REGULATORY COMPLIANCE TEST REPORT

FCC CFR 47 Part 15.225 & ISED RSS-210

Report No.: LYFT15-U7 Rev A (NFC)

Company: Lyft, Inc

Model Name: BIT041N

REGULATORY COMPLIANCE TEST REPORT

Company Name: Lyft, Inc

Model Name: BIT041N

To: FCC CFR 47 Part 15.225 & ISED RSS-210

Test Report Serial No.: LYFT15-U7 Rev A (NFC)

This report supersedes: NONE

Applicant: Lyft, Inc
185 Berry St #5000
San Francisco, California 94107
USA

Issue Date: 15th August 2022

This Test Report is Issued Under the Authority of:

MiCOM Labs, Inc.
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ACCREDITED
TESTING CERT #2381.01

MiCOM Labs is an ISO 17025 Accredited Testing Laboratory

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1. ACCREDITATION, LISTINGS & RECOGNITION

1.1. TESTING ACCREDITATION

MiCOM Labs, Inc. is an accredited Electrical testing laboratory per the international standard ISO/IEC 17025:2017. The company is accredited by the American Association for Laboratory Accreditation (A2LA) www.a2la.org test laboratory number 2381.01. MiCOM Labs test schedule is available at the following URL; http://www.a2la.org/scopepdf/2381-01.pdf

ilac-MRA A2LA

Accredited Laboratory

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for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 14th day of January 2022.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2381.01
Valid to November 30, 2023

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

1.2. RECOGNITION

MiCOM Labs, Inc is widely recognized for its wireless testing and certification capabilities. In addition to being recognized for Testing and Certification under Phase 2 Mutual Recognition Agreements (MRA) with Canada, Europe, United Kingdom and Japan, our international recognition includes Conformity Assessment Body (CAB) designation status under agreements with Asia Pacific (APEC) MRA Phase 1 countries giving acceptance of MiCOM Labs test reports. MiCOM Labs test reports are accepted globally.

Country	Recognition Body	Status	MRA Phase	Identification No.
USA	Federal Communications Commission (FCC)	TCB	-	US0159 Test Firm Designation#: US1084
Canada	Industry Canada (ISED)	FCB	APEC MRA 2	US0159 ISED#: 4143A
Japan	MIC (Ministry of Internal Affairs and Communication)	CAB	Japan MRA 2	RCB 210
	Japan Approvals Institute for Telecommunication Equipment (JATE)			
	VCCI	--	--	A-0012
Europe	European Commission	NB	EU MRA 2	NB 2280
United Kingdom	Department for Business, Energy & Industrial Strategy (BEIS)	AB	UK MRA 2	AB 2280
Mexico	Instituto Federal de Telecomunicaciones (IFT)	CAB	Mexico MRA 1	US0159
Australia	Australian Communications and Media Authority (ACMA)	CAB	APEC MRA 1	US0159
Hong Kong	Office of the Telecommunication Authority (OFTA)			
Korea	Ministry of Information and Communication Radio Research Laboratory (RRL)			
Singapore	Infocomm Development Authority (IDA)			
Taiwan	National Communications Commission (NCC) Bureau of Standards, Metrology and Inspection (BSMI)			
Vietnam	Ministry of Communication (MIC)			

TCB – Telecommunications Certification Bodies (TCB)
FCB – Foreign Certification Body
CAB – Conformity Assessment Body
NB – Notified Body
AB – Approved Body

MRA – Mutual Recognition Agreement
MRA Phase I - recognition for product testing
MRA Phase II – recognition for both product testing and certification

1.3. PRODUCT CERTIFICATION

MiCOM Labs, Inc. is an accredited Product Certification Body per the international standard ISO/IEC 17065:2012. The company is accredited by the American Association for Laboratory Accreditation (A2LA) www.a2la.org test laboratory number 2381.02. MiCOM Labs test schedule is available at the following URL; http://www.a2la.org/scopepdf/2381-02.pdf

Accredited Product Certification Body

A2LA has accredited

MiCOM LABS

Pleasanton, CA

This product certification body is accredited in accordance with the recognized International Standard ISO/IEC 17065:2012 *Requirements for bodies certifying products, processes and services*. This product certification body also meets the *A2LA R322 – Specific Requirements – Notified Body Accreditation Requirements* and *A2LA R308 - Specific Requirements - ISO-IEC 17065 - Telecommunication Certification Body Accreditation Program*. This accreditation demonstrates technical competence for a defined scope and the operation of a management system.

Presented this 14th day of January 2022

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2381.02
Valid to November 30, 2023

For the product certification schemes to which this accreditation applies, please refer to the organization's Product Certification Scope of Accreditation.

United States of America – Telecommunication Certification Body (TCB)
Industry Canada – Certification Body, CAB Identifier – US0159
Europe – Notified Body (NB), NB Identifier - 2280
UK – Approved Body (AB), AB Identifier - 2280
Japan – Recognized Certification Body (RCB), RCB Identifier - 210

2. DOCUMENT HISTORY

Document History		
Revision	Date	Comments
Draft	10th August 2022	Draft report for client review.
Rev A	15th August 2022	Initial Release

In the above table the latest report revision will replace all earlier versions.

MiCOM Labs, 575 Boulder Court, Pleasanton, California 94566 USA, Phone: +1 (925) 462 0304, Fax: +1 (925) 462 0306, www.micomlabs.com

3. TEST RESULT CERTIFICATE

Manufacturer:	Lyft, Inc 185 Berry St #5000 San Francisco California 94107 USA	**Tested By:**	MiCOM Labs, Inc. 575 Boulder Court Pleasanton California 94566 USA
Model:	BIT041N	**Telephone:**	+1 925 462 0304
Type Of Equipment:	E-Bike Location and Communication Module	**Fax:**	+1 925 462 0306
S/N's:	65-0000029-A		
Test Date(s):	10th August 2022	**Website:**	www.micomlabs.com

STANDARD(S)	TEST RESULTS
FCC CFR 47 Part 15.225 & ISED RSS-210	EQUIPMENT COMPLIES

MiCOM Labs, Inc. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.

Notes:

1. This document reports conditions under which testing was conducted and the results of testing performed.

2. Details of test methods used have been recorded and kept on file by the laboratory.

3. Test results apply only to the item(s) tested.

A2LA ACCREDITED
TESTING CERT #2381.01

Approved & Released for MiCOM Labs, Inc. by:

Graeme Grieve
Quality Manager MiCOM Labs, Inc.

Gordon Hurst
President & CEO MiCOM Labs, Inc.

4. REFERENCES AND MEASUREMENT UNCERTAINTY

4.1. Normative References

REF.	PUBLICATION	YEAR	TITLE
I	KDB 662911 D01 & D02	Oct 31 2013	Guidance for measurement of output emission of devices that employ single transmitter with multiple outputs or systems with multiple transmitters operating simultaneously in the same frequency band
II	A2LA	5th October 2020	R105 - Requirement's When Making Reference to A2LA Accreditation Status
III	ANSI C63.10	2013	American National Standard for Testing Unlicensed Wireless Devices
IV	ANSI C63.4	2014	American National Standards for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
V	CISPR 32	2015	Electromagnetic compatibility of multimedia equipment - Emission requirements
VI	ETSI TR 100 028	2001-12	Parts 1 and 2 Electromagnetic compatibility and Radio Spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics
VII	FCC 47 CFR Part 15.225	2020	Operation within the band 13.110-14.010MHz
VIII	ICES-003	Issue 7 ; October 15, 2020	Information Technology Equipment (Including Digital Apparatus) – Limits and methods of measurement.
IX	M 3003	Edition 3 Nov.2012	Expression of Uncertainty and Confidence in Measurements
X	RSS-210	Issue 10 December 2019	RSS-210 — License-Exempt Radio Apparatus: Category I Equipment
XI	RSS-Gen Issue 5	March 2019 Amendment 1	General Requirements for Compliance of Radio Apparatus
XII	FCC 47 CFR Part 2.1033	2020	FCC requirements and rules regarding photographs and test setup diagrams.

4.2. Test and Uncertainty Procedure

Conducted and radiated emission measurements were conducted in accordance with American National Standards Institute ANSI C63.4, listed in the Normative References section of this report.

Measurement uncertainty figures are calculated in accordance with ETSI TR 100 028 Parts 1 and 2.

Measurement uncertainties stated are based on a standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95 % in accordance with UKAS document M 3003 listed in the Normative References section of this report.

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5. PRODUCT DETAILS AND TEST CONFIGURATIONS

5.1. Technical Details

Details	Description
Purpose:	Test of the Lyft, Inc BIT041N to FCC CFR 47 Part 15.225 & ISED RSS-210.
Applicant:	Lyft, Inc 185 Berry St #5000 San Francisco California 94107, USA
Manufacturer:	Lyft, Inc
Laboratory performing the tests:	MiCOM Labs, Inc. 575 Boulder Court Pleasanton California 94566 USA
Test report reference number:	LYFT15-U7
Date EUT received:	4th August 2022
Standard(s) applied:	FCC CFR 47 Part 15.225 & ISED RSS-210
Dates of test (from - to):	3rd – 4th & 8th August 2022
No of Units Tested:	1
Product Family Name:	Cosmo VCU
Model(s):	BIT041N
Marketing Name:	Cosmo VCU
Location for use:	Indoors / Outdoors
Declared Frequency Range(s):	13.56 MHz
Type of Modulation:	ASK
EUT Modes of Operation:	NFC
Rated Input Voltage and Current:	50.4VDC / 1A Battery
Operating Temperature Range:	-20ºC to +50ºC
Equipment Dimensions:	15.75cm x 8.8cm x 5.5cm
Weight:	360 grams
Hardware Rev:	88-0000779-A
Software Rev:	16b00bc1d102c

5.2. Scope Of Test Program

Lyft, Inc BIT041N

The scope of the test program was to test the Lyft, Inc BIT041N NFC operating in the frequency range 13.110 – 14.010 MHz; for compliance against the following specifications:

FCC CFR 47 Part 15.225
Radio Frequency Devices; Operating in the band 13.110 – 14.010 MHz

ISED RSS-210
License-Exempt Radio Apparatus

Section 7. Technical Specifications; B.6 Band 13.110-14.010 MHz

This verification report was only to verify the continued compliance of the Lyft Inc. BIT041N. As a result of the device modification testing is limited to emissions in the range of 9KHz to 30MHz.

All other tests may be found in the following test report:

The NFC Module used in this equipment was previously tested in MiCOM Labs Report # LYFT08-U7, Date 28th July 2021.

5.3. Equipment Model(s) and Serial Number(s)

Type (EUT/ Support)	Equipment Description (Including Brand Name)	Mfr.	Model No.	Serial No.
EUT	E-Bike Location and Communication Module	Lyft Inc	BIT041N	65-0000029-A

5.4. Antenna Details

Type	Manufacturer	Model	Gain (dBi)	Frequency Band (MHz)
Integral	Lyft	PCB Loop Antenna	0.0	13.110-14.010

5.5. Cabling and I/O Ports

Port Type	Max Cable Length	Conn Type	Environment
Discrete I/O	<3m	Higo L810 CG	End-User
Analog	<3m	Higo L309 CM	End-User
Analog	<3m	Higo L609 CM	End-User
CAN+DC IN	<3m	Higo L409 CG	End-User
Power + Digital I/O	<3m	Higo L509 CM	End-User

5.6. Test Configurations

Results for the following configurations are provided in this report:

Operational Mode	Data Rate with Highest Power MBit/s	Channel Frequency (MHz)		
		Low	Mid	High
13.110 – 14.010 MHz				
NFC	-	--	13.56	--

5.7. Equipment Modifications

The following modifications were required to bring the equipment into compliance:
1. NONE

5.8. Deviations from the Test Standard

The following deviations from the test standard were required in order to complete the test program:
1. NONE

6. TEST SUMMARY

List of Measurements

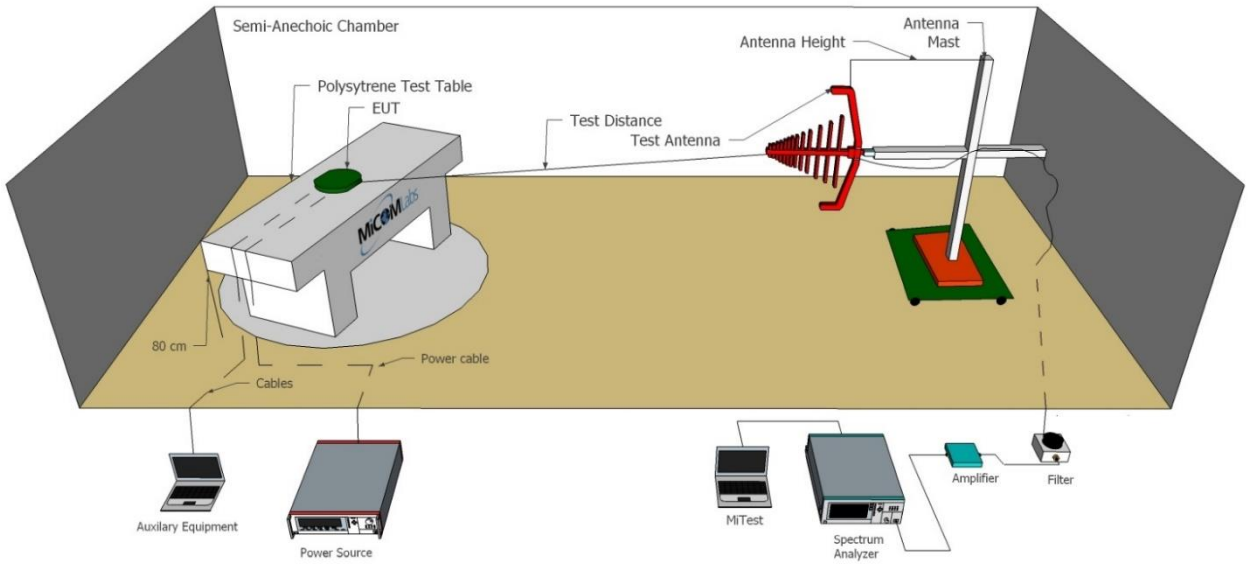
Test Header	Result	Data Link
Emissions	Complies	-
Radiated Emissions	Complies	-
(i) TX Spurious & Restricted Band Emissions	Complies	View Data

7. TEST EQUIPMENT CONFIGURATION(S)

7.1. Radiated Emissions - 3m Chamber

The following tests were performed using the radiated test set-up shown in the diagram below.
Radiated emissions below 1GHz.

Radiated Emissions Below 1GHz Test Setup



Test Equipment Utilized

A full system calibration was performed on the test station and any resulting system losses (or gains) were considered in the production of all final measurement data.

Asset#	Description	Manufacturer	Model#	Serial#	Calibration Due Date
170	Video System Controller for Semi Anechoic Chamber	Panasonic	WV-CU101	04R08507	Not Required
287	Rohde & Schwarz 40 GHz Receiver	Rhode & Schwarz	ESIB40	100201	8 Oct 2022
298	3M Radiated Emissions Chamber Maintenance Check	MiCOM	3M Chamber	298	24 Sep 2022
330	Variac 0-280 Vac	Staco Energy Co	3PN1020B	0546	Cal when used
336	Active loop Ant 10kHz to 30 MHz	EMCO	EMCO 6502	00060498	29 Nov 2022
338	Sunol 30 to 3000 MHz Antenna	Sunol	JB3	A052907	29 Sep 2023
342	2.4 GHz Notch Filter	EWT	EWT-14-0203	H1	6 Oct 2022
373	26III RMS Multimeter	Fluke	Fluke 26 series III	76080720	29 Sep 2022
397	Amp 10 - 2500MHz	MiCOM Labs	Amp 10 - 2500 MHz	NA	27 Oct 2022
399	ETS 1-18 GHz Horn Antenna	ETS	3117	00154575	30 Sep 2023
406	Amplifier for Radiated Emissions	MiCOM Labs	40dB 1 to 18GHz Amp	0406	2 Nov 2022
410	Desktop Computer	Dell	Inspiron 620	WS38	Not Required
411	Mast/Turntable Controller	Sunol Sciences	SC98V	060199-1D	Not Required
412	USB to GPIB Interface	National Instruments	GPIB-USB HS	11B8DC2	Not Required
413	Mast Controller	Sunol Science	TWR95-4	030801-3	Not Required
414	DC Power Supply 0-60V	HP	6274	1029A01285	Cal when used
415	Turntable Controller	Sunol Sciences	Turntable Controller	None	Not Required
416	Gigabit ethernet filter	ETS-Lingren	Gigafoil 260366	None	Not Required
447	MiTest Rad Emissions Test Software	MiCOM	Rad Emissions Test Software Version 1.0	447	Not Required
462	Schwarzbeck cable from Antenna to Amplifier.	Schwarzbeck	AK 9513	462	27 Oct 2022
463	Schwarzbeck cable from Amplifier to Bulkhead.	Schwarzbeck	AK 9513	463	27 Oct 2022
464	Schwarzbeck cable from Bulkhead to Receiver	Schwarzbeck	AK 9513	464	27 Oct 2022
480	Cable - Bulkhead to Amp	SRC Haverhill	157-3050360	480	6 Oct 2022
481	Cable - Bulkhead to	SRC Haverhill	151-3050787	481	6 Oct 2022

	Receiver				
510	Barometer/Thermometer	Digi Sense	68000-49	170871375	4 Jan 2023
554	Precision SMA Cable	Fairview Microwave	SCE18060101-400CM	554	6 Oct 2022
555	Rhode & Schwarz Receiver (Firmware Version: 2.00 SP1)	Rhode & Schwarz	ESW 44	101893	28 Jun 2023
CC05	Confidence Check	MiCOM	CC05	None	27 Feb 2023

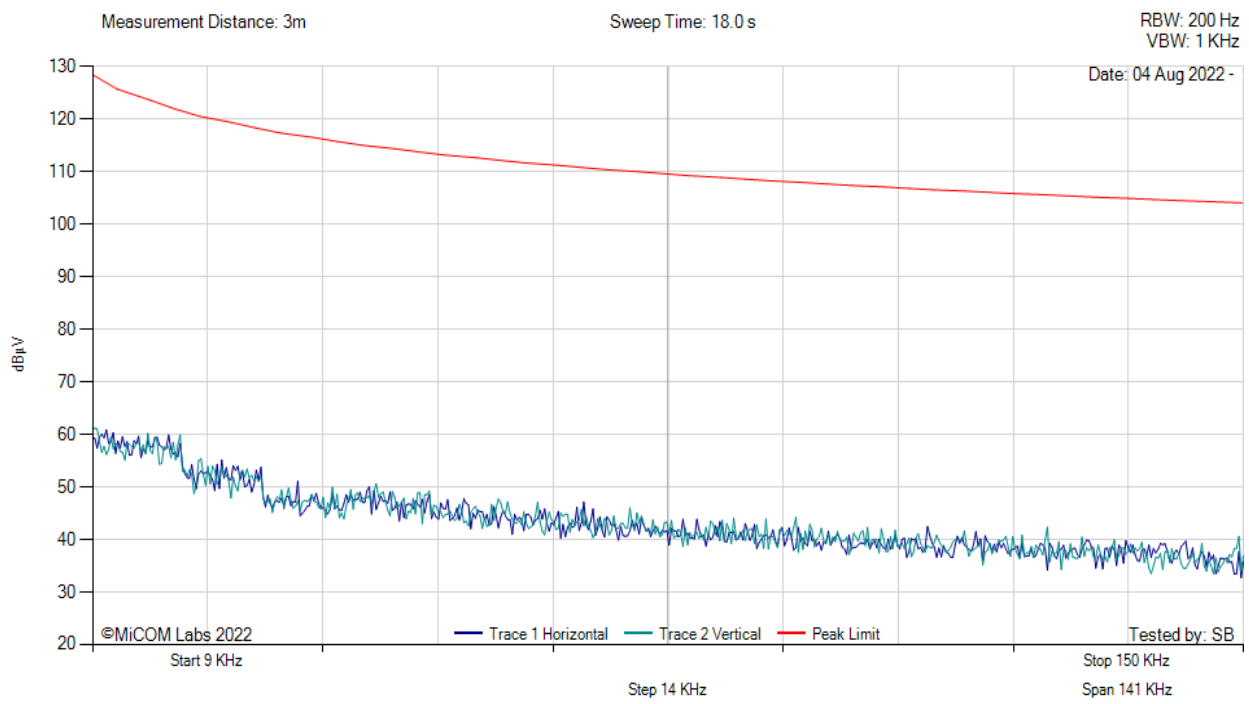
7.1.1. Radiated Emissions – 9KHz to 150KHz

Equipment Configuration for Below 30MHz Emissions (9kHz - 150kHz)

Antenna:	Integral	**Variant:**	NFC
Antenna Gain (dBi):	0.0	**Modulation:**	ASK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	13.56	**Data Rate:**	Not Applicable
Power Setting:	Max	**Tested By:**	SB

Test Measurement Results

Variant: NFC, Test Freq: 13.56 MHz, Power Setting: Max, Duty Cycle (%): 99



There are no emissions found within 6dB of the limit line.

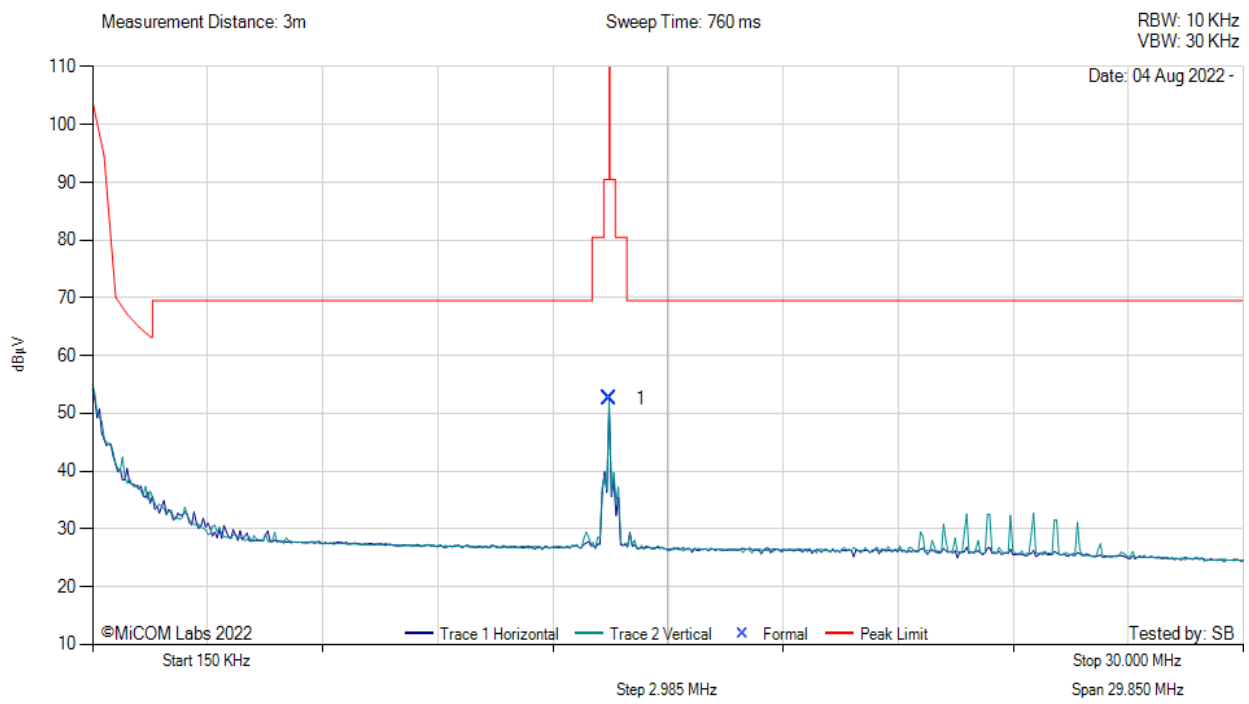
7.1.2. Radiated Emissions – 150KHz to 30MHzHz

Equipment Configuration for Below 30MHz Emissions (150kHz - 30Mhz)

Antenna:	Integral	**Variant:**	NFC
Antenna Gain (dBi):	0.0	**Modulation:**	ASK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	13.56	**Data Rate:**	Not Applicable
Power Setting:	Max	**Tested By:**	SB

Test Measurement Results

Variant: NFC, Test Freq: 13.56 MHz, Power Setting: Max, Duty Cycle (%): 99



0.15.00 - 30.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	13.56	42.23	0.44	9.96	52.63	Peak (NRB)	--	0	53	--	--	Pass

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