# FCC (USA)/ISED (Canada) TEST REPORT

# FCC 47 CFR Part 15D

**Unlicensed Personal Communications Service Devices** 

# **Industry Canada RSS-213**

2 GHz License-exempt Personal Communications Service Devices (LE-PCS)

Report Reference No: LIG20230928-01

Testing Laboratory: ElectroMagnetic Investigations, LLC

Address: 8531 NE Cornell Road. Suite 600, Hillsboro, OR, USA

Accreditation: A2LA Accredited Testing Laboratory

Applicant's name: Lightspeed Technologies, Inc.

Address: 11509 SW Herman Rd.

Tualatin, OR 97062

**United States** 

Testing specification

Standard: FCC 47 CFR Part 15D

FCC 47 CFR Part 15C

FCC 47 CFR Part 15B

RSS-213, Issue 3, 2015-03

RSS-Gen, Issue 5, 2018-04

ANSI C63.17:2013

ANSI C63.4:2014

Equipment Under test (EUT): Rogue Base

Serial Number: 03-CMT-Z-S2342-00116

Product description: DECT Mic

Model No. CMT

Additional Model(s): N/A

Hardware version:

Firmware / Software version: 7.1.00

FCC ID: ORV-LSCMT

IC ID 1732B-LSCMT

Test result: Passed

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Possible test case verdicts

Neither assessed nor tested: N/N

Required by standard but not applicable: N/A

Required by standard but not tested: **NOT PERFORMED** 

Not required by standard: N/R

EUT meets the requirement: P (Pass)

EUT does not meet the requirement: F (Fail)

Testing

Test Lab Temperature: 20 - 28 C

Test Lab Humidity: 30 - 38 %

Date EUT received: October 25, 2023

Date(s) of performance of tests: October 25, 2023 to November 22, 2023

Complied by: Ryan Benitez

Ryan Benity
Ryan Benity
Henry W. Benits Tested by: Ryan Benitez

Approved by: Henry Benitez

Date of issue: January 16, 2024

Total number of pages: 75

#### General remarks

The test results presented in this report relate only to the object tested. The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

This report shall not be reproduced, except in full, without written approval of the issuing test laboratory.

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# **Revision History**

Version	Date Issued	Description of Revision

# **Authorizations**

**FCC** (**USA**): Accepted by FCC for performance of radiated emissions and conducted emissions measurements. FCC ID: US1092.

**Industry Canada:** Accepted by Industry Canada for performance of radiated emissions and conducted emissions measurements. ISED Canada CAB ID US0203.

**European Union (CE):** ElectroMagnetic Investigations, LLC is equipped and capable of performing EMC CE compliance testing to European Union EMC CE requirements for Information Technology Equipment (ITE), Measurement, Control and Laboratory Equipment (MCL), and other equipment.

American Association of Lab Accreditations (A2LA): ElectroMagnetic Investigations is accredited to perform the tests contained within this report to the standards listed.



Certificate #2569.01

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### 1 Equipment (Test item) description

Description: DECT Microphone

Model: CMT Additional Model(s): None

Brand Name(s): Lightspeed Technologies, Inc.

Serial number: 03-CMT-Z-S2342-00116

Hardware version:

Software / Firmware version: 7.1.00
FCC-ID: ORV-LSCMT
IC: 1732B-LSC25
Equipment type: End product

Radio type: DECT portable part

Number of radios: 1 DECT transceiver built into device

Radio technology: DECT 6.0

Operating frequency range: 1921.536 – 1928.448 MHz

Assigned frequency band: 1920 – 1930 MHz

Number of RF channels: 5

Supported slots: even and odd

Number of time slots:  $12 \times Tx + 12 \times Rx = 24$ 

Channels F<sub>0</sub> CH:0 / 1928.448 MHz

F<sub>1</sub> CH:1 / 1926.720 MHz F<sub>2</sub> CH:2 / 1924.992 MHz F<sub>3</sub> CH:3 / 1923.264 MHz F<sub>4</sub> CH:4 / 1921.536 MHz

Main test frequencies F<sub>low</sub> CH:4 / 1921.536 MHz

 $F_{mid}$  CH:2 / 1924.992 MHz  $F_{high}$  CH:0 / 1928.448 MHz

Modulations GFSK
Emissions designator F7D
Nominal emission bandwidth 1.42 MHz
Channel spacing 1728 kHz

Spectrum access Listen before transmit

Nominal lower threshold N/A
Nominal upper threshold -60 dBm

Number of antennas 1

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Antenna Type Bent Monopole

Gain 1921.536 MHz -4.9 dBi

1924.992 MHz -4.31 dBi 1928.448 MHz -4.45 dBi

Manufacturer Lightspeed Technologies, Inc.

11509 SW Herman Rd. Tualatin, OR 97062 United States

Power supply V<sub>nom</sub> 3.7 V DC Battery operated

 $\begin{array}{cc} V_{min} & N/A \\ V_{max} & N/A \end{array}$ 

Charger Model FSC

Vendor Lightspeed Input 5 V DC Output 3.7 V DC

Temperature  $T_{nom}$  20 C

 $\begin{array}{lll} T_{min} & -20 \ C \\ T_{max} & 50 \ C \end{array}$ 

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# 1.1 Photos – Equipment external

See dedicated report

# 1.2 Photos – Equipment internal

See dedicated report

# 1.3 Photos – Test setup

See dedicated report

## 1.4 Supporting equipment used during testing

Product type*	Device	Manufacturer	Model No.	Comments		
		None				
*Note: Use the follo	owing abbreviations:					
AE : Auxiliary/Assoc	AE: Auxiliary/Associated Equipment					
SIM : Simulator (Not Subject to Test)						
CABL: Connecting of	CABL : Connecting cables					

## 1.5 Test modes

Mode #		Description
TDMA	General conditions:	EUT powered by a laboratory power supply. Active
		connection to companion device.
	Radio conditions:	Mode = Transmit mode
		Modulation = GFSK
		Duty cycle = 1/24
		Power level = Maximum
Receive General conditions: EUT		EUT powered by a laboratory power supply.
	Radio conditions:	Mode = standalone receive
		Modulation = GFSK
AC-Powerline	General conditions:	Active data connection between EUT and companion device.
		EUT connected to AM main via AC/DC Adaptor
	Radio conditions:	Mode = Transmit mode
		Modulation = GFSK
		Duty cycle = 1/24
		Power level = Maximum

# 1.6 Test equipment used during testing

	Conducted				
Description	Manufacturer	Model	Cal. Date	Cal. Due	
Analyzer	Agilent	E4440A	2023/05/13	2024/05/13	
DECT Tester	R&S	CMD60	2023/03/16	2024/03/16	
Signal generator	R&S	SME06	2021/09/03	2026/09/03	
Signal generator	R&S	SME06	Cal on use	Cal on use	
Signal generator	R&S	SME03	Cal on use	Cal on use	
Signal generator	Anritsu	68369A	2023/09/14	2026/09/14	
Signal generator	Marconi	2412	Cal on use	Cal on use	
Pulse generator	Agilent	81104A	Cal on use	Cal on use	
Coupler	Narda	4222-16	2022/12/05	2023/12/05	

Radiated spurious emissions				
Description	Manufacturer	Model	Cal. Date	Cal. Due
Analyzer	Analyzer Agilent		2023/05/13	2024/05/13
Analyzer	Agilent	E4443A	2023/01/30	2026/01/30
Antenna	Com-Power	AC-220	2021/08/30	2024/02/30
Antenna	Com-Power	AHA-118	2021/08/24	2024/02/24
Antenna	Com-Power	AH-1840	2022/11/11	2027/11/11
Pre-Amp	Amplifier Research	LN1000	2023/02/18	2024/02/18

	AC powerline conducted emissions				
Description Manufacturer Model Cal. Date Cal. Due					
Analyzer Agilent		E4443A	2023/01/30	2026/01/30	
LISN Fischer Custom		FCC-50-50-04-02	2020/12/08	2025/12/08	
Communications					

### 1.7 Sample emission level calculation

The following is a description of terms and a sample calculation, as appears in the radiated emissions data table. The numbers used in the calculation are for example only. There is no direct correlation to specific data taken for the product described in this document:

### Reading:

This is the reading obtained on the spectrum analyzer in  $dB\mu V$ . Any external preamplifiers used are taken into account through internal analyzer settings.

#### A.F.:

This is the antenna factor for the receiving antenna. It is a conversion factor, which converts electric field strength to voltage that can be measured directly on the spectrum analyzer. It is treated as a loss in dB. Cable losses have been included with the A.F. to simplify the calculations. The antenna factor is used in calculations as follows:

Reading on analyzer (dB $\mu$ V) + A.F. (dB) = Net field strength (dB $\mu$ V/m)

#### Measurement Uncertainty:

#### Net:

This is the net field strength measurement (as shown above).

#### Limit:

This is the FCC Class B radiated emission limit (in units of  $dB\mu V/m$ ). The FCC limits are given in units of  $\mu V/m$ . The following formula is used to convert the units of  $\mu V/m$  to  $dB\mu V/m$ :

```
Limit (dB\muV/m) = 20*log(\muV/m)
```

### Margin:

This is the margin of compliance below the FCC limit. The units are given in dB. A positive margin indicates the emission was below the limit. A negative margin indicates that the emission exceeds the emission was below the limit.

### Example only:

Reading + A.F. = Net Reading : FCC limit – Net reading = Margin  $21.5 \text{ dB}\mu\text{V} + 26 \text{ db} = 47.5 \text{ dB}\mu\text{V/m}$  :  $57.0 \text{ dB}\mu\text{V/m} - 47.5 \text{ dB}\mu\text{V/m} = 9.5 \text{ dB}$ 

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# 2 Result summary

FCC 47 CFR Part 15D, 15C, IC RSS-213. IC RSS-Gen					
Section	Requirement - Test	FCC	IC	ANSI	Result
3.1	Channel Frequencies	15.303	RSS-213 5.1		PASS
3.2	AC power line	15.107(a)	RSS-213 5.4	C63.4 7	PASS
	conducted emissions	15.207(a)	RSS-Gen 7.2 / 8.8		
3.3	Antenna	15.317, 15.203	RSS-GEN 6.8		PASS
	Requirement				
3.4	Digital modulation	15.319(b)	RSS -213 5.1	6.1.4	PASS
3.5	Occupied Bandwidth	N/A	RSS-GEN 6.7	6.1.3	PASS
3.6	Emission Bandwidth	15.323(a)	RSS-213 5.5	6.1.3	PASS
3.7	Peak Transmit Power	15.319(c)(e)	RSS-213 5.6	6.1.2	PASS
	and Antenna Gain	15.31(e)	RSS-GEN 8.3		
3.8	Power Spectral	15.319(d)	RSS-213 5.7	6.1.5	PASS
	Density				
3.9	Frequency stability	15.323(f)	RSS-213 5.3	6.2.2	PASS
3.10	In-band unwanted	15.323(d)	RSS-213 5.8.2	6.1.6.1	PASS
	emissions				
3.11	Out-of-band-	15.323(d)	RSS-213 5.8.1	6.1.6.2	PASS
	emissions				
3.12	Spurious Emissions	15.319(g)	RSS-GEN 7.3 / 8.9	C63.4	PASS
	(Radiated)	15.109(a)			
		15.209(a)			
3.13	Automatic	15.319(f)	RSS-213 5.2		PASS
	discontinuation of				
	transmission				
3.14	Radiofrequency	15.319(i)	RSS-102		N/A
	radiation exposure				
3.15	Monitoring threshold	15.323(c)(2)(5)(9)	RSS-213 5.2 (2)(5)(9)	7.3.1	N/A
3.16	LIC confirmation	15.323(c)(5)	RSS-213 5.2 (5)	7.3.2	PASS
3.17	LIC selection	15.323(c)(5)	RSS-213 5.2 (5)	7.3.2	PASS
3.18	Monitoring antenna	15.323(c)(8)	RSS-213 5.2 (8)	4	PASS
3.19	Monitoring time	15.323(c)(1)	RSS-213 5.2 (1)	7.3.3	PASS
3.20	Monitoring	15.323(c)(7)	RSS-213 5.2 (7)	7.4	PASS
	bandwidth				
3.21	Monitoring reaction	15.323(c)(7)	RSS-213 5.2 (7)	7.5	PASS
	time				
N/A	Access criteria test	15.323(c)(4)(6)	RSS-213 5.2 (6)		PASS
	interval				
3.22	Access criteria	15.323(c)(4)(6)	RSS-213 5.2 (6)	8.1.2 or 8.1.3	PASS
	functional test				
3.23	Acknowledgments	15.323(c)(4)	RSS-213 5.2 (4)	8.1 or 8.2	PASS

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3.24	Maximum transmit	15.323(c)(3)	RSS-213 5.2 (3)	8.2.2	PASS
	duration				
3.25	Maximum spectrum	15.323(c)(5)	RSS-213 5.2 (5)		PASS
	occupancy				
N/A	Duplex connections	15.323(c)(10)	RSS-213 5.2 (10)	8.3	N/A
N/A	Alternative	15.323(c)(11)	RSS-213 5.2 (11)	8.4	N/A
	monitoring interval				
3.26	Fair access	FCC	IC RSS-213 5.2(5)		PASS
		15.323(c)(12)			
3.27	Frame period and	15.323(e)	RSS-213 5.2 (13)	6.2.3	PASS
	jitter				
3.28	Frame repetition	15.323(e)	RSS-213 5.2 (13)	6.2.2	PASS
	stability				

# 3 Test conditions and results

# 3.1 Channel Frequencies

FCC 15.303, RSS-213 Issue 3, clause 5.1:

Within 1920 – 1930 MHz band for isochronous devices.

UPCS Channel	Frequency (MHz)
Upper Band Edge	1930.000
0 (Highest)	1928.448
1	1926.720
2	1924.992
3	1923.264
4 (Lowest)	1921.536
Lower Band Edge	1920.000

# 3.2 Test conditions and results – AC power line conducted emissions

Conducted emissions acc. to FCC 47 CFR 15D / IC RSS		5-213		Verdict: PASS
EUT requirement			Reference	
rule parts and clause		FCC 15	5.107(a), FCC 15.	207(a)
		RSS-21	3 5.4, RSS-Gen 7	.2 / 8.8
Test according reference	ed	R	eference Metho	d
standards			ANSI C63.4	
Fully configured sample scanne	d over the		Frequency range	!
following frequency ran	ge	0.	15 MHz to 30 MI	Hz
Points of Application		Application Interface		
AC Mains			LISN	
EUT test mode			AC-Powerline	
	Limits and I	results		
Frequency [MHz]	Quasi-Peak	Result	Average	Result
	[dBµV]		[dBµV]	
0.15 to 0.5	66 to 56*	PASS	56 to 46*	PASS
0.5 to 5	56	PASS	46	PASS
5 to 30 60		PASS	50	PASS
Comments: *Limit decreases linearly with the logarithm of the frequency.				

Conducted Emissions Measurement System uncertainty (k=2.05).....  $\pm$ 3.7 dB Sample conducted emissions measurement:

RF Reading from Spectrum Analyzer (dBuV) + Cable Loss Factor (dB) + LISN Factor (dB) = Final Conducted Emission Level (dBuV).

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#### Revision 11 CONDUCTED EMISSIONS DATA SHEET 6/30/2021 Customer: Lightspeed Technologies Job Reference#: LIG20230928 Contact: Rob D'Angelo Date: 12/7/2023 DUT: Rogue Mic Temperature (°C): 19.8 Serial Number: 03-CMT-Z-S2340-00002 Relative Humidity (%): 42 Voltage/Freq: 120 V 50 Hz Barometric Pressure: 30 Tested by: Location: Hillsboro Ryan Benitez Product Standards: EN55011:2016+A2:2021 Class A/CISPR 11Ed6.2B:2019 Class A Test Standard: FCC Part 15 Class B TEST RESULTS LINE RUN# TEST TYPE Line Pass Compliance QP Data 70 60 50 40 30 20 10 0 0.1 10 100 MHz SIGNATURE COMMENTS 120 V 60 Hz; QP Data Peak Data Average Data Freq Amplitude Margin Amplitude Limit Margin Amplitude Limit Margin (dBmV) (dB) (MHz) (dBµV) (dB) (dBµV) (dBµV) (dBmV) (dB) 40.15 21.34 54.12 64.12 28.58 0.1923.98 32.78 35.55 30.96 28.67 11.50 49.63 38.13 22.75 59.63 36.88 0.32 22.85 0.43 29.08 28.14 12.33 47.21 34.88 57.21 34.37 0.73 22.92 33.08 7.34 46.00 38.66 56.00 40.14 15.86 32.45 5.71 46.00 40.29 1.00 23.55 14.27 56.00 41.74 30.00 33.56 22.44 4.41 46.00 41.59 32.32 56.00 23.68

#### Revision 11 CONDUCTED EMISSIONS DATA SHEET 6/30/2021 Job Reference#: LIG20230928 Customer: Lightspeed Technologies Contact: Rob D'Angelo Date: 12/7/2023 DUT: Rogue Mic Temperature (°C): 19.8 Serial Number: 03-CMT-Z-S2340-00002 Relative Humidity (%): 42 Voltage/Freq: 120 V 50 Hz Barometric Pressure: 30 Tested by: Ryan Benitez Location: Hillsboro Product Standards: EN55011:2016+A2:2021 Class A/CISPR 11Ed6.2B:2019 Class A Test Standard: FCC Part 15 Class B RUN# TEST RESULTS TEST TYPE LINE Neutral Pass Compliance QP Limit QP Date 70 60 50 40 dBuV 30 20 10 0 0.1 10 100 MHz SIGNATURE COMMENTS 120 V 60 Hz; Peak Data Average Data QP Data Freq Amplitude Margin Amplitude Limit Margin Amplitude Limit Margin (MHz) (dBµV) (dB) (dBµV) (dBmV) (dB) (dBµV) (dBmV) (dB) 0.15 41.84 23.94 0.30 55.78 55.48 36.94 65.78 28.84 0.44 29.17 27.99 -8.99 47.16 56.15 24.99 57.16 32.16 -19.11 39.46 2.66 22.89 33.11 46.00 65.11 16.55 56.00 3.82 22.18 33.82 -18.31 46.00 64.31 16.45 56.00 39.55 4.40 23.05 32.95 -18.20 46.00 64.20 17.25 56.00 38.75 30.00 31.76 28.24 -19.82 50.00 69.82 28.83 60.00 31.17

### 3.3 Test conditions and results – Antenna requirement

	Antenna requirement acc. to FCC 47 CFR 15D / IC RSS-GEN		Verdict: PASS	
	EUT requirement Reference			
rule parts and clause		FCC 15.317, FCC 15.203, RSS-GEN 6.8		
Test according to measurement reference		Reference		
		Visual inspection & dec	laration	
	Poquiroments			

#### Requirements

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.

When an antenna conducted measurement is used to determine the RF output power of the device, the effective gain of the antenna intended for the device must be stated based on measurement or on data from the measured RF output power before using the power limits.

Results			
Antenna No.	Туре	Antenna gain	Antenna gain in
		[dBi]	excess of 3 dBi
0	internal	-4.31	0
Comment:			

### 3.4 Test conditions and results – Digital modulation

Antenna requirement acc. to FCC 47 CFR 15D / IC RSS-213 Verdict: F		
EUT requirement	Reference	
rule parts and clause	FCC 15.319(b), IC RCC-213 5.1	
Test according to Reference Method		
measurement reference	Declaration	
Requirements		
All transmission must use only digital modulation techniques.		
Results		

The test sample is an isochronous digital modulated device that operates in 1920-1930 MHz band. This device is based on DECT technology described in European Standards EN 300 175-2 and EN 300 175-3, now operating in frequency channels mentioned above.

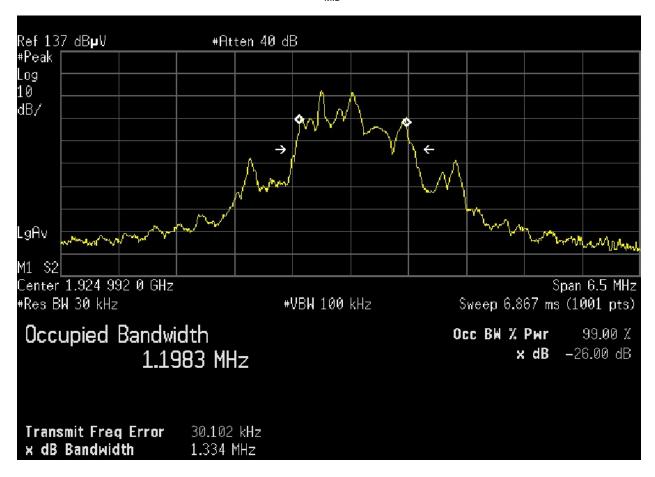
The operating modes are MC/TDMA/TDD (Multi carrier / Time Division Multiple Access / Time Division Duplex) using Digital GFSK modulation.

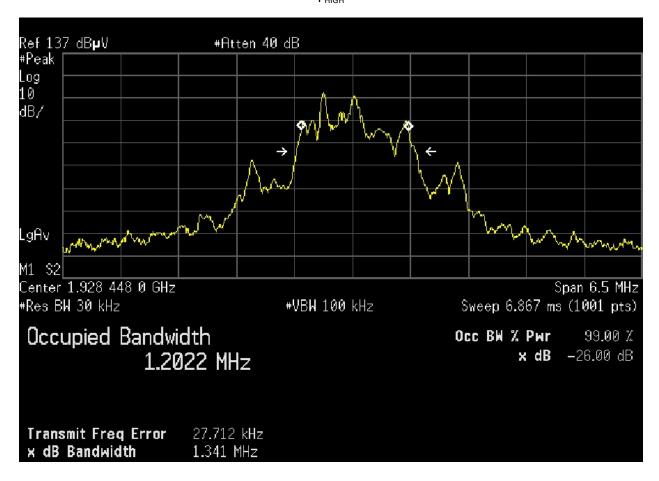
For further details see operational description provided by manufacturer.

# 3.5 Test conditions and results – Occupied bandwidth

Occupied Bandwidth acc. to IC RSS-GEN			Verdict: PASS
Test according to		Reference Method	
measure	ement reference	IC RSS-GEN 6.7	
Teste	d frequencies		F <sub>mid</sub>
EUT	test mode		TDMA
		Limits	
0.05 MHz <= Occuր		upied Bandwidth < 2.	5 MHz
Te		est results	
Channel	Center frequency [MHz]		Occupied Bandwidth [MHz]
F <sub>LOW</sub>	1921.536		1.1995
F <sub>MID</sub>	1924.992		1.1983
F <sub>HIGH</sub>	1928.448		1.2022
Comments:			





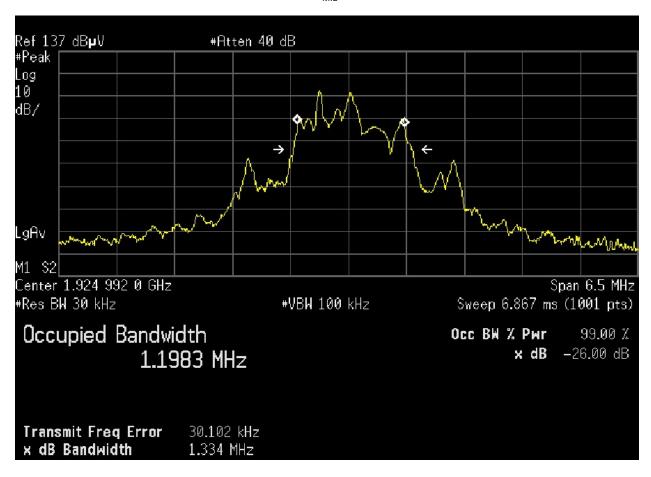


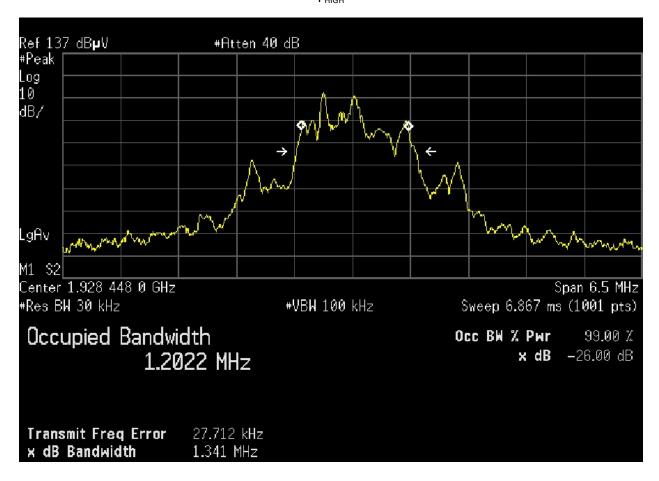
## 3.6 Test conditions and results – Emission Bandwidth

Emission Bandwidth acc. to FCC 47 CFR 15D and RSS-213 Verdict: PASS		
Test according to	Test according to Reference	
measurement reference	FCC 15.323(a), IC R	SS-213 5.5
Test according to Reference Method		
measurement reference ANSI C63.17 6.1.3		
Tested frequencies F <sub>low</sub> / F <sub>high</sub>		h
EUT test mode TDMA		
Limits		
0.05 MHz ≤ Emission Bandwidth < 2.5 MHz		

	Test results			
Channel	Center frequency [MHz]	Mode	Emission Bandwidth [MHz]	
F <sub>low</sub>	1921.536	-26 dB	1.340	
F <sub>MID</sub>	1924.992	-26 dB	1.334	
F <sub>HIGH</sub>	1928.448	-26 dB	1.341	
Comments:				





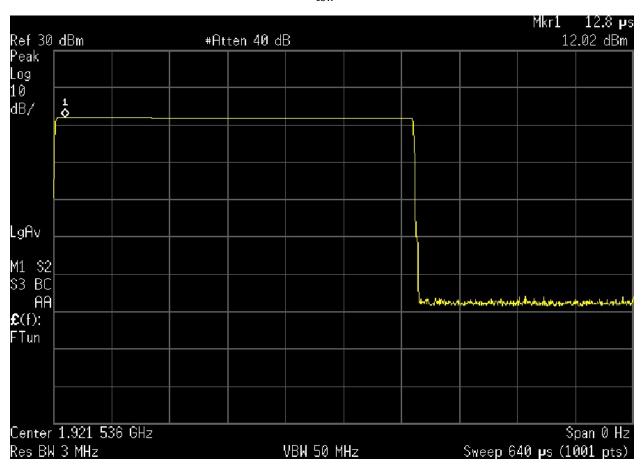


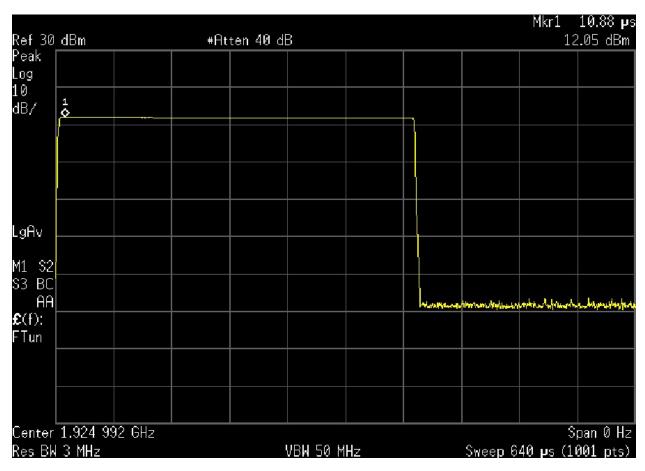
## 3.7 Test conditions and results – Peak transmit power

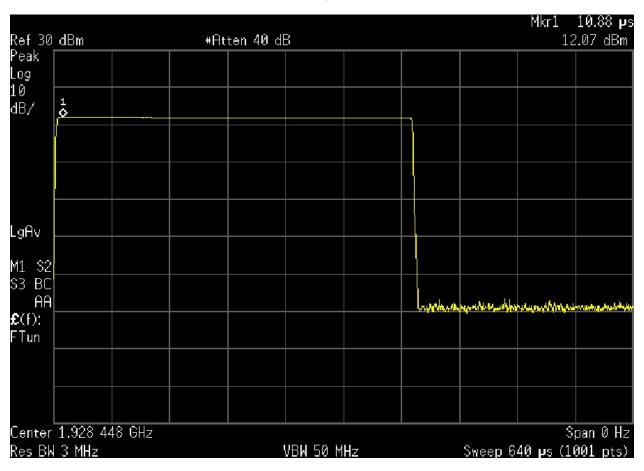
Peak transmit power acc. to FCC 47 CFR 15D	/ ICC RSS-213 Verdict: PASS	
EUT requirement	Reference	
rule parts and clause	FCC 15.319(c),(e), IC RSS-213 5.6, IC RSS-GEN 8.3	
Test according to	Reference Method	
measurement reference	ANSI C63.17 6.1.2	
Tested frequencies F <sub>LOW</sub> / F <sub>MID</sub> / F <sub>HIGH</sub>		
EUT test mode	TDMA	
Antenna excess gain 0 dB		
Limits		

Peak transmit power shall not exceed 100 microwatts multiplied by the square root of the emission bandwidth in hertz. The peak transmit power shall be reduced by the amount in decibels that the maximum directional gain of the antenna exceeds 3 dBi.

Test results – FCC								
Channel	Frequency [MHz]	Peak Power	Excess gain [dB]	Limit [dBm]	Margin [dB]			
		[dBm]						
$F_{LOW}$	1921.536	12.02	0	20.63	8.61			
F <sub>MID</sub>	1924.992	12.05	0	20.62	8.57			
F <sub>HIGH</sub>	1928.448	12.07	0	20.63	8.56			
Test results – IC								
F <sub>LOW</sub>	1921.536	12.02	0	20.39	8.37			
F <sub>MID</sub>	1924.992	12.05	0	20.39	8.34			
F <sub>HIGH</sub>	1928.448	12.07	0	20.39	8.32			
Comments:								

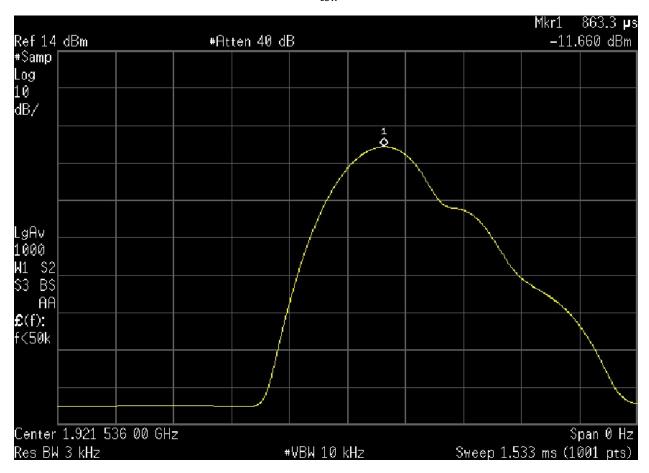


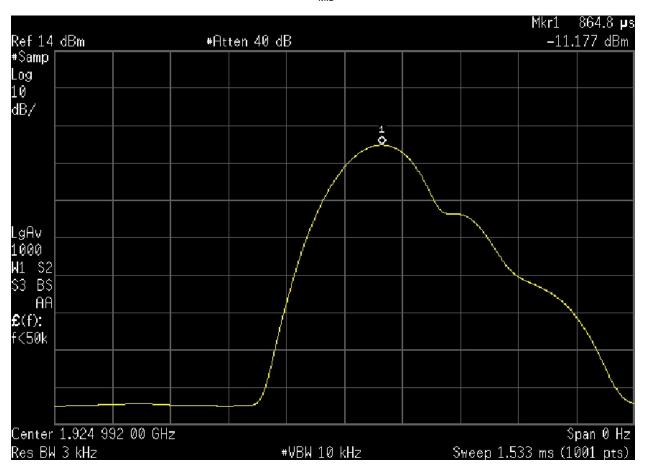


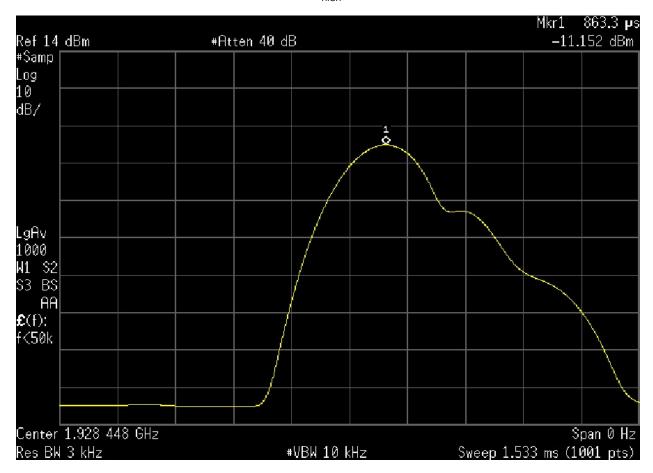


# 3.8 Test conditions and results – Power spectral density

Power spectral density acc.	Verdict: PASS						
EUT requireme	Reference						
rule parts and cla	FCC 15.319(d) / IC RSS-213 5.7						
Test according to		Reference Method					
measurement reference		ANSI C63.17 6.1.5					
Tested frequencies		F <sub>low</sub> / F <sub>high</sub>					
EUT test mode		TDMA					
Limits							
≤ mW (4.77 dBm) / 3 kHz							
Test results							
Channel	Frequency	Peak Density	Limit	Margin [dB]			
	[MHz]	[dBm/3kHz]	[dBm/3kHz]				
F <sub>LOW</sub>	1921.536	-11.660	4.77	16.430			
F <sub>MID</sub>	1924.992	-11.177	4.77	15.947			
F <sub>HIGH</sub>	1928.448	-11.152	4.77	15.922			
Comments:							

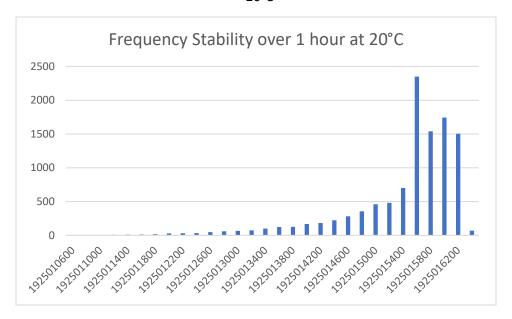


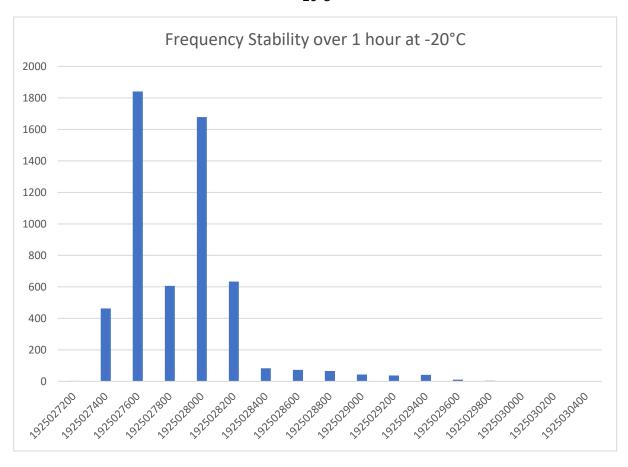


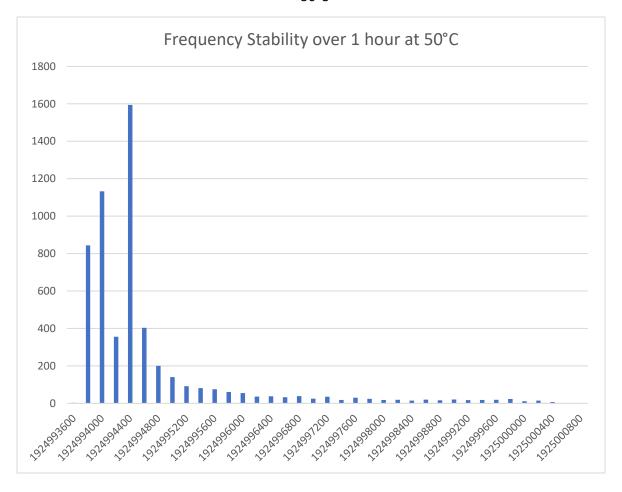


# 3.9 Test conditions and results – Frequency stability

Frequency stability acc. to FCC 47 CFR 15D / IC RSS-213 Verdict: PASS							
EUT requirement		Reference					
rule parts and clause		FCC 15.323(f) / IC RSS213 5.3					
Test according to		Reference Method					
measurement reference		ANSI C63.17 6.2.1					
Tested frequencies		F <sub>mid</sub>					
EUT test mode		TDMA					
Limits							
± 10 ppm / hour							
Test results							
Voltage	Temperature	Maximum Frequency deviation	Limit	Verdict			
		[ppm]	[ppm]				
Nominal	+20 °C	2.597	±10	PASS			
Nominal	-20 °C	1.350	±10	PASS			
Nominal	+50 °C	3.324	±10	PASS			
Comments:							

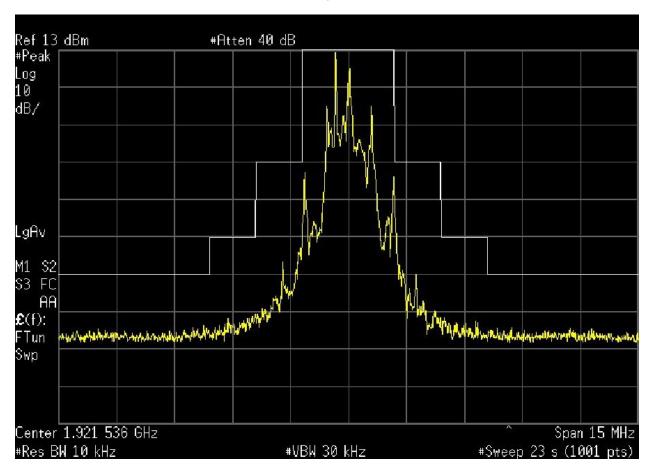


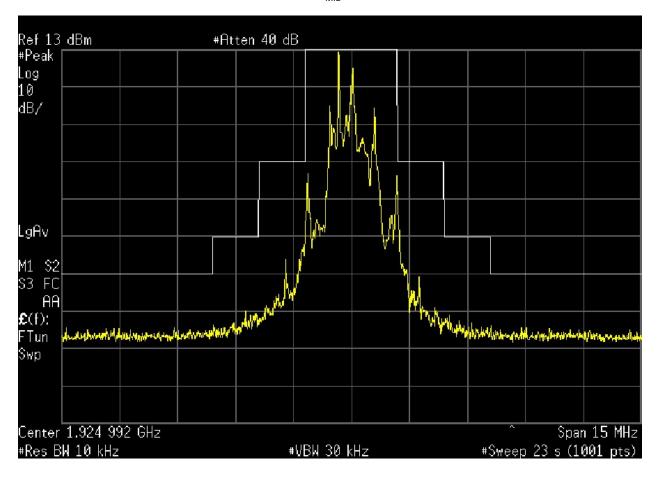


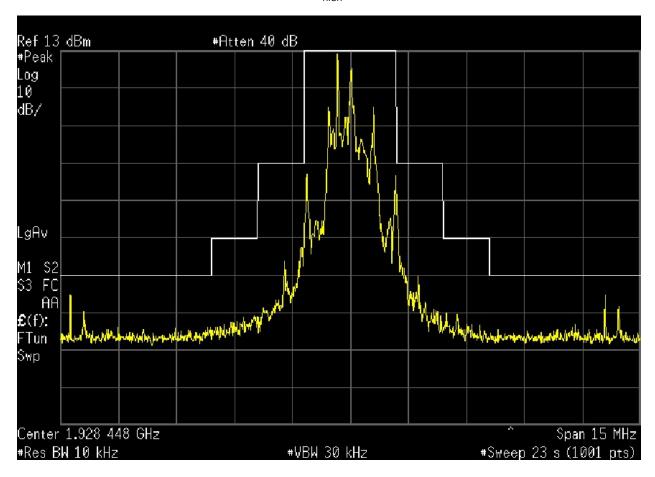


### 3.10 Test conditions and results – Transmitter in-band unwanted emissions

In-band unwanted emissions acc. to				Verdict: PASS
FCC 47 CFR 15D / IC RSS-213				
EUT requirement			Re	eference
rule parts and clause			FCC 15.323(d	) / IC RSS-213 5.8.2
Test according to			Refere	nce Method
measurement reference	9		ANSI C	63.17 6.1.6.1
Tested frequencies			Fi	ow / F <sub>high</sub>
Test frequency range			1920	– 1930 MHz
	Li	imits		
Frequency range [MHz]			Detector	Limit [dBc]
UPCS Band Edge to (F <sub>C</sub> – 3B)			Peak	-60
(F <sub>C</sub> – 3B) to (F <sub>C</sub> – 2B)			Peak	-50
(F <sub>C</sub> – 2B) to (F <sub>C</sub> – 1B)			Peak	-30
$(F_C + 1B)$ to $(F_C + 2B)$			Peak	-30
$(F_C + 2B)$ to $(F_C + 3B)$			Peak	-50
(F <sub>C</sub> + 3B) to UPCS Band Edge			Peak	-60
B = occupied bandwidth of selected c	hannel			
F <sub>C</sub> = Center frequency of selected cha	nnel			
	Test	resul	ts	
Channel	Fr	reque	ncy [MHz]	Verdict
F <sub>LOW</sub>		192	21.536	Pass
F <sub>MID</sub>		192	24.992	Pass
F <sub>HIGH</sub>		192	28.448	Pass
Comments: The limit calculation was	done with	the Ca	anadian limit becaus	se it is worst case







#### 3.11 Test conditions and results – Transmitter out-of-band emissions

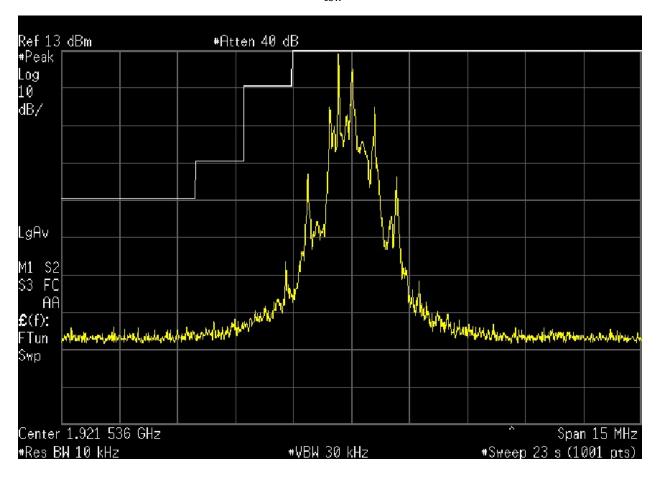
Out-of-band emissions acc. to FCC 47 C	FR 15D / IC RSS-213			Verdict: PASS
EUT requirement			Reference	
rule parts and clause	!		FCC 15.323(d) / IC RSS-213	5.8.1
Test according to			Reference Method	
measurement reference	ce		ANSI C63.17 6.1.6	
Tested frequencies			F <sub>low</sub> / F <sub>high</sub>	
Test frequency range			30 MHz – 10 <sup>th</sup> Harmon	ic
	Lim	its		
Frequency range [MHz]	Detector	r	Limit	Limit Distance [meters]
30 – 88	Quasi-Pea	ak	100 μV/m (40 dBμV/m)	3
88 – 216	Quasi-Pea	ak	150 μV/m (43.5 dBμV/m)	3
216 – 960	Quasi-Pea	ak	200 μV/m (46 dBμV/m)	3
960 – 1000	Quasi-Pea	ak	500 μV/m (54 dBμV/m)	3
1000 – 1917.5	Average		500 μV/m (54 dBμV/m)	3
Below 1917.5	Peak		-39.5 dBm *	N/A
1917.5 - 1918.75	Peak		-29.5 dBm *	N/A
1918.75 – 1920	Peak		-9.5 dBm *	N/A
1930 – 1931.25	Peak		-9.5 dBm *	N/A
1931.25 – 1932.5	Peak		-29.5 dBm *	N/A
Above 1932.5	Peak		-39.5 dBm *	N/A
1932.5 - 20000	Average	!	500 μV/m (54 dBμV/m)	3

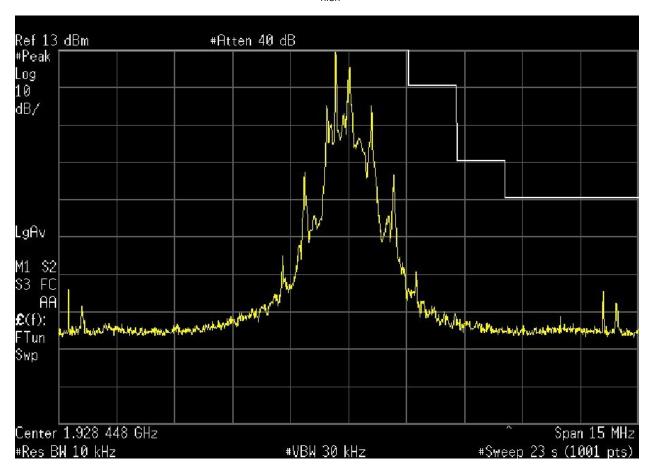
Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

When average radiated emission measurements are specified, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test. \*Measurement is performed with conducted measurement setup

Comments:

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11620220028	ElectroMagnetic	CMT
LIG20230928	Investigations	







Revision 11

EMI		KADIA	IED EN	IISSIUN	SDATA	SHEET		6/30/2021
	Customer:	Lightspeed 1	Technologies	1	Job	Reference#:	LIG2023092	28
	Contact:	Rob D'Ange	lo				11/20/2023	
	DUT:	Rogue Mic			Temp	erature (°C):	22	
Se	erial Number:	03-CMT-Z-S	2340-00002		Relative H	Humidity (%):	30	
١	/oltage/Freq:	Battery			Baromet	ric Pressure:	30	
	Tested by:	Ryan Benite	Z			Location:	Hillsboro	
Produc	ct Standards:	FCC Part 15	Subpart D					
		N/A						
Te	est Standard:	FCC Part 15	.209					
TEST RESUL	TS	TEST TYPE			DISTANCE		RUN#	
Pass		Compliance			3 meters			1
	_	Horizontal Peak	_	Vertical Peak	——— Averag	pe Limit	- QP Limit	
80 T								
70								
60								
50								
Ang 40								
₩ 30 +								
- 1	I I A				-	- Paris Carlo Carl		
20	\	M	The Parks of the P					
10	W*	*****						
o								
0	100	200	300 40	00 500 MHz	600	700 8	00 900	1000
COMMENTS							SIGNATURE	
Mic Ch: LC	DW .					Ryan		
				Horizontal			_	
Freq (MHz)	Peak (dBμV)	QP (dBμV)	Factors (dB)	Peak Limit (dBµV)	QP Limit (dBμV)	Turntable (deg) / Height (cm)	Peak Margin (dB)	QP Margin (dB)
30.16	21.39	16.91	23.40	40.00	40.00	73°/374cm	18.61	23.09
109.93	24.91	19.04	16.70	43.52	43.52	68º/161cm	18.61	24.48
351.11	21.67	17.23	20.93	46.02	46.02	293°/400cm	24.35	28.79
901.39	29.30	24.84	31.75	46.02	46.02	315°/175cm	16.72	21.18
				Vertical				
Freq (MHz)	Peak (dBμV)	QP (dBμV)	Factors (dB)	Peak Limit (dBµV)	QP Limit (dBμV)	Turntable (deg) / Height (cm)	Peak Margin (dB)	QP Margin (dB)
30.16	22.28	16.91	23.40	40.00	40.00	203°/275cm	17.72	23.09
109.55	27.70	21.90	16.67	43.52	43.52	316°/400cm	15.82	21.62
351.11	21.41	17.36	20.93	46.02	46.02	275°/375cm	24.61	28.66
973.66	31.63	27.36	34.14	53.98	53.98	67º/198cm	22.35	26.62



Revision 11 6/30/2021

Contact: Rob D'Angelo   Date   1/20/2023	EMI		KADIA	TED EN	100101				6/30/2021
Serial Number   O3-CMT-Z-S2340-00002   Relative Humidity (%): 30   So		Customer:	Lightspeed '	Technologies	3	Job	Reference#:	LIG2023092	8
Serial Number  03-CMT-Z-S2340-00002   Relative Humidity (%): 30		Contact:		lo			Date:	11/20/2023	
Voltage/Freq   Battery   Barometric Pressure:   30   1   1   1   1   1   1   1   1   1		DUT:	Rogue Mic			Temp	erature (°C):	22	
Tested by: Ryan Benitez	S	erial Number:	03-CMT-Z-S	2340-00002		Relative H	Humidity (%):	30	
Tested by: Ryan Benitez		Voltage/Freg:	Battery			Baromet	ric Pressure:	30	
N/A   Test Standards   FCC   Part 15.209   TEST RESULTS   TEST TYPE   Compliance   3 meters   1				Z			Location:	Hillsboro	
NA   Test Standards   FCC Part 15.209   TEST RESULTS   TEST TYPE   Compliance   3 meters   1	Produ	ct Standards:	FCC Part 15	Subpart D				•	
Test Standard:   FCC Part 15.209   TEST TYPE   DISTANCE   RUN #				•					
Pass   Compliance   3 meters   1	Т	est Standard:	FCC Part 15	.209					
Pass   Compliance   3 meters   1						DISTANCE		RUN#	
Note that   Peak   Mic Ch:0   Horizontal									1
Mic Ch:0   Horizontal		_			Vertical Peak	——— Avera	ge Limit	QP Limit	
Freq (MHz)   Peak (dB <sub>µ</sub> V)   Final (dB <sub>µ</sub> V)   Feators (dB)   Qas	80 -								
COMMENTS   SIGNATURE	70								++++
COMMENTS   SIGNATURE	,,,								
Horizontal   Freq (MHz)   Peak (dBμV)   Final (dBμV)   Final (dBμV)   Final Limit (dBμV)   Final (dBμV)   Fi	60 -							+++++	+
Horizontal   Freq (MHz)   Peak (dBμV)   Final (dBμV)   Final (dBμV)   Final Limit (dBμV)   Final (dBμV)   Fi	50 -								
COMMENTS   SIGNATURE				I Market	Valence .	Marin Marin		The second second	
COMMENTS   SIGNATURE	<b>ng</b> 40 -	I de la constitución de la const	STATE OF THE PERSON NAMED IN						
Mic Ch:0   Horizontal   Freq (MHz)   Peak (dB <sub>μ</sub> V)   Final (dB <sub>μ</sub> V)   Factors (dB)   Peak Limit (dB <sub>μ</sub> V)   Final Limit (dB <sub>μ</sub> V)   Fina									
Mic Ch:0   Horizontal   Freq (MHz)   Peak (dB <sub>μ</sub> V)   Final (dB <sub>μ</sub> V)   Factors (dB)   Peak Limit (dB <sub>μ</sub> V)   Final Limit (dB <sub>μ</sub> V)   Fina	20								
Mic Ch:0   Horizontal	20 -								
Mic Ch:0   Horizontal	10 -								+
Mic Ch:0   Horizontal	0 -								
Mic Ch:0   Horizontal		00 3000	5000	7000	9000	11000	13000	15000 1	7000
Mic Ch:0   Horizontal					MHz				
Horizontal   Freq (MHz)   Peak (dBμV)   Final (dBμV)   Factors (dB)   Peak Limit (dBμV)   Final Limit (dBμV)   Height (cm)   Peak Margin (dB)   Final Margin (dB)   Peak Margin (dB)					2				
Horizontal   Freq (MHz)   Peak (dBμV)   Final (dBμV)   Factors (dB)   Peak Limit (dBμV)   Final Limit (dBμV)	COMMENT	S						SIGNATURE	
Horizontal   Freq (MHz)   Peak (dBμV)   Final (dBμV)   Factors (dB)   Peak Limit (dBμV)   Final Limit (dBμV)							Ruan	Bent	
Freq (MHz)         Peak (dBμV)         Final (dBμV)         Factors (dB)         Peak Limit (dBμV)         Final Limit (dBμV)         Turntable (deg) / Height (cm)         Peak Margin (dB)         Final Margin (dB)           1921.20         45.30         20.92         -10.09         73.98         53.98         21°/101cm         28.68         33.06           7861.01         40.61         38.58         10.62         73.98         53.98         315°/149cm         33.37         15.40           12459.00         43.82         39.09         7.22         73.98         53.98         315°/152cm         30.16         14.89           13876.08         42.30         39.19         9.38         73.98         53.98         207°/149cm         31.68         14.79           14684.90         48.40         42.73         11.92         73.98         53.98         260°/101cm         25.58         11.25           17872.01         48.73         44.21         17.54         73.98         53.98         -1°/168cm         25.25         9.77           Vertical           Freq (MHz)         Feak (dBμV)         Final (dBμV)         Factors (dB)         Feak Limit (dBμV)         Turntable (deg) / Height (cm)         Peak Margin (dB) <t< td=""><td>Mic Ch:0</td><td></td><td></td><td></td><td></td><td></td><td>109</td><td>Centry</td><td></td></t<>	Mic Ch:0						109	Centry	
Freq (MHz)         Peak (dBμV)         Final (dBμV)         Factors (dB)         (dBμV)         (dBμV)         Height (cm)         (dB)         (dB)           1921.20         45.30         20.92         -10.09         73.98         53.98         21°/101cm         28.68         33.06           7861.01         40.61         38.58         10.62         73.98         53.98         315°/149cm         33.37         15.40           12459.00         43.82         39.09         7.22         73.98         53.98         207°/149cm         31.68         14.79           13876.08         42.30         39.19         9.38         73.98         53.98         207°/149cm         31.68         14.79           14684.90         48.40         42.73         11.92         73.98         53.98         260°/101cm         25.58         11.25           17872.01         48.73         44.21         17.54         73.98         53.98         -1°/168cm         25.25         9.77           Vertical           Freq (MHz)         Peak (dBμV)         Final (dBμV)         Factors (dB)         Peak Limit (dBμV)         Final Limit (dBμV)         Final Margin (dB)         Final Margin (dB)         Final Margin (dB)         Fina					Horizontal				
7861.01         40.61         38.58         10.62         73.98         53.98         315°/149cm         33.37         15.40           12459.00         43.82         39.09         7.22         73.98         53.98         315°/152cm         30.16         14.89           13876.08         42.30         39.19         9.38         73.98         53.98         207°/149cm         31.68         14.79           14684.90         48.40         42.73         11.92         73.98         53.98         260°/101cm         25.58         11.25           17872.01         48.73         44.21         17.54         73.98         53.98         -1°/168cm         25.25         9.77           Vertical           Freq (MHz)         Peak (dBμV)         Final (dBμV)         Final Limit (dBμV)         Turntable (deg) / Peak Margin (dB)         Final Margin (dB)           1921.22         46.21         20.95         -10.09         73.98         53.98         234°/199cm         27.77         33.03           7817.15         44.11         38.99         10.78         73.98         53.98         316°/174cm         29.87         14.99           12377.87         40.78	Freq (MHz)	Peak (dBμV)	Final (dBµV)	Factors (dB)					
12459.00 43.82 39.09 7.22 73.98 53.98 315°/152cm 30.16 14.89 13876.08 42.30 39.19 9.38 73.98 53.98 207°/149cm 31.68 14.79 14684.90 48.40 42.73 11.92 73.98 53.98 260°/101cm 25.58 11.25 17872.01 48.73 44.21 17.54 73.98 53.98 -1°/168cm 25.25 9.77 Vertical  Freq (MHz) Peak (dBμV) Final (dBμV) Factors (dB) Peak Limit (dBμV) Final Limit (dBμV) Final Limit (dBμV) Final Limit (dBμV) Peak Margin (dB) Final Margin (dB) Final Limit (dBμV) Final Limit (dBμ	1921.20	45.30	20.92	-10.09	73.98	53.98	21º/101cm	28.68	33.06
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	7861.0	40.61	38.58	10.62	73.98	53.98	315°/149cm	33.37	15.40
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	12459.0	43.82	39.09	7.22	73.98	53.98	315°/152cm	30.16	14.89
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	13876.0	42.30	39.19	9.38	73.98	53.98	207°/149cm	31.68	14.79
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	14684.90	48.40	42.73	11.92	73.98	53.98	260°/101cm	25.58	11.25
Freq (MHz)         Peak (dBμV)         Final (dBμV)         Factors (dB)         Peak Limit (dBμV)         Final Limit (dBμV)         Turntable (deg) / Height (cm)         Peak Margin (dB)         Final Margin (dB)           1921.22         46.21         20.95         -10.09         73.98         53.98         234°/199cm         27.77         33.03           7817.15         44.11         38.99         10.78         73.98         53.98         316°/174cm         29.87         14.99           12377.87         40.78         38.56         7.04         73.98         53.98         154°/176cm         33.20         15.42           13918.43         40.17         38.44         9.37         73.98         53.98         22°/175cm         33.81         15.54           14667.70         44.85         42.72         11.94         73.98         53.98         0°/100cm         29.13         11.26	17872.0	1 48.73	44.21	17.54	73.98	53.98	-1º/168cm	25.25	9.77
Freq (MHz)         Peak (dBμV)         Final (dBμV)         (dBμV)         (dBμV)         Height (cm)         (dB)         (dB)           1921.22         46.21         20.95         -10.09         73.98         53.98         234°/199cm         27.77         33.03           7817.15         44.11         38.99         10.78         73.98         53.98         316°/174cm         29.87         14.99           12377.87         40.78         38.56         7.04         73.98         53.98         154°/176cm         33.20         15.42           13918.43         40.17         38.44         9.37         73.98         53.98         22°/175cm         33.81         15.54           14667.70         44.85         42.72         11.94         73.98         53.98         0°/100cm         29.13         11.26					Vertical				
7817.15         44.11         38.99         10.78         73.98         53.98         316°/174cm         29.87         14.99           12377.87         40.78         38.56         7.04         73.98         53.98         154°/176cm         33.20         15.42           13918.43         40.17         38.44         9.37         73.98         53.98         22°/175cm         33.81         15.54           14667.70         44.85         42.72         11.94         73.98         53.98         0°/100cm         29.13         11.26	Freq (MHz)	Peak (dBµV)	Final (dBµV)	Factors (dB)				_	_
12377.87     40.78     38.56     7.04     73.98     53.98     154°/176cm     33.20     15.42       13918.43     40.17     38.44     9.37     73.98     53.98     22°/175cm     33.81     15.54       14667.70     44.85     42.72     11.94     73.98     53.98     0°/100cm     29.13     11.26	1921.2	46.21	20.95	-10.09	73.98	53.98	234°/199cm	27.77	33.03
13918.43 40.17 38.44 9.37 73.98 53.98 22°/175cm 33.81 15.54 14667.70 44.85 42.72 11.94 73.98 53.98 0°/100cm 29.13 11.26	7817.1	44.11	38.99	10.78	73.98	53.98	316°/174cm	29.87	14.99
14667.70 44.85 42.72 11.94 73.98 53.98 0°/100cm 29.13 11.26	12377.8	7 40.78	38.56	7.04	73.98	53.98	154°/176cm	33.20	15.42
	13918.4	40.17	38.44	9.37	73.98	53.98	22º/175cm	33.81	15.54
	14667.70	44.85	42.72	11.94	73.98	53.98	0º/100cm	29.13	11.26
11071110 JULIO TTALO 11112 (3.70 J3.70 122/1000H 23.02 9.73	17897.7	50.16	44.25	17.72	73.98	53.98	122º/100cm	23.82	9.73



Revision 11 6/30/2021

MI	antique lum								
		Customer:	Lightspeed 1	Technologies		Job	Reference#:	LIG2023092	28
			Rob D'Ange	lo				11/21/2023	
		DUT:	Rogue Mic				erature (°C):		
	Ser	rial Number:	03-CMT-Z-S	2340-00002		Relative H	Humidity (%):	30	
	V	oltage/Freq:	Battery			Baromet	ric Pressure:	30	
			Ryan Benite				Location:	Hillsboro	
Pi	roduct	t Standards:	FCC Part 15	Subpart D					
			N/A						
	Tes	st Standard:	FCC Part 15	5.209					
	ESUL	TS	TEST TYPE			DISTANCE		RUN#	
ass			Compliance			3 meters			
		_	Horizontal Peak		Vertical Peak	——— Averaç	ge Limit	QP Limit	
	80 上								
	70								
	60	ALL LAND					والمار والمارو		and a
	50								
dBuV	40					+			
	20								
	30								
	20								+
	20								
									$\square$
	10 1800	00 1900	00 20000	0 21000	22000 MHz	23000	24000	25000	26000
	10	00 1900	00 20000	0 21000		23000		SIGNATURE	
ОММ	10 18000	00 1900	00 20000	0 21000	MHz	23000	24000 Ryan	SIGNATURE	
DMM ic Cl	10 1800 1800	00 1900 Peak (dBμV)	OO 20000 Average (dBμV)	D 21000 Factors (dB)		23000  Average Limit (dBµV)		SIGNATURE	
OMM ic Cl	10 1800 1800				MHz Horizontal Peak Limit	Average Limit	Ryan Turntable (deg)/	SIGNATURE Bentley Peak Margin	Average Mar (dB)
DMMI iic Cl	10 1800 1800 H:0	Peak (dBμV)	Average (dBμV)	Factors (dB)	MHz Horizontal Peak Limit (dΒμV)	Average Limit (dBμV)	Pyan  Turntable (deg) / Height (cm)	Beatty  Peak Margin (dB)	Average Mar (dB)
DMM iic Cl Freq (M	10 1800 1800 H:0	Peak (dBμV) 41.67	Average (dBμV) 38.95 39.35	Factors (dB)	MHz  Horizontal  Peak Limit (dBμV)  73.98	Average Limit (dBµV) 53.98	Turntable (deg)/ Height (cm) 202°/100cm	Bentey  Peak Margin (dB)  32.31	Average Mar (dB) 15
DMMI lic CI 182 214 217	10 1800 1800 H:0 4Hz) 284.57	Peak (dBµV) 41.67 44.40	Average (dBµV) 38.95 39.35 39.77	Factors (dB) 10.61 9.09 9.56	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98	Average Limit (dBμV) 53.98 53.98	Turntable (deg)/ Height (cm) 202°/100cm 248°/175cm	Peak Margin (dB)  32.31 29.58 29.26	Average Mar (dB) 15 14
DMMI lic CI 1822 214 217 218	10 1800 1800 H:0 4Hz) 284.57 422.64 725.64	Peak (dBµV) 41.67 44.40 44.72	Average (dBµV) 38.95 39.35 39.77 39.96	Factors (dB) 10.61 9.09 9.56	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98	Average Limit (dBμV) 53.98 53.98 53.98	Turntable (deg) / Height (cm) 202°/100cm 248°/175cm 68°/101cm	Peak Margin (dB)  32.31 29.58 29.26	Average Mar (dB) 15 14 14
DMMI iic Cl 182 214 217 218 223	10 1800 1800 H:0 4Hz) 284.57 422.64 725.64 893.46	Peak (dBµV) 41.67 44.40 44.72 42.57	Average (dBµV) 38.95 39.35 39.77 39.96 39.17	Factors (dB) 10.61 9.09 9.56 9.02	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  73.98  73.98	Average Limit (dBμV) 53.98 53.98 53.98 53.98	Turntable (deg) / Height (cm) 202°/100cm 248°/175cm 68°/101cm 0°/175cm	Peak Margin (dB)  32.31 29.58 29.26 31.41	Average Man (dB) 15 14 14 14
DMMI iic Cl 182 214 217 218 223	10 1800 1800 H:0 4Hz) 284.57 422.64 725.64 893.46 324.43	Peak (dBµV) 41.67 44.40 44.72 42.57 41.94	Average (dBµV) 38.95 39.35 39.77 39.96 39.17	Factors (dB) 10.61 9.09 9.56 9.02 8.87	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  73.98	Average Limit (dBμV) 53.98 53.98 53.98 53.98 53.98	Turntable (deg) / Height (cm) 202°/100cm 248°/175cm 68°/101cm 0°/175cm 221°/100cm	Peak Margin (dB)  32.31 29.58 29.26 31.41 32.04	Average Man (dB) 15 14 14 14
DMMI iic CI 182 214 217 218 223 232	H:0 MHz) 284.57 422.64 725.64 893.46 324.43 238.97	Peak (dBµV) 41.67 44.40 44.72 42.57 41.94	Average (dBµV) 38.95 39.35 39.77 39.96 39.17	Factors (dB) 10.61 9.09 9.56 9.02 8.87	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  73.98  73.98	Average Limit (dBμV) 53.98 53.98 53.98 53.98 53.98	Turntable (deg) / Height (cm) 202°/100cm 248°/175cm 68°/101cm 0°/175cm 221°/100cm	Peak Margin (dB)  32.31 29.58 29.26 31.41 32.04	Average Mar (dB) 15 14 14 14 14
218 223 232 219 219 220 230	H:0  4Hz) 284.57 422.64 725.64 324.43 238.97	Peak (dBµV) 41.67 44.40 44.72 42.57 41.94	Average (dBμV)  38.95 39.35 39.77 39.96 39.17 39.90 Average (dBμV)	Factors (dB) 10.61 9.09 9.56 9.02 8.87 9.64	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  73.98  Vertical  Peak Limit	Average Limit (dBμV) 53.98 53.98 53.98 53.98 53.98 Average Limit	Turntable (deg) / Height (cm) 202°/100cm 248°/175cm 68°/101cm 0°/175cm 221°/100cm 112°/199cm	Peak Margin (dB)  32.31 29.58 29.26 31.41 32.04 31.05	Average Mar (dB) 15 14 14 14 14 14 Average Mar (dB)
214 217 218 223 232 232 219 219	H:0 4Hz) 284.57 422.64 725.64 893.46 324.43 238.97 4Hz) 905.31 923.68	Peak (dBμV) 41.67 44.40 44.72 42.57 41.94 42.93 Peak (dBμV)	Average (dBμV)  38.95  39.35  39.77  39.96  39.17  39.90  Average (dBμV)  40.04	Factors (dB)  10.61  9.09  9.56  9.02  8.87  9.64  Factors (dB)	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  Vertical  Peak Limit (dBμV)	Average Limit (dBμV) 53.98 53.98 53.98 53.98 53.98 Average Limit (dBμV)	Turntable (deg)/ Height (cm) 202°/100cm 248°/175cm 68°/101cm 0°/175cm 221°/100cm 112°/199cm  Turntable (deg)/ Height (cm) 145°/155cm 22°/176cm	Peak Margin (dB)  32.31 29.58 29.26 31.41 32.04 31.05  Peak Margin (dB)	Average Mar (dB) 15 14 14 14 14 14 Average Mar (dB)
214 217 218 223 232 232 219 227	H:0 4Hz) 284.57 422.64 725.64 893.46 324.43 238.97 4Hz) 905.31 923.68 737.67	Peak (dBμV) 41.67 44.40 44.72 42.57 41.94 42.93 Peak (dBμV) 41.73 44.88 44.49	Average (dBµV)  38.95  39.35  39.77  39.96  39.17  39.90  Average (dBµV)  40.04  40.18  39.20	Factors (dB)  10.61 9.09 9.56 9.02 8.87 9.64  Factors (dB) 8.96 8.92 8.65	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  Vertical  Peak Limit (dBμV)  73.98  73.98  73.98  73.98	Average Limit (dBμV) 53.98 53.98 53.98 53.98 53.98 4verage Limit (dBμV) 53.98 53.98	Turntable (deg)/ Height (cm) 202°/100cm 248°/175cm 68°/101cm 0°/175cm 221°/100cm 112°/199cm  Turntable (deg)/ Height (cm) 145°/155cm 22°/176cm 176°/100cm	Peak Margin (dB)  32.31 29.58 29.26 31.41 32.04 31.05  Peak Margin (dB)  32.25 29.10 29.49	Average Mar (dB) 15 14 14 14 14 14 Average Mar (dB) 13
214 217 218 223 232 249 219 227 230	H:0 4H:2) 284.57 422.64 725.64 893.46 324.43 238.97 4Hz) 905.31 923.68 737.67 985.07	Peak (dBμV) 41.67 44.40 44.72 42.57 41.94 42.93  Peak (dBμV) 41.73 44.88 44.49 41.44	Average (dBµV)  38.95 39.35 39.77 39.96 39.17 39.90  Average (dBµV) 40.04 40.18 39.20 39.62	Factors (dB)  10.61 9.09 9.56 9.02 8.87 9.64  Factors (dB)  8.96 8.92 8.65 9.42	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  Vertical  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  73.98  73.98	Average Limit (dBμV) 53.98 53.98 53.98 53.98 53.98 Average Limit (dBμV) 53.98 53.98 53.98	Turntable (deg)/ Height (cm) 202°/100cm 248°/175cm 68°/101cm 0°/175cm 221°/100cm 112°/199cm  Turntable (deg)/ Height (cm) 145°/155cm 22°/176cm 176°/100cm 0°/199cm	Peak Margin (dB)  32.31 29.58 29.26 31.41 32.04 31.05  Peak Margin (dB)  32.25 29.10 29.49 32.54	Average Mar (dB) 15. 14. 14. 14. 14. 14. Average Mar (dB) 13. 13.
214 217 218 223 232 252 27 219 227 230 233	H:0 4Hz) 284.57 422.64 725.64 893.46 324.43 238.97 4Hz) 905.31 923.68 737.67	Peak (dBμV) 41.67 44.40 44.72 42.57 41.94 42.93 Peak (dBμV) 41.73 44.88 44.49	Average (dBμV)  38.95 39.35 39.77 39.96 39.17 39.90  Average (dBμV)  40.04 40.18 39.20 39.62 39.35	Factors (dB)  10.61 9.09 9.56 9.02 8.87 9.64  Factors (dB) 8.96 8.92 8.65	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  Vertical  Peak Limit (dBμV)  73.98  73.98  73.98  73.98	Average Limit (dBμV) 53.98 53.98 53.98 53.98 53.98 4verage Limit (dBμV) 53.98 53.98	Turntable (deg)/ Height (cm) 202°/100cm 248°/175cm 68°/101cm 0°/175cm 221°/100cm 112°/199cm  Turntable (deg)/ Height (cm) 145°/155cm 22°/176cm 176°/100cm	Peak Margin (dB)  32.31 29.58 29.26 31.41 32.04 31.05  Peak Margin (dB)  32.25 29.10 29.49	Average Mary (dB)  15. 14. 14. 14. 14. Average Mary (dB)  13. 13. 14. 14.



Revision 11

MIJJ	******								
		Custome	: Lightspeed	Technologies		Job	Reference#:	LIG2023092	28
		Contac	: Rob D'Ange	lo			Date:	11/20/2023	
		DUT	: Rogue Mic			Temp	erature (°C):	22	
	Ser	rial Numbe	: 03-CMT-Z-S	2340-00002		Relative H	lumidity (%):	30	
	V	oltage/Fred	: Battery			Baromet	ric Pressure:	30	
		¥	: Ryan Benite	z			Location:	Hillsboro	
Pr	roduct	t Standards	: FCC Part 15	Subpart D					
			N/A						
	Tes	st Standard	: FCC Part 15	5.209					
EST R	ESULT		TEST TYPE			DISTANCE		RUN#	
ass			Compliance			3 meters			
		_	Horizontal Peak		Vertical Peak		p Limit	—— GP Limit	
	80 <u>-</u>								ПП.
	70								
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dBuV	40		<del></del>						
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	10 0	100	200	300 40		600	700 8	00 900	1000
	10 0	100	200	300 40	0 500 MHz	600	700 8		1000
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ОММІ	10 0 0		200	300 40		600	-0	SIGNATURE	1000
OMMI lic Ch	10 0 0		200 QP (dBμV)	300 40 Factors (dB)	MHz	QP Limit (dBµV)	Ryan Turntable (deg)/ Height (cm)	SIGNATURE	1000 QP Margin (o
DMMI ic Ch	10 0 0	GH Peak (dBμV) 21.4	QP (dBμV) 9 16.79		MHz Horizontal Peak Limit	QP Limit	Turntable (deg)/ Height (cm) 158°/225cm	SIGNATURE Beautey	QP Margin (
OMMI lic Ch	10 0 0	GH Peak (dBμV)	QP (dBμV) 9 16.79	Factors (dB)	MHz Horizontal Peak Limit (dBµV)	QP Limit (dBμV)	Ryan Turntable (deg)/ Height (cm)	Beartey Peak Margin (dB)	QP Margin (c
DMMI	10 0 0 0 ENTS	GH Peak (dBμV) 21.4	QP (dBμV) 9 16.79 8 18.97 9 17.40	Factors (dB)	MHz Horizontal Peak Limit (dBμV) 40.00	QP Limit (dBµV) 40.00	Turntable (deg)/ Height (cm) 158°/225cm	Beatty  Peak Margin (dB)  18.51	QP Margin (
DMMI	10 0 0 0 0 HIC (Hz) 30.72 109.62	GH  Peak (dBμV)  21.4  25.3	QP (dBμV) 9 16.79 8 18.97 9 17.40	Factors (dB) 23.25 16.67	MHz Horizontal Peak Limit (dBμV) 40.00 43.52	QP Limit (dBμV) 40.00 43.52	Turntable (deg) / Height (cm) 158°/225cm 316°/400cm	Beatty  Peak Margin (dB)  18.51	QP Margin ( 23 24 28
DMMI	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	GH  Peak (dBμV)  21.4  25.3  21.1	QP (dBμV) 9 16.79 8 18.97 9 17.40	Factors (dB) 23.25 16.67 20.93	MHz  Horizontal  Peak Limit (dBμV)  40.00  43.52  46.02  53.98	QP Limit (dBμV) 40.00 43.52 46.02	Turntable (deg) / Height (cm) 158°/225cm 316°/400cm 315°/330cm	Peak Margin (dB)  18.51  18.14  24.83	QP Margin (c 23 24 28
DMMI	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	GH  Peak (dBμV)  21.4  25.3  21.1	QP (dBμV) 9 16.79 8 18.97 9 17.40	Factors (dB) 23.25 16.67 20.93	MHz  Horizontal Peak Limit (dBμV) 40.00 43.52 46.02 53.98  Vertical	QP Limit (dBμV) 40.00 43.52 46.02 53.98	Turntable (deg) / Height (cm) 158°/225cm 316°/400cm 315°/330cm 293°/324cm	Peak Margin (dB)  18.51  18.14  24.83	QP Margin (c 23 24 28
DMMI	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	GH  Peak (dBμV)  21.4  25.3  21.1	QP (dBμV) 9 16.79 8 18.97 9 17.40 1 27.09	Factors (dB) 23.25 16.67 20.93	MHz  Horizontal  Peak Limit (dBμV)  40.00  43.52  46.02  53.98	QP Limit (dBμV) 40.00 43.52 46.02	Turntable (deg) / Height (cm) 158°/225cm 316°/400cm 315°/330cm	Peak Margin (dB)  18.51  18.14  24.83	QP Margin (c) 23 24 28 26
DMMI iic Ch freq (M	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak (dBμV) 21.4 25.3 21.1 31.5	QP (dBμV) 9 16.79 8 18.97 9 17.40 1 27.09  QP (dBμV)	Factors (dB) 23.25 16.67 20.93 34.17	MHz  Horizontal  Peak Limit (dBμV)  40.00  43.52  46.02  53.98  Vertical  Peak Limit	QP Limit (dBμV) 40.00 43.52 46.02 53.98	Turntable (deg) / Height (cm)  158°/225cm 316°/400cm 315°/330cm 293°/324cm  Turntable (deg) / Height (cm) 233°/131cm	Peak Margin (dB)  18.51  18.14  24.83  22.47	QP Margin (c) 23 24 28 26 QP Margin (c)
DMMI  lic Ch  Freq (M	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak (dBµV)  21.4  25.3  21.1  31.5	QP (dBμV) 9 16.79 8 18.97 9 17.40 1 27.09  QP (dBμV) 8 16.64	Factors (dB)  23.25 16.67 20.93 34.17  Factors (dB)	MHz  Horizontal  Peak Limit (dBμV)  40.00  43.52  46.02  53.98  Vertical  Peak Limit (dBμV)	QP Limit (dBμV) 40.00 43.52 46.02 53.98 QP Limit (dBμV)	Turntable (deg)/ Height (cm) 158°/225cm 316°/400cm 315°/330cm 293°/324cm	Peak Margin (dB)  18.51  18.14  24.83  22.47	QP Margin (c 23 24 28
DMMI  lic Ch  Freq (M  1  3  9	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak (dBµV)  21.4  25.3  21.1  31.5  Peak (dBµV)	QP (dBμV) 9 16.79 8 18.97 9 17.40 1 27.09  QP (dBμV) 8 16.64 8 21.96	Factors (dB)  23.25 16.67 20.93 34.17  Factors (dB) 22.88	MHz  Horizontal  Peak Limit (dBμV)  40.00  43.52  46.02  53.98  Vertical  Peak Limit (dBμV)  40.00	QP Limit (dBμV) 40.00 43.52 46.02 53.98 QP Limit (dBμV)	Turntable (deg) / Height (cm)  158°/225cm 316°/400cm 315°/330cm 293°/324cm  Turntable (deg) / Height (cm) 233°/131cm	Peak Margin (dB)  18.51  18.14  24.83  22.47  Peak Margin (dB)	QP Margin (c) 23 24 28 26 QP Margin (c) 23
DMMI  Ilic Ch  Freq (M  1  3  9	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak (dBµV)  21.4  25.3  21.1  31.5  Peak (dBµV)	QP (dBμV) 9 16.79 8 18.97 9 17.40 1 27.09  QP (dBμV) 8 16.64 8 21.96 6 16.88	Factors (dB)  23.25 16.67 20.93 34.17  Factors (dB)  22.88 16.65	MHz  Horizontal  Peak Limit (dBμV)  40.00  43.52  46.02  53.98  Vertical  Peak Limit (dBμV)  40.00  43.52	QP Limit (dBμV) 40.00 43.52 46.02 53.98 QP Limit (dBμV) 40.00 43.52	Turntable (deg)/ Height (cm) 158°/225cm 316°/400cm 315°/330cm 293°/324cm Turntable (deg)/ Height (cm) 233°/131cm 202°/399cm	Peak Margin (dB)  18.51  18.14  24.83  22.47  Peak Margin (dB)  17.42  16.44	QP Margin (  23  24  28  26  QP Margin (  23  21



Revision 11 6/30/2021

		Customor	Lightspeed 1	Foobbologies		loh	Reference#:	1102022002	00
		Contact:			•	300			.0
		DUT:		10		Tomp			
	Sa	rial Number:		2340-00002			Humidity (%):		
				2340-00002					
	V	oltage/Freq:	_			Baromet			
	Deading	Tested by: t Standards:					Location:	Hillsboro	
r	Produc	t Standards:	FCC Part 15 N/A	о опран р					
	To	st Standard:		200					
TEST	RESUL		TEST TYPE	.209		DISTANCE		RUN#	
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1 433			Compliance			O IIICICIS			$\overline{}$
		_	Horizontal Peak		Vertical Peak		ge Limit	OP Limit	
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		0 3000	5000	7000	9000	11000	13000	15000 1	7000
	0	0 3000	5000	7000	9000 MHz	11000	13000	15000 1	7000
	100	0 3000	5000	7000		11000	13000		
COMM	0	0 3000	5000	7000		11000	-0	SIGNATURE	
COMM	100	0 3000	5000	7000		11000	-0	SIGNATURE	
	100	0 3000	5000	7000		11000	13000 Ryan	SIGNATURE	
COMM Mic C	100	0 3000	5000	7000	MHz	11000	-0	SIGNATURE	
Mic C	0 + 100				MHz Horizontal		Ryan	SIGNATURE Benity	
Mic C	100	0 3000 Peak (dBμV)	5000 Final (dBμV)	7000 Factors (dB)	MHz	11000 Final Limit (dBµV)	-0	SIGNATURE	
Mic C	0 100 MENTS Ch:4 (MHz)		Final (dBμV)		MHz  Horizontal  Peak Limit (dBµV)	Final Limit	Ryan Turntable (deg)	Bentey  Peak Margin	Final Margin (dB)
Mic C	0 + 100	Peak (dBμV)		Factors (dB)	MHz Horizontal Peak Limit	Final Limit (dBμV)	Turntable (deg)/ Height (cm)	Bearty Peak Margin (dB)	Final Margin
Freq (	0 + 1000 MENTS Ch:4 (MHz) 1928.12	Peak (dBμV) 41.85	Final (dBμV)	Factors (dB)	MHz  Horizontal  Peak Limit (dBμV)  73.98	Final Limit (dBµV) 53.98	Turntable (deg)/ Height (cm) 221°/100cm	Benty Peak Margin (dB) 32.13	Final Margin (dB) 32.85 30.51
Freq (1	0 + 1000 MENTS Ch:4 (MHz) 1928.12 3856.24	Peak (dBµV) 41.85 45.62	Final (dBµV) 21.13 23.47	Factors (dB) -10.01 -6.17	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98	Final Limit (dBμV) 53.98 53.98	Turntable (deg)/ Height (cm) 221°/100cm 77°/101cm	Peak Margin (dB) 32.13 28.36	Final Margin (dB) 32.85 30.51
Freq ()	0 1000 MENTS Ch:4 (MHz) 1928.12 3856.24 7817.69	Peak (dBμV) 41.85 45.62 40.98	Final (dBµV) 21.13 23.47 39.00	Factors (dB) -10.01 -6.17 10.78	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98	Final Limit (dBμV) 53.98 53.98 53.98	Turntable (deg) / Height (cm) 221°/100cm 77°/101cm 135°/150cm	Peak Margin (dB)  32.13 28.36 33.00	Final Margin (dB) 32.85 30.51 14.98
Freq ()  1  3  7  13	0 1000 MENTS Ch:4 (MHz) 1928.12 3856.24 7817.69 3843.10	Peak (dBμV) 41.85 45.62 40.98 44.99 47.84	Final (dBµV)  21.13  23.47  39.00  39.42  42.80	Factors (dB) -10.01 -6.17 10.78 9.37 11.93	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  73.98	Final Limit (dBμV) 53.98 53.98 53.98 53.98	Turntable (deg) / Height (cm) 221º/100cm 77º/101cm 135º/150cm 0º/153cm 0º/179cm	Peak Margin (dB)  32.13 28.36 33.00 28.99	Final Margin (dB) 32.85 30.51 14.98 14.56
Freq ()  1  3  7  13	0 1000 MENUS Ch:4 (MHz) 1928.12 3856.24 7817.69 3843.10 4670.93	Peak (dBμV) 41.85 45.62 40.98 44.99 47.84	Final (dBµV)  21.13  23.47  39.00  39.42  42.80	Factors (dB) -10.01 -6.17 10.78 9.37 11.93	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  73.98	Final Limit (dBμV) 53.98 53.98 53.98 53.98	Turntable (deg) / Height (cm) 221º/100cm 77º/101cm 135º/150cm 0º/153cm 0º/179cm	Peak Margin (dB)  32.13  28.36  33.00  28.99  26.14	Final Margin (dB) 32.85 30.51 14.98 14.56
Freq ()  11  33  7  13  14	0 1000 11000 11100 1100	Peak (dBμV) 41.85 45.62 40.98 44.99 47.84 46.40	Final (dBμV)  21.13 23.47 39.00 39.42 42.80 44.15	Factors (dB) -10.01 -6.17 10.78 9.37 11.93	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  73.98  73.98	Final Limit (dBμV) 53.98 53.98 53.98 53.98	Turntable (deg) / Height (cm) 221º/100cm 77º/101cm 135º/150cm 0º/153cm 0º/179cm	Peak Margin (dB)  32.13  28.36  33.00  28.99  26.14	Final Margin (dB) 32.85 30.51 14.98 14.56
Freq ()  11  33  7  13  14	0 1000 MENUS Ch:4 (MHz) 1928.12 3856.24 7817.69 3843.10 4670.93	Peak (dBμV) 41.85 45.62 40.98 44.99 47.84	Final (dBµV)  21.13  23.47  39.00  39.42  42.80	Factors (dB) -10.01 -6.17 10.78 9.37 11.93	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  73.98  Vertical	Final Limit (dBμV) 53.98 53.98 53.98 53.98 53.98	Turntable (deg) / Height (cm) 221°/100cm 77°/101cm 135°/150cm 0°/153cm 0°/179cm 120°/200cm	Peak Margin (dB)  32.13  28.36  33.00  28.99  26.14  27.58	Final Margin (dB) 32.85 30.51 14.98 14.56 11.18
Freq ()  1  3  7  13  14  17	0 1000 11000 11100 1100	Peak (dBμV) 41.85 45.62 40.98 44.99 47.84 46.40	Final (dBµV)  21.13  23.47  39.00  39.42  42.80  44.15  Final (dBµV)	Factors (dB) -10.01 -6.17 10.78 9.37 11.93	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  73.98  Vertical  Peak Limit	Final Limit (dBμV) 53.98 53.98 53.98 53.98 53.98 Final Limit	Turntable (deg) / Height (cm) 221°/100cm 77°/101cm 135°/150cm 0°/153cm 0°/179cm 120°/200cm	Peak Margin (dB)  32.13  28.36  33.00  28.99  26.14  27.58	Final Margin (dB)  32.85  30.51  14.98  14.56  11.18  9.83
Freq ()  13  7  13  14  17  Freq ()	0 1000 MENUS Ch:4 (MHz) 1928.12 3856.24 7817.69 3843.10 4670.93 7859.38 (MHz)	Peak (dBμV) 41.85 45.62 40.98 44.99 47.84 46.40 Peak (dBμV)	Final (dBμV)  21.13  23.47  39.00  39.42  42.80  44.15  Final (dBμV)	Factors (dB) -10.01 -6.17 10.78 9.37 11.93 17.54 Factors (dB)	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  Vertical  Peak Limit (dBμV)	Final Limit (dBμV) 53.98 53.98 53.98 53.98 53.98 Final Limit (dBμV)	Turntable (deg)/ Height (cm) 221°/100cm 77°/101cm 135°/150cm 0°/179cm 120°/200cm Turntable (deg)/ Height (cm)	Peak Margin (dB)  32.13 28.36 33.00 28.99 26.14 27.58  Peak Margin (dB)	Final Margin (dB) 32.85 30.51 14.98 14.56 11.18 9.83
Freq ()  13  7  13  14  17  Freq ()	0 1000 MENUS Ch:4 (MHz) 1928.12 3856.24 7817.69 3843.10 4670.93 7859.38 (MHz)	Peak (dBμV) 41.85 45.62 40.98 44.99 47.84 46.40 Peak (dBμV)	Final (dBμV)  21.13 23.47 39.00 39.42 42.80 44.15  Final (dBμV) 21.33 38.76	Factors (dB) -10.01 -6.17 10.78 9.37 11.93 17.54 Factors (dB) -10.01	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  Vertical  Peak Limit (dBμV)  73.98	Final Limit (dBμV) 53.98 53.98 53.98 53.98 53.98 Final Limit (dBμV)	Turntable (deg)/ Height (cm) 221°/100cm 77°/101cm 135°/150cm 0°/179cm 120°/200cm Turntable (deg)/ Height (cm) 189°/123cm	Peak Margin (dB)  32.13 28.36 33.00 28.99 26.14 27.58  Peak Margin (dB)	Final Margin (dB)  32.85  30.51  14.98  14.56  11.18  9.83  Final Margin (dB)  32.65
Freq ()  11 33 77 13 14 17  Freq ()	0 1000 MENUS Ch:4 (MHz) 1928.12 3856.24 7817.69 3843.10 4670.93 7859.38 (MHz)	Peak (dBµV) 41.85 45.62 40.98 44.99 47.84 46.40 Peak (dBµV) 46.50 40.58	Final (dBμV)  21.13 23.47 39.00 39.42 42.80 44.15  Final (dBμV) 21.33 38.76 39.19	Factors (dB) -10.01 -6.17 10.78 9.37 11.93 17.54 Factors (dB) -10.01 10.73	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  Vertical  Peak Limit (dBμV)  73.98  73.98	Final Limit (dBμV) 53.98 53.98 53.98 53.98 53.98 Final Limit (dBμV) 53.98	Turntable (deg)/ Height (cm) 221°/100cm 77°/101cm 135°/150cm 0°/179cm 120°/200cm Turntable (deg)/ Height (cm) 189°/123cm 90°/175cm	Peak Margin (dB)  32.13 28.36 33.00 28.99 26.14 27.58  Peak Margin (dB)  27.48 33.40	Final Margin (dB)  32.83  30.51  14.98  14.11  9.83  Final Margin (dB)  32.63
Freq ()  11 33 77 13 14 17  Freq () 1 1 2 13	0 1000 MENUS Ch:4 (MHz) 1928.12 3856.24 7817.69 3843.10 4670.93 7859.38 (MHz)	Peak (dBμV) 41.85 45.62 40.98 44.99 47.84 46.40 Peak (dBμV) 46.50 40.58 40.87	Final (dBμV)  21.13 23.47 39.00 39.42 42.80 44.15  Final (dBμV) 21.33 38.76 39.19 39.25	Factors (dB) -10.01 -6.17 10.78 9.37 11.93 17.54 Factors (dB) -10.01 10.73 7.19	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  Vertical  Peak Limit (dBμV)  73.98  73.98  73.98  73.98	Final Limit (dBμV) 53.98 53.98 53.98 53.98 53.98 Final Limit (dBμV) 53.98 53.98	Turntable (deg)/ Height (cm)  221°/100cm 77°/101cm 135°/150cm 0°/179cm 120°/200cm  Turntable (deg)/ Height (cm)  189°/123cm 90°/175cm 208°/153cm	Peak Margin (dB)  32.13 28.36 33.00 28.99 26.14 27.58  Peak Margin (dB)  27.48 33.40 33.11	Final Margin (dB)  32.8: 30.51 14.98 14.56 11.18 9.8: Final Margin (dB) 32.6: 15.22 14.75 14.73



Revision 11 6/30/2021

14.68

EMIN	11		RADIA'	TED EM	IISSION	S DATA	SHEET		6/30/2021
	.,,,,,,	Customer:	Lightspeed 1	Technologies	3	Job	Reference#:	LIG2023092	
		Contact:	Rob D'Ange	lo			Date:	11/21/2023	
		DUT:	Rogue Mic			Temp	erature (°C):	22	
	Se	rial Number:	03-CMT-Z-S	2340-00002		Relative H	Humidity (%):	30	
	٧	oltage/Freq:	Battery			Baromet	ric Pressure:	30	
		Tested by:	Ryan Benite	Z			Location:	Hillsboro	
Pr	oduc	t Standards:	FCC Part 15	Subpart D					
			N/A	·					
	Te	st Standard:	FCC Part 15	5.209					
TEST RI	ESUL	TS	TEST TYPE			DISTANCE		RUN#	
Pass			Compliance			3 meters			3
	80 70	_	Horizontal Peak	_	Vertical Peak	Acera	ge Limit	OP Limit	
	60 L								
	L								and the second
	50 🕇								
dBuV	40 📙								
	30								
•	³º T								
2	20 🕂		<del></del>						+
	10 L								
	.								
	1800	0 1900	0 20000	21000	22000	23000	24000	25000	26000
			2000	2.000	MHz	20000	2.000	20000	20000
					MITZ				
соммв	ENTS							SIGNATURE	
Mic CF	d: 4						Ryan	Benity	
	_				Horizontal				
Freq (M	Hz)	Peak (dBμV)	Average (dBμV)	Factors (dB)	Peak Limit (dBμV)	Average Limit (dBμV)	Turntable (deg) / Height (cm)	Peak Margin (dB)	Average Margin (dB)
186	62.98	40.05	38.39	10.31	73.98	53.98	203°/123cm	33.93	15.59
215	13.46	43.51	38.87	9.09	73.98	53.98	247º/175cm	30.47	15.11
215	63.06	44.27	39.37	9.16	73.98	53.98	41°/200cm	29.71	14.61
	61.21	45.36	39.86	9.24	73.98	53.98	158º/174cm	28.62	14.12
	58.66	44.57	39.78	8.85		53.98		29.41	
232	52.76	42.28	39.71	9.58		53.98	145°/175cm	31.70	14.27
					Vertical		m	B. L. M. C.	
Freq (M	Hz)	Peak (dBμV)	Average (dBμV)	Factors (dB)	Peak Limit (dBμV)	Average Limit (dBμV)	Turntable (deg) / Height (cm)	Peak Margin (dB)	Average Margin (dB)
180	38.47	43.69	38.61	11.48	73.98	53.98	48º/100cm	30.29	15.37
219	00.85	42.86	39.99	8.97	73.98	53.98	293°/200cm	31.12	13.99
222	53.14	42.74	39.17	8.80	73.98	53.98	124°/100cm	31.24	14.81
	56.70	44.58	39.54	8.91	73.98	53.98	139º/175cm	29.40	14.44
222	53.22	45.00	39.73	9.58	73.08	53.08	-1º/175cm	28.08	14.25

41.06

25784.93

### 3.12 Test conditions and results – Receiver spurious emissions

Receiver spurious emissions acc. to IC RSS-2	213			Ve	rdict: PASS
EUT requirement			Refere	ence	
rule parts and clause			IC RSS-GEN	7.3 / 8.9	
Test according to			Reference	Method	
measurement reference			ANSI C	63.4	
Tested frequencies			Scan (	All)	
Test frequency range			30 MHz – 5 <sup>th</sup>	Harmonic	
EUT test mode			Rece	ive	
	Li	mits			
Frequency range [MHz]	Det	ector	Limit [μV/m]	Limit	Limit
				[dBµV/m]	Distance
					[meters]
30 – 88	Quas	si-Peak	100	40	3
88 – 216	Quas	si-Peak	150	43.5	3
216 – 960	Quas	si-Peak	200	46	3
960 – 1000	Quas	si-Peak	500	54	3
>1000	Ave	erage	500	54	3

### Comments:

<sup>\*</sup>Physical distance between EUT and measurement antenna.

<sup>\*\*</sup>Emission level corresponds to ambient noise floor.



Revision 11

MI										S D								6/3	
		Cust	omer:	Lightsp	eed '	Techno	ologies	,			Job	Ref	eren	ce#:	LIG	2023	092		
		Co	ntact:	Rob D'	Ange	lo								)ate:	11/2	0/20	23		
			DUT:	Rogue	Mic						Tem	oera	ture	(°C):	22				
	Se	rial Nu	mber:	03-CM	T-Z-S	2340-	00002			Re	lative	Hum	idity	(%):	30				
	٧	oltage/	Freq:	Battery	,					В	arome	tric F	ress	sure:	30				
				Ryan B		Z									Hills	boro			
Р	roduc	t Stand	lards:	FCC Pa	art 15	Subp	art D												
				N/A															
	Te	st Stan	dard:	FCC Pa	art 15	5.209													
ESTE	RESUL	TS		TEST T	YPE					DIST	ANCE				RUN	#			
ass				Compli	ance					3 me	ters								
dBuV	80 T 70 - 60 - 50 - 40 - 30 -		Â	Horizontal F				Vertical Pleak				lege Limit				GP Li			
	10 - 0	\ <u>\</u>	100	200		300	40	00	500 MHz	6	600	70	000	8	00	9	900	1	0000
	10		100	200		300	40		MHz	6	300	6	)		SIGN	MILL	RE	1	000
⁄lic C	10 0 0 Eh: MI	D						Horizo	MHz			P	y	an	Be	aty	RE		
	10 0 0 Eh: MI			200 QP (dB			40 rs (dB)		MHz	QP	Limit BµV)	Tun	)	an (deg)/	Be	NATU	RE	QP Ma	
⁄lic C	10 0 0 Eh: MI	D						Horizo	MHz	QP	Limit	Tun	y	(deg)/	Be	k Marg	RE		
Mic C	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	D	ΒμV)		lμV)		rs (dB)	Horizo	ontal	QP	Limit ΒμV)	Tun H	ntable deight (	(deg)/(cm)	Be	k Marg	in		rgin (d
Mic C	10 - 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	D	B <sub>μ</sub> V)		iμV) 16.78		rs (dB)	Horizo	ontal	QP	Limit ΒμV) 40.00	Turn H	ntable leight (	(deg)/cm)	Be	k Marg (dB)	in 0.70		rgin (d
Mic C	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	D Peak (d	BμV) 20.30 19.42		μV) 16.78 15.07	Factor	rs (dB) 23.25 16.71	Horizo	ontal imit V) 40.00 43.52	QP	Limit BµV) 40.00 43.52	Tun H	ntable (eight (	(deg)/(cm)	Be	k Marg (dB)	0.70		23. 28. 28.
freq ()	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	D Peak (d	B <sub>μ</sub> V) 20.30 19.42 20.61		16.78 15.07 17.12	Factor	23.25 16.71 20.93	Horizo	ontal imit (V) 40.00 43.52 46.02	QP	Limit BµV) 40.00 43.52 46.02	Tun H	ntable (eight (	(deg)/(cm) 00cm 55cm 25cm	Be	k Marg (dB)	in 9.70		23 28 28
freq ()	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	D Peak (d	B <sub>μ</sub> V) 20.30 19.42 20.61		16.78 15.07 17.12	Factor	23.25 16.71 20.93	Horizo	ontal imit (V) 40.00 43.52 46.02	QP	Limit BµV) 40.00 43.52 46.02	Tun H	ntable (eight (	(deg)/(cm) 00cm 55cm 25cm	Be	k Marg (dB)	in 9.70		23 28 28
freq ()	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	D Peak (d	B <sub>μ</sub> V) 20.30 19.42 20.61		16.78 15.07 17.12	Factor	23.25 16.71 20.93	Horizo	ontal imit (V) 40.00 43.52 46.02 46.02	QP	Limit BµV) 40.00 43.52 46.02	Tun H	ntable (eight (	(deg)/(cm) 00cm 55cm 25cm	Be	k Marg (dB)	in 9.70		23 28 28
freq ()	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	D Peak (d	ВµV) 20.30 19.42 20.61 29.44		μV) 16.78 15.07 17.12 24.90	Factor	23.25 16.71 20.93	Horizα Peak L (dBμ	MHz  ontal  imit V)  40.00  43.52  46.02  46.02  imit	QP (dl	Limit BµV) 40.00 43.52 46.02	Turn H H 12 1 1 2 3 3	ntable (eight (	((deg) / (om) 00cm 55cm 74cm	Be Peal	k Marg (dB)	9.70 4.10 5.41		233 288 288 211
Freq ()	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak (d	ВµV) 20.30 19.42 20.61 29.44	QP (dB	μV) 16.78 15.07 17.12 24.90	Factor	23.25 16.71 20.93 31.75	Horizo	MHz  ontal  imit V)  40.00  43.52  46.02  46.02  imit	QP (dl	Limit BμV) 40.00 43.52 46.02	Turn H D 1 1 2 2 3 3 2 2 3	ntable leight ( 1.57°/4 1.57°/3 1.50°/2	((deg) / (om) 00cm 55cm 74cm	Be Peal	k Marg (dB) 19 24 25 16	9.70 4.10 5.41	QP Ma	23. 28. 28. 21.
Freq ()	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak (d	BμV) 20.30 19.42 20.61 29.44	QP (dB	16.78 15.07 17.12 24.90	Factor	23.25 16.71 20.93 31.75	Horizo	mHz  ontal  imit V)  40.00 43.52 46.02 46.02 ical  imit V)	QP (dl	Limit BμV) 40.00 43.52 46.02 46.02	Turn H H 2 2 3	ntable eleight ( 1.57°/4 1.57°/1 3.15°/3 5.50°/2	(deg) / (cm) 000cm 55cm 25cm 74cm (deg) /	Be Peal	k Marg (dB) 1992 16	9.70 4.10 5.41 5.58	QP Ma	23. 28. 28. 21.
Freq ()	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak (d	B <sub>μ</sub> V) 20.30 19.42 20.61 29.44 B <sub>μ</sub> V)	QP (dB	16.78 15.07 17.12 24.90	Factor	23.25 16.71 20.93 31.75	Horizo	mHz  ontal  imit  V)  40.00  43.52  46.02  46.02  ical  imit  V)  40.00	QP (dl	Limit BμV) 40.00 43.52 46.02 46.02 Limit BμV)	Turn H H 2 2 1 3 2 2 3 2 2 2 2 2 3 3 2 2 2 2 3 3 3 3	ntable teight (157°/4 157°/2 1	(deg) / (cm) 00cm 55cm 74cm (deg) / (cm) 75cm	Be Peal	k Marg (dB) 199 24 25 16 16	in 9.70 4.10 5.41 5.58	QP Ma	23. 28. 28. 21.



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MI	mand bank lama		KADIA	TED EN	133101	DAIA	SHEET		6/30/2021
		Customer:	Lightspeed '	Technologies		Job	Reference#:	LIG2023092	28
			Rob D'Ange	lo				11/20/2023	
			Rogue Mic				1	22	
	Se	rial Number:	03-CMT-Z-S	2340-00002		Relative I	Humidity (%):	30	
	V	oltage/Freq:	Battery			Baromet	ric Pressure:	30	
		Tested by:	Ryan Benite				Location:	Hillsboro	
Р	roduc	t Standards:	FCC Part 15	Subpart D					
			N/A						
	Te	st Standard:	FCC Part 15	5.209					
ESTE	RESUL	TS	TEST TYPE			DISTANCE		RUN#	
ass			Compliance			3 meters			2
		_	Horizontal Peak		Vertical Peak	——— Avera	ge Limit	OP Limit	
	80 누								
	70								
	<sup>60</sup> ±								
	50							<b>N.</b> .	
3	40			In Laboratory	Name and Address of the Owner, where	A STATE OF THE PERSON.		A SHAPE	
dBuV		and the same of							
	30								++++
	20							+	
	40								
	10								+++
	0								
	1	0 3000	5000	7000	9000	11000	13000	15000 1	7000
	0	0 3000	5000	7000	9000 MHz	11000	13000	15000 1	7000
	0	0 3000	5000	7000		11000	13000	15000 1	7000
OMM	0		5000	7000		11000	13000	15000 1	7000
:ОММ	100		5000	7000		11000		SIGNATURE	7000
томм	100		5000	7000		11000		SIGNATURE	7000
OMM Vic C	1000		5000	7000		11000	13000 Ryan	SIGNATURE	7000
	1000		5000	7000		11000		SIGNATURE	7000
/lic C	0 + 1000 1000 1ENTS				MHz	11000		SIGNATURE	7000 Final Margin
	0 + 1000 1000 1ENTS		5000 Final (dBμV)	7000 Factors (dB)	MHz Horizontal		Ryan	SIGNATURE Benity	
Mic C	0 + 1000 1000 1ENTS				MHz Horizontal Peak Limit	Final Limit	Ryan Turntable (deg)	SIGNATURE Benety Peak Margin	Final Margin
Mic C	0 1000 IENTS Ch:2	Peak (dBμV)	Final (dBμV)	Factors (dB)	MHz  Horizontal  Peak Limit (dBμV)	Final Limit (dBμV)	Pyan Turntable (deg)/ Height (cm)	Beauty  Peak Margin (dB)	Final Margin (dB)
Freq (N	0 1000 1000 112NTS Ch:2	Peak (dBµV) 42.34	Final (dBµV)	Factors (dB)	MHz  Horizontal  Peak Limit (dBμV)  73.98	Final Limit (dBμV) 53.98	Turntable (deg)/ Height (cm) 175°/102cm	Bentey  Peak Margin (dB)  31.64	Final Margin (dB) 32.9: 30.81
Freq (N	0 1000 11000 112NTS Ch:2 MHz) 924.65	Peak (dBµV) 42.34 42.88	Final (dBµV) 21.03 23.10	Factors (dB) -10.05 -6.19	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98	Final Limit (dBμV) 53.98 53.98	Turntable (deg) / Height (cm) 175°/102cm 302°/200cm	Peak Margin (dB) 31.64 31.10	Final Margin (dB) 32.9: 30.8! 15.00
Freq (N	0 1000 11000 112NTS Ch:2 MHz) 924.65 8849.30 832.89	Peak (dBµV) 42.34 42.88 40.54 42.15	Final (dBμV) 21.03 23.10 38.92	Factors (dB) -10.05 -6.19 10.80 9.30	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98	Final Limit (dBμV) 53.98 53.98 53.98	Turntable (deg) / Height (cm) 175°/102cm 302°/200cm 0°/152cm 142°/199cm	Peak Margin (dB) 31.64 31.10 33.44	Final Margin (dB) 32.93 30.88 15.00
Freq ()  19 33 73 134	0 1000 10000 10000	Peak (dBµV) 42.34 42.88 40.54 42.15	Final (dBµV) 21.03 23.10 38.92 39.67	Factors (dB) -10.05 -6.19 10.80 9.30	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98	Final Limit (dBμV) 53.98 53.98 53.98 53.98	Turntable (deg) / Height (cm) 175°/102cm 302°/200cm 0°/152cm 142°/199cm	Peak Margin (dB) 31.64 31.10 33.44 31.83	Final Margin (dB) 32.93 30.88 15.00
Freq ()  19 33 73 134	0 1000 10000 10000	Peak (dBµV) 42.34 42.88 40.54 42.15	Final (dBµV) 21.03 23.10 38.92 39.67 42.71	Factors (dB) -10.05 -6.19 10.80 9.30 11.95	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  73.98	Final Limit (dBμV) 53.98 53.98 53.98 53.98	Turntable (deg) / Height (cm) 175°/102cm 302°/200cm 0°/152cm 142°/199cm 95°/169cm	Peak Margin (dB)  31.64 31.10 33.44 31.83 28.06	Final Margin (dB) 32.9: 30.8i 15.00 14.3
Freq ()  19 33 73 134 179	0 1000 11000 11ENTS 12 2 MHz) 1924.65 1849.30 1832.89 1801.87 1662.71 1983.40	Peak (dBµV) 42.34 42.88 40.54 42.15 45.92 46.47	Final (dBμV) 21.03 23.10 38.92 39.67 42.71 44.02	Factors (dB) -10.05 -6.19 10.80 9.30 11.95 17.88	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  73.98  73.98	Final Limit (dBμV) 53.98 53.98 53.98 53.98	Turntable (deg) / Height (cm)  175°/102cm  302°/200cm  0°/152cm  142°/199cm  95°/169cm  21°/143cm	Peak Margin (dB)  31.64 31.10 33.44 31.83 28.06	Final Margin (dB) 32.9: 30.8i 15.00 14.3
Freq ()  19 33 73 134	0 1000 11000 11ENTS 12 2 MHz) 1924.65 1849.30 1832.89 1801.87 1662.71 1983.40	Peak (dBµV) 42.34 42.88 40.54 42.15	Final (dBµV) 21.03 23.10 38.92 39.67 42.71	Factors (dB) -10.05 -6.19 10.80 9.30 11.95	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  73.98  Vertical	Final Limit (dBμV) 53.98 53.98 53.98 53.98 53.98	Turntable (deg) / Height (cm) 175°/102cm 302°/200cm 0°/152cm 142°/199cm 95°/169cm 21°/143cm	Peak Margin (dB)  31.64  31.10  33.44  31.83  28.06  27.51	Final Margin (dB) 32.9 30.8 15.0 14.3 11.2
Freq ()  19 33 73 134 179 Freq ()	0 1000 11000 11ENTS 12 2 MHz) 1924.65 1849.30 1832.89 1801.87 1662.71 1983.40	Peak (dBµV) 42.34 42.88 40.54 42.15 45.92 46.47	Final (dBμV) 21.03 23.10 38.92 39.67 42.71 44.02	Factors (dB) -10.05 -6.19 10.80 9.30 11.95 17.88	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  73.98  Vertical  Peak Limit	Final Limit (dBμV) 53.98 53.98 53.98 53.98 53.98 Final Limit	Turntable (deg) / Height (cm)  175°/102cm  302°/200cm  0°/152cm  142°/199cm  95°/169cm  21°/143cm	Peak Margin (dB)  31.64 31.10 33.44 31.83 28.06 27.51	Final Margin (dB) 32.9 30.8 15.0 14.3 11.2 9.9
19 Freq () 11 13 14 17 17 17 17 17 17 17 17 17 17 17 17 17	0 1000 10000 10000	Peak (dBµV) 42.34 42.88 40.54 42.15 45.92 46.47  Peak (dBµV)	Final (dBμV) 21.03 23.10 38.92 39.67 42.71 44.02 Final (dBμV)	Factors (dB) -10.05 -6.19 10.80 9.30 11.95 17.88 Factors (dB)	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  Vertical  Peak Limit (dBμV)	Final Limit (dBμV) 53.98 53.98 53.98 53.98 53.98 Final Limit (dBμV)	Turntable (deg)/ Height (cm) 175°/102cm 302°/200cm 0°/152cm 142°/199cm 21°/143cm Turntable (deg)/ Height (cm)	Peak Margin (dB)  31.64 31.10 33.44 31.83 28.06 27.51	Final Margin (dB) 32.9 30.8 15.0 14.3 11.2 9.9 Final Margin (dB)
19 Freq () 11 13 14 17 19 Freq ()	0 1000 10000 10000	Peak (dBµV) 42.34 42.88 40.54 42.15 45.92 46.47  Peak (dBµV) 46.99 40.95	Final (dBμV)  21.03 23.10 38.92 39.67 42.71 44.02  Final (dBμV) 21.21 38.42	Factors (dB) -10.05 -6.19 10.80 9.30 11.95 17.88 Factors (dB) -10.05	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  Vertical  Peak Limit (dBμV)  73.98  73.98  73.98	Final Limit (dBμV) 53.98 53.98 53.98 53.98 53.98 Final Limit (dBμV) 53.98	Turntable (deg)/ Height (cm) 175°/102cm 302°/200cm 0°/152cm 142°/199cm 21°/143cm Turntable (deg)/ Height (cm) 162°/153cm 288°/200cm	Peak Margin (dB)  31.64 31.10 33.44 31.83 28.06 27.51  Peak Margin (dB) 26.99 33.03	Final Margin (dB)  32.9  30.8  15.0  14.3  11.2  9.9  Final Margin (dB)  32.7  15.5
Freq ()  19  33  73  133  144  179  Freq ()	0 1000 10000 10000	Peak (dBµV) 42.34 42.88 40.54 42.15 45.92 46.47  Peak (dBµV)	Final (dBμV) 21.03 23.10 38.92 39.67 42.71 44.02 Final (dBμV)	Factors (dB) -10.05 -6.19 10.80 9.30 11.95 17.88 Factors (dB) -10.05	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  Vertical  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  73.98	Final Limit (dBμV) 53.98 53.98 53.98 53.98 53.98 Final Limit (dBμV)	Turntable (deg)/ Height (cm) 175°/102cm 302°/200cm 0°/152cm 142°/199cm 21°/143cm Turntable (deg)/ Height (cm) 162°/153cm 288°/200cm 260°/199cm	Peak Margin (dB)  31.64 31.10 33.44 31.83 28.06 27.51  Peak Margin (dB)	Final Margin (dB)  32.9  30.8  15.0  14.3  11.2  9.9  Final Margin (dB)  32.7  15.5
Freq ()  11: 36: 77: 13: 144: 17: 19: 76: 11: 12: 13: 13:	0 1000 10000 10000	Peak (dBμV) 42.34 42.88 40.54 42.15 45.92 46.47  Peak (dBμV) 46.99 40.95 44.54	Final (dBμV)  21.03 23.10 38.92 39.67 42.71 44.02  Final (dBμV) 21.21 38.42 39.24	Factors (dB) -10.05 -6.19 10.80 9.30 11.95 17.88 Factors (dB) -10.05 10.44 7.19	MHz  Horizontal  Peak Limit (dBμV)  73.98  73.98  73.98  73.98  Vertical  Peak Limit (dBμV)  73.98  73.98  73.98	Final Limit (dBμV) 53.98 53.98 53.98 53.98 53.98 Final Limit (dBμV) 53.98 53.98	Turntable (deg)/ Height (cm) 175°/102cm 302°/200cm 0°/152cm 142°/199cm 21°/143cm Turntable (deg)/ Height (cm) 162°/153cm 288°/200cm	Peak Margin (dB)  31.64 31.10 33.44 31.83 28.06 27.51  Peak Margin (dB) 26.99 33.03 29.44	Final Margin (dB)  32.9  30.8  15.0  14.3  11.2  9.9  Final Margin (dB)  32.7



Revision 11 6/30/2021

EMINIT		KADIA	IED EN	119910N	S DATA	SHEET		6/30/2021
	Customer:	Lightspeed '	Technologies	3	Job	Reference#:	LIG2023092	28
	Contact:	Rob D'Ange	lo			Date:	11/21/2023	
	DUT:	Rogue Mic			Temp	erature (°C):	22	
S	erial Number:	03-CMT-Z-S	2340-00002		Relative H	Humidity (%):	30	
1	Voltage/Freq:	Battery			Baromet	ric Pressure:	30	
	Tested by:		Z			Location:	Hillsboro	
Produ	ct Standards:							
		N/A	•					
To	est Standard:	FCC Part 15	5.209					
TEST RESU	LTS	TEST TYPE			DISTANCE		RUN#	
Pass		Compliance			3 meters			2
	_	Horizontal Peak	_	Vertical Peak	——— Averag	ge Limit	QP Limit	
80								
70 -								
60 -								
60 -			يعلم المحاجر	and the latest the lat	ماميل إرواميلي	بيان والخاسات		
50 -								
<b>Angp</b> 40 -								
30 -								
20 -								++++
10 -								
0 -l 180	000 1900	0 2000	21000	22000	23000	24000	25000	26000
100	1300	2000	21000	MHz	23000	24000	23000	20000
COMMENT				MITZ			CICN: ATURE	
COMMENTS	•					$\sim$	SIGNATURE	
Mic CH: 2						Ryan	Benity	
				Horizontal				
Freq (MHz)	Peak (dBµV)	Average (dBμV)	Factors (dB)	Peak Limit (dBμV)	Average Limit (dBμV)	Turntable (deg) / Height (cm)	Peak Margin (dB)	Average Margin (dB)
21709.93		39.45	9.55	73.98	53.98	315°/100cm	30.81	14.53
21803.63	-	40.00	9.62	73.98	53.98	202°/153cm	31.05	13.98
21922.47	7 42.70	40.14	8.92	73.98	53.98	315°/200cm	31.28	13.84
22419.50			9.03		53.98	113°/155cm	31.17	
23200.77			9.78	73.98	53.98	203°/101cm	31.60	13.89
23283.20	6 42.59	39.67	9.47		53.98	293°/101cm	31.39	14.31
				Vertical		m	D 4.35	
Freq (MHz)	Peak (dBμV)	Average (dBμV)	Factors (dB)	Peak Limit (dBμV)	Average Limit (dBμV)	Turntable (deg) / Height (cm)	Peak Margin (dB)	Average Margin (dB)
21830.67		39.82	9.43	73.98	53.98	68°/175cm	31.42	14.16
21864.65			9.21	73.98	53.98	203°/198cm	29.09	14.14
22616.89			8.74	73.98	53.98	280°/100cm	30.65	
22659.82			8.70	73.98	53.98	99º/100cm	32.44	15.00
23189.31			9.76	-	53.98	316°/199cm	30.98	14.00
23258.41	1 42.99	39.77	9.56	73.98	53.98	35°/125cm	30.99	14.21

#### 3.13 Test conditions and results – Automatic discontinuation of transmission

Automatic discontinuation of transmission acc. to FCC 15D / RSS-213 Verdict: PA		
EUT requirement	Reference	
rule parts and clause	IC RSS-21	3 5.2
Test according to	Reference Method	
measurement reference	ANSI C63.4	
EUT equipment type	Scan (All)	
Requirements		

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. This is not intended to preclude transmission of control and signaling information or use of repetitive codes used by certain digital technologies to complete frame or burst intervals.

Result			
Test	Reaction	Verdict	
Power removed: EUT	A	PASS	
Power removed: Companion device	A	PASS	
Switch -off: EUT	A	PASS	
Switch -off: Companion device	A	PASS	
Hook-on: EUT	N/A	N/A	
Hook-on: Companion device	N/A	N/A	

#### Comments:

- A Cease of all transmissions
- B EUT transmits control and signaling information
- C Companion device transmits control and signaling information
- N/A Not applicable

# 3.14 Test conditions and results – Radiofrequency radiation exposure

Radiofrequency radiation exposure acc. to FCC 47 CFR 15D / IC RSS-213 Verdict			
EUT requirement	Reference		
rule parts and clause	FCC 15.319(i) / IC RSS-102		
Requiren	nents		
FCC: Unlicensed PCS devices are subject to the radiofrequency radiation exposure requirements specified in §§1.1307(b), 2.1091 and 2.1093. All equipment shall be considered to operate in a "general population/uncontrolled" environment. Applications for equipment authorization of devices operating under this section must contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for thus statement must be submitted to the Commission upon request.			
IC: Category I and Category II equipment shall comply with the applicable requirements of RSS-102.			
Result			
Reference Verdict			
RF Exposure is addressed in a separate exhibit. N/A			

#### 3.15 Test conditions and results – Monitoring threshold

Monitoring threshold acc. to FCC 47 CFR 15D / IC F	RSS-213 Verdict: N/A	
EUT requirement	Reference	
rule parts and clause	FCC 15.323(c)(2),(5),(9) / IC RSS-213 5.2 (2)(5)(9)	
Test according to referenced standards	Reference Method	
	ANSI C63.17 7.3.4	
Number of duplex channels used	5 carrier with 12 duplex timeslots = 60 duplex channels	
Requirements		

The monitoring threshold must not be more than 30 dB above the thermal noise power (KTB) of a bandwidth equivalent to the emission/occupied bandwidth of the device.

Devices that have a power output lower than the maximum permitted under this standard may increase their detection threshold by 1 dB for each 1 dB that the transmitter power is below the maximum permitted.

IC: If access to spectrum is not available as determined by the above, a minimum of 40 duplex system access channels are defined for the system, the time and spectrum windows with a power level below a monitoring threshold of 50 dB above the terminal noise power determined for the occupied bandwidth may be accessed.

$$T_u[dBm] = -174 + 10 * log_{10}(Bandwidth [Hz]) M_U + P_{MAX}[dBm] - P_{EUT}[dBm]$$

$$T_L[dBm] = -174 + 10 * log_{10}(Bandwidth [Hz]) M_L + P_{MAX}[dBm] - P_{EUT}[dBm]$$

With  $M_U = 50$  dB and  $M_L = 30$  dB,  $P_{MAX}$  as given under "Peak transmit power" and bandwidth as emission or occupied bandwidth. The power threshold limit is given by  $T_U + U_M$  ( $U_M = 6$  dB).

Comments:

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### 3.16 Test conditions and results – LIC confirmation

LIC confirmation acc. to FCC 47 CFR 15D	Verdict: PASS			
EUT requirement	Refere	nce		
rule parts and clause	FCC 15.323(c)(5) / IC	C RSS-213 5.2(5)		
Test according to referenced	Reference I	Method		
standards	ANSI C63.1	7 7.3.2		
Requirements				
A device utilizing the provisions of FCC 47 CFR 15.323(c)(5) / IC RSS-213(b)(5) must have monitored all access channels				
defined for its system within the last 10 seconds and must verify, within the 20 milliseconds (40 milliseconds for				
devices designed to use a 20 millisecond	devices designed to use a 20 millisecond frame period) immediately preceding actual channel access, that the detected			
power of the selection time and spectru	power of the selection time and spectrum windows is no higher than the previously detected value.			
Test Result				
Evaluation Verdict				
The requirement is verified using the "N	PASS			
Comments:				

#### 3.17 Test conditions and results – LIC selection

LIC confirmation acc. to FCC	47 CFR 15D / IC RSS-213	Verdict: PASS	
EUT requirement		Reference	
rule parts and clause	FCC 15.323(c	)(5) / IC RSS-213 5.2 (5)	
Test according to	Refe	rence Method	
referenced standards	ANSI C63.17 7.3.3		
Requirements			

FCC: if access to spectrum is not available as determined by the above, and a minimum of 20 duplex system access channels are defined for the system, the time and spectrum windows with the lowest power levels may be accessed.

IC: If access to spectrum is not available as determined by the above, and a minimum of 40 duplex system access channels are defined for the system, the time and spectrum windows with a power level below a monitoring threshold of 50 dB above the thermal noise power determined for the occupied bandwidth may be accessed.

	Test Result				
Interferer Level f <sub>1</sub>	Interferer Level f <sub>2</sub>	Communication channel	Verdict		
$T_L + U_M + 7 dB$	T <sub>L</sub> + U <sub>M</sub>	f <sub>2</sub>	PASS		
T <sub>L</sub> + U <sub>M</sub>	$T_L + U_M + 7 dB$	$f_1$	PASS		
$T_L + U_M + 1 dB$	T <sub>L</sub> + U <sub>M</sub> - 6 dB	f <sub>2</sub>	PASS		
T <sub>L</sub> + U <sub>M</sub> - 6 dB	$T_L + U_M + 1 dB$	f <sub>1</sub>	PASS		
Comments: T <sub>L</sub> corresponds to the lower threshold power value					

# 3.18 Test conditions and results – Monitoring antenna

Monitoring antenna acc. to FCC 47 CFR 15D / IC RSS-213 Verdict: PASS					
EUT requirement	EUT requirement Reference				
rule parts and clause	FCC 15.319(c)(8) / IC RSS-213 5.2(8	)			
Test according to referenced	Reference Method				
standards	ANSI C63.17 4.6				
Monitoring antenna The same as transmitting antenna					
Requirements					
The monitoring system shall use the same antenna used for transmission, or antenna that yields equivalent					
reception at the location.					
	Results				
Connection status Verdict					
N/A (monitoring antenna identical to transmitting antenna) PASS					
Comments:					

# 3.19 Test conditions and results – Monitoring time

Monitoring Time acc. to FCC 47 CFR 15D / IC RSS-213 Verdict: PAS				
EUT requirement		Reference		
rule parts and clause		FCC 15.323(c)(1) / IC RSS-213	5.2(1)	
Test according to reference	ed	Reference Method		
standards		ANSI C63.17 7.3.4		
	Requirements			
Immediately prior to initiating	Immediately prior to initiating transmission, devices must monitor the combined time and spectrum windows in			
which they intend to transmi	t for a period of at least 10 n	nilliseconds for systems design	ed to use a 10 millisecond or	
shorter frame period or at lea	ast 20 milliseconds for system	ns designed to use a 20 millise	cond frame period.	
	Test	results		
Initial transmit channel	Interferer level	Final transmit channel	Verdict	
F <sub>1</sub>	$T_U + U_M + 20 \text{ dB}$	F <sub>2</sub>	PASS	
F <sub>2</sub>	T <sub>U</sub> + U <sub>M</sub> + 20 dB	F <sub>1</sub>	PASS	
Comments:				

# 3.20 Test conditions and results – Monitoring bandwidth

Monitoring bandwidth acc. to FCC 47 CFR 15D / IC RSS-213 Verdict: PA					
EUT requirement		Reference			
rule parts and clause		FCC 15.323(c)(7) / IC RSS-213 5.2(7)			
Test according to reference	ed	Reference Method			
standards		ANSI C63.17 7.4			
	Requ	irements			
The monitoring system bands	The monitoring system bandwidth must be equal or greater than the emission bandwidth of the intended				
transmission.					
	Test	results			
Initial transmit channel	Initial transmit channel Interferer level Transmission status Verdict				
F <sub>LOW</sub> + 30% BW	$T_{U} + U_{M} + 10 \text{ dB}$	None	PASS		
F <sub>LOW</sub> - 30% BW	F <sub>LOW</sub> - 30% BW T <sub>U</sub> + U <sub>M</sub> + 10 dB None PASS				
F <sub>HIGH</sub> + 30% BW	$F_{HIGH} + 30\%$ BW $T_U + U_M + 10$ dB None PASS				
F <sub>HIGH</sub> - 30% BW T <sub>U</sub> + U <sub>M</sub> + 10 dB		None	PASS		
Comments:	Comments:				

### 3.21 Test conditions and results – Monitoring reaction time

Monitoring reaction time acc. to FCC 47 CFR 15D / IC RSS-213		Verdict: Pass
EUT requirement	Reference	
rule parts and clause	FCC 15.323(c)(7) / IC RSS-213 5.2(7)	
Test according to referenced	Reference Method	
standards	ANSI C63.17 7.5	
Requirements		

The monitor shall have a maximum reaction time less than 50xSQRT (1.25/emission(occupied) bandwidth in MHz) microseconds for signal at the applicable threshold level but shall not be required to be less than 50 microseconds. If a signal is detected that is 6 dB or more above the applicable threshold level the maximum reaction time shall be 35xSQRT (1.25/emission(occupied) bandwidth in MHz) microseconds but shall not be required to be less than 35 microseconds.

Test results				
Channel	Pulse width	Level	Connection possible	Result
F <sub>LOW</sub>	50	$T_L + U_M + 0 dB$	No	PASS
F <sub>MID</sub>	50	$T_L + U_M + 0 dB$	No	PASS
F <sub>HIGH</sub>	50	$T_L + U_M + 0 dB$	No	PASS
F <sub>LOW</sub>	35	$T_L + U_M + 6 dB$	No	PASS
F <sub>MID</sub>	35	T <sub>L</sub> + U <sub>M</sub> + 6 dB	No	PASS
F <sub>HIGH</sub>	35	T <sub>L</sub> + U <sub>M</sub> + 6 dB	No	PASS

### 3.22 Random Waiting

Random Waiting acc. to FCC 47 CFR 15D / IC RSS-213		
EUT requirement	Reference	
rule parts and clause	FCC 15.323(c)(6) / IC RSS-213 5.2(6)	
Test according to referenced standards Reference Method		
	ANSI C63.17 8.1.2 / 8.1.3	
Option implemented No		
Requirements		

If the selected combined time and spectrum windows are unavailable the device may either monitor and select different windows or seek to use the same window after waiting an amount of time randomly chosen from a uniform distribution between 10 and 150 milliseconds commencing from the time when the channel becomes available.

Test results – Access criteria functional test option not implemented				
Initial channel / timeslot				
F <sub>1</sub> / Slot 2	0	F <sub>1</sub> / Slot 2	PASS	
F <sub>1</sub> / Slot 2				
Comments:				

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# 3.23 Test conditions and results – Acknowledgements

Acknowledgements acc. to FCC 47 CFR 15D / IC RSS-213 Verd			
EUT requirement	Reference		
rule parts and clause	FCC 15.323(c)(4) / IC RSS-213 5.2	(4)	
Test according to referenced standards	Reference Method		
	ANSI C63.17 8.2.1		
EUT can initiate a communication session	No		
Requirements			
Once access to specific combined time and spectrum windows is obtained an acknowledgement from a system			
participant must be received by the initial transmitter within one second or transmission must cease.			
Periodic acknowledgements must be received at least every 30 seconds or transmission must cease.			
Test results			
Maximum initial transmission [s]	Transmission time limit [s]	Verdict	
1 30 PASS			
Time needed to cease Traffic Channel [s]	Transmission time limit [s]	Verdict	
4	4 30 PASS		
Comments:			

### 3.24 Maximum transmit duration

Maximum transmit duration acc. to FCC 47 CFR 15D / IC RSS-213 Verdict: PA			
EUT requirement	EUT requirement Reference		
rule parts and clause	FCC 15.323(c)(3) / IC RSS-213 5.	2(3)	
	Requirements		
If no signal above the threshold level is dete	If no signal above the threshold level is detected, transmission may commence and continue with the same		
emission bandwidth in the monitoring time and spectrum windows without further monitoring. However,			
occupation of the same combined time and spectrum window by an EUT or group of cooperative EUTs continuously			
over a period of time longer than 8 hours is not permitted without repeating the access criteria.			
Test results			
Measured Maximum Transmission Limit (minutes) Verdict			
Duration (minutes)			
475 480 PASS			
Comments:			

# 3.25 Test conditions and results – Maximum spectral occupancy

Maximum spectral occupancy acc. to FCC 47 CFR 15D / IC RSS-213 Verdi			
EUT requirement Reference			
rule parts and clause	FCC 15.323(c)(5) / IC RSS-213 5.2(5)		
Test according to referenced standards	Reference Method		
	Customer declaration		
	Requirements		
Once access to specific combined time and s	pectrum windows is obtained an acknowledgement fro	m a system	
participant must be received by the initial tr	participant must be received by the initial transmitter within one second or transmission muse cease.		
Periodic acknowledgements must be received at least every 30 seconds or transmission must cease.			
Test result			
Evaluation Verdict Verdict			
According to the technical documentation the total number of time and spectrum windows is: 5 x		PASS	
12 = 60			
According to customer declaration the total number of concurrent time and spectrum windows is:			
12			
The number of concurrent allocated time and spectrum windows is less than one third of the total			
time and spectrum windows of the EUT			
Comments:			

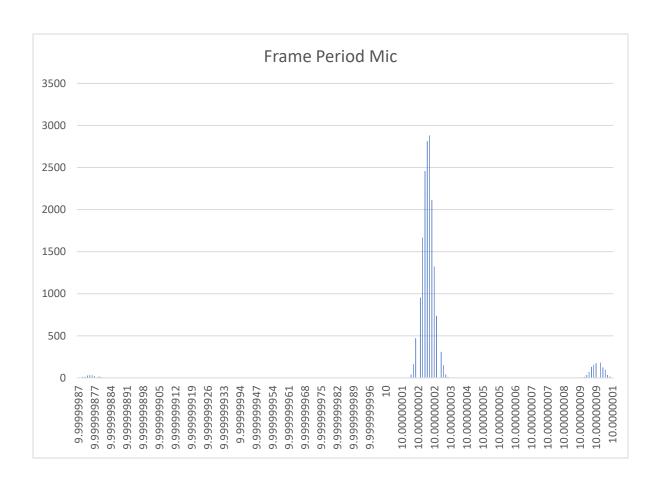
### 3.26 Test conditions and results – Fair access

Fair access acc. to FCC 47 CFR 15D / IC RSS-2	13 Verdict: PASS	
EUT requirement	Reference	
rule parts and clause	FCC 15.323(c)(12) / IC RSS-213 4.3.4(b)(12)	
Test according to measurement reference	Reference Method	
Customer declaration		
Requirements		
The provisions of FCC 47 CFR 15.323(c)(10), IC RSS-213(b)(10) or FCC 47 CFR 15.323(c)(12), IC RSS – 213(b)(12) shall		
not be used to extend the range of spectrum occupied over space or time for the purpose of denying fair access to		
spectrum to other devices.		
Declaration		
The manufacturer declares that the device does not work in a mode which denies fair access to spectrum for other		
participants.		

# 3.27 Test conditions and results – Frame period and jitter

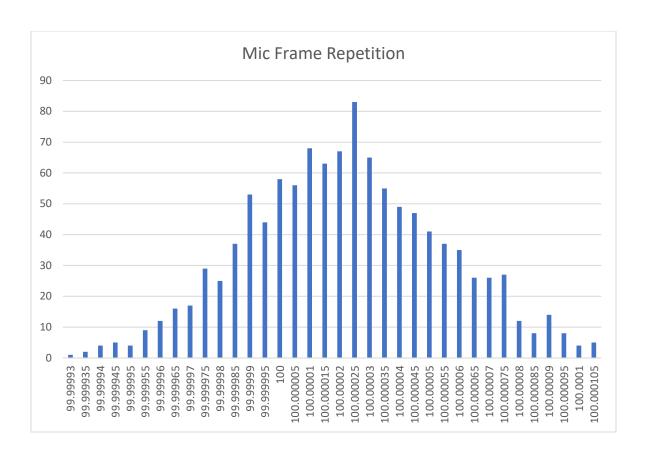
Frame period and jitter acc. to FCC 47 CFR 15D / IC RSS-213 Verdict:		t: PASS		
EUT requirement	Reference			
rule parts and clause	FCC 15.323(e) / IC RSS-213 5.2(13	3)		
Test according to referenced standards	Reference Method			
	ANSI C63.17 6.2.3			
	Requirements			
The frame period (a set of consecutive time	slots in which the position of each time slot can be ic	dentified by		
reference to a synchronizing source) of an ir	reference to a synchronizing source) of an intentional radiator operating in the sub-band shall be 20 milliseconds/X			
where X is a positive whole number.				
The jitter (time-related, abrupt, spurious variations in the duration of the duration of the frame interval) introduced				
at the two ends of a communication link shall not exceed 25 microseconds for any two consecutive transmissions.				
Test results – Frame period				
Mean value [ms]	Divider X (10 ms/X)	Verdict		
10.00000002 1 PASS				
Test results – Jitter				
Maximum difference between frames [μs]	Limit [μs]	Verdict		
0.000231	25	PASS		

Comments:



# 3.28 Test conditions and results – Frame and repetition stability

Frame and TDMA repetition stability acc. to FCC 47 CFR 15D / IC RSS-213 Verdict: PASS				
EUT requirement	EUT requirement Reference			
rule parts and clause	FCC	15.323(e) / IC RSS-213 5.2	2(13)	
Test according to referenced standards		Reference Method		
		ANSI C63.17 6.2.2		
Access scheme used	Access scheme used Time Division Multiple Access			
Requirements				
Each device that implements time division for the purpose of maintaining a duplex connection on a given frequency				
carrier shall maintain a frame repetition rate with a frequency stability of at least 50 parts per million (ppm).				
Each device which further divides access in time in order to support multiple communication links on a given				
frequency carrier shall maintain a frame repetition rate with a frequency stability of at least 10 ppm.				
Test results				
Access scheme	Error [ppm]	Limit [ppm]	Verdict	
Time Division multiple Access	0.89999982	10	PASS	
Comments:				



# **END OF REPORT**