

CERTIFICATION TEST REPORT

Report Number. : 11689563-E1V2

- Applicant : Google Inc. 1600 Amphitheatre Parkway Mountain View, CA 94043 U.S.A
 - Model : A1JT
 - FCC ID : A4R-A1JT
- EUT Description : Bluetooth Device
- Test Standard(s) : FCC 47 CFR PART 15 SUBPART C

Date Of Issue: June 07, 2017

Prepared by: UL Verification Services Inc. 47173 Benicia Street Fremont, CA 94538, U.S.A. TEL: (510) 771-1000 FAX: (510) 661-0888

NVLAP LAB CODE 200065-0

Revision History

Rev.	lssue Date	Revisions	Revised By
V1	4/28/17	Initial Issue	
V2	6/7/17	Updated section 7.1	F. de Anda

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:Google Inc.1600 Amphitheatre ParkwayMountain View, CA 94043 U.S.A					
EUT DESCRIPTION:	EUT DESCRIPTION: Bluetooth Device				
MODEL: A1JT					
SERIAL NUMBER:	d)				
DATE TESTED:	April 25 th , 2017 – April 27th, 2017				
	APPLICABLE STANDARDS				
ST	ANDARD	TEST RESULTS			
CFR 47 P	art 15 Subpart C	Pass			

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of the U.S. government.

Approved & Released For UL Verification Services Inc. By:

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, KDB 558074 D01 v04, ANSI C63.10-2013.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street	
Chamber A	Chamber D	
🛛 Chamber B	Chamber E	
Chamber C	Chamber F	
	Chamber G	
	Chamber H	

The above test sites and facilities are covered under FCC Test Firm Registration # 208313.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0.

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3.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

3.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB) 36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

3.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.84 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.65 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	3.15 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	5.36 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.32 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.45 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.24 dB

Uncertainty figures are valid to a confidence level of 95%.

4. EQUIPMENT UNDER TEST

4.1. DESCRIPTION OF EUT

The EUT is a BLE device.

4.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum <u>peak</u> conducted output power as follows:

Frequency Range	Mode	Output Power (dBm)	Output Power (mW)
(MHz)		(UBIII)	(11100)
2402 - 2480	BLE	0.13	1.03

The transmitter has a maximum <u>average</u> conducted output power as follows:

Frequency	Mode	Output Power	Output Power
Range		(dBm)	(mW)
(MHz)			
2402 - 2480	BLE	-0.22	0.95

4.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a chip antenna, with a maximum gain of 1.0 dBi

4.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was v0.34

4.5. WORST-CASE CONFIGURATION AND MODE

Radiated emission and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

The fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, it was determined that X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X orientation.

Worst-case data rates as provided by the client were:

BLE Mode: 1Mbps

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4.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List						
Description Manufacturer Model Serial Number						
AC Adapter	Dell	LA65NM130	CN-0JNKWD-72438-3CI-3C43-A00			
Laptop	Dell	E7440	243HM32			

I/O CABLES

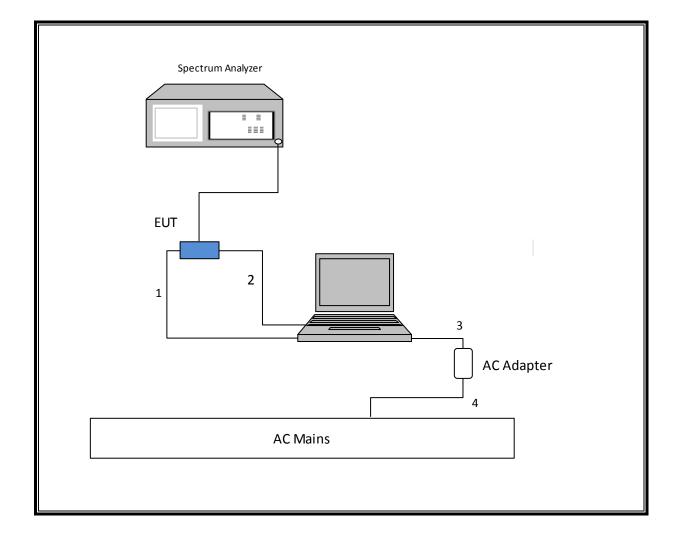
	I/O Cable List							
Cable	ble Port #of identical Co		Connector	Cable Type	Cable	Remarks		
No		ports	Туре		Length (m)			
1	USB	1	USB-A	unshielded	1.85	USB-A extension cable		
2	USB	1	USB-A	unshielded	1.8	USB-Serial		
3	DC	1	Barrel	unshielded	1.85			
4	AC	1	3-Prong	unshielded	0.9			

TEST SETUP

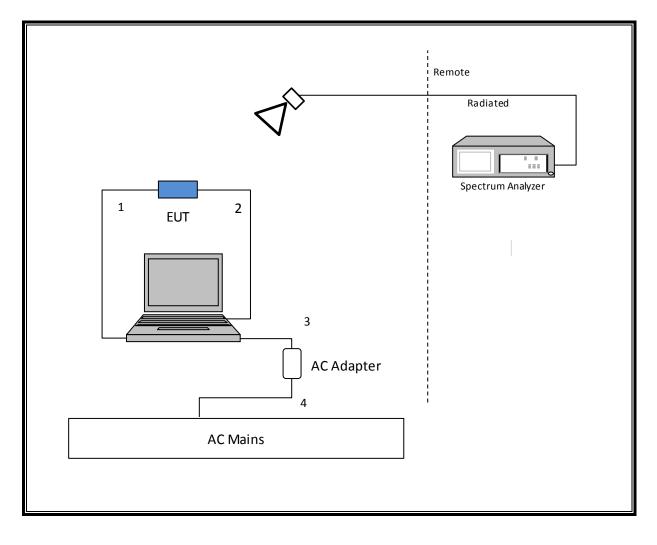
The EUT is connected to a test laptop during the tests. Test software exercised the radio card.

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SETUP DIAGRAM FOR ANTENNA PORT TESTS



SETUP DIAGRAM FOR RADIATED TESTS



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5. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List						
Description	Manufacturer	Model	ID No.	Cal Date	Cal Due	
Antenna Port Software	UL	UL EMC	V	er 6.6 <i>,</i> April 26	, 2017	
Spectrum Analyzer	Keysight	N9030A	T1450	1/10/17	1/10/18	
Antenna, Biconolog, 30MHz – 1GHz	Sunol Sciences	JB3	T477	6/22/16	6/22/17	
Antenna, Horn, 1-18GHz	ETS Lindgren	3117	T346	3/28/17	3/28/18	
Horn Antenna, 18 - 26 GHz	ARA	MWH-1826/B	T449	05/26/16	05/26/17	
RF Preamplifier, 10kHz – 1GHz	НР	8447D	T10	2/15/17	2/15/18	
RF Preamplifier, 1 – 18GHz	Miteq	AFS42-00101800-25-S-42	T493	2/15/17	2/15/18	
RF Preamplifier, 1 - 26GHz	Agilent	8449B	T404	07/05/16	07/05/17	
Spectrum Analyzer	Keysight	N9030A	T907	1/23/17	1/23/18	
Spectrum Analyzer	HP	8564E	T106	09/07/16	09/07/17	
Power Meter	Keysight	N1911A	T1265	12/14/16	12/14/17	
Power Sensor	Keysight	N1921A	T1223	3/29/17	3/29/18	
EMI Receiver	Rohde & Schwarz	ESR	T1436	1/06/17	1/06/18	
LISN	FISCHER	FCC-LISN-50/250-25-2-01	T1310	06/08/16	06/08/17	

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6. ANTENNA PORT TEST RESULTS

6.1. MEASUREMENT METHODS

On Time and Duty Cycle: KDB 558074 D01 v04, Section 6.

<u>6 dB BW</u>: KDB 558074 D01 v04, Section 8.1.

Average Power: KDB 558074 D01 v04, Section 9.2.3.2.

Output Power: KDB 558074 D01 v04, Section 9.1.3.

Power Spectral Density: KDB 558074 D01 v04, Section 10.2.

Out-of-band emissions in non-restricted bands: KDB 558074 D01 v04, Section 11.1.

Out-of-band emissions in restricted bands: KDB 558074 D01 v04, Section 12.2.5.3

Band-edge: KDB 558074 D01 v04, Section 13.3.3

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6.2. ON TIME, DUTY CYCLE

<u>LIMITS</u>

None; for reporting purposes only.

PROCEDURE

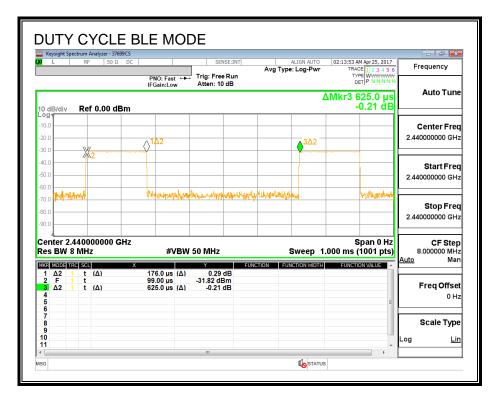
KDB 558074 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time	Period	Duty Cycle	Duty	Duty Cycle	1/T
	В		x	Cycle	Correction Factor	Minimum VBW
	(msec)	(msec)	(linear)	(%)	(dB)	(kHz)
BLE	0.176	0.625	0.282	28.16%	5.50	5.682

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DUTY CYCLE PLOTS



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6.3. 6 dB BANDWIDTH

LIMITS

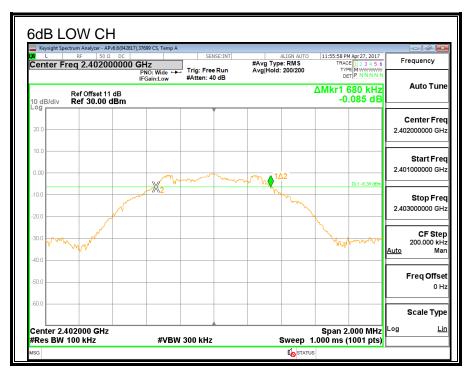
FCC §15.247 (a) (2)

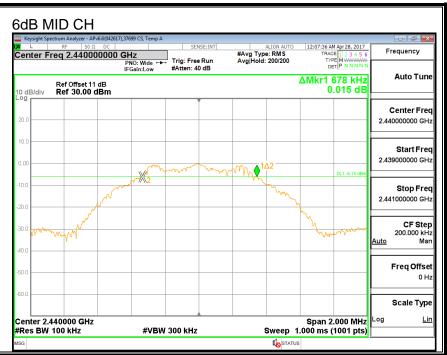
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

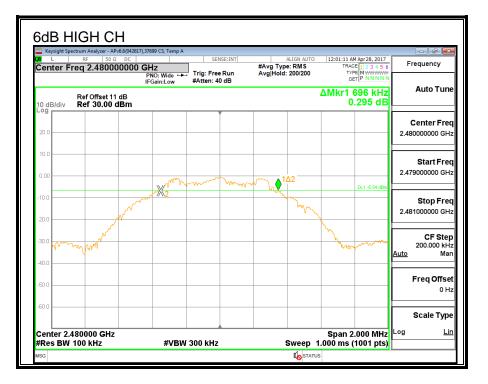
Channel	Frequency	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.680	0.5
Middle	2440	0.678	0.5
High	2480	0.696	0.5

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6.4. 99% **BANDWIDTH**

LIMITS

None; for reporting purposes only.

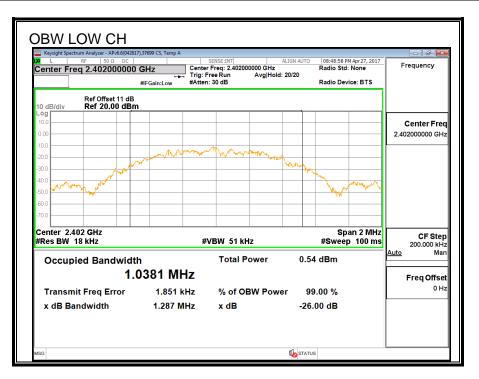
Test Procedure

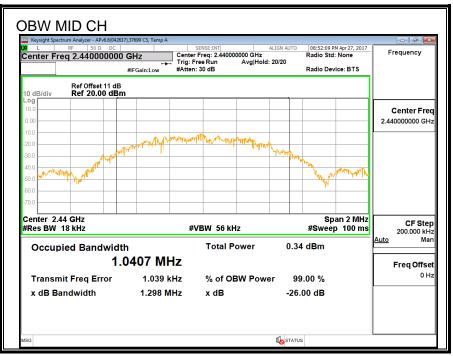
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth and to 1% of the span. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

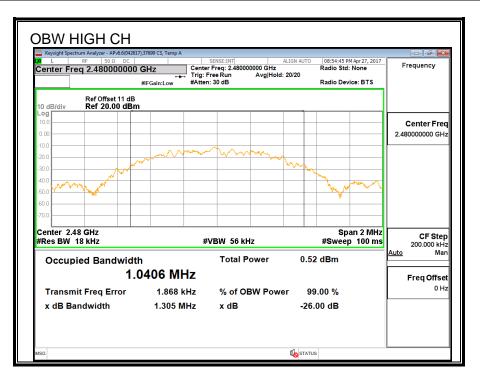
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.038
Middle	2440	1.041
High	2480	1.041

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6.5. AVERAGE POWER

LIMITS

None; for reporting purposes only.

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Tested By:	37699 CS
Date:	4/27/2017

Channel	Frequency	Avg Power Reading
	(MHz)	(dBm)
Low	2402	-0.37
Middle	2440	-0.32
High	2480	-0.22

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6.6. OUTPUT POWER

LIMITS

FCC §15.247 (b)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

RESULTS

Tested By:	37699 CS
Date:	4/27/2017

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-0.02	30	-30.02
Middle	2440	0.13	30	-29.87
High	2480	-0.05	30	-30.05

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6.7. POWER SPECTRAL DENSITY

LIMITS

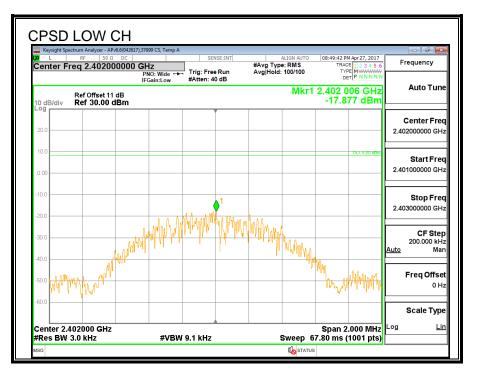
FCC §15.247 (e)

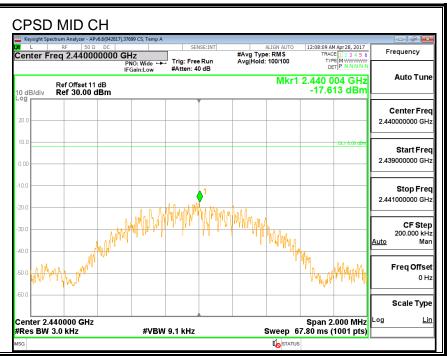
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

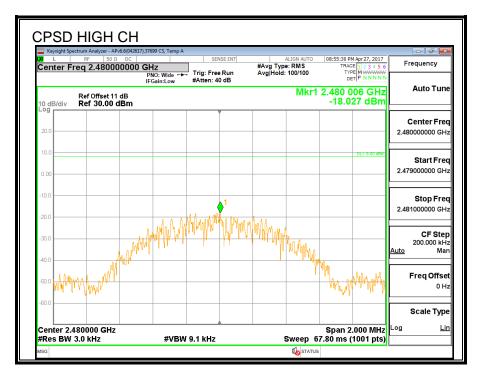
Channel	Frequency	PSD	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)
Low	2402	-17.88	8	-25.88
Middle	2440	-17.61	8	-25.61
High	2480	-18.03	8	-26.03

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6.8. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

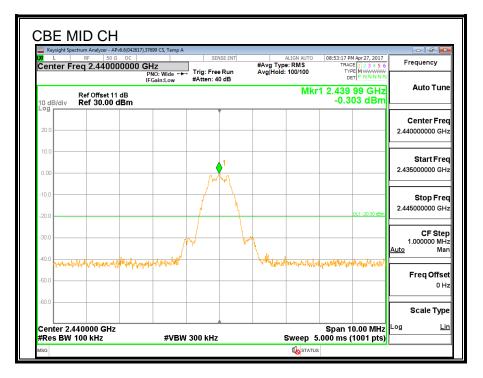
FCC §15.247 (d)

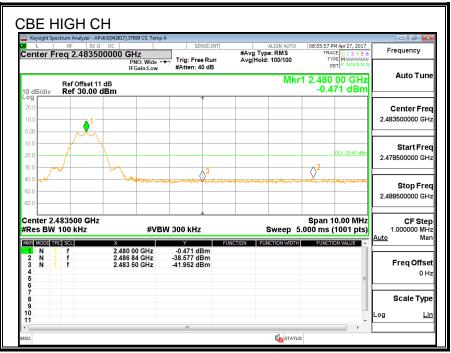
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

RESULTS

	CH - APv6.6(042617),37699 CS, Temp	4			
Center Freg 2.40	50 Ω DC 000000 GHz	SENSE:INT	ALIGN AUTO #Avg Type: RMS	08:50:10 PM Apr 27, 2017 TRACE 1 2 3 4 5 6	Frequency
•	PNO: Wide ← IFGain:Low	Trig: Free Run #Atten: 40 dB	Avg Hold: 100/100	DET P N N N N	
Ref Offse 10 dB/div Ref 30.1			Mkr	1 2.402 00 GHz -0.434 dBm	Auto Tun
20.0					Center Fre
10.0			1		2.400000000 GH
0.00			- Andrea		
10.0			+		Start Fre
20.0			+/	DL1 -20.43 dBm	2.395000000 GH
30.0	03	²	Jun In	Maria I. I.	
40.0 - www.a.d.partition	and and the second s	an the state and the state of the state of the		Well man work of the second	Stop Fre
60.0					2.405000000 GH
Center 2.400000 G	·U			Span 10.00 MHz	05.04-
Res BW 100 kHz		N 300 kHz	Sweep 5	.000 ms (1001 pts)	CF Ste 1.000000 MH
MKR MODE TRC SCL	X		INCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Ma
1 N 1 f 2 N 1 f	2.402 00 GHz 2.400 00 GHz	-0.434 dBm -41.707 dBm			Freq Offse
3 N 1 f 4	2.398 06 GHz	-39.728 dBm			
5 6				E	
7 8					Scale Typ
9 10					Log <u>Li</u>
11				•	

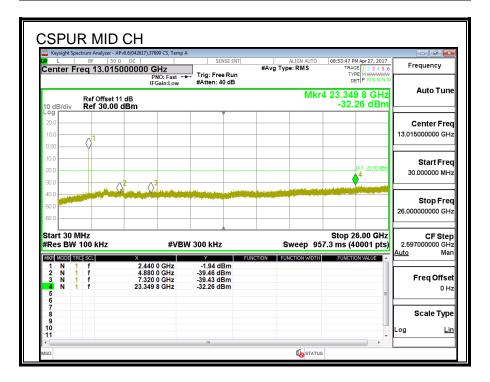
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			LOW	v6.6(042617),37699	9 CS, Temp A				_				F	- 6 ×
LXI L	- 1	F	RF 50 Ω	DC 000000 GH		SENS	SE:INT	#Avg		ALIGN AUTO e: RMS	TRA	PM Apr 27, 2017 RACE 1 2 3 4 5 6 TYPE M WWWWW	Free	quency
10 dE	3/div		ef Offset 11 (ef 30.00 d	dB	Sain:Low	#Atten: 40	dB			Mkr	4 25.62	29 3 GHz 1.79 dBm		Auto Tune
Log 20.0 10.0) 1						_					enter Fred 000000 GH:
-10.0 -20.0 -30.0				2 \(\lambda\)					_			DL1 -20.43 dFm		Start Free 000000 MH
-40.0 + -50.0 + -60.0 +														Stop Fre
#Res		100	0 kHz		#VBV	N 300 kHz				<u> </u>	i7.3 ms (26.00 GHz (40001 pts)	2.5970 Auto	CF Ste 000000 GH Ma
1 2 3	N N	1 f 1 f 1 f 1 f 1 f	f f f	× 2.402 0 4.804 0 7.206 0 25.629 3	0 GHz 0 GHz	-1.90 dBr -39.90 dBr -39.65 dBr -31.79 dBr	m m	NON	FUNC	CTION WIDTH	FUNC		F	req Offse 0 H
7 8 9														cale Typ
10 11													Log	Li



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Keysight Spectrum Analyzer - APvi	5.6(042617),37699 CS, Temp A				- 6 -
L RF 50 Ω Center Freq 13.0150		SENSE:INT	ALIGN AUTO #Avg Type: RMS	08:56:26 PM Apr 27, 2017 TRACE 1 2 3 4 5 6 TYPE M WWWWW	Frequency
	PNO: Fast ↔ IFGain:Low	#Atten: 40 dB		DET P NNNN	Auto Tune
Ref Offset 11 10 dB/div Ref 30.00 d			WKr	4 24.823 6 GHz -32.10 dBm	
20.0					Center Free
10.00					13.015000000 GH
-10.0				DL1 -20.47 dBm	Start Free 30.000000 MH
-30.0	23	anter a construction	The public second and a second bi		30.00000 MH
-40.0					Stop Free 26.00000000 GH
-60.0					20.000000000
Start 30 MHz #Res BW 100 kHz	#VBW	300 kHz	Sweep 95	Stop 26.00 GHz 7.3 ms (40001 pts)	CF Step 2.597000000 GH
MKR MODE TRC SCL 1 N 1 f	X 2.480 0 GHz	-0.85 dBm	NCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Mar
2 N 1 f 3 N 1 f 4 N 1 f 5	4.960 0 GHz 7.440 0 GHz 24.823 6 GHz	-40.66 dBm -41.43 dBm -32.10 dBm		E	Freq Offse 0 H
6 7 8					Scale Type
9 10 11					Log <u>Li</u> i

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7. RADIATED TEST RESULTS

7.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

(a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For pre-scans above 1 GHz, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.

For final measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and reduced VBW 1/T, where 1/T is 6.2 KHz for average measurements.

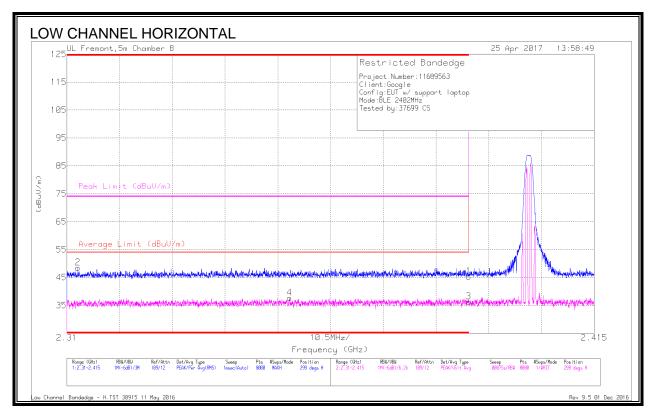
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The spectrum from 30 MHz to 1GHz and 18GHz to 26 GHz is investigated with the transmitter set to transmit at the channel with highest output power as worst-case scenario. 1GHz to 18GHz was set to the lowest, middle, and highest channels in the 2.4 GHz band

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

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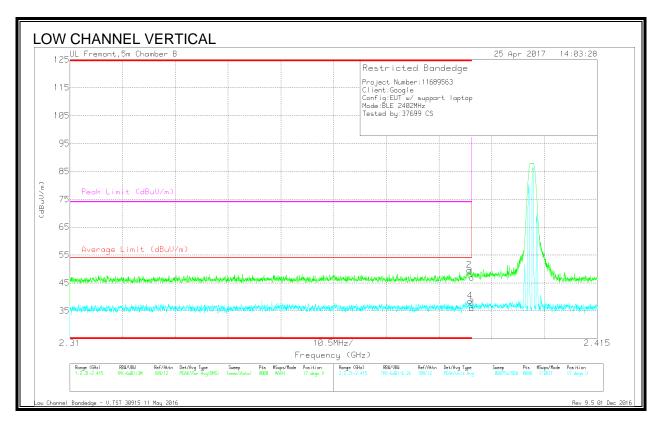
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/P ad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	34.59	Pk	32	-21.3	45.29	-	-	74	-28.71	299	118	Н
2	* 2.312	37.89	Pk	31.7	-21.2	48.39	-	-	74	-25.61	299	118	Н
3	* 2.39	25.58	VA1T	32	-21.3	36.28	54	-17.72	-	-	299	118	Н
4	* 2.354	27.04	VA1T	31.9	-21.3	37.64	54	-16.36	-	-	299	118	Н

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

VA1T - KDB558074 Method: Reduced VBW

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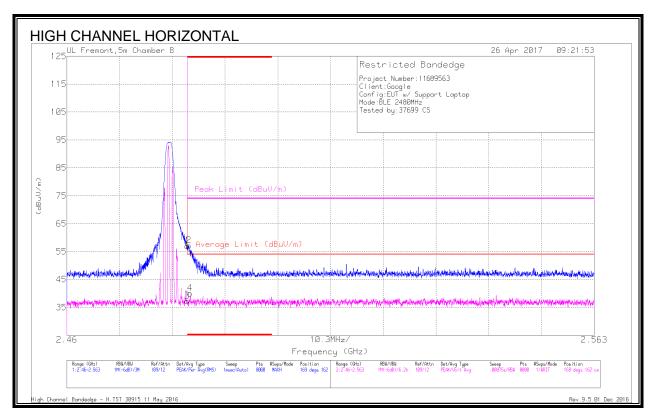
Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fitr/Pad (dB)	Correcte d Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.389	38.79	Pk	32	-21.3	49.49	-	-	74	-24.51	17	116	V
1	* 2.39	36.21	Pk	32	-21.3	46.91	-	-	74	-27.09	17	116	V
3	* 2.39	25.35	VA1T	32	-21.3	36.05	54	-17.95	-	-	17	116	V
4	* 2.39	27.79	VA1T	32	-21.3	38.49	54	-15.51	-	-	17	116	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

VA1T - KDB558074 Method: Reduced VBW

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7.3. AUTHORIZED BANDEDGE (HIGH CHANNEL)

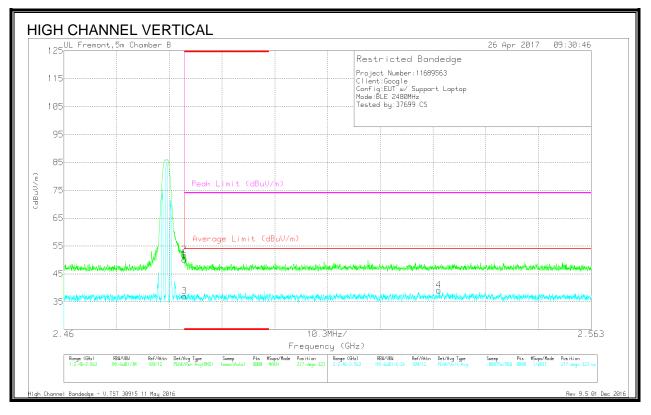
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/P ad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	46.14	Pk	32.1	-21.2	57.04	-	-	74	-16.96	169	162	н
2	* 2.484	46.24	Pk	32.1	-21.2	57.14	-	-	74	-16.86	169	162	Н
3	* 2.484	26.32	VA1T	32.1	-21.2	37.22	54	-16.78	-	-	169	162	Н
4	* 2.484	29.09	VA1T	32.1	-21.2	39.99	54	-14.01	-	-	169	162	Н

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

VA1T - KDB558074 Method: Reduced VBW

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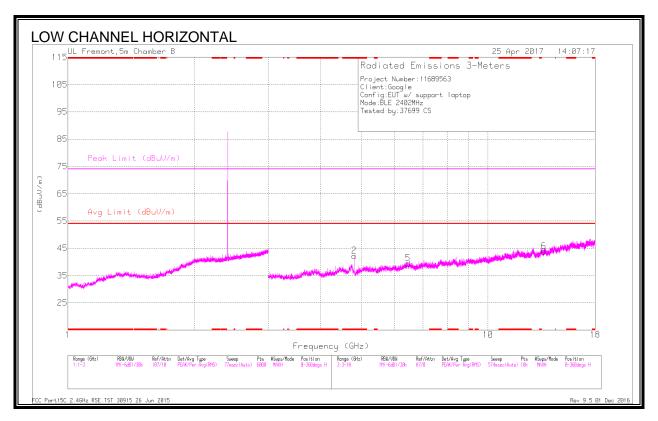
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/P ad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	39.25	Pk	32.1	-21.2	50.15	-	-	74	-23.85	217	323	V
2	* 2.484	40.85	Pk	32.1	-21.2	51.75	-	-	74	-22.25	217	323	V
3	* 2.484	26.08	VA1T	32.1	-21.2	36.98	54	-17.02	-	-	217	323	V
4	2.533	28.06	VA1T	32.1	-21	39.16	54	-14.84	-	-	217	323	V

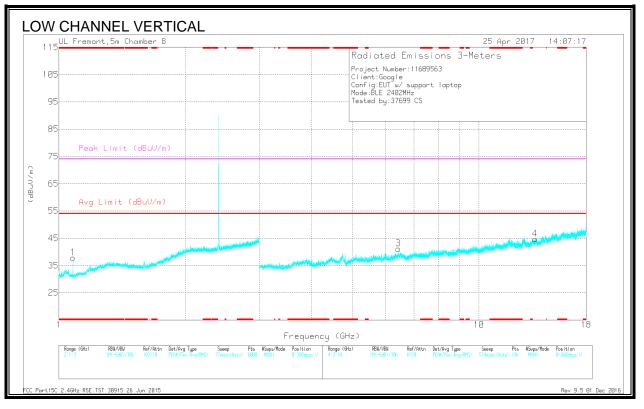
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band Pk - Peak detector

VA1T - KDB558074 Method: Reduced VBW

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7.4. HARMONICS AND SPURIOUS EMISSIONS





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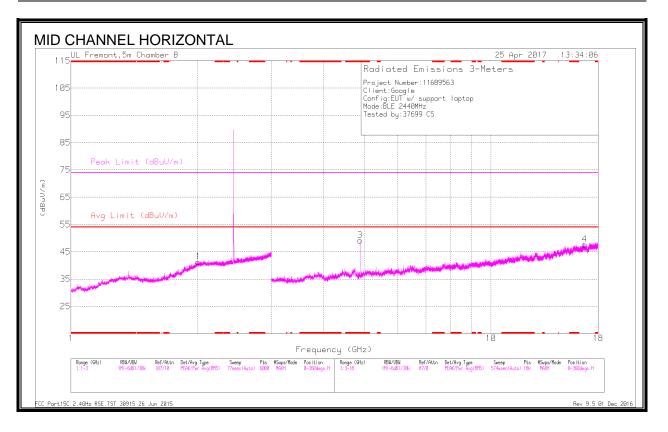
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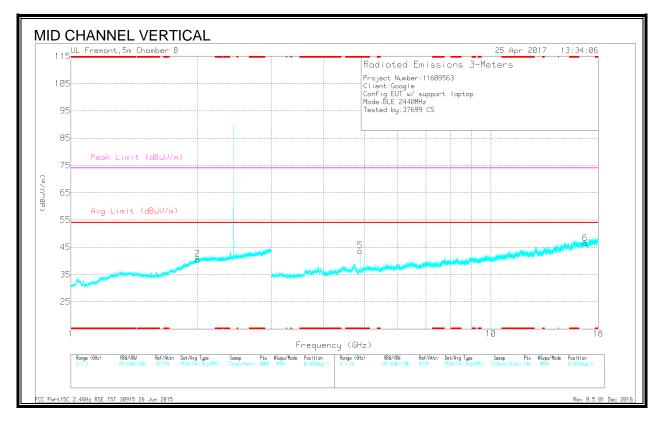
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/P ad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.081	35.17	PK2	26.4	-23	38.57	-	-	74	-35.43	88	200	V
	* 1.08	23.62	VA1T	26.4	-23	27.02	54	-26.98	-	-	88	200	V
2	* 4.804	46.22	PK2	34.4	-29	51.62	-	-	74	-22.38	261	282	Н
	* 4.804	36.63	VA1T	34.4	-29	42.03	54	-11.97	-	-	261	282	Н
3	6.423	38.86	PK2	36.2	-28.5	46.56	-	-	-	-	360	104	V
5	6.449	38.05	PK2	36.2	-28.1	46.15	-	-	-	-	360	104	Н
6	13.571	33.49	PK2	39.6	-23	50.09	-	-	-	-	360	199	Н
4	13.605	33.53	PK2	39.6	-22.7	50.43	-	-	-	-	360	104	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band PK2 - KDB558074 Method: Maximum Peak

VA1T – KDB558074 Method: Reduced VBW

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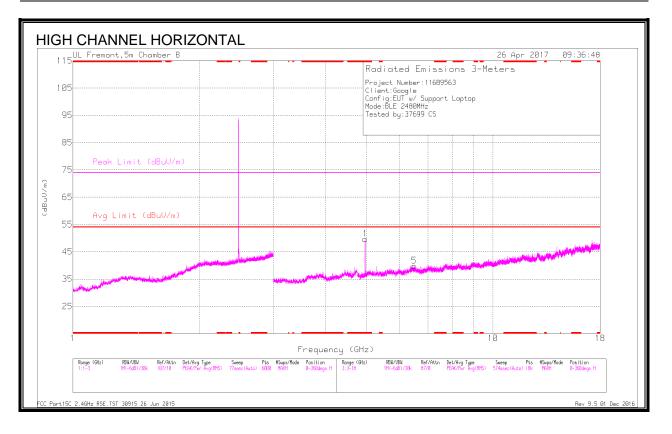
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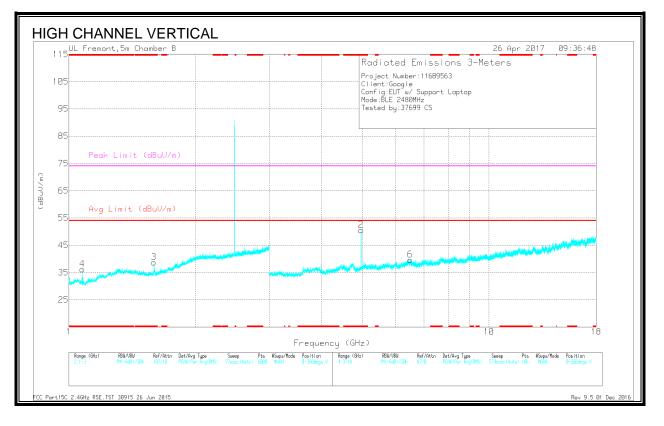
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/P ad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.88	47.43	PK2	34.5	-30.5	51.43	-	-	74	-22.57	276	392	Н
	* 4.88	41.08	VA1T	34.5	-30.4	45.18	54	-8.82	-	-	276	392	Н
5	* 4.881	44.74	PK2	34.5	-30.5	48.74	-	-	74	-25.26	19	365	V
	* 4.88	37.8	VA1T	34.5	-30.4	41.9	54	-12.1	-	-	19	365	V
2	2.005	35.97	PK2	32.1	-21	47.07	-	-	-	-	0	201	V
1	2.007	35.82	PK2	32.1	-20.9	47.02	-	-	-	-	0	201	Н
4	16.711	31.17	PK2	41.6	-20.2	52.57	-	-	-	-	0	201	Н
6	16.762	31.45	PK2	41.8	-20.6	52.65	-	-	-	-	0	104	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak VA1T – KDB558074 Method: Reduced VBW

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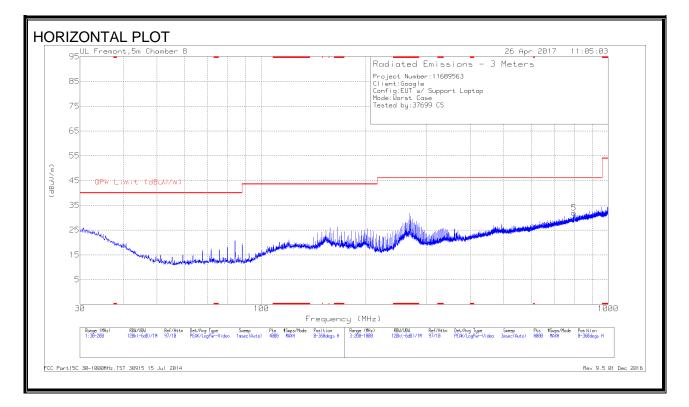
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/P ad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 1.595	41.04	PK2	27.2	-21.3	46.94	-	-	74	-27.06	145	103	V
	* 1.593	26.11	VA1T	27.2	-21.2	32.11	54	-21.89	-	-	145	103	V
4	* 1.076	36.82	PK2	26.4	-23.2	40.02	-	-	74	-33.98	301	276	V
	* 1.076	24.6	VA1T	26.4	-23.2	27.8	54	-26.2	-	-	301	276	V
1	* 4.96	49.05	PK2	34.5	-29.7	53.85	-	-	74	-20.15	79	110	Н
	* 4.96	43.17	VA1T	34.5	-29.7	47.97	54	-6.03	-	-	79	110	Н
2	* 4.96	49.82	PK2	34.5	-29.7	54.62	-	-	74	-19.38	211	104	V
	* 4.96	43.94	VA1T	34.5	-29.7	48.74	54	-5.26	-	-	211	104	V
6	6.493	37.8	PK2	36.1	-27.8	46.1	-	-	-	-	360	104	V
5	6.495	37.8	PK2	36.1	-27.8	46.1	-	-	-	-	360	199	Н

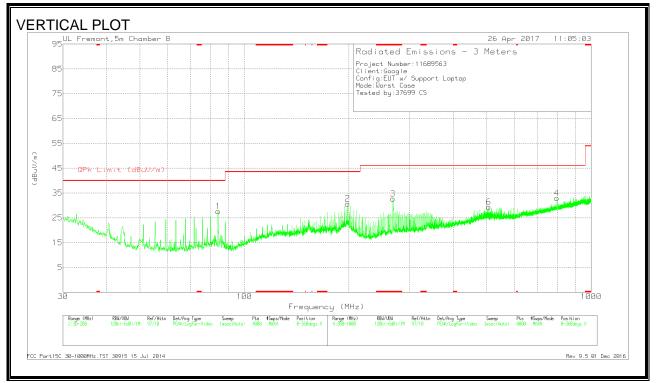
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band PK2 - KDB558074 Method: Maximum Peak VA1T – KDB558074 Method: Reduced VBW

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7.5. WORST-CASE BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)





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<u>DATA</u>

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T477 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 268.2089	41.7	Pk	17.1	-26.1	32.7	46.02	-13.32	0-360	200	V
1	83.989	44.68	Pk	11.1	-28.1	27.68	40	-12.32	0-360	100	V
2	198.6411	41	Pk	16.5	-26.8	30.7	43.52	-12.82	0-360	100	V
6	506.2398	33.72	Pk	21.6	-25.9	29.42	46.02	-16.6	0-360	100	V
4	796.4775	32.22	Pk	25.1	-24.4	32.92	46.02	-13.1	0-360	100	V
5	796.5775	31.19	Pk	25.1	-24.4	31.89	46.02	-14.13	0-360	100	Н

Pk - Peak detector

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7.6. WORST-CASE ABOVE 18 GHz

SPURIOUS EMISSIONS 18 TO 26 GHz (WORST-CASE CONFIGURATION)

5UL EMC	26 Apr 2017 11:27:38
55	RF Emissions Project Number:11689563 Client:Google Configuration:EUT w/ Support Loptop Mode:Worst Cose Tested by / SN:37699 CS
5 Peak Limit (dBuV/m)	
5	
5 Avg Limit (dBuV/m)	
5	
5	numper and
5	
5	

5 <mark></mark>	26 Apr 2017 11:27:38
	RF Emissions
5	Project Number:11689563 Client:Google Configuration:EUT w/ Support Laptop Mode:Worst Case
5	Tested by / SN:37699 CS
5	
5 Avg Limit (dBuV/m)	
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4	2

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<u>Data</u>

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T449 (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	18.706	39.83	Pk	32.4	-24.4	-9.5	38.33	54	-15.67	74	-35.67
2	24.035	43.3	Pk	34	-24.3	-9.5	43.5	54	-10.5	74	-30.5
3	25.054	43.37	Pk	34.3	-25	-9.5	43.17	54	-10.83	74	-30.83
4	18.719	40.8	Pk	32.4	-24.7	-9.5	39	54	-15	74	-35
5	24.002	43.57	Pk	34	-24.4	-9.5	43.67	54	-10.33	74	-30.33
6	25.101	43.27	Pk	34.3	-24.4	-9.5	43.67	54	-10.33	74	-30.33

Pk - Peak detector

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