below.

Table 4-1: Test Equipment

Asset ID	Manufacturer	Model #	Equipment Type	Serial #	Last Calibration Date	Calibration Due Date
277	EMCO	93146	Antennas	9904-5199	9/12/2016	9/12/2018
626	EMCO	3110B	Antennas	9411-1945	3/21/2017	3/21/2019
3002	Rohde & Schwarz	ESU40	Receiver	100346	1/12/2017	1/12/2018
3006	Rohde & Schwarz	TS-PR18	Amplifiers	122006	1/11/2017	1/11/2018
3011	Rohde & Schwarz	ENV216	LISN	3011	1/12/2017	1/12/2018
3012	Rohde & Schwarz	EMC32-EB	Software	100731	NCR	NCR
3016	Fei Teng Wireless Technology	HA-07M18G-NF	Antennas	2013120203	1/26/2016	1/26/2018
3028	Micro-Tronics	HPM50111	Filter	122	1/13/2017	1/13/2018
3029	Micro-Tronics	HPM50108	Filter	134	1/13/2017	1/13/2018
3038	Florida RF Labs	NMSE-290AW-60.0-NMSE	Cable Set	1448	1/3/2017	1/3/2018
3039	Florida RF Labs	NMSE-290AW-396.0-NMSE	Cable Set	1447	1/3/2017	1/3/2018
3042	Aeroflex Inmet	18N10W-10	Attenuator	1444	1/16/2017	1/16/2018
3051	Mountain View Cable	BMS-RG400-264.0-BMS	Cables	3051	1/3/2017	1/3/2018
3055	Rohde & Schwarz	3005	Cables	3055	1/3/2017	1/3/2018

DMAS MT-25 RF absorber material was used on the floor for all final measurements above 1 GHz.

NCR = No Calibration Required

Firmware Version: ESU40 is 4.73 SP4

Software Version: EMC32-B is 9.15

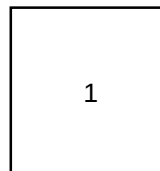
5 SUPPORT EQUIPMENT

Table 5-1: Support Equipment

Item #	Type Device	Manufacturer	Model/Part #	Serial #
1	EUT	Strato Innovations	Link-It	L1910000001
2	5V-1A Power Adapter	Merryking	MKS-0501000SU	TUV SUD 4

6 EQUIPMENT UNDER TEST SETUP BLOCK DIAGRAM

Radiated Emissions



AC Power Line Conducted Emissions

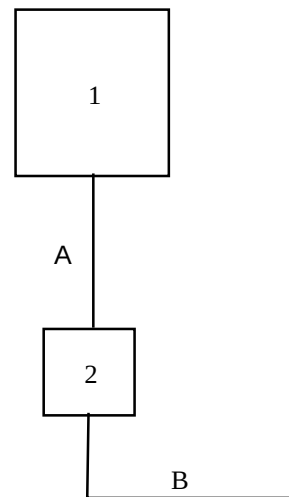


Figure 6-1: Test Setup Block Diagram

Table 3.3-2: Cable Description

Cable #	Cable Type	Length	Shield	Termination
A	Power	1 m	No	1 to 2
B	Extension	1.8 m	No	2 to AC mains

7 SUMMARY OF TESTS

Along with the tabular data shown below, plots were taken of all signals deemed important enough to document.

7.1 Antenna Requirement – FCC: 15.203

The antenna is attached to the device internally. Therefore, the antenna meets the requirement of Section 15.203.

7.2 Power Line Conducted Emissions – FCC: 15.207

7.2.1 Measurement Procedure

ANSI C63.10-2013 section 6 was the guiding document for this evaluation. Conducted emissions were performed from 150kHz to 30MHz with the spectrum analyzer's resolution bandwidth set to 9kHz and the video bandwidth set to 30kHz. The calculation for the conducted emissions is as follows:

Corrected Reading = Analyzer Reading + LISN Loss + Cable Loss

Margin = Applicable Limit - Corrected Reading

7.2.2 Measurement Results

Performed by: Jean Tezil

Table 7.2.2-1: Conducted EMI Results – Line 1

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.162000	---	26.93	55.30	28.37	2000.0	9.000	L1	OFF	9.7
0.162000	40.51	---	65.31	24.80	2000.0	9.000	L1	OFF	9.7
0.404000	41.32	---	57.65	16.33	2000.0	9.000	L1	OFF	9.7
0.404000	---	30.08	47.63	17.55	2000.0	9.000	L1	OFF	9.7
0.408000	40.61	---	57.58	16.97	2000.0	9.000	L1	OFF	9.7
0.408000	---	29.66	47.55	17.89	2000.0	9.000	L1	OFF	9.7
0.452000	---	26.66	46.76	20.10	2000.0	9.000	L1	OFF	9.7
0.452000	37.82	---	56.78	18.96	2000.0	9.000	L1	OFF	9.7
1.124000	---	21.85	46.00	24.15	2000.0	9.000	L1	OFF	9.7
1.124000	33.48	---	56.00	22.52	2000.0	9.000	L1	OFF	9.7
1.812000	---	21.42	46.00	24.58	2000.0	9.000	L1	OFF	9.7
1.812000	33.16	---	56.00	22.84	2000.0	9.000	L1	OFF	9.7
2.008000	---	21.18	46.00	24.82	2000.0	9.000	L1	OFF	9.7
2.008000	32.35	---	56.00	23.65	2000.0	9.000	L1	OFF	9.7
3.332000	---	12.39	46.00	33.61	2000.0	9.000	L1	OFF	9.7
3.332000	21.44	---	56.00	34.56	2000.0	9.000	L1	OFF	9.7
4.276000	---	10.10	46.00	35.90	2000.0	9.000	L1	OFF	9.8
4.276000	19.76	---	56.00	36.24	2000.0	9.000	L1	OFF	9.8
7.102000	---	7.95	50.00	42.05	2000.0	9.000	L1	OFF	9.9
7.102000	16.98	---	60.00	43.02	2000.0	9.000	L1	OFF	9.9

Table 7.2.2-2: Conducted EMI Results – Line 2

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.404000	30.51	---	57.65	27.14	2000.0	9.000	N	OFF	9.7
0.404000	---	21.25	47.63	26.38	2000.0	9.000	N	OFF	9.7
0.408000	---	23.93	47.55	23.62	2000.0	9.000	N	OFF	9.7
0.408000	33.24	---	57.58	24.34	2000.0	9.000	N	OFF	9.7
0.416000	---	26.37	47.40	21.03	2000.0	9.000	N	OFF	9.7
0.416000	35.69	---	57.42	21.73	2000.0	9.000	N	OFF	9.7
0.420000	35.62	---	57.35	21.73	2000.0	9.000	N	OFF	9.7
0.420000	---	26.44	47.33	20.89	2000.0	9.000	N	OFF	9.7
0.596000	---	13.61	46.00	32.39	2000.0	9.000	N	OFF	9.7
0.596000	22.34	---	56.00	33.66	2000.0	9.000	N	OFF	9.7
0.852000	---	10.27	46.00	35.73	2000.0	9.000	N	OFF	9.7
0.852000	18.38	---	56.00	37.62	2000.0	9.000	N	OFF	9.7
1.336000	---	11.24	46.00	34.76	2000.0	9.000	N	OFF	9.7
1.336000	20.39	---	56.00	35.61	2000.0	9.000	N	OFF	9.7
2.560000	---	9.59	46.00	36.41	2000.0	9.000	N	OFF	9.7
2.560000	18.94	---	56.00	37.06	2000.0	9.000	N	OFF	9.7
3.700000	---	8.44	46.00	37.56	2000.0	9.000	N	OFF	9.8
3.700000	17.45	---	56.00	38.55	2000.0	9.000	N	OFF	9.8
28.446000	---	6.12	50.00	43.88	2000.0	9.000	N	OFF	10.2
28.446000	16.55	---	60.00	43.45	2000.0	9.000	N	OFF	10.2

7.2.3 Radiated Spurious Emissions – FCC: 15.205, 15.209

7.2.3.1 Measurement Procedure

Performed by: Jean Tezil

Radiated emissions tests were made over the frequency range of 30MHz to 10GHz, 10 times the highest fundamental frequency.

The EUT was rotated through 360° and the receive antenna height was varied from 1m to 4m so that the maximum radiated emissions level would be detected. For frequencies below 1000MHz, quasi-peak measurements were made using a resolution bandwidth RBW of 120 kHz and a video bandwidth VBW of 300 kHz. For frequencies above 1000MHz, peak and average measurements were made with RBW and VBW of 1 MHz and 3MHz respectively.

Each emission found to be in a restricted band as defined by section 15.205, including any emission at the operational band-edge, was compared to the radiated emission limits as defined in section 15.209.

The EUT was caused to generate a continuous modulated carrier on the hopping channel. The radiated spurious emissions were evaluated based on the worst case data rate determined in the original certification filing.

7.2.3.2 Duty Cycle Correction

The Duty Cycle Correction was not required.

7.2.3.3 Measurement Results

Table 7.2.2.3-1: Radiated Spurious Emissions – M4-250 (Mode 1)

Frequency (MHz)	Level (dBuV)		Antenna Polarity (H/V)	Correction Factors (dB)	Corrected Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	pk	Qpk/Avg			pk	Qpk/Avg	pk	Qpk/Avg	pk	Qpk/Avg
Low Channel = 902.75 MHz										
2708.25	51.10	38.36	H	-2.43	48.67	35.93	74.0	54.0	25.3	18.1
2708.25	51.71	41.57	V	-2.43	49.28	39.14	74.0	54.0	24.7	14.9
3611	41.81	28.91	V	1.26	43.07	30.17	74.0	54.0	30.9	23.8
5416.5	41.75	28.87	V	4.13	45.88	33.00	74.0	54.0	28.1	21.0
Middle Channel = 914.75 MHz										
2744.25	51.25	38.12	H	-2.35	48.90	35.77	74.0	54.0	25.1	18.2
2744.25	52.15	40.88	V	-2.35	49.80	38.53	74.0	54.0	24.2	15.5
3659	40.32	26.98	H	1.08	41.40	28.06	74.0	54.0	32.6	25.9
3659	40.50	26.94	V	1.08	41.58	28.02	74.0	54.0	32.4	26.0
4573.75	39.80	27.50	V	3.54	43.34	31.04	74.0	54.0	30.7	23.0
7318	41.40	33.51	H	7.66	49.06	41.17	74.0	54.0	24.9	12.8
7318	41.86	34.73	V	7.66	49.52	42.39	74.0	54.0	24.5	11.6
9147.5	38.85	25.96	H	11.24	50.09	37.20	74.0	54.0	23.9	16.8
9147.5	39.95	29.44	V	11.24	51.19	40.68	74.0	54.0	22.8	13.3
High Channel = 927.25 MHz										
963.18		9.4	H	24.44	-----	33.84	-----	54.0	-----	20.2
960		9.4	V	24.50	-----	33.90	-----	46.0	-----	12.1
2781.75	51.30	40.10	H	-2.08	49.22	38.02	74.0	54.0	24.8	16.0
2781.75	52.10	41.70	V	-2.08	50.02	39.62	74.0	54.0	24.0	14.4
3709	42.68	29.80	H	1.57	44.25	31.37	74.0	54.0	29.7	22.6
3709	42.67	31.36	V	1.57	44.24	32.93	74.0	54.0	29.8	21.1
4636.25	41.60	29.38	H	3.72	45.32	33.10	74.0	54.0	28.7	20.9
4636.25	43.11	31.27	V	3.72	46.83	34.99	74.0	54.0	27.2	19.0
7418	43.27	34.80	H	8.37	51.64	43.17	74.0	54.0	22.4	10.8
7418	43.90	36.16	V	8.37	52.27	44.53	74.0	54.0	21.7	9.5
8345.25	40.60	27.44	H	10.87	51.47	38.31	74.0	54.0	22.5	15.7
8345.25	40.65	29.30	V	10.87	51.52	40.17	74.0	54.0	22.5	13.8

Table 7.2.2.3-1: Radiated Spurious Emissions – FM0-40 (Mode 2)

Frequency (MHz)	Level (dBuV)		Antenna Polarity (H/V)	Correction Factors (dB)	Corrected Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	pk	Qpk/Avg			pk	Qpk/Avg	pk	Qpk/Avg	pk	Qpk/Avg
Low Channel = 902.75 MHz										
2708.25	51.47	38.15	H	-2.45	49.02	35.70	74.0	54.0	25.0	18.3
2708.25	51.71	41.53	V	-2.45	49.26	39.08	74.0	54.0	24.7	14.9
3611	42.96	31.53	H	0.94	43.90	32.47	74.0	54.0	30.1	21.5
3611	42.54	31.65	V	0.94	43.48	32.59	74.0	54.0	30.5	21.4
5416.5	42.45	29.72	V	4.01	46.46	33.73	74.0	54.0	27.5	20.3
9027.5	41.19	28.20	V	11.62	52.81	39.82	74.0	54.0	21.2	14.2
Middle Channel = 914.75 MHz										
2744.25	48.74	35.75	H	-2.26	46.48	33.49	74.0	54.0	27.5	20.5
2744.25	51.01	41.13	V	-2.26	48.75	38.87	74.0	54.0	25.2	15.1
3659	41.89	29.12	H	1.41	43.30	30.53	74.0	54.0	30.7	23.5
3659	42.07	29.12	V	1.41	43.48	30.53	74.0	54.0	30.5	23.5
7318	42.25	30.93	H	7.86	50.11	38.79	74.0	54.0	23.9	15.2
7318	43.96	35.99	V	7.86	51.82	43.85	74.0	54.0	22.2	10.2
9147.5	41.16	29.15	V	11.44	52.60	40.59	74.0	54.0	21.4	13.4
High Channel = 927.25 MHz										
960		8.40	V	24.50	-----	32.90	-----	46.0	-----	13.1
960		11.40	V	24.50	-----	35.90	-----	46.0	-----	10.1
2781.75	46.20	39.15	H	-2.08	44.12	37.07	74.0	54.0	29.9	16.9
2781.75	49.14	44.43	V	-2.08	47.06	42.35	74.0	54.0	26.9	11.7
3709	42.44	30.96	H	1.57	44.01	32.53	74.0	54.0	30.0	21.5
3709	42.50	30.23	V	1.57	44.07	31.80	74.0	54.0	29.9	22.2
4636.25	41.50	29.19	H	3.72	45.22	32.91	74.0	54.0	28.8	21.1
4636.25	42.66	31.49	V	3.72	46.38	35.21	74.0	54.0	27.6	18.8
7418	41.64	31.25	H	8.37	50.01	39.62	74.0	54.0	24.0	14.4
7418	42.50	33.31	V	8.37	50.87	41.68	74.0	54.0	23.1	12.3
8345.25	40.55	27.69	V	10.87	51.42	38.56	74.0	54.0	22.6	15.4

Table 7.2.2.3-1: Radiated Spurious Emissions – FM0-400 (Mode 3)

Frequency (MHz)	Level (dBuV)		Antenna Polarity (H/V)	Correction Factors (dB)	Corrected Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	pk	Qpk/Avg			pk	Qpk/Avg	pk	Qpk/Avg	pk	Qpk/Avg
Low Channel = 902.75 MHz										
2708.25	51.30	38.28	H	-2.45	48.85	35.83	74.0	54.0	25.1	18.2
2708.25	52.17	41.24	V	-2.45	49.72	38.79	74.0	54.0	24.3	15.2
3611	41.96	29.31	V	0.94	42.90	30.25	74.0	54.0	31.1	23.7
9027.5	41.81	29.19	V	11.62	53.43	40.81	74.0	54.0	20.6	13.2
Middle Channel = 914.75 MHz										
2744.25	48.96	42.78	H	-2.26	46.70	40.52	74.0	54.0	27.3	13.5
2744.25	52.80	49.45	V	-2.26	50.54	47.19	74.0	54.0	23.5	6.8
3659	42.90	30.20	V	1.41	44.31	31.61	74.0	54.0	29.7	22.4
4573.75	43.10	29.50	H	3.74	46.84	33.24	74.0	54.0	27.2	20.8
4573.75	43.00	30.40	V	3.74	46.74	34.14	74.0	54.0	27.3	19.9
7318	42.80	30.40	H	7.86	50.66	38.26	74.0	54.0	23.3	15.7
9147.5	43.60	33.61	V	11.44	55.04	45.05	74.0	54.0	19.0	8.9
High Channel = 927.25 MHz										
960		9.4	H	24.50	-----	33.90	-----	46.0	-----	12.1
961.79		10.5	V	24.46	-----	34.96	-----	54.0	-----	19.0
2781.75	46.60	39.50	H	-2.08	44.52	37.42	74.0	54.0	29.5	16.6
2781.75	49.40	44.60	V	-2.08	47.32	42.52	74.0	54.0	26.7	11.5
3709	43.50	31.30	H	1.57	45.07	32.87	74.0	54.0	28.9	21.1
3709	43.10	31.20	V	1.57	44.67	32.77	74.0	54.0	29.3	21.2
4636.25	42.50	29.60	H	3.72	46.22	33.32	74.0	54.0	27.8	20.7
4636.25	43.60	31.80	V	3.72	47.32	35.52	74.0	54.0	26.7	18.5
7418	44.10	35.10	H	8.37	52.47	43.47	74.0	54.0	21.5	10.5
7418	47.40	41.40	V	8.37	55.77	49.77	74.0	54.0	18.2	4.2
8345.25	42.20	30.70	V	10.87	53.07	41.57	74.0	54.0	20.9	12.4

7.2.3.4 Sample Calculation:

$$R_C = R_U + CF_T$$

Where:

CF_T	=	Total Correction Factor (AF+CA+AG)-DC (Average Measurements Only)
R_U	=	Uncorrected Reading
R_C	=	Corrected Level
AF	=	Antenna Factor
CA	=	Cable Attenuation
AG	=	Amplifier Gain
DC	=	Duty Cycle Correction Factor

Example Calculation: Peak

Corrected Level: 51.10 dBuV/m - 2.43 = 48.67 dBuV/m

Margin: 74dBuV/m – 48.67dBuV/m = 25.33 dB

Example Calculation: Average

Corrected Level: 38.36 dBuV/m- 2.43 - 0 = 35.93 dBuV/m

Margin: 54dBuV – 35.93 dBuV = 18.07 dB

8 MEASUREMENT UNCERTAINTY

The expanded laboratory measurement uncertainty figures (U_{Lab}) provided below correspond to an expansion factor (coverage factor) $k = 1.96$ which provide confidence levels of 95%.

Parameter	U_{lab}
Occupied Channel Bandwidth	$\pm 0.004\%$
RF Conducted Output Power	$\pm 0.689 \text{ dB}$
Power Spectral Density	$\pm 0.5 \text{ dB}$
Antenna Port Conducted Emissions	$\pm 2.717 \text{ dB}$
Radiated Emissions	$\pm 5.877 \text{ dB}$
Temperature	$\pm 0.860 \text{ }^{\circ}\text{C}$
Radio Frequency	$\pm 2.832 \times 10^{-8}$
AC Power Line Conducted Emissions	± 2.85

9 CONCLUSION

In the opinion of TÜV SÜD America Inc. the Link-It L191, manufactured by Strato Innovations, Inc. meets the requirements of FCC Part 15 subpart C for the tests documented herein.

END REPORT