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Vivante Health, Inc.

TEST REPORT

SCOPE OF WORK
FCC TESTING–LPK3614

REPORT NUMBER
200918024SZN-001

ISSUE DATE **[REVISED DATE]**

25 November 2020 [----------]

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Tel: (86 755) 8601 6288
Fax: (86 755) 8601 6751
www.intertek.com

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TEST REPORT

Intertek Report No.: 200918024SZN-001

Vivante Health, Inc.

Application
For
Certification

FCC ID: 2AXRI-GIMATE01

Digestive Monitor

Model: LPK3614

Brand name: GIMate

2.4GHz Transceiver

Report No.: 200918024SZN-001

We hereby certify that the sample of the above item is considered to comply with the requirements of FCC Part 15, Subpart C for Intentional Radiator, mention 47 CFR [10-1-19]

Prepared and Checked by:

Judy Xu
Asst. Engineer

Approved by:

Kidd Yang
Technical Supervisor
Date: 25 November 2020

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MEASUREMENT/TECHNICAL REPORT

This report concerns (check one) Original Grant ___X___ Class II Change _____

Equipment Type: DTS - Part 15 Digital Transmission Systems (Bluetooth BLE transmitter portion)

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes _____ No ___X___

If yes, defer until : _____
date

Company Name agrees to notify the Commission by: _____
date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? Yes _____ No ___X___

If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [10-01-19] Edition] provision.

Report prepared by:

Judy Xu
Intertek Testing Services Shenzhen Ltd. Longhua Branch
101, 201, Building B, No. 308 Wuhe Avenue,
Zhangkengjing Community, GuanHu Subdistrict, LongHua District, Shenzhen, P.R. China.
Tel: (86 755) 8614 0743 Fax: (86 755) 8601 6680

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1.0 Summary of Test results

Applicant: Vivante Health, Inc.
Applicant Address: JnJ Innovation Center JLabs@TMC 2450 Holcombe Blvd, Houston, Texas 77021

Sample Receipt Date: 21 April 2020
Test Conducted Date: 21 April 2020 to 23 November 2020

Model: LPK3614
FCC ID: 2AXRI-GIMATE01

TEST ITEM	REFERENCE	RESULTS
Max. Output power	15.247(b)(3)	Pass
6 dB Bandwidth	15.247(a)(2)	Pass
Max. Power Density	15.247(e)	Pass
Out of Band Antenna Conducted Emission	15.247(d)	Pass
Radiated Emission in Restricted Bands	15.247(d), 15.209, FCC 15.205	Pass
AC Conducted Emission	15.207	Pass
Antenna Requirement	15.203	Pass (See Notes)

Notes: The EUT uses an Integral Antenna which in accordance to Section 15.203 is considered sufficient to comply with the provisions of this section.

2.0 General Description

2.1 Product Description

The Equipment Under Test (EUT) is a Digestive Monitor with Bluetooth 5.0 BLE function operating in 2402-2480MHz. The EUT is powered by DC 3.7V by rechargeable battery. For more detailed features description, please refer to the user's manual.

Antenna Type: Integral antenna
Modulation Type: GFSK
Antenna Gain: 2dBi Max
Bluetooth Version: 5.0 BLE (Single Mode)

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

2.2 Related Submittal(s) Grants

This is an application for certification of:
DTS- Part 15 Digital Transmission Systems (Bluetooth 5.0 BLE transmitter portion).

For other functions were reported in the SDOC report: 200918024SZN-002.

2.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.10 (2013) and KDB 558074 D01 v05r02. Radiated emission measurement was performed in semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application.

2.4 Test Facility

The Semi-anechoic chamber and shielded room used to collect the radiated data and conducted data are **Intertek Testing Services Shenzhen Ltd. Longhua Branch** and located at 101, 201, Building B, No. 308 Wuhe Avenue, Zhangkengjing Community, GuanHu Subdistrict, LongHua District, Shenzhen, P.R. China. This test facility and site measurement data have been fully placed on file with File Number: CN1188.

3.0 System Test Configuration

3.1 Justification

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables were manipulated to produce worst case emissions. The EUT was powered by DC 3.7V full rechargeable battery and charged by DC 5V through adapter during the test.

For maximizing emissions, the EUT was rotated through 360°, the EUT was placed on the styrene turntable with 0.8m up to 1GHz and 1.5 m above 1GHz. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000 MHz. The resolution is 1 MHz or greater for frequencies above 1000 MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

The rear of unit shall be flushed with the rear of the table.

Radiated emission measurement were performed the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

3.2 EUT Exercising Software

The EUT exercise program (provided by client) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The worst case configuration is used in all specified testing.

The parameters of test software setting:
During the test, Channel and power controlling software provided by the applicant was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the application and is going to be fixed on the firmware of the end product.

3.3 Special Accessories

N/A.

3.4 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

Measurement Uncertainty	Uncertainty
Occupied Channel Bandwidth	±5%
RF Output Power	±0.31dB
Power Spectral Density	±1.19dB
Conducted Unwanted Emission	±0.55dB
Spurious emission (above 18GHz)	±5.3dB
Spurious emission (6GHz to 18GHz)	±5.1dB
Radiated emission (1GHz to 6GHz)	±4.8dB
Radiated emission (Up to 1GHz)	±4.8dB
AC Conducted emission	±3.6 dB
Temperature	±1°C
Humidity	±5%

3.5 Equipment Modification

Any modifications installed previous to testing by Vivante Health, Inc. will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Longhua Branch.

3.6 Support Equipment List and Description

Description	Manufacturer	Model No.
Adapter	N/A	Model: MP12M-050200-AU Input: AC100-240V, 50/60Hz, 0.5A Max Output: DC5V, 2A

Applicant: Vivante Health, Inc.
Date of Test: April 30, 2020 Model: LPK3614

4.0 Measurement Results

4.1 Maximum Conducted Output Power at Antenna Terminals, FCC Rules 15.247(b)(3):

The antenna power of the EUT was connected to the input of a broadband peak RF power meter. The power meter has a video bandwidth that is greater than DTS bandwidth and utilize a fast-responding diode detector. Power was read directly at the EUT antenna terminals with cable loss added.

For antennas with gains of 6 dBi or less, maximum allowed Transmitter output is 1 watt (+30 dBm).

Frequency (MHz)	Output in dBm (Peak Reading)	Output in mWatt
Low Channel: 2402	-12.25	0.06
Middle Channel: 2440	-13.19	0.05
High Channel: 2480	-14.16	0.04

Cable loss: 1.0 dB External Attenuation: 0 dB

Cable loss, external attenuation has been included in OFFSET function

EUT max. output level = -12.25dBm
EUT max. E.I.R.P = -12.25dBm + 2dBi = -10.25dBm = 0.09mW

For RF Exposure, the information is saved with filename: RF exposure.pdf.

Applicant: Vivante Health, Inc.
Date of Test: April 30, 2020 Model: LPK3614

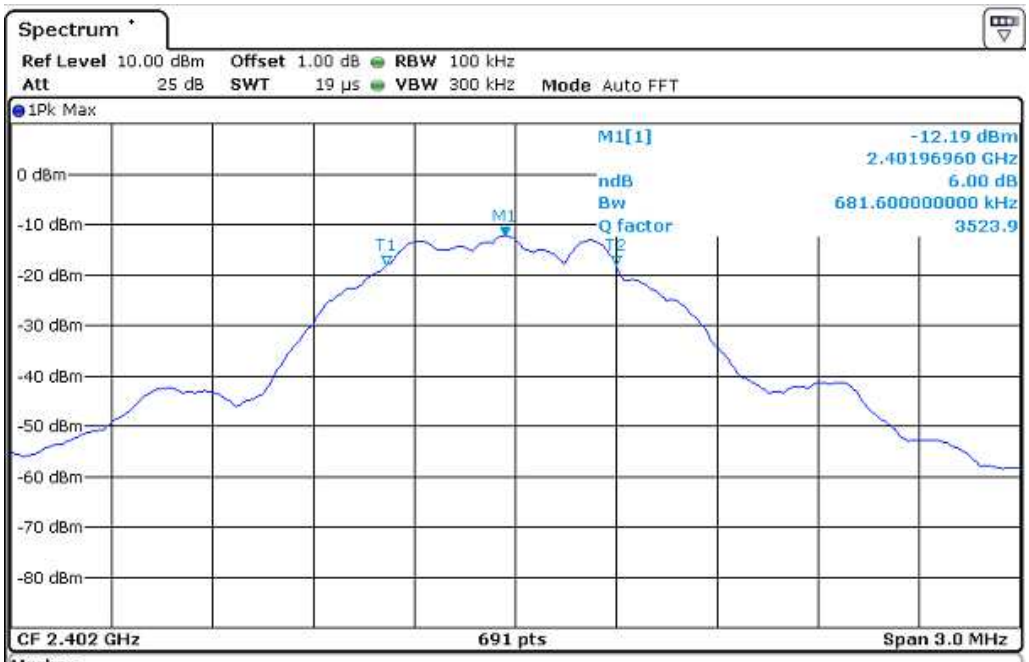
4.2 Minimum 6 dB RF Bandwidth, FCC Rule 15.247(a) (2):

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100 KHz according to FCC KDB 558074 D01 v05r02. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6dB bandwidth was determined from where the channel output spectrum intersected the display line.

Limit: The 6 dB Bandwidth is at least 500 kHz.

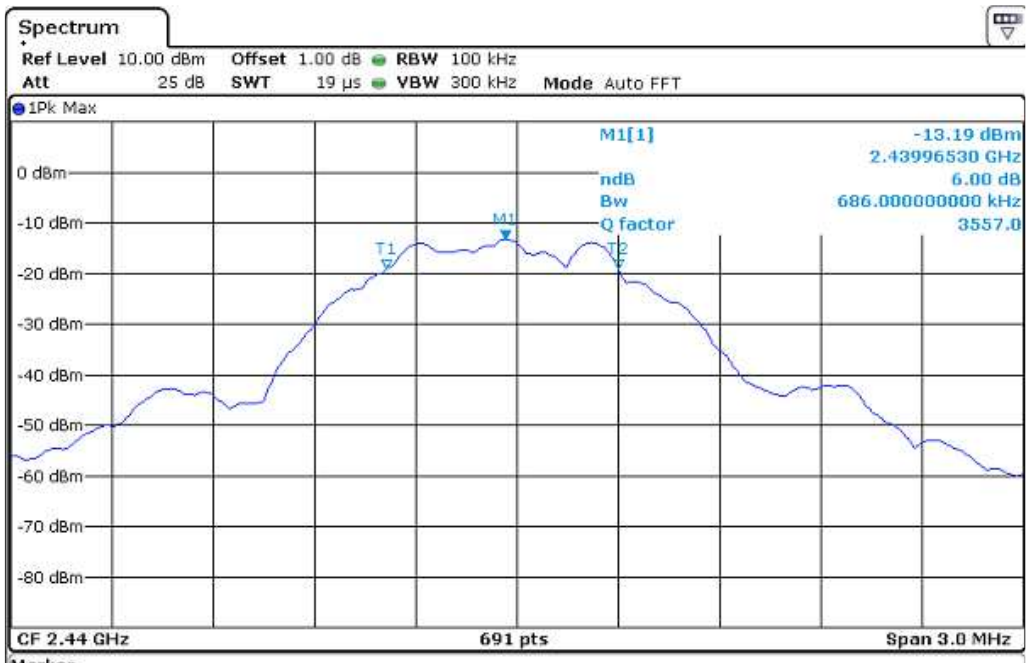
Frequency (MHz)	6 dB Bandwidth (KHz)
2402	681.6
2440	686.0
2480	690.3

The test plots are attached as below.



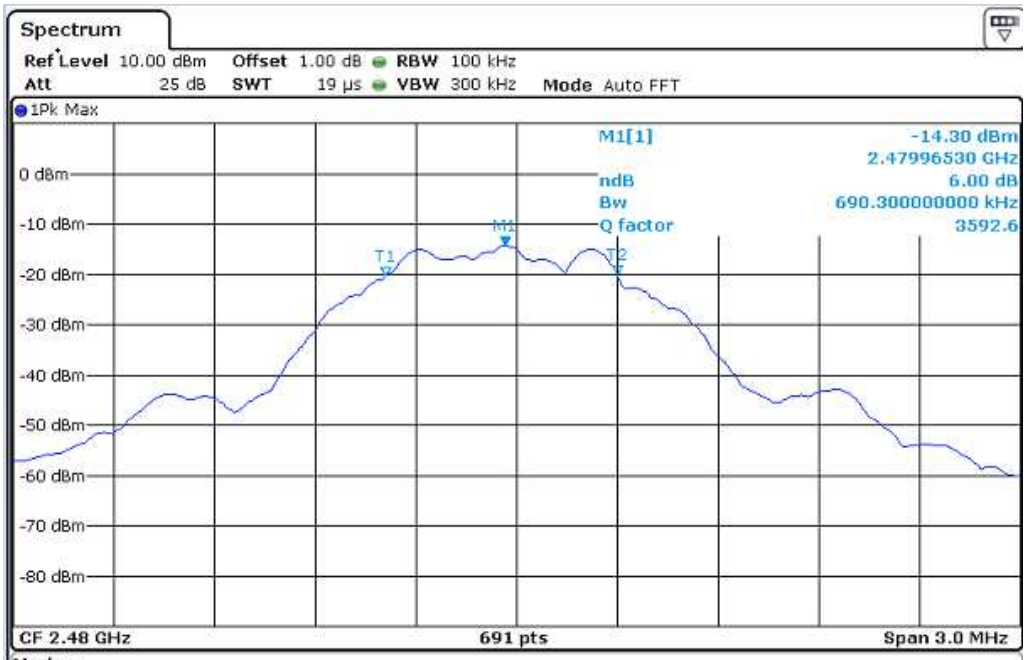
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4019696 GHz	-12.19 dBm	ndB down	681.6 kHz
T1		1	2.4016179 GHz	-18.10 dBm	ndB	6.00 dB
T2		1	2.4022996 GHz	-18.21 dBm	Q factor	3523.9



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4399653 GHz	-13.19 dBm	ndB down	686.0 kHz
T1		1	2.4396136 GHz	-19.17 dBm	ndB	6.00 dB
T2		1	2.4402996 GHz	-19.02 dBm	Q factor	3557.0



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4799653 GHz	-14.30 dBm	ndB down	690.3 kHz
T1		1	2.4796093 GHz	-20.33 dBm	ndB	6.00 dB
T2		1	2.4802996 GHz	-20.21 dBm	Q factor	3592.6

Applicant: Vivante Health, Inc.
Date of Test: April 30, 2020 Model: LPK3614

4.3 Maximum Power Density Reading, FCC Rule 15.247(e):

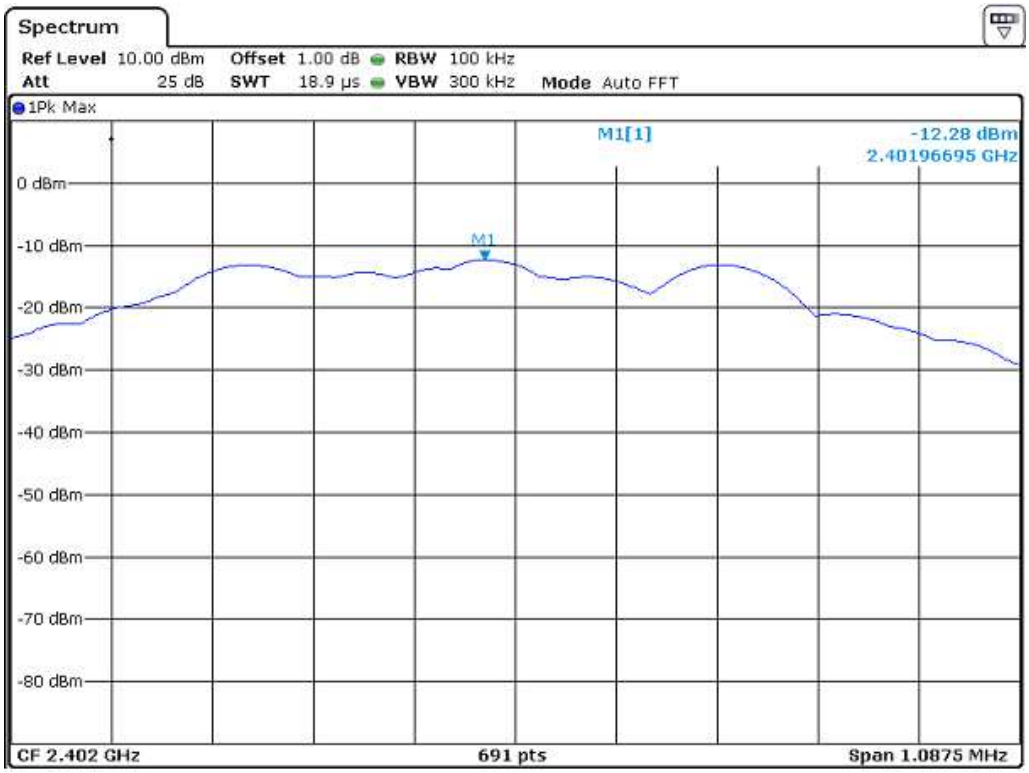
The Measurement Procedure PKPSD was set according to the FCC KDB 558074 D01 v05r02.

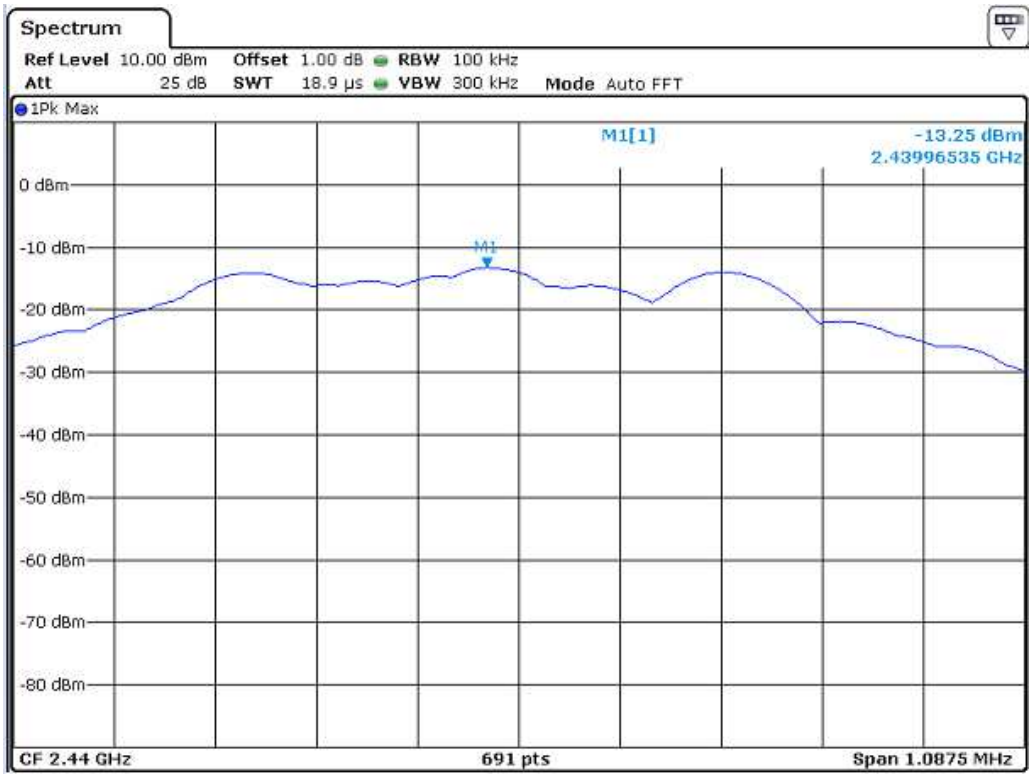
Antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

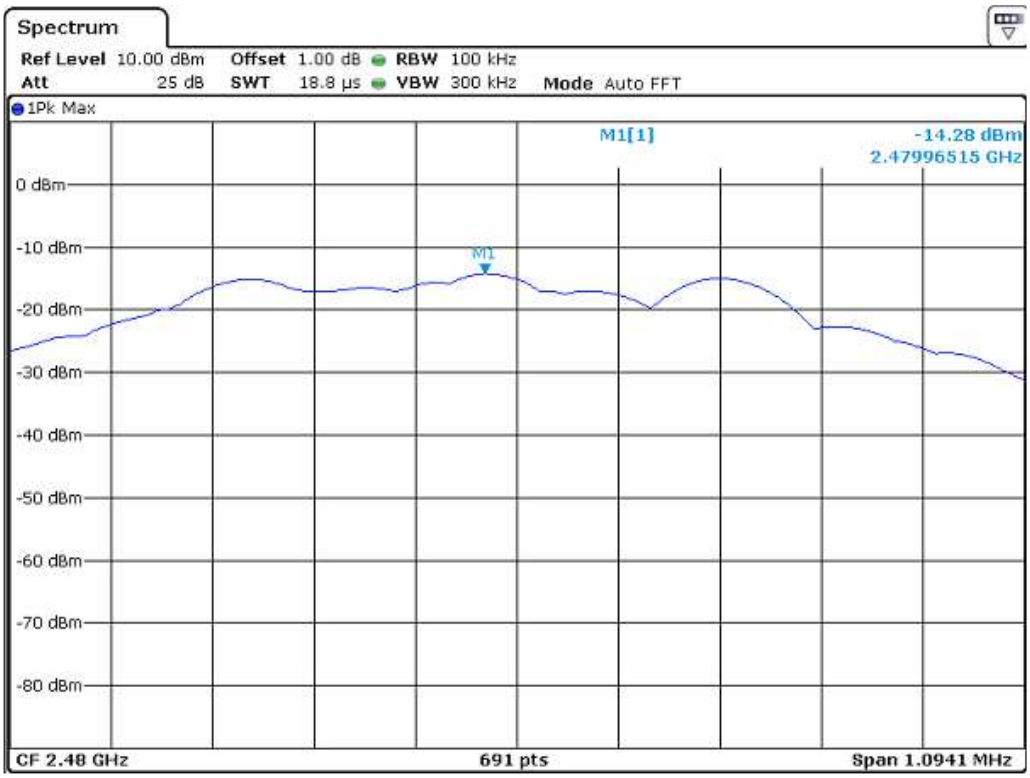
Limit: The Power Density does not exceed 8dBm/3 kHz.

Frequency (MHz)	Power Density with RBW 100KHz
2402	-12.28
2440	-13.25
2480	-14.28

The test plots are attached as below.


Spectrum
Ref Level 10.00 dBm Offset 1.00 dB RBW 100 kHz
Att 25 dB SWT 18.9 µs VBW 300 kHz Mode Auto FFT
1Pk Max
M1[1] -12.28 dBm
2.40196695 GHz
M1
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
CF 2.402 GHz
691 pts
Span 1.0875 MHz


Spectrum
Ref Level 10.00 dBm Offset 1.00 dB RBW 100 kHz
Att 25 dB SWT 18.9 µs VBW 300 kHz Mode Auto FFT
1Pk Max
M1[1] -13.25 dBm
2.43996535 GHz
M1
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
CF 2.44 GHz
691 pts
Span 1.0875 MHz


Spectrum
Ref Level 10.00 dBm Offset 1.00 dB RBW 100 kHz
Att 25 dB SWT 18.8 µs VBW 300 kHz Mode Auto FFT
1Pk Max
M1[1] -14.28 dBm
2.47996515 GHz
M1
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
CF 2.48 GHz
691 pts
Span 1.0941 MHz

Applicant: Vivante Health, Inc.
Date of Test: April 30, 2020 Model: LPK3614

4.4 Out of Band Conducted Emissions, FCC Rule 15.247(d)

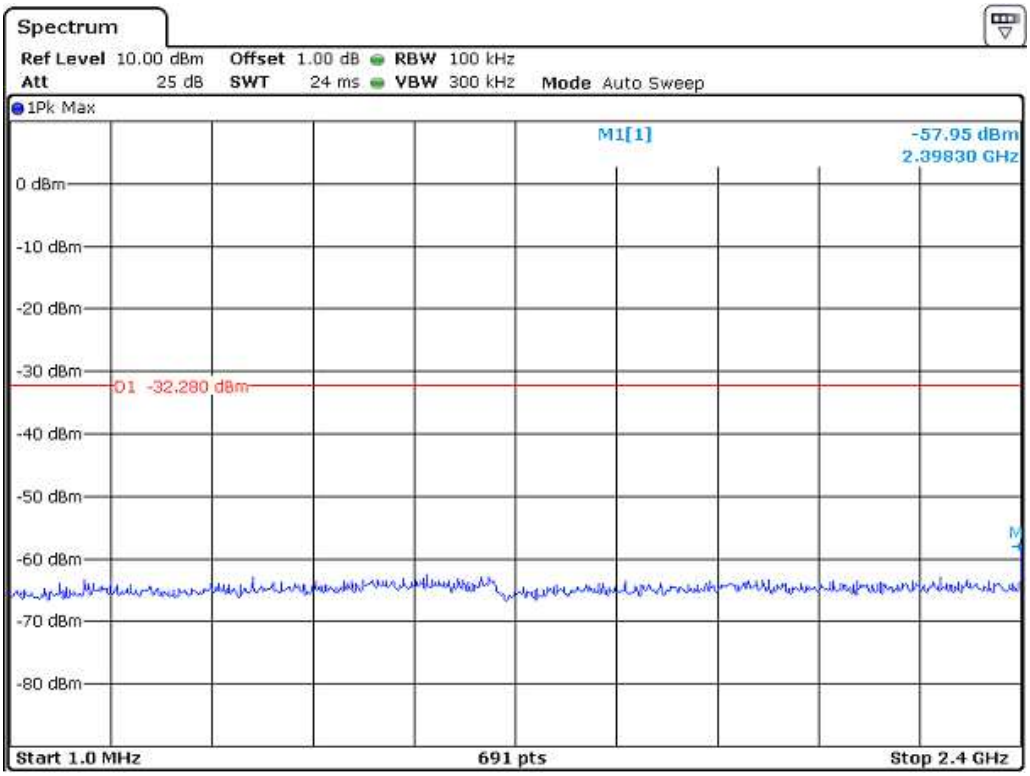
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. The Measurement Procedure was set according to the FCC KDB 558074 D01 v05r02.

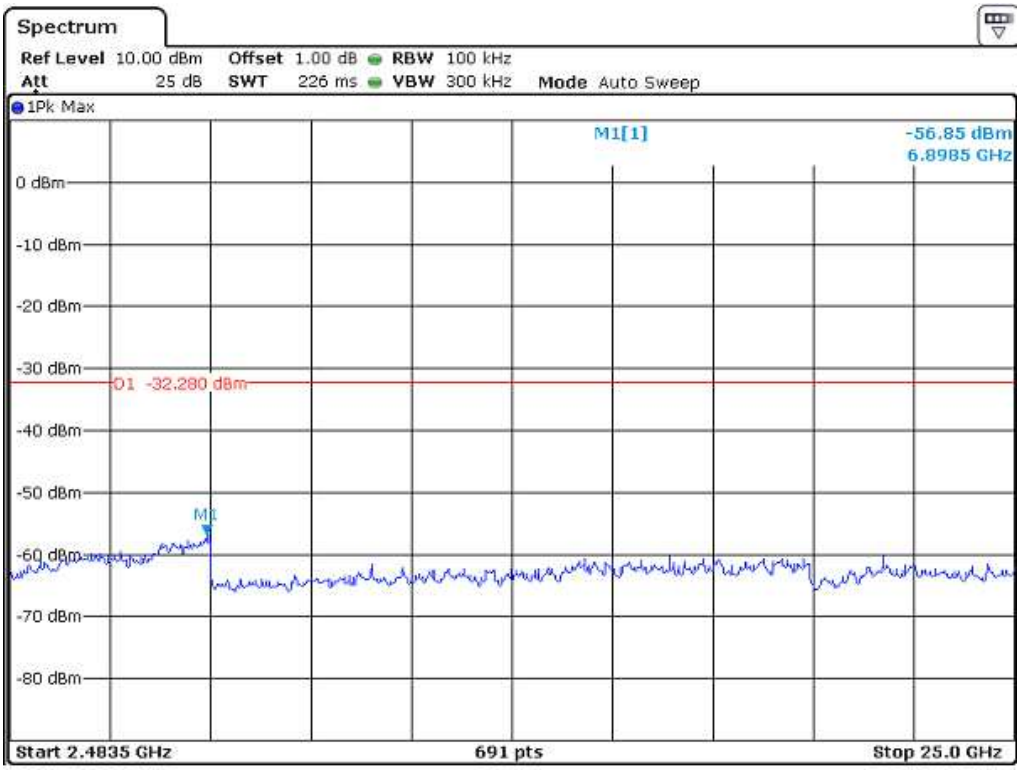
All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the passband.

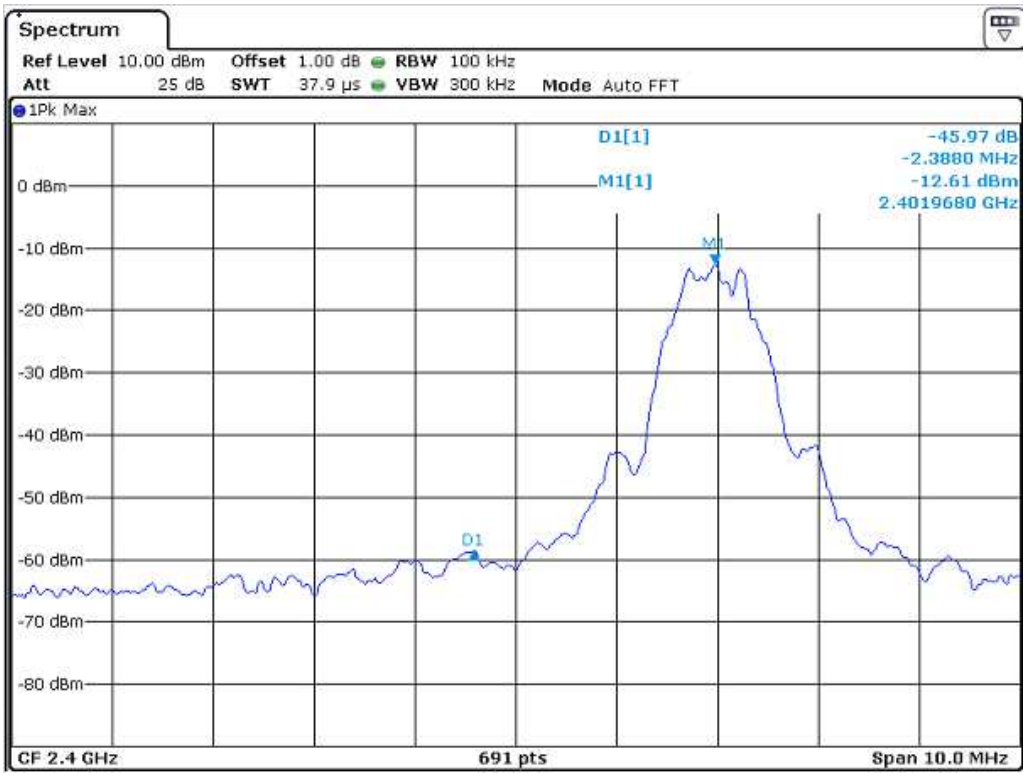
The test plots showed all spurious emission up to the tenth harmonic were measured and they were found to be at least 20 dB below the highest level of the desired power in the passband.

The test plots are attached as below.

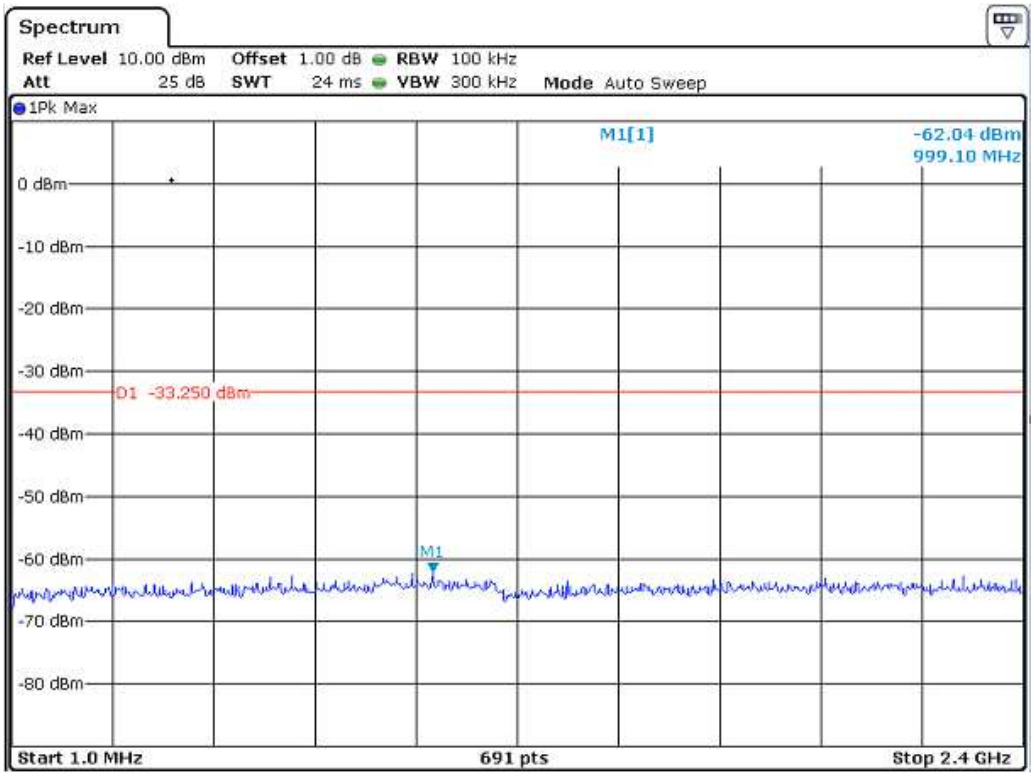
Channel 01 (2402MHz) Reference Level: -12.28dBm

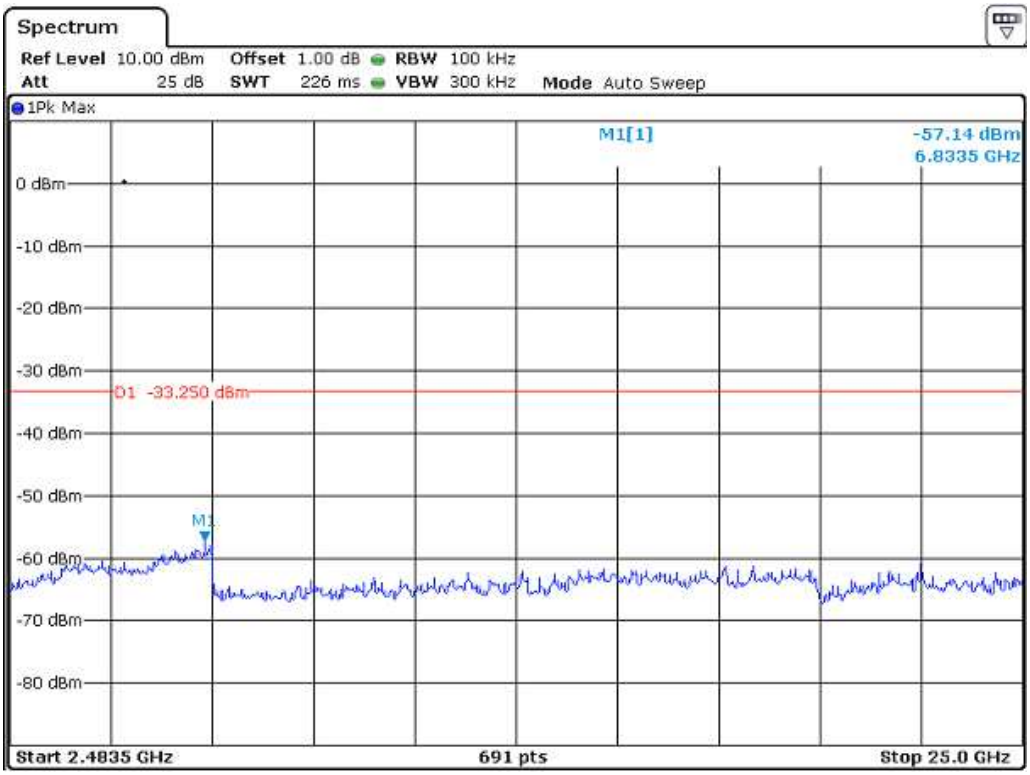




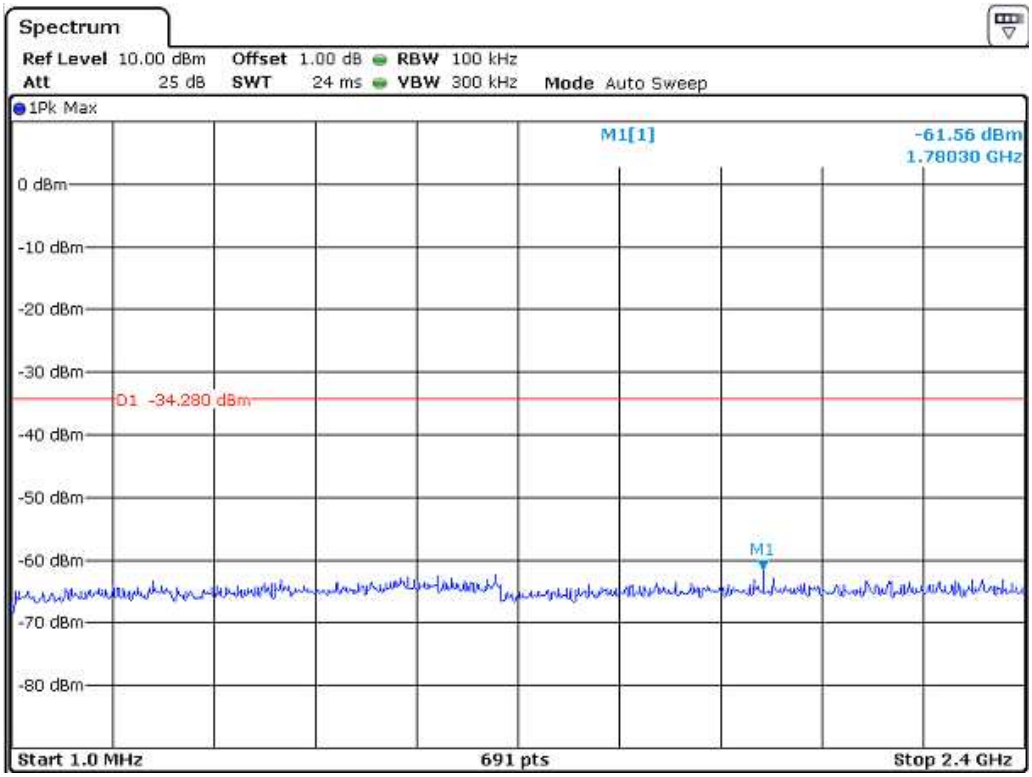

Spectrum
Ref Level 10.00 dBm Offset 1.00 dB RBW 100 kHz
Att 25 dB SWT 37.9 µs VBW 300 kHz Mode Auto FFT
1Pk Max
D1[1]
-45.97 dB
-2.3880 MHz
M1[1]
-12.61 dBm
2.4019680 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
D1
CF 2.4 GHz
691 pts
Span 10.0 MHz

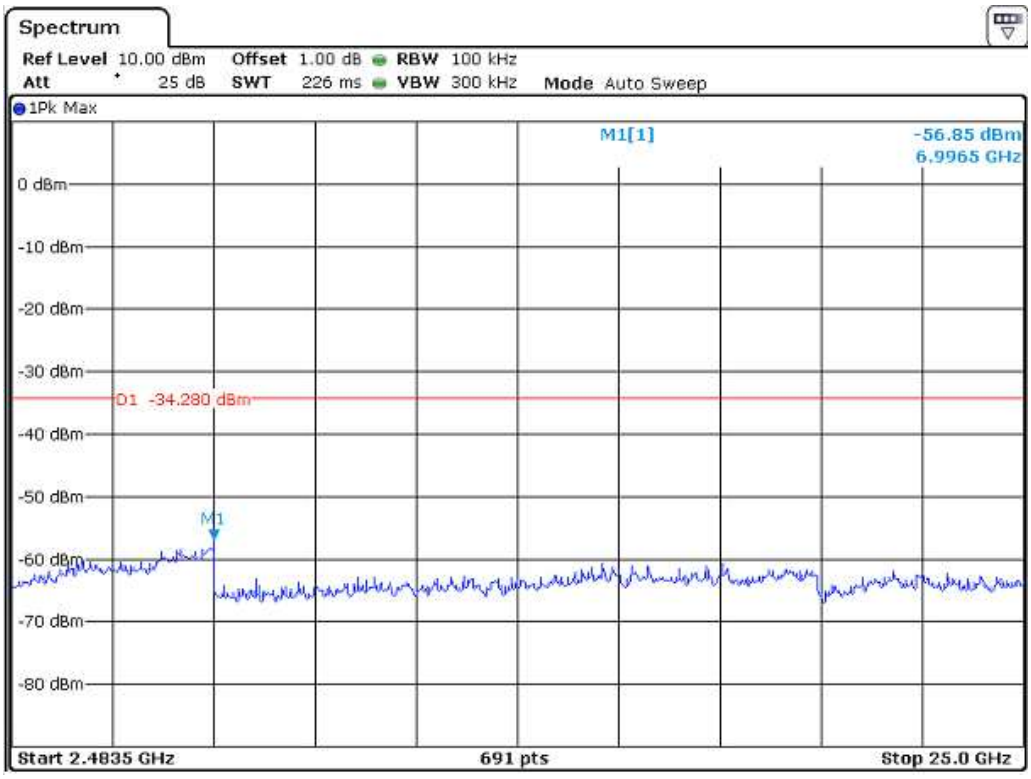
Channel 20 (2440MHz) Reference Level: -13.25dBm

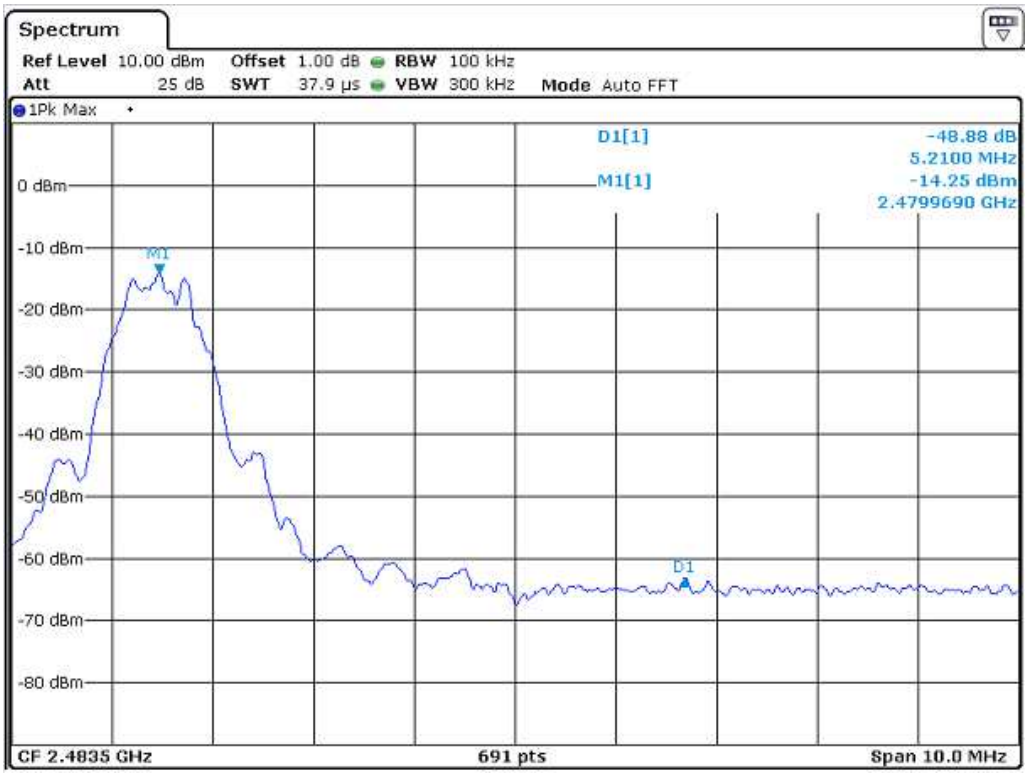




Channel 40 (2480MHz) Reference Level: -14.28dBm






Spectrum
Ref Level 10.00 dBm Offset 1.00 dB RBW 100 kHz
Att 25 dB SWT 37.9 µs VBW 300 kHz Mode Auto FFT
1Pk Max
D1[1]
-48.88 dB
5.2100 MHz
M1[1]
-14.25 dBm
2.4799690 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
D1
CF 2.4835 GHz
691 pts
Span 10.0 MHz

4.5 Out of Band Radiated Emissions (for emissions in 4.4 above that are less than 20dB below carrier), FCC Rule 15.247(d):

For out of band emissions that are close to or that exceed the 20dB attenuation requirement described in the specification, radiated measurements were performed at a 3m separation distance to determine whether these emissions complied with the general radiated emission requirement.

[×] Not required, since all emissions are more than 20dB below fundamental
[ ] See attached data sheet

4.6 Transmitter Radiated Emissions in Restricted Bands, FCC Rule 15.35(b) (c):

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included. All measurements were performed with peak detection unless otherwise specified.

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

4.7 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

FS = RA + AF + CF - AG + PD

Where FS = Field Strength in dBµV/m
RA = Receiver Amplitude (including preamplifier) in dBµV
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB
AG = Amplifier Gain in dB
PD = Pulse Desensitization in dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

FS = RA + AF + CF - AG + PD

<u>Example</u>
Assume a receiver reading of 62.0 dBµV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB. The net field strength for comparison to the appropriate emission limit is 42 dBµV/m. This value in dBµV/m was converted to its corresponding level in µV/m.

RA = 62.0 dBµV
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
PD = 0 dB
FS = 62 + 7.4 + 1.6 - 29 + 0 = 42 dBµV/m

Level in mV/m = Common Antilogarithm [(42 dBµV/m)/20] = 125.9 µV/m

Applicant: Vivante Health, Inc.
Date of Test: 30 April 2020 &16 November 2020 Model: LPK3614

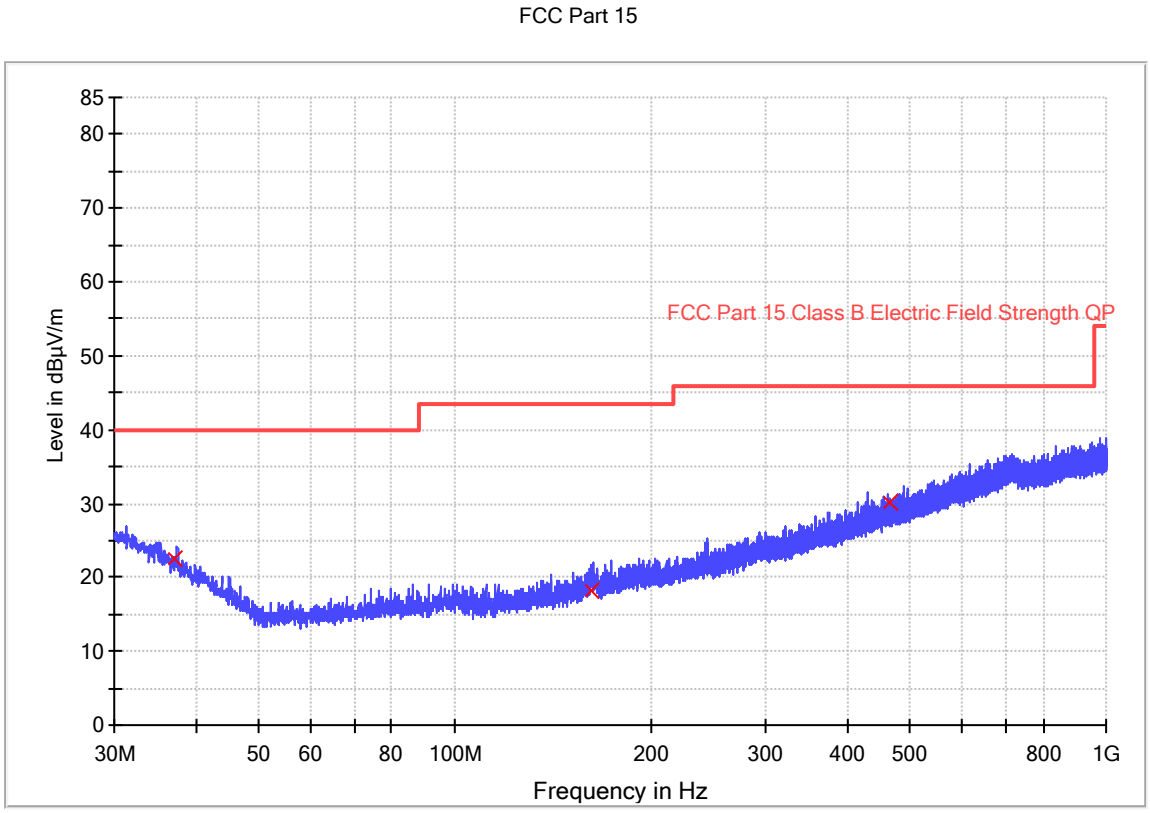
4.8 Radiated Spurious Emission

Worst Case Radiated Spurious Emission
at 7440.000MHz
is passed by 11.5dB margin.

For the electronic filing, the worst case radiated emission configuration photographs are saved with filename: radiated photos.pdf.

Applicant: Vivante Health, Inc.
Date of Test: 16 November 2020 Model: LPK3614
Worst Case Operating Mode: BT Link

ANT Polarity: Horizontal

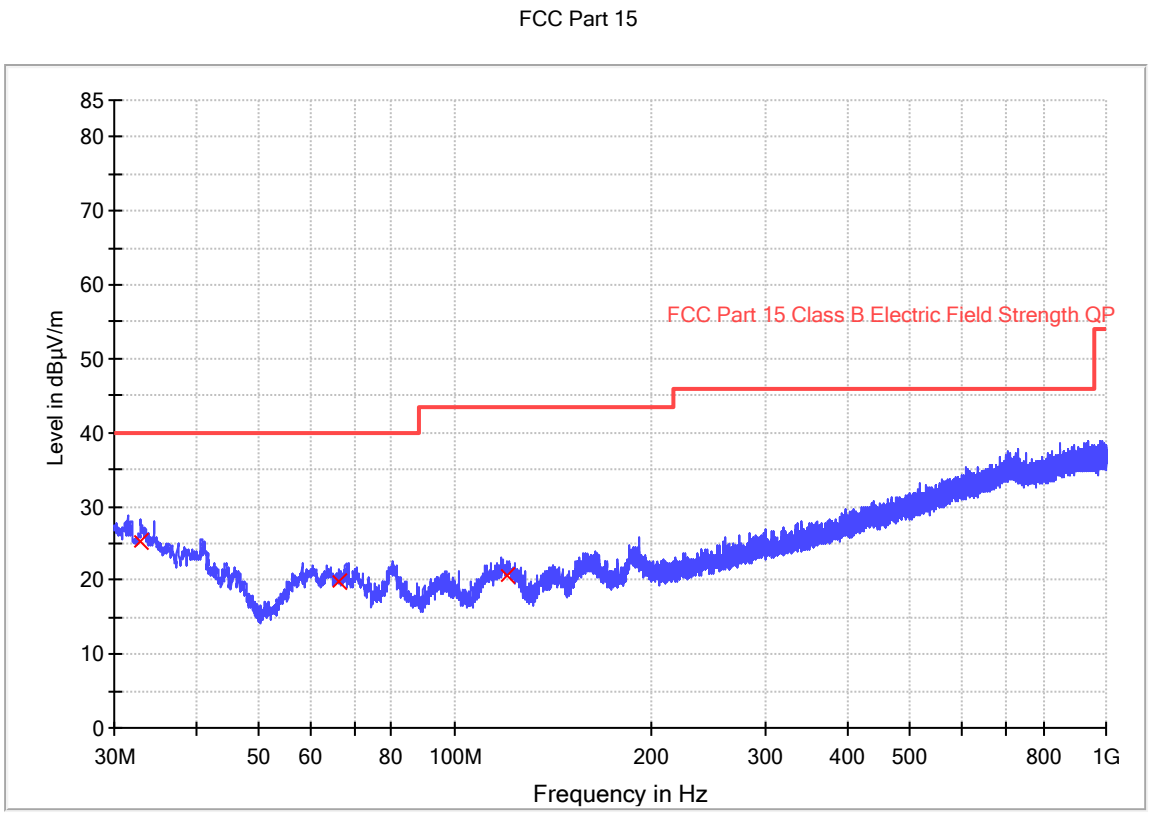


Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
37.081000	22.6	1000.0	120.000	0.0	H	14.7	17.4	40.0
161.758333	18.2	1000.0	120.000	0.0	H	11.2	25.3	43.5
466.273667	30.1	1000.0	120.000	0.0	H	20.7	15.9	46.0

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak (dBµV/m)= Corr. (dB/m)+ Read Level (dBµV)
3. Margin (dB) = Limit Line(dBµV/m) – Level (dBµV/m)

Applicant: Vivante Health, Inc.
Date of Test: 16 November 2020 Model: LPK3614
Worst Case Operating Mode: BT Link

ANT Polarity: Vertical



Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
32.910000	25.3	1000.0	120.000	0.0	V	16.7	14.7	40.0
66.310333	19.9	1000.0	120.000	0.0	V	8.3	20.1	40.0
120.145333	20.6	1000.0	120.000	0.0	V	9.5	22.9	43.5

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak (dBµV/m)= Corr. (dB/m)+ Read Level (dBµV)
3. Margin (dB) = Limit Line(dBµV/m) – Level (dBµV/m)

Applicant: Vivante Health, Inc.
Date of Test: 30 April 2020 Model: LPK3614
Worst Case Operating Mode: Transmitting (Channel 01)

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2402.000	101.0	36.7	28.1	92.4	--	--
Horizontal	4804.000	50.0	36.7	35.5	48.8	74.0	-25.2
Horizontal	2389.210	59.5	36.4	27.6	50.7	74.0	-23.3

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m	Margin (dB)
Horizontal	2402.000	100.8	36.7	28.1	92.2	--	--
Horizontal	4804.000	40.4	36.7	35.5	39.2	54.0	-14.8
Horizontal	2389.210	50.3	36.4	27.6	41.5	54.0	-12.5

Notes:
1. Peak detector is used for the emission measurement (RBW=1MHz / VBW=3MHz for Peak value, and RBW=1MHz / VBW=10Hz for Average value; RBW=3MHz is used for fundamental emission measurement).
2. All measurements were made at 3 meter. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.

Test Engineer: Judy Xu

Applicant: Vivante Health, Inc.
Date of Test: 30 April 2020 Model: LPK3614
Worst Case Operating Mode: Transmitting (Channel 19)

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2440.000	99.6	36.7	28.1	91.0	--	--
Horizontal	4880.000	49.6	36.7	35.5	48.4	74.0	-25.6
Horizontal	7320.000	50.2	36.1	37.2	51.3	74.0	-22.7

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m	Margin (dB)
Horizontal	2440.000	99.3	36.7	28.1	90.7	--	--
Horizontal	4880.000	40.3	36.7	35.5	39.1	54.0	-14.9
Horizontal	7320.000	40.8	36.1	37.2	41.9	54.0	-12.1

Notes:
1. Peak detector is used for the emission measurement (RBW=1MHz / VBW=3MHz for Peak value, and RBW=1MHz / VBW=10Hz for Average value; RBW=3MHz is used for fundamental emission measurement).

2. All measurements were made at 3 meter. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna is used for the emission over 1000MHz.

Test Engineer: Judy Xu

Applicant: Vivante Health, Inc.
Date of Test: 30 April 2020 Model: LPK3614
Worst Case Operating Mode: Transmitting (Channel 40)

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2480.000	100.8	36.7	28.1	92.2	--	--
Horizontal	4960.000	49.9	36.7	35.5	48.7	74.0	-25.3
Horizontal	7440.000	51.2	36.1	37.2	52.3	74.0	-21.7

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m	Margin (dB)
Horizontal	2480.000	100.8	36.7	28.1	92.2	--	--
Horizontal	4960.000	40.2	36.7	35.5	39.0	54.0	-15.0
Horizontal	7440.000	41.4	36.1	37.2	42.5	54.0	-11.5

Notes:
1. Peak detector is used for the emission measurement (RBW=1MHz / VBW=3MHz for Peak value, and RBW=1MHz / VBW=10Hz for Average value; RBW=3MHz is used for fundamental emission measurement).
2. All measurements were made at 3 meter. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.

Test Engineer: Judy Xu

Applicant: Vivante Health, Inc.
Date of Test: November 16, 2020
Model: LPK3614

4.9 Conducted Emission

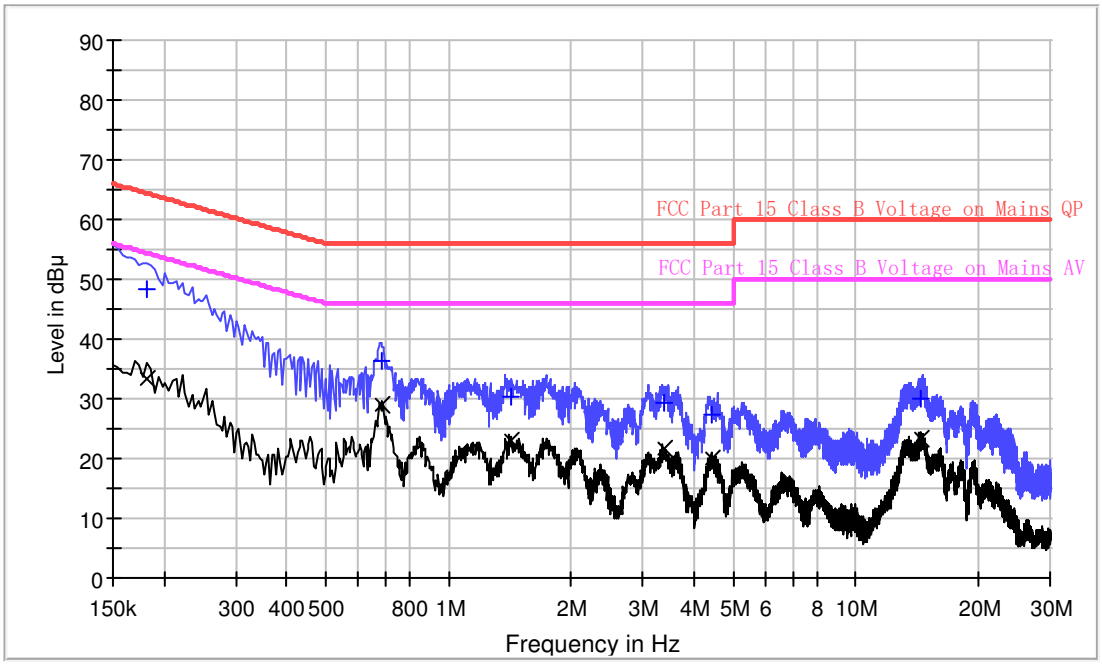
Worst Case Neutral Conducted Emission
at 0.172500MHz
is passed by 14.2dB margin.

For the electronic filing, the worst case radiated emission configuration photographs are saved with filename: conducted photos.pdf.

Applicant: Vivante Health, Inc.
Date of Test: November 16, 2020
Model: LPK3614
Worst Case Operating Mode: BT Link
Phase: Live

Graphic / Data Table

Conducted Emissions
Pursuant to FCC 15.207: Emissions Requirement



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.182000	48.4	9.000	L1	9.6	16.0	64.4
0.685500	36.4	9.000	L1	9.7	19.6	56.0
1.426000	30.3	9.000	L1	9.7	25.7	56.0
3.374000	29.2	9.000	L1	9.7	26.8	56.0
4.414000	27.3	9.000	L1	9.7	28.7	56.0
14.430000	29.8	9.000	L1	10.0	30.2	60.0

Limit and Margin AV

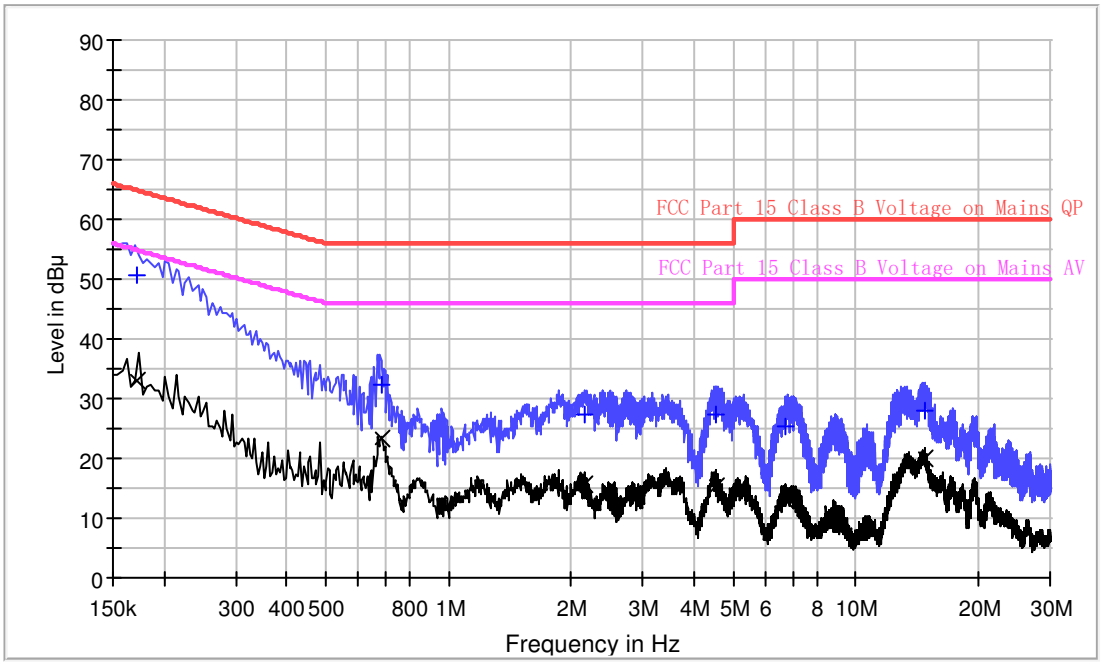
Frequency (MHz)	Average (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.182000	33.2	9.000	L1	9.6	21.2	54.4
0.685500	29.1	9.000	L1	9.7	16.9	46.0
1.426000	22.9	9.000	L1	9.7	23.1	46.0
3.374000	21.5	9.000	L1	9.7	24.5	46.0
4.414000	19.9	9.000	L1	9.7	26.1	46.0
14.430000	23.2	9.000	L1	10.0	26.8	50.0

Remark:
1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Limit (dBuV) – Level (dBuV)

Applicant: Vivante Health, Inc.
Date of Test: November 16, 2020
Model: LPK3614
Worst Case Operating Mode: BT Link
Phase: Neutral

Graphic / Data Table

Conducted Emissions
Pursuant to FCC 15.207: Emissions Requirement



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.172500	50.6	9.000	N	9.6	14.2	64.8
0.682000	32.3	9.000	N	9.7	23.7	56.0
2.146000	27.2	9.000	N	9.7	28.8	56.0
4.538000	27.5	9.000	N	9.8	28.5	56.0
6.710000	25.3	9.000	N	9.8	34.7	60.0
14.726000	28.1	9.000	N	10.0	31.9	60.0

Limit and Margin AV

Frequency (MHz)	Average (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.172500	33.0	9.000	N	9.6	21.8	54.8
0.682000	23.2	9.000	N	9.7	22.8	46.0
2.146000	15.5	9.000	N	9.7	30.5	46.0
4.538000	15.4	9.000	N	9.8	30.6	46.0
6.710000	13.1	9.000	N	9.8	36.9	50.0
14.726000	20.1	9.000	N	10.0	29.9	50.0

Remark:
1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Limit (dBuV) – Level (dBuV)

Applicant: Vivante Health, Inc.
Date of Test: 30 April 2020
Model: LPK3614

4.10 Radiated Emissions from Digital Section of Transceiver, FCC Ref: 15.109

[ ] Not required - No digital part

[ ] Test results are attached

[x] Included in the separated report.

Applicant: Vivante Health, Inc.
Date of Test: 30 April 2020
Model: LPK3614

4.11 Transmitter Duty Cycle Calculation and Measurements, FCC Rule 15.35(b), (c)

The EUT antenna output port was connected to the input of the spectrum analyzer. The analyzer center frequency was set to EUT RF channel carrier. The SWEP function on the analyzer was set to ZERO SPAN. The Transmitter ON time was determined from the resultant time-amplitude display:

	See attached spectrum analyzer chart (s) for Transmitter timing
	See Transmitter timing diagram provided by manufacturer
x	Not applicable, duty cycle was not used.

5.0 Equipment Photographs

For electronic filing, the photographs are saved with filename: external photos.pdf & internal photos.pdf.

6.0 Product Labeling

For electronic filing, the FCC ID label artwork and location are saved with filename: label.pdf.

7.0 Technical Specifications

For electronic filing, the block diagram and circuit diagram are saved with filename: block.pdf and circuit.pdf respectively.

8.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

9.0 Confidentiality Request

For electronic filing, the confidentiality request of the tested EUT is saved with filename: request.pdf.

10.0 Discussion of Pulse Desensitization

The determination of pulse desensitivity was made in accordance with Hewlett Packard Application Note 150-2, *Spectrum Analysis ... Pulsed RF.*

Pulse desensitivity is not applicable for this device since the transmitter transmits the RF signal continuously.

11.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ182-02	RF Power Meter	Anritsu	ML2496A	1302005	28-May-2019	28-May-2020
SZ182-02-01	Power Sensor	Anritsu	MA2411B	1207429	28-May-2019	28-May-2020
SZ061-03	Biconilog Antenna	ETS	3142C	00078828	24-May-2019	24-May-2021
SZ185-01	EMI Receiver	R&S	ESCI	100547	24-Dec-2019	24-Dec-2020
SZ061-08	Horn Antenna	ETS	3115	00092346	07-Sep-2019	07-Sep-2021
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	24-May-2019	24-May-2021
SZ056-03	Spectrum Analyzer	R&S	FSP 30	101148	28-May-2019 27-May-2020	28-May-2020 27-May-2021
SZ056-06	Signal Analyzer	R&S	FSV 40	101101	28-May-2019 27-May-2020	28-May-2020 27-May-2021
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	05-Jul-2019 27-May-2020	05-Jul-2020 27-May-2021
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	15-Dec-2018	15-Dec-2020
SZ062-02	RF Cable	RADIALL	RG 213U	--	16-Dec-2019 12-Jun-2020	16-Jun-2020 12-Dec-2020
SZ062-05	RF Cable	RADIALL	0.04-26.5GHz	--	26-Feb-2020 24-Aug-2020	26-Aug-2020 24-Feb-2021
SZ062-12	RF Cable	RADIALL	0.04-26.5GHz	--	26-Feb-2020 24-Aug-2020	26-Aug-2020 24-Feb-2021
SZ067-04	Notch Filter	Micro-Tronics	BRM50702-02	--	28-May-2019 27-May-2020	28-May-2020 27-May-2021
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	27-Oct-2020	27-Oct-2021
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	27-Oct-2020	27-Oct-2021
SZ188-03	Shielding Room	ETS	RFD-100	4100	07-Jan-2020	07-Jan-2022
SZ062-16	RF Cable	HUBER+SUHNER	CBL2-BN-1m	--	13-Nov-2020	13-Nov-2021

********** End of Report**********