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# EMC Test Report

# Application for FCC Grant of Equipment Authorization Canada Certification

# Innovation, Science and Economic Development Canada RSS-Gen Issue 4 / RSS 247 Issue 1 FCC Part 15, Subpart E

# Model: H0ME

IC CERTIFICATION #: FCC ID:	10395A-H0ME A4RH0ME
APPLICANT:	Google Inc. 1600 Amphitheatre Pky Mountain View, CA 94043
TEST SITE(S):	National Technical Systems - Silicon Valley 41039 Boyce Road. Fremont, CA. 94538-2435
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## **REVISION HISTORY**

Rev#	Date	Comments	Modified By
-	September 13, 2016	First release	
1.0	September 19, 2016	Clarified power vs. data rate and duty cycle information. Corrected power for HT20 in UNII2c.	MEH
2.0	September 22, 2016	Corrected power for HT40 in UNII2c for ISED results. Updated plot for duty cycle for HT20. Updated reference to HT20/AC20 in power vs data rate.	MEH

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#### SCOPE

An electromagnetic emissions test has been performed on the Google Inc. model H0ME, pursuant to the following rules:

RSS-Gen Issue 4 "General Requirements for Compliance of Radio Apparatus" RSS 247 Issue 1 "Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSS) and Licence-Exempt Local Area Network (LE-LAN) Devices" FCC Part 15, Subpart E requirements for UNII Devices

Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in the following reference standards and as outlined in National Technical Systems - Silicon Valley test procedures:

FCC General UNII Test Procedures KDB789033

The intentional radiator above has been tested in a simulated typical installation to demonstrate compliance with the relevant Industry Canada performance and procedural standards.

Final system data was gathered in a mode that tended to maximize emissions by varying orientation of EUT, orientation of power and I/O cabling, antenna search height, and antenna polarization.

Every practical effort was made to perform an impartial test using appropriate test equipment of known calibration. All pertinent factors have been applied to reach the determination of compliance.

### OBJECTIVE

The primary objective of the manufacturer is compliance with the regulations outlined in the previous section.

Prior to marketing in the USA, all unlicensed transmitters and transceivers require certification. Receive-only devices operating between 30 MHz and 960 MHz are subject to either certification or a manufacturer's declaration of conformity, with all other receive-only devices exempt from the technical requirements.

Prior to marketing in Canada, Class I transmitters, receivers and transceivers require certification. Class II devices are required to meet the appropriate technical requirements but are exempt from certification requirements.

Certification is a procedure where the manufacturer submits test data and technical information to a certification body and receives a certificate or grant of equipment authorization upon successful completion of the certification body's review of the submitted documents. Once the equipment authorization has been obtained, the label indicating compliance must be attached to all identical units, which are subsequently

manufactured.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

#### STATEMENT OF COMPLIANCE

The tested sample of Google Inc. model HOME complied with the requirements of the following regulations:

RSS 247 Issue 1 "Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSS) and Licence-Exempt Local Area Network (LE-LAN) Devices" FCC Part 15, Subpart E requirements for UNII Devices

Maintenance of compliance is the responsibility of the manufacturer. Any modifications to the product should be assessed to determine their potential impact on the compliance status of the device with respect to the standards detailed in this test report.

The test results recorded herein are based on a single type test of Google Inc. model H0ME and therefore apply only to the tested sample. The sample was selected and prepared by Dominik Mente of Google Inc.

#### **DEVIATIONS FROM THE STANDARDS**

No deviations were made from the published requirements listed in the scope of this report.

#### TEST RESULTS SUMMARY

#### UNII / LELAN DEVICES

OPERATION IN THE 5.15 – 5.25 GHZ BAND – MOBILE AND PORTABLE CLIENT DEVICE - FCC

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.407 (a) (1) (iv)		Output Power	a: 18.1dBm (64.6 mW) n20: 18.1dBm (64.6 mW) n40: 13.1dBm (20.4 mW) ac80: 8.4dBm (6.9 mW)	24 dBm (250 mW)	Complies
15.407 (a) (1) (iv)		Power Spectral Density	a: 6.6 dBm/MHz n20: 6.4 dBm/MHz n40: -2.4 dBm/MHz ac80: -12.0 dBm/MHz	11 dBm/MHz	Complies
15.407(b) (1) / 15.209		Spurious Emissions	53.8 dBµV/m @ 5150.0 MHz (-0.2 dB)	Refer to the limits section (p24) for restricted bands, all others -27 dBm/MHz EIRP	Complies

#### OPERATION IN THE 5.15 – 5.25 GHZ BAND – ISED Canada

RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
RSS-247 6.2.1	Indoor operation only	Refer to user's manual	N/A	Complies
RSS-247 6.2.1 (1)	99% Bandwidth	a: 17.3MHz n20: 18.6MHz n40: 36.8MHz ac80: 77.3MHz	N/A – limits output power if < 20MHz	N/A
RSS-247 6.2.1 (1)	EIRP Output Power	a: 16.0dBm (39.8mW) n20: 16.0dBm (39.8mW) n40: 13.1dBm (20.4mW) ac80: 8.4dBm (6.9mW) EIRP: a: 21.7dBm (128.8mW) n20: 21.7dBm (128.8mW) n40: 18.8dBm (75.9mW) ac80: 14.1dBm (25.7mW)	23 dBm (200 mW) EIRP	Complies
RSS-247 6.2.1 (1)	Power Spectral Density	a: 4.3 dBm/MHz n20: 4.0 dBm/MHz n40: -2.4 dBm/MHz ac80: -12.0 dBm/MHz EIRP: 11a: 10.0dBm/MHz n20: 9.7dBm/MHz n40: 3.3dBm/MHz ac80: -6.3dBm/MHz	10 dBm/MHz EIRP	Complies
RSS-247 6.2.1 (2)	Spurious Emissions	53.8 dBµV/m @ 5150.0 MHz (-0.2 dB)	Refer to the limits section (p24) for restricted bands, all others -27 dBm/MHz EIRP	Complies



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#### OPERATION IN THE 5.25 – 5.35 GHZ BAND – FCC/ISED Canada

OPERATION IN THE 5.25 – 5.35 GHZ BAND – FCC/ISED Canada					
FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.407(a) (2)		26dB Bandwidth	a: 29.5MHz n20: 29.1MHz n40: 40.6MHz ac80: 142.4MHz	N/A – limits output power if < 20MHz	N/A
	RSS-247 6.2.2 (1)	99% Bandwidth	a: 17.0MHz n20: 18.1MHz n40: 36.2MHz ac80: 76.4MHz	N/A – limits EIRP if < 20MHz	N/A
15.407(a) (2)	RSS-247 6.2.1 (2)	Output Power	a: 17.8dBm (60.3mW) n20: 17.7dBm (58.9mW) n40: 15.8dBm (38.0mW) ac80: 9.1dBm (8.1mW) (Max eirp: 23.5 dBm (223.9 mW))	24 dBm (250 mW) EIRP <= 1W	Complies
15.407(a) (2)	RSS-247 6.2.2 (1)	Power Spectral Density	a: 4.8 dBm/MHz n20: 4.6 dBm/MHz n40: -0.9 dBm/MHz ac80: -11.1 dBm/MHz	11 dBm/MHz	Complies
15.407(b) (2) / 15.209	RSS-247 6.2.2 (2)	Spurious Emissions	53.1 dBµV/m @ 5350.0 MHz (-0.9 dB)	Refer to the limits section (p24) for restricted bands, all others -27 dBm/MHz EIRP	Complies
-	RSS-247 6.2.2 (3)	EIRP Above Horizon	Device is intended for indoor operation only	Depends on angle	N/A



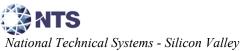
National Technical Systems - Silicon Valley

#### OPERATION IN THE 5.47 - 5.725 GHZ BAND - FCC

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.407(a) (2)	-	26dB Bandwidth	a: 24.2MHz n20: 22.8MHz n40: 40.6MHz ac80: 82.0MHz	N/A – limits output power if < 20MHz	N/A
15.407(a) (2)	-	Output Power	a: 16.4dBm (43.7mW) n20: 16.5dBm (44.7mW) n40: 14.9dBm (30.9mW) ac80: 12.2dBm (16.6mW) (Max eirp: 0.166W)	24 dBm (250 mW) EIRP <= 1W	Complies
15.407(a) (2)	-	Power Spectral Density	a: 4.9 dBm/MHz	11 dBm/MHz	Complies
15.407(b) (3) / 15.209	-	Spurious Emissions	53.4 dBµV/m @ 5469.9 MHz (-0.6 dB)	Refer to the limits section (p24) for restricted bands, all others -27 dBm/MHz EIRP	Complies

#### OPERATION IN THE 5.47 – 5.725 GHZ BAND – ISED Canada

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FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
-	RSS-247 6.2.3 (1)	99% Bandwidth	a: 16.8MHz n20: 17.9MHz n40: 36.3MHz ac80: 76.3MHz	N/A – limits EIRP if < 20MHz	N/A
-	RSS-247 6.2.3 (1)	Output Power	a: 16.4dBm (43.7mW) n20: 16.5dBm (44.7mW) n40: 14.9dBm (30.9mW) ac80: 10.5dBm (11.3mW) (Max eirp: 0.166W)	24 dBm (250 mW) EIRP <= 1W	Complies
-	RSS-247 6.2.3 (1)	Power Spectral Density	a: 4.9 dBm/MHz n20: 4.3 dBm/MHz n40: 0.4 dBm/MHz ac80: -6.6 dBm/MHz	11 dBm/MHz	Complies
-	RSS-247 6.2.3 (2)	Spurious Emissions	53.4 dBµV/m @ 5469.9 MHz (-0.6 dB)	Refer to the limits section (p24) for restricted bands, all others -27 dBm/MHz EIRP	Complies
-	RSS-247 6.2.3	Non-operation in 5600 – 5650 MHz sub band	Device cannot operate ir band –refer to Oper		Complies



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OPERATION IN THE 5.725 – 5.85 GHZ BAND – FCC/ISED Canada					
FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.407(e)	RSS-247 6.2.4 (1)	6dB Bandwidth	>500kHz	<= 500 kHz	Complies
15.407(a) (3)	RSS-210 A9.2(2)	Output Power (multipoint systems)	a: 17.7dBm (58.9mW) n20: 17.4dBm (55.0mW) n40: 15.3dBm (33.9mW) ac80: 12.3dBm (17.0mW)	30 dBm (1 W) EIRP <= 4W	Complies
15.407(a) (3)	RSS-247 6.2.3 (1)	Power Spectral Density	a: 4.1 dBm/MHz n20: 3.8 dBm/MHz n40: -1.0 dBm/MHz ac80: -7.1 dBm/MHz	30 dBm / 500 kHz	Complies
15.407(b) (4) / 15.209	RSS-247 6.2.4 (2)	Spurious Emissions	68.4 dBμV/m @ 5653.8 MHz (-2.7 dB)	Refer to the limits section (p24) for restricted bands, all others -17 dBm/MHz EIRP bandedge and -27 dBm/MHz EIRP	Complies

## OPERATION IN THE 5.725 – 5.85 GHZ BAND – FCC/ISED Canada

#### **REQUIREMENTS FOR ALL U-NII/LELAN BANDS**

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.407	RSS-247 6.1	Modulation	Digital Modulation is used	Digital modulation is required	Complies
15.31 (m)	RSS-247 6.4 (1) RSS-Gen 6.8	Channel Selection	Emissions tested at outermost and middle channels in each band	Device was tested on the top, bottom and center channels in each band	N/A
15.407 (c)	RSS-247 6.4 (2)	Operation in the absence of information to transmit	Operation is discontinued in the absence of information	Device shall automatically discontinue operation in the absence of information to transmit	Complies
15.407 (g)	-	Frequency Stability	Refer to operational description	Signal shall remain within the allocated band	Complies
15.407 (h1)	RSS-247 6.2.2 (1) 6.2.3 (1)	Transmit Power Control	TPC is not required as the device operates at below 500mW eirp	The U-NII device shall have the capability to operate with a mean EIRP value lower than 24dBm (250mW)	Complies
15.407 (h2)	RSS-247 6.3	Dynamic frequency Selection (device without radar detection)	Refer to separate test report, reference R102507	Channel move time < 10s Channel closing transmission time < 260ms	Complies



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#### GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.203	-	RF Connector	Antennas are internal	Unique or integral antenna required	Complies
15.407 (b) (6)	RSS-Gen Table 3	AC Conducted Emissions	Chicony: 38.6 dBµV @ 0.358 MHz (-10.2 dB) TenPao: 44.4 dBµV @ 0.156 MHz (-21.3 dB)	Refer to page 23	Complies
15.247 (i) 15.407 (f)	RSS 102	RF Exposure Requirements	Refer to MPE calculations in separate exhibit, RSS 102 declaration and User Manual statements.	Refer to OET 65, FCC Part 1 and RSS 102	Complies

#### **MEASUREMENT UNCERTAINTIES**

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level and were calculated in accordance with UKAS document LAB 34.

Measurement Type	Measurement Unit	Frequency Range	Expanded Uncertainty
RF power, conducted (power meter)	dBm	25 to 7000 MHz	± 0.52 dB
RF power, conducted (Spectrum analyzer)	dBm	25 to 7000 MHz	± 0.7 dB
Conducted emission of transmitter	dBm	25 to 26500 MHz	± 0.7 dB
Conducted emission of receiver	dBm	25 to 26500 MHz	± 0.7 dB
Radiated emission (substitution method)	dBm	25 to 26500 MHz	± 2.5 dB
Radiated emission (field strength)	dDu\//m	25 to 1000 MHz	± 3.6 dB
	dBµV/m	1000 to 40000 MHz	± 6.0 dB
Conducted Emissions (AC Power)	dBµV	0.15 to 30 MHz	± 2.4 dB

### EQUIPMENT UNDER TEST (EUT) DETAILS

#### GENERAL

The Google Inc. HOME is an interactive media streaming device. Since the EUT would be placed on a tabletop during operation, the EUT was treated as tabletop equipment during testing to simulate the end-user environment. The electrical rating of the EUT is 100-240 Volts, 50-60 Hz, 1.1 Amps.

The sample was received on July 8, 2016 and tested on July 8, 12, 13, 15, 18, 19, 20, 21, 25, 26, 27, 28 and August 10, 2016. The EUT consisted of the following component(s):

Company	Model	Description	Serial Number	FCC ID
Google	H0ME	Streaming Media	6629AZZB6W	A4RH0ME
		Device (RF conducted)		
Google	HOME	Streaming Media	6629AZZB75	A4RH0ME
		Device (radiated)		
Chicony	W16-033N1A	External power supply	F185081624001224	-
TenPao	S033BU1650200	External power supply	prototype	-

#### ANTENNA SYSTEM

Two Internal Antennas: 2.7dBi and 3.3dBi max @ 2.4GHz, 5.3dBi and 5.7dBi @ 5GHz. Tx/Rx diversity.

#### ENCLOSURE

The EUT enclosure is primarily constructed of plastic. It measures approximately 10 cm in diameter by 14 cm high.

#### **MODIFICATIONS**

No modifications were made to the EUT during the time the product was at NTS Silicon Valley.

#### SUPPORT EQUIPMENT

The following equipment was used as support equipment for testing:

Company	Model	Description	Serial Number	FCC ID
Dell	Latitude	Laptop	27175981753	-
-	PA-12FAMILY	Laptop Power Supply	-	-
Google	Chromecast	USB AC/DC Adapter	-	-

No remote support equipment was used during testing.

#### EUT INTERFACE PORTS

The I/O cabling configuration during testing was as follows: EUT

		LUI				
Port	Connected To	Cable(s)				
1 OIT	Connected 10	Description	Shielded or Unshielded	Length(m)		
DC power	External power supply	2 wire	Unshielded	2		
AC in (external supply)	AC mains	Direct plug in	NA	NA		
USB	USB splitter	Multiwire	Shielded	0.3		

### Additional on Support Equipment

Port	Connected To	Cable(s)				
TOIL	Connected To	Description	Shielded or Unshielded	Length(m)		
USB charger out	USB splitter	Multiwire	Shielded	0.3		
USB charger, AC in	AC mains	Direct plug in	NA	NA		
USB splitter	USB-serial adaptor cable					

#### EUT OPERATION

The EUT was configured to transmit continuously at the maximum output power setting. Specifics for the channel and mode are described in the test data.

### **TEST SITE**

#### GENERAL INFORMATION

Final test measurements were taken at the test sites listed below. Pursuant to section 2.948 of the FCC's Rules and section 3.3 of RSP-100, construction, calibration, and equipment data has been filed with the Commission and with industry Canada.

Site	Designation / Registration Numbers		Location
	FCC	Canada	
Chamber 4	US0027	2845B-4	41039 Boyce Road
Chamber 7	US0027	2845B-7	Fremont, CA 94538-2435

ANSI C63.4 recommends that ambient noise at the test site be at least 6 dB below the allowable limits. Ambient levels are below this requirement. The test site(s) contain separate areas for radiated and conducted emissions testing. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent requirements of ANSI C63.4.

#### CONDUCTED EMISSIONS CONSIDERATIONS

Conducted emissions testing is performed in conformance with ANSI C63.10. Measurements are made with the EUT connected to the public power network through a nominal, standardized RF impedance, which is provided by a line impedance stabilization network, known as a LISN. A LISN is inserted in series with each current-carrying conductor in the EUT power cord.

#### RADIATED EMISSIONS CONSIDERATIONS

The FCC has determined that radiation measurements made in a shielded enclosure are not suitable for determining levels of radiated emissions. Radiated measurements are performed in an open field environment or in a semi-anechoic chamber. The test sites are maintained free of conductive objects within the CISPR defined elliptical area incorporated in ANSI C63.4 guidelines and meet the Normalized Site Attenuation (NSA) requirements of ANSI C63.4.

#### **MEASUREMENT INSTRUMENTATION**

#### **RECEIVER SYSTEM**

An EMI receiver as specified in CISPR 16-1-1 is used for emissions measurements. The receivers used can measure over the frequency range of 9 kHz up to 2000 MHz. These receivers allow both ease of measurement and high accuracy to be achieved. The receivers have Peak, Average, and CISPR (Quasi-peak) detectors built into their design so no external adapters are necessary. The receiver automatically sets the required bandwidth for the CISPR detector used during measurements. If the repetition frequency of the signal being measured is below 20Hz, peak measurements are made in lieu of Quasi-Peak measurements.

For measurements above the frequency range of the receivers, a spectrum analyzer is utilized because it provides visibility of the entire spectrum along with the precision and versatility required to support engineering analysis. Average measurements above 1000MHz are performed on the spectrum analyzer using the linear-average method with a resolution bandwidth of 1 MHz and a video bandwidth of 10 Hz, unless the signal is pulsed in which case the average (or video) bandwidth of the measuring instrument is reduced to onset of pulse desensitization and then increased.

#### INSTRUMENT CONTROL COMPUTER

Software is used to view and convert receiver measurements to the field strength at an antenna or voltage developed at the LISN measurement port, which is then compared directly with the appropriate specification limit. This provides faster, more accurate readings by performing the conversions described under Sample Calculations within the Test Procedures section of this report. Results are printed in a graphic and/or tabular format, as appropriate. A personal computer is used to record all measurements made with the receivers. The software used for radiated and conducted emissions measurements is NTS EMI Test Software (rev 2.10)

#### LINE IMPEDANCE STABILIZATION NETWORK (LISN)

Line conducted measurements utilize a fifty microhenry Line Impedance Stabilization Network as the monitoring point. The LISN used also contains a 250 uH CISPR adapter. This network provides for calibrated radio frequency noise measurements by the design of the internal low pass and high pass filters on the EUT and measurement ports, respectively.

#### FILTERS/ATTENUATORS

External filters and precision attenuators are often connected between the receiving antenna or LISN and the receiver. This eliminates saturation effects and non-linear operation due to high amplitude transient events.

#### ANTENNAS

A loop antenna is used below 30 MHz. For the measurement range 30 MHz to 1000 MHz either a combination of a biconical antenna and a log periodic or a bi-log antenna is used. Above 1000 MHz, horn antennas are used. The antenna calibration factors to convert the received voltage to an electric field strength are included with appropriate cable loss and amplifier gain factors to determine an overall site factor, which is then programmed into the test receivers or incorporated into the test software.

#### ANTENNA MAST AND EQUIPMENT TURNTABLE

The antennas used to measure the radiated electric field strength are mounted on a nonconductive antenna mast equipped with a motor-drive to vary the antenna height. Measurements below 30 MHz are made with the loop antenna at a fixed height of 1m above the ground plane.

ANSI C63.10 specifies that the test height above ground for table mounted devices shall be 80 centimeters. Floor mounted equipment shall be placed on the ground plane if the device is normally used on a conductive floor or separated from the ground plane by insulating material from 3 to 12 mm if the device is normally used on a non-conductive floor as specified in ANSI C63.4. During radiated measurements, the EUT is positioned on a motorized turntable in conformance with this requirement.

#### **INSTRUMENT CALIBRATION**

All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications. All antennas are calibrated at regular intervals with respect to tuned half-wave dipoles. An exhibit of this report contains the list of test equipment used and calibration information.

### **TEST PROCEDURES**

#### EUT AND CABLE PLACEMENT

The regulations require that interconnecting cables be connected to the available ports of the unit and that the placement of the unit and the attached cables simulate the worst case orientation that can be expected from a typical installation, so far as practicable. To this end, the position of the unit and associated cabling is varied within the guidelines of ANSI C63.10, and the worst-case orientation is used for final measurements.

#### **CONDUCTED EMISSIONS**

Conducted emissions are measured at the plug end of the power cord supplied with the EUT. Excess power cord length is wrapped in a bundle between 30 and 40 centimeters in length near the center of the cord. Preliminary measurements are made to determine the highest amplitude emission relative to the specification limit for all the modes of operation. Placement of system components and varying of cable positions are performed in each mode. A final peak mode scan is then performed in the position and mode for which the highest emission was noted on all current carrying conductors of the power cord.

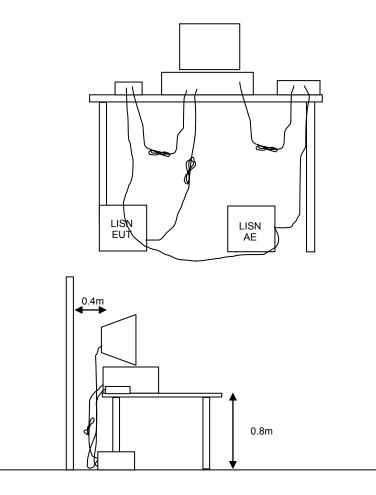


Figure 1 Typical Conducted Emissions Test Configuration



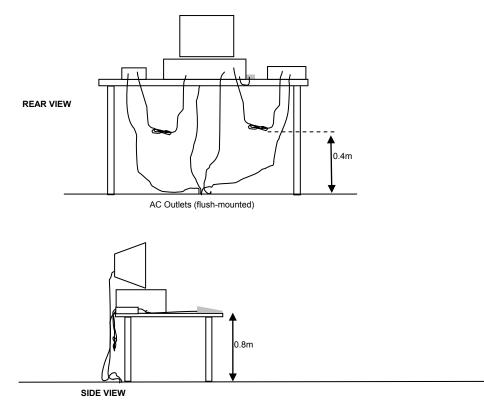
#### RADIATED EMISSIONS

A preliminary scan of the radiated emissions is performed in which all significant EUT frequencies are identified with the system in a nominal configuration. At least two scans are performed, one scan for each antenna polarization (horizontal and vertical; loop parallel and perpendicular to the EUT). During the preliminary scans, the EUT is rotated through 360°, the antenna height is varied (for measurements above 30 MHz) and cable positions are varied to determine the highest emission relative to the limit. Preliminary scans may be performed in a fully anechoic chamber for the purposes of identifying the frequencies of the highest emissions from the EUT.

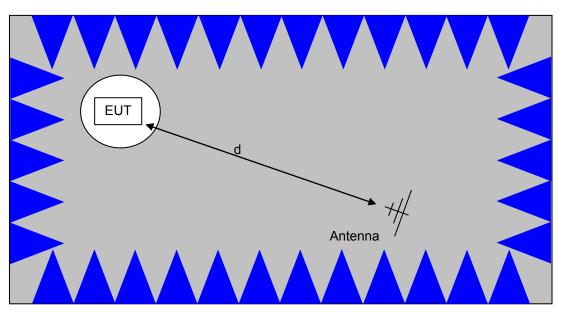
A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

Final maximization is a phase in which the highest amplitude emissions identified in the spectral search are viewed while the EUT azimuth angle is varied from 0 to 360 degrees relative to the receiving antenna. The azimuth, which results in the highest emission is then maintained while varying the antenna height from one to four meters (for measurements above 30 MHz, measurements below 30 MHz are made with the loop antenna at a fixed height of 1m). The result is the identification of the highest amplitude for each of the highest peaks. Each recorded level is corrected in the receiver using appropriate factors for cables, connectors, antennas, and preamplifier gain.

When testing above 18 GHz, the receive antenna is located at 1 meter from the EUT and the antenna height is restricted to a maximum of 2.5 meters.

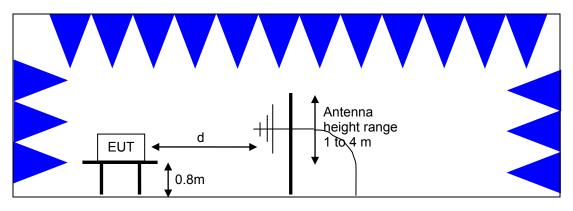


Typical Test Configuration for Radiated Field Strength Measurements



The anechoic materials on the walls and ceiling ensure compliance with the normalized site attenuation requirements of CISPR 16 / CISPR 22 / ANSI C63.4 for an alternate test site at the measurement distances used.

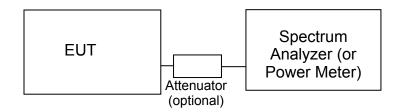
Floor-standing equipment is placed on the floor with insulating supports between the unit and the ground plane.



<u>Test Configuration for Radiated Field Strength Measurements</u> <u>Semi-Anechoic Chamber, Plan and Side Views</u>

#### CONDUCTED EMISSIONS FROM ANTENNA PORT

Direct measurements of power, bandwidth and power spectral density are performed, where possible, with the antenna port of the EUT connected to either the power meter or spectrum analyzer via a suitable attenuator and/or filter. These are used to ensure that the front end of the measurement instrument is not overloaded by the fundamental transmission.



#### Test Configuration for Antenna Port Measurements

Measurement bandwidths (video and resolution) are set in accordance with the relevant standards and NTS Silicon Valley's test procedures for the type of radio being tested. When power measurements are made using a resolution bandwidth less than the signal bandwidth the power is calculated by summing the power across the signal bandwidth using either the analyzer channel power function or by capturing the trace data and calculating the power using software. In both cases the summed power is corrected to account for the equivalent noise bandwidth (ENBW) of the resolution bandwidth used.

If power averaging is used (typically for certain digital modulation techniques), the EUT is configured to transmit continuously. Power averaging is performed using either the built-in function of the analyzer or, if the analyzer does not feature power averaging, using external software. In both cases the average power is calculated over a number of sweeps (typically 100). When the EUT cannot be configured to continuously transmit then either the analyzer is configured to perform a gated sweep to ensure that the power is averaged over periods that the device is transmitting or power averaging is disabled and a max-hold feature is used.

If a power meter is used to make output power measurements the sensor head type (peak or average) is stated in the test data table.

#### BANDWIDTH MEASUREMENTS

The 6dB, 20dB, 26dB and/or 99% signal bandwidth are measured using the bandwidths recommended by ANSI C63.10 and RSS GEN.

#### SPECIFICATION LIMITS AND SAMPLE CALCULATIONS

The limits for conducted emissions are given in units of microvolts, and the limits for radiated emissions are given in units of microvolts per meter at a specified test distance. Data is measured in the logarithmic form of decibels relative to one microvolt, or dB microvolts (dBuV). For radiated emissions, the measured data is converted to the field strength at the antenna in dB microvolts per meter (dBuV/m). The results are then converted to the linear forms of uV and uV/m for comparison to published specifications.

For reference, converting the specification limits from linear to decibel form is accomplished by taking the base ten logarithm, then multiplying by 20. These limits in both linear and logarithmic form are as follows:

#### CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(a), RSS GEN

The table below shows the limits for the emissions on the AC power line from an intentional radiator and a receiver.

Frequency (MHz)	Average Limit (dBuV)	Quasi Peak Limit (dBuV)
0.150 to 0.500	Linear decrease on logarithmic frequency axis between 56.0 and 46.0	Linear decrease on logarithmic frequency axis between 66.0 and 56.0
0.500 to 5.000	46.0	56.0
5.000 to 30.000	50.0	60.0

#### GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS

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The table below shows the limits for the spurious emissions from transmitters that fall in restricted bands<sup>1</sup>.

Frequency Range (MHz)	Limit (uV/m)	Limit (dBuV/m @ 3m)
0.009-0.490	2400/F <sub>KHz</sub> @ 300m	67.6-20*log <sub>10</sub> (F <sub>KHz</sub> ) @ 300m
0.490-1.705	24000/F <sub>KHz</sub> @ 30m	87.6-20*log <sub>10</sub> (F <sub>KHz</sub> ) @ 30m
1.705 to 30	30 @ 30m	29.5 @ 30m
30 to 88	100 @ 3m	40 @ 3m
88 to 216	150 @ 3m	43.5 @ 3m
216 to 960	200 @ 3m	46.0 @ 3m
Above 960	500 @ 3m	54.0 @ 3m

#### FCC 15.407 (a) OUTPUT POWER LIMITS

The table below shows the limits for output power and output power density. For the 5250-5350 and 5470-5725 MHz bands, where the signal bandwidth is less than 20 MHz the maximum output power is reduced to the power spectral density limit plus 10 times the log of the bandwidth (in MHz).

Operating Frequency (MHz)	Output Power	Power Spectral Density
5150 – 5250	250Watt (24 dBm)	11 dBm/MHz
5250 – 5350 and 5470-5725	250 mW (24 dBm)	11 dBm/MHz
5725 – 5825	1 Watt (30 dBm)	30 dBm/500kHz

For system using antennas with gains exceeding 6dBi, the output power and power spectral density limits are reduced by 1dB for every dB the antenna gain exceeds 6dBi.

#### **OUTPUT POWER LIMITS – LELAN DEVICES**

The table below shows the limits for output power and output power density defined by RSS 247. Where the signal bandwidth is less than 20 MHz the maximum output power is reduced to the power spectral density limit plus 10 times the log of the bandwidth (in MHz).

Operating Frequency (MHz)	Output Power	Power Spectral Density
5150 – 5250	200mW (23 dBm) eirp	10 dBm/MHz eirp
5250 – 5350 and 5470 - 5725	250 mW (24 dBm)2 1W (30dBm) eirp	11 dBm/MHz
5725 – 5825	1 Watt (30 dBm) 4W eirp	30 dBm/500kHz

<sup>&</sup>lt;sup>1</sup> The restricted bands are detailed in FCC 15.205 and RSS-Gen Table 6

<sup>&</sup>lt;sup>2</sup> If EIRP exceeds 500mW the device must employ TPC



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#### SPURIOUS EMISSIONS LIMITS – UNII and LELAN DEVICES

The spurious emissions limits for signals below 1GHz are the FCC/RSS-Gen general limits. For emissions above 1GHz, signals in restricted bands are subject to the FCC/RSS-Gen general limits. All other signals have a limit of -27dBm/MHz, which is field strength of 68.3dBuV/m/MHz at a distance of 3m. For devices operating in the 5725-5850 MHz bands under the LELAN/UNII rules, the limit within 10MHz of the allocated band is increased to -17dBm/MHz.

#### SAMPLE CALCULATIONS - CONDUCTED EMISSIONS

Receiver readings are compared directly to the conducted emissions specification limit (decibel form) as follows:

 $R_r - S = M$ where:  $R_r =$  Receiver Reading in dBuV S = Specification Limit in dBuV M = Margin to Specification in +/- dB

#### SAMPLE CALCULATIONS - RADIATED EMISSIONS

Receiver readings are compared directly to the specification limit (decibel form). The receiver internally corrects for cable loss, preamplifier gain, and antenna factor. The calculations are in the reverse direction of the actual signal flow, thus cable loss is added and the amplifier gain is subtracted. The Antenna Factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

A distance factor, when used for electric field measurements above 30MHz, is calculated by using the following formula:

 $F_{d} = 20*LOG_{10} (D_{m}/D_{s})$ where:  $F_{d} = Distance Factor in dB$   $D_{m} = Measurement Distance in meters$   $D_{s} = Specification Distance in meters$ 

For electric field measurements below 30MHz the extrapolation factor is either determined by making measurements at multiple distances or a theoretical value is calculated using the formula:

 $F_d = 40*LOG_{10} (D_m/D_s)$ 

Measurement Distance is the distance at which the measurements were taken and Specification Distance is the distance at which the specification limits are based. The antenna factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

The margin of a given emission peak relative to the limit is calculated as follows:

$$\begin{array}{rcl} R_c &=& R_r \,+\, F_d \\ and \\ M &=& R_c \,-\, L_S \\ where: \\ R_r &=& Receiver Reading in dBuV/m \\ F_d &=& Distance Factor in dB \\ R_c &=& Corrected Reading in dBuV/m \\ L_S &=& Specification Limit in dBuV/m \end{array}$$

M = Margin in dB Relative to Spec

#### SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION

Where the radiated electric field strength is expressed in terms of the equivalent isotropic radiated power (eirp), or where a field strength measurement of output power is made in lieu of a direct measurement, the following formula is used to convert between eirp and field strength at a distance of d (meters) from the equipment under test:

 $E = \frac{1000000 \sqrt{30 P}}{d}$  microvolts per meter

where P is the eirp (Watts)

For a measurement at 3m the conversion from a logarithmic value for field strength (dBuV/m) to an eirp power (dBm) is -95.3dB.

# Appendix A Test Equipment Calibration Data

T101744					
Manufacturer	Description	<u>Model</u>	<u>Asset #</u>	<b>Calibrated</b>	Cal Due
Radiated Emissions Hewlett Packard	, 1000 - 6,500 MHz, 08-Jul-16	8564E (84125C)	1148	10/17/2015	10/17/2016
newiell Fackalu	Spectrum Analyzer (SA40) Red 30 Hz -40 GHz	0504E (04125C)	1140	10/17/2015	10/17/2010
EMCO	Antenna, Horn, 1-18 GHz	3115	2733	11/18/2014	11/18/2016
Radiated Emissions	, 1000 - 25,000 MHz, 12-Jul-16				
Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz	8449B	870	1/21/2016	1/21/2017
HP / Miteq	SA40 Head (Red)	TTA1840-45-5P- HG-S	1145	7/17/2015	8/17/2016
Hewlett Packard	Spectrum Analyzer (SA40) Red 30 Hz -40 GHz	8564E (84125C)	1148	10/17/2015	10/17/2016
Micro-Tronics	Band Reject Filter, 2400-2500	BRM50702-02	1683	6/29/2016	6/29/2017
A. H. Systems	Purple System Horn, 18- 40GHz	SAS-574, p/n: 2581	2160	8/28/2014	8/28/2017
EMCO	Antenna, Horn, 1-18 GHz	3115	2733	11/18/2014	11/18/2016
Radiated Spurious E	Emissions, 1000 - 40,000 MHz, <i>*</i>	12-Jul-16			
NTS	NTS EMI Software (rev 2.10)	N/A	0		N/A
Narda West	High Pass Filter, 8 GHz	HPF 180	821	1/27/2016	1/27/2017
Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz	8449B	870	1/21/2016	1/21/2017
HP / Miteq	SA40 Head (Red)	TTA1840-45-5P- HG-S	1145	7/17/2015	8/17/2016
Hewlett Packard	Spectrum Analyzer (SA40) Red 30 Hz -40 GHz	8564E (84125C)	1148	10/17/2015	10/17/2016
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	1681	5/11/2016	5/11/2017
A. H. Systems	Purple System Horn, 18- 40GHz	SAS-574, p/n: 2581	2160	8/28/2014	8/28/2017
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	2241	9/16/2015	9/16/2016
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2251	9/16/2015	9/16/2016
EMCO	Antenna, Horn, 1-18 GHz	3115	2733	11/18/2014	11/18/2016
Radiated Emissions	, 1000 - 6,000 MHz, 13-Jul-16				
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	12/19/2015	12/19/2016
EMCO	Antenna, Horn, 1-18 GHz	3115	2733	11/18/2014	11/18/2016
Radiated Emissions	, 1000 - 40,000 MHz, 20-Jul-16				
NTS	NTS EMI Software (rev 2.10)	N/A	0		N/A
Narda West	High Pass Filter, 8 GHz	HPF 180	821	1/27/2016	1/27/2017
Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz	8449B	870	1/21/2016	1/21/2017
HP / Miteq	SA40 Head (Red)	TTA1840-45-5P-	1145	7/17/2015	8/17/2016
Hewlett Packard	Sportrum Analyzar (SA40)	HG-S	11/0	10/17/2015	10/17/2016
	Spectrum Analyzer (SA40) Red 30 Hz -40 GHz	8564E (84125C)	1148	10/17/2013	10/17/2010



Report Date: September 13, 2016

Project number JD101591 Reissue Date: September 22, 2016

	Report Date:	September 13, 2016	Keissue	Date: Septembe	er 22, 2010
Manufacturer Micro-Tronics	Description Band Reject Filter, 5470-5725	<u>Model</u> BRC50704-02	<u>Asset #</u> 1730	<u>Calibrated</u> 5/9/2016	<u>Cal Due</u> 5/9/2017
A. H. Systems	MHz Purple System Horn, 18- 40GHz	SAS-574, p/n: 2581	2160	8/28/2014	8/28/2017
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2239	9/16/2015	9/16/2016
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	2241	9/16/2015	9/16/2016
EMCO	Antenna, Horn, 1-18 GHz	3115	2733	11/18/2014	11/18/2016
<b>Radiated Emissions</b> , Narda West Hewlett Packard	, <b>1000 - 40,000 MHz, 20-Jul-16</b> High Pass Filter, 8 GHz Microwave Preamplifier, 1- 26.5GHz	HPF 180 8449B	821 870	1/27/2016 1/21/2016	1/27/2017 1/21/2017
HP / Miteq	SA40 Head (Red)	TTA1840-45-5P-	1145	7/17/2015	8/17/2016
Hewlett Packard	Spectrum Analyzer (SA40) Red 30 Hz -40 GHz	HG-S 8564E (84125C)	1148	10/17/2015	10/17/2016
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	12/19/2015	12/19/2016
A. H. Systems	Purple System Horn, 18- 40GHz	SAS-574, p/n: 2581	2160	8/28/2014	8/28/2017
EMCO	Antenna, Horn, 1-18 GHz	3115	2733	11/18/2014	11/18/2016
Radiated Emissions, Hewlett Packard	, <b>1000 - 25,000 MHz, 26-Jul-16</b> Microwave Preamplifier, 1- 26.5GHz	8449B	870	1/21/2016	1/21/2017
HP / Miteq	SA40 Head (Red)	TTA1840-45-5P- HG-S	1145	7/17/2015	8/17/2016
Hewlett Packard	Spectrum Analyzer (SA40) Red 30 Hz -40 GHz	8564E (84125C)	1148	10/17/2015	10/17/2016
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	1683	6/29/2016	6/29/2017
A. H. Systems	Purple System Horn, 18- 40GHz	SAS-574, p/n: 2581	2160	8/28/2014	8/28/2017
EMCO Micro-Tronics	Antenna, Horn, 1-18 GHz Band Reject Filter, 5150-5350 MHz	3115 BRC50703-02	2733 2251	11/18/2014 9/16/2015	11/18/2016 9/16/2016
Radiated Spurious E	missions, 12 - 25 GHz, 27-Jul-	16			
NTS Narda West Hewlett Packard	NTS EMI Software (rev 2.10) High Pass Filter, 8 GHz Microwave Preamplifier, 1-	N/A HPF 180 8449B	0 821 870	1/27/2016 1/21/2016	N/A 1/27/2017 1/21/2017
HP / Miteq	26.5GHz SA40 Head (Red)	TTA1840-45-5P- HG-S	1145	7/17/2015	8/17/2016
Hewlett Packard	Spectrum Analyzer (SA40) Red 30 Hz -40 GHz	8564E (84125C)	1148	10/17/2015	10/17/2016
A. H. Systems	Purple System Horn, 18- 40GHz	SAS-574, p/n: 2581	2160	8/28/2014	8/28/2017
EMCO	Antenna, Horn, 1-18 GHz	3115	2733	11/18/2014	11/18/2016
<b>Conducted Emissior</b> NTS EMCO Rohde & Schwarz Rohde & Schwarz	ns - AC Power Ports, 10-Aug-10 NTS EMI Software (rev 2.10) LISN, 10 kHz-100 MHz Pulse Limiter EMI Test Receiver, 20 Hz-7 GHz	6 N/A 3825/2 ESH3 Z2 ESIB7	0 1292 1401 1538	8/1/2016 4/26/2016 12/19/2015	N/A 8/1/2017 4/26/2017 12/19/2016



Report Date: September 13, 2016

T102213					
Manufacturer	<b>Description</b>	<u>Model</u>	<u>Asset #</u>	<b>Calibrated</b>	<u>Cal Due</u>
Radio Antenna Port	(Power and Spurious Emission	ns), 25-Jul-16			
Rohde & Schwarz	Power Sensor, 1 uW-100 mW, DC-18 GHz, 50ohms	NRV-Z51	1070	8/3/2015	8/3/2016
Rohde & Schwarz	Power Meter, Single Channel, +1795+1796	NRVS	1534	7/22/2016	7/22/2017
Rohde & Schwarz	Signal Analyzer 20 Hz - 26.5 GHz	FSQ26	2327	6/17/2016	6/17/2017
Radio Antenna Port	(Power and Spurious Emission	ns), 26-Jul-16			
Agilent Technologies	PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	É4446A	2139	6/24/2016	6/24/2017
Radio Antenna Port	(Power and Spurious Emission	ns), 27-Jul-16			
Rohde & Schwarz	Power Sensor, 1 uW-100 mW, DC-18 GHz, 50ohms	NRV-Z51	1070	8/3/2015	8/3/2016
Rohde & Schwarz	Power Meter, Single Channel, +1795+1796	NRVS	1534	7/22/2016	7/22/2017
Agilent Technologies	PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	E4446A	2139	6/24/2016	6/24/2017



# Appendix B Test Data

 $\begin{array}{ll} T101744 & Pages \ 32-129 \\ T102213 & Pages \ 130-148 \end{array}$ 



# EMC Test Data

Client:	Google Inc	Job Number:	JD101591
Product	HOME	T-Log Number:	T101744
System Configuration:	-	Project Manager:	Deepa Shetty
Contact:	Dominik Mente	Project Coordinator:	-
Emissions Standard(s):	FCC 15.247/15.407/RSS-247	Class:	В
Immunity Standard(s):	-	Environment:	-

# **EMC** Test Data

For The

# **Google Inc**

Product

H0ME

Date of Last Test: 9/9/2016

# EMC Test Data

v	VE ENGINEER SUCCESS		
Client:	Google Inc	Job Number:	JD101591
Model:	HUUNE	T-Log Number:	T101744
	HOWE	Project Manager:	Deepa Shetty
Contact:	Dominik Mente	Project Coordinator:	-
Standard:	FCC 15.247/15.407/RSS-247	Class:	N/A

# Power vs. Data Rate

In normal operating modes the card uses power settings stored on EEPROM to set the output power. For a given nominal output power the actual transmit power normally is reduced as the data rate increases, therefore testing was performed at the data rate in the mode with highest power to determine compliance with the requirements.

The following power measurements were made using a GATED average power meter and with the device configured in a continuous transmit mode on Chain 1 at the various data rates in each mode to verify the highest power mode:

#### Sample Notes

Sample S/N: 6629AZZB75 Driver: 1.21

**NTS** 

Date of Test: 7/8/2016 Test Engineer: Rafael Varelas Test Location: FT Chamber #7

Mode	Data Rate	Power (dBm)	Power setting	
	6.5	12.0	<u> </u>	1
	13	11.8		
	19.5	11.8		
802.11n/ac	26	11.7		
	39	11.7	15	
20MHz	52	11.7		
	58.5	11.8		
	65	11.8		
	78	10.5		<<-11ac mode only
	13.5	9.9		1
	27	9.9		
	40.5	9.9		
	54	9.9		
802.11n/ac	81	9.8	10	
40MHz	108	9.8	- 13	
	121.5	9.8		
	135	9.8		
	162	9.7		<<-11ac mode only
	180	9.6	1	<-11ac mode only

	NE ENGINEER SUCCESS				EM	C Test
lient	Google Inc	J	lob Number:	JD101591		
					.og Number:	
lodel:	HOME			Project Manager: Deepa She		
ntact:	Dominik Mente				Coordinator:	
dard:	FCC 15.247/15.407/RSS-247				Class:	
	Mode	Data Rate	Power (dBm)	Power setting		
		29.3	6.9			
		58.5	6.7			
		87.8	6.7	-		
	-	117	6.6	-		
	802.11ac 80MHz -	175.5 234	6.5 6.4	10		
		266.3	6.4	-		
		292.5	6.4			
		351	6.3			
		390	6.3			

# EMC Test Data

	VE ENGINEER SUCCESS		
Client:	Google Inc	Job Number:	JD101591
Model:	НОМЕ	T-Log Number:	T101744
Model.	HUME	Project Manager:	Deepa Shetty
Contact:	Dominik Mente	Project Coordinator:	-
Standard:	FCC 15.247/15.407/RSS-247	Class:	N/A

# Duty Cycle

Date of Test: 7/11/2016 Test Engineer: John Caizzi Test Location: Lab 4A

NTS

Duty cycle measurements performed on the worse case data rate for power.

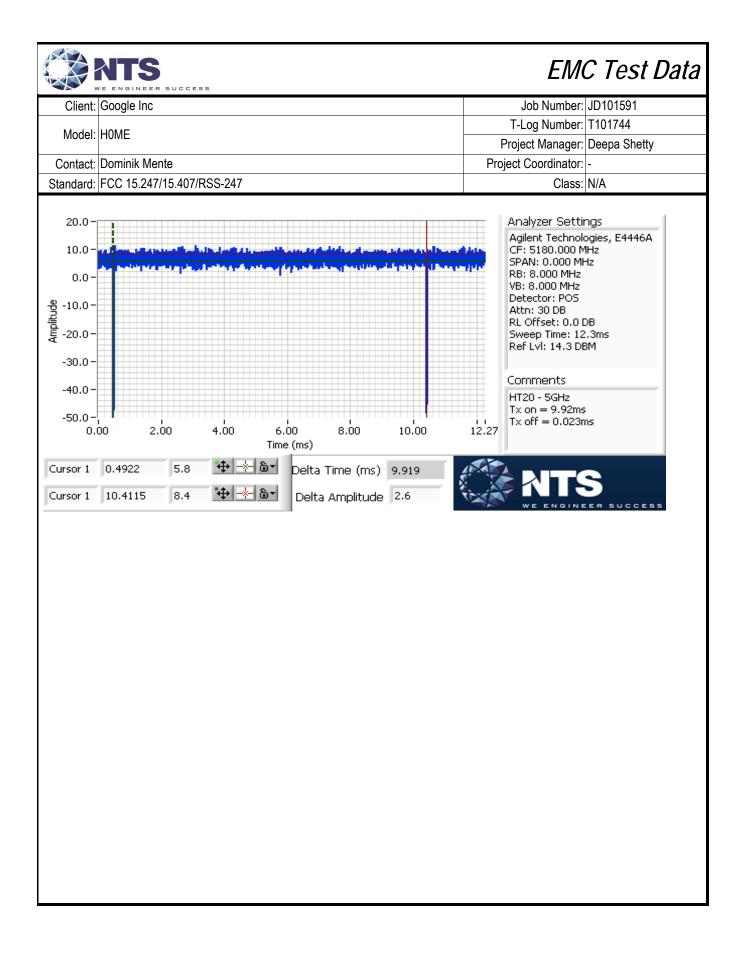
Notes: Measurements taken with maximum RBW/VBW settings allowed.

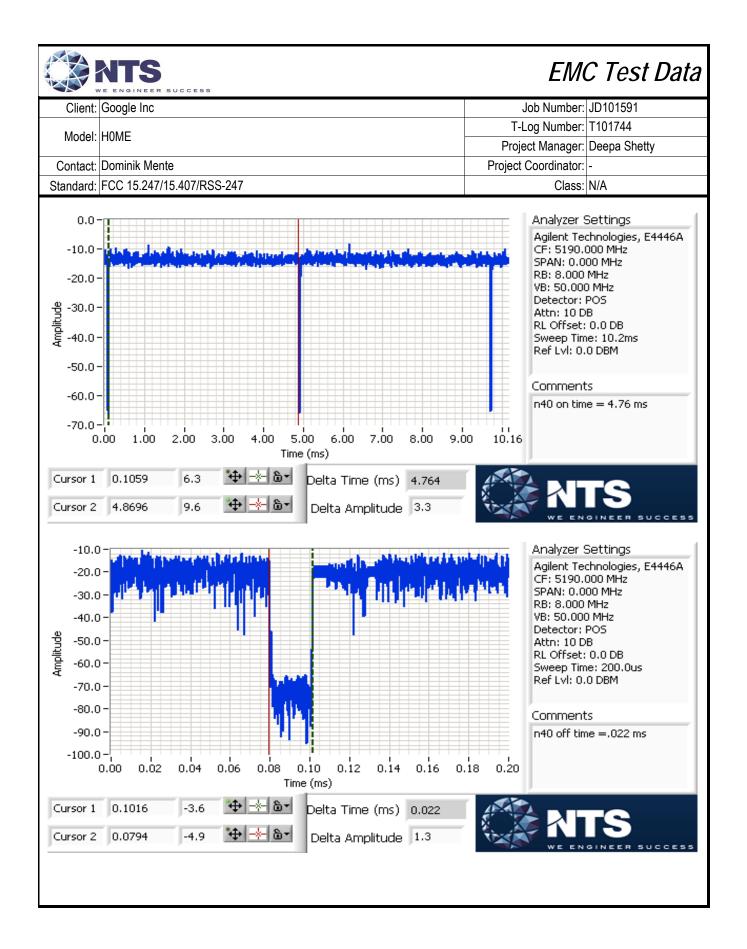
Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
n20	MCS0	1.00	Yes	9.92	0	0	101
n40	MCS0	1.00	Yes	4.76	0	0	210
ac80	VHT SS1	0.99	Yes	2.25	0	0	444

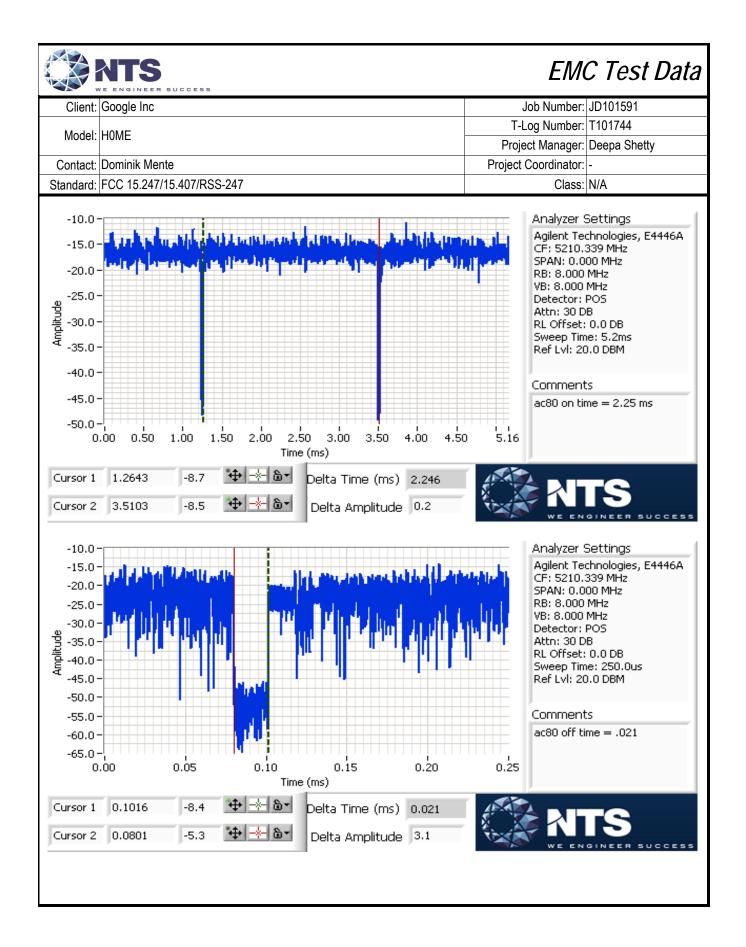
\* Correction factor when using RMS/Power averaging - 10\*log(1/x)

\*\* Correction factor when using linear voltage average - 20\*log(1/x)

T = Minimum transmission duration



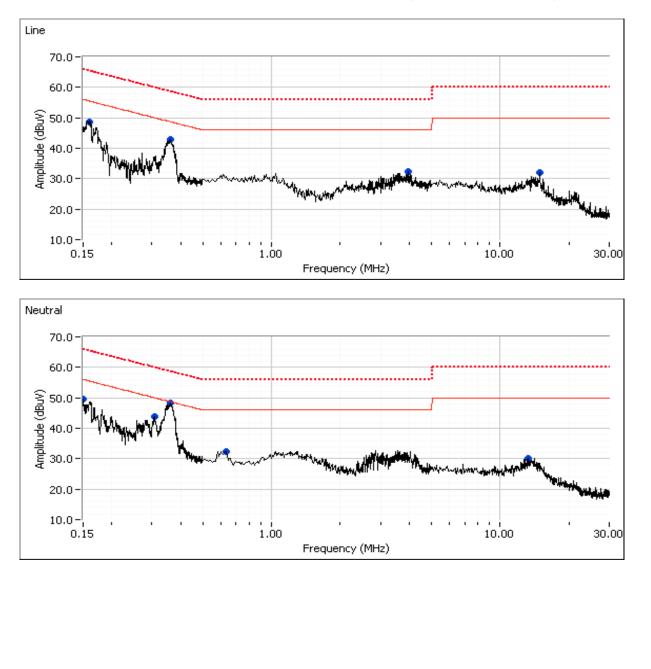




	WE ENGINEER S	UCCESS			EM	
Client:	Google Inc				b Number:	
Model:	HOME				og Number:	
				-		Deepa Shetty
	Dominik Mente			Project C	oordinator:	
Standard:	FCC 15.247/1	0.407/RSS-Z47			Class:	В
		Conduct (NTS Silicon Valley, Fremor	ted Emissions at Facility, Semi-Ane		r)	
Test Spec	cific Details					
	Objective: Th	he objective of this test session is to p pecification listed above.	erform final qualificat	tion testing of the	EUT with r	respect to the
	Date of Test: 8/		ed: 1			
	est Engineer: Jo		ge: No support e	quipment.		
Ie	est Location: Fi	remont Chamber #7	EUT Voltag	ge: 120V/60Hz		
For tabletop and 80cm fr	Test Configu equipment, the om the LISN. Conditions:	e EUT was located on a wooden table Temperature:	23 °C	choic chamber, 4	0 cm from a	a vertical coupling p
For tabletop and 80cm fr Ambient ( Summary	equipment, the om the LISN. Conditions: <u>/ of Results</u>	e EUT was located on a wooden table Temperature: Rel. Humidity:	23 °C 40 %	choic chamber, 4	0 cm from a	
For tabletop and 80cm fr Ambient ( Summary	equipment, the rom the LISN. Conditions:	e EUT was located on a wooden table Temperature:	23 °C	choic chamber, 4		Margin
For tabletop and 80cm fr Ambient ( Summary Ru	equipment, the om the LISN. Conditions: <u>/ of Results</u>	e EUT was located on a wooden table Temperature: Rel. Humidity:	23 °C 40 %		38.6 d	<u>Margin</u> ВµV @ 0.358 MHz (-10.2 dB)
For tabletop and 80cm fr Ambient ( Summary Ru 2 2	equipment, the rom the LISN. Conditions: <u>y of Results</u> in # 2a	e EUT was located on a wooden table Temperature: Rel. Humidity: Test Performed	23 °C 40 % Limit	Result	38.6 d	Margin BµV @ 0.358 MHz

	NTS VE ENGINEER SUCCESS	EM	C Test Data
Client:	Google Inc	Job Number:	JD101591
Model:	HOME	T-Log Number:	T101744
wouer.		Project Manager:	Deepa Shetty
Contact:	Dominik Mente	Project Coordinator:	-
Standard:	FCC 15.247/15.407/RSS-247	Class:	В

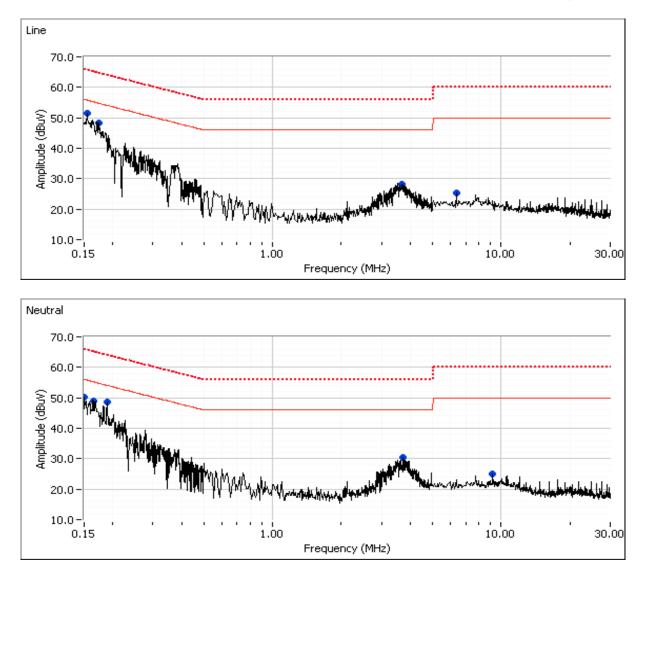
# Run #2a: AC Power Port Conducted Emissions, 0.15 - 30MHz, 120V/60Hz. Chicony W16-033N1A power supply.



	<b>NTS</b>	R SUCCESS					EMO	C Test Data
Client:	Google Inc						Job Number:	JD101591
Madala							T-Log Number:	T101744
Model:	HUME					-	Project Manager:	Deepa Shetty
Contact:	Dominik Me	nte					Project Coordinator:	-
		/15.407/RSS	-247				Class:	
otandara.		,					0.0001	-
Preliminary	v peak readi	nas captured	durina pre	-scan (peak	readings v	s. average lir	nit)	
Frequency	Level	AC		ss B	Detector	Comments	/	
MHz	dBµV	Line	Limit	Margin	QP/Ave			
0.161	48.7	Line	55.4	-6.7	Peak			
0.361	42.9	Line	48.7	-5.8	Peak			
3.958	32.4	Line	46.0	-13.6	Peak			
14.920	32.0	Line	50.0	-18.0	Peak			
0.152	49.7	Neutral	56.0	-6.3	Peak			
0.306	43.8	Neutral	50.0	-6.2	Peak			
0.358	48.2	Neutral	48.7	-0.5	Peak			
0.635	32.4	Neutral	46.0	-13.6	Peak			
13.317	30.1	Neutral	50.0	-19.9	Peak			
		verage readi			1			
Frequency	Level	AC		ss B	Detector	Comments		
MHz	dBμV	Line	Limit	Margin	QP/Ave			
0.161	27.4	Line	55.4	-28.0	AVG			
0.161	43.0	Line	65.4	-22.4	QP			
0.361	33.1	Line	48.7	-15.6	AVG			
0.361	40.5	Line	58.7	-18.2	QP			
3.958	16.2	Line	46.0	-29.8	AVG			
3.958	25.5	Line	56.0	-30.5	QP			
0.152	43.3	Neutral	65.9	-22.6	QP			
0.152	27.9	Neutral	55.9	-28.0	AVG			
0.306	31.6	Neutral	50.1 60.1	-18.5	AVG			
0.306 0.358	40.4 38.6	Neutral Neutral	60.1 48.8	-19.7 -10.2	QP AVG			
0.358	45.3	Neutral	40.0 58.8	-10.2	QP			
0.000	-J.J	neuliai	50.0	-10.0	U(I			
Note 1:	FUT transm	itting on CH6	power setti	na = 19  dBr	11b mode	at 1 Mbns		
			, porror ootti		.,	at i mopo.		

	NTS VE ENGINEER SUCCESS	EM	C Test Data
Client:	Google Inc	Job Number:	JD101591
Model:	HOME	T-Log Number:	T101744
wouer.	HUNE	Project Manager:	Deepa Shetty
Contact:	Dominik Mente	Project Coordinator:	-
Standard:	FCC 15.247/15.407/RSS-247	Class:	В

Run #2b: AC Power Port Conducted Emissions, 0.15 - 30MHz, 120V/60Hz. TenPao S033BU1650200 power supply, sample 2.



4.								
		RSUCCESS					EMO	C Test Data
Client:	Google Inc						Job Number:	JD101591
							T-Log Number:	
Model:	HOME						Project Manager:	
0	Daminila Ma							
	Dominik Me		0.47				Project Coordinator:	
Standard:	FCC 15.247	/15.407/RSS	-247				Class:	В
				, .			1.)	
						s. average lii	nit)	
Frequency	Level	AC	Clas		Detector	Comments		
MHz 0.156	<u>dBμV</u> 51.4	Line Line	Limit 55.7	Margin -4.3	QP/Ave Peak			
0.156	48.4	Line	54.8	-4.3 -6.4	Peak			
3.630	28.2	Line	46.0	-0.4 -17.8	Peak			
6.353	<u>20.2</u> 25.4	Line	40.0 50.0	-17.0 -24.6	Peak			
0.353	<u>25.4</u> 50.1	Neutral	56.0	- <i>24.0</i> -5.9	Peak			
0.166	49.0	Neutral	55.2	-6.2	Peak			
0.184	48.5	Neutral	54.1	-5.6	Peak			
3.737	30.4	Neutral	46.0	-15.6	Peak			
9.158	24.9	Neutral	50.0	-25.1	Peak			
	2,,,,	rioundi	0010	2011	7 oun			
Final guasi-	peak and a	verage readi	ngs					
Frequency	Level	AC	Clas	ss B	Detector	Comments		
MHz	dBµV	Line	Limit	Margin	QP/Ave			
0.156	26.7	Line	55.7	-29.0	AVG			
0.156	44.4	Line	65.7	-21.3	QP			
0.172	24.5	Line	54.9	-30.4	AVG			
0.172	41.3	Line	64.9	-23.6	QP			
3.630	12.7	Line	46.0	-33.3	AVG			
3.630	23.3	Line	56.0	-32.7	QP			
0.151	25.6	Neutral	55.9	-30.3	AVG			
0.151	44.6	Neutral	65.9	-21.3	QP			
0.166	25.0	Neutral	55.2	-30.2	AVG			
0.166	42.2	Neutral	65.2	-23.0	QP			
0.184	22.3	Neutral	54.3	-32.0	AVG			
0.184	39.2	Neutral	64.3	-25.1	QP			
Note 1:	ELIT transm	itting on CH6	nower cotti	na - 10 dP~	11h mode	at 1 Mbns		
			, power setti	ng – 19 ubli		αι ι ινιυμ5.		

# EMC Test Data

		R SUCCESS				EM	C Test Data
Client:	Google Inc					Job Number:	JD101591
-						T-Log Number:	T101744
Model:	HOME					Project Manager:	Deepa Shetty
Contact:	Dominik Me	nte				Project Coordinator:	-
Standard:	FCC 15.247	7/15.407/RSS·	-247			Class:	N/A
			and FCC	15.407 (	(UNII) Radiated Sp	ourious Emissior	IS
Test Spec	cific Detail		6 11 de 4 e e 4	· · · · · · · · · · · · · · · ·	for a for all and life after		
	Objective:	specification			o perform final qualification		espect to the
The EUT an		ipport equipm			turntable for radiated spuri located 3 meters from the		ioted.
Ambient	Condition	Te	emperature: el. Humidity:		⊧ °C 5 %		
Summary	y of Result	ts					
Run #	Mode	Channel	Target Power (dBm)	Passing Power Setting	Test Performed	Limit	Result / Margin
20MHz Ban	dwith Modes						
1	а	36 - 5180MHz	-	16	Restricted Band Edge at 5150 MHz	15.209	51.9 dBµV/m @ 5150.0 MHz (-2.1 dB)
2	а	64 - 5320MHz	-	16	Restricted Band Edge at 5350 MHz	15.209	53.1 dBµV/m @ 5350.0 MHz (-0.9 dB)
	а	100 - 5500MHz	-	14	Restricted Band Edge at 5460 MHz	15.209	44.5 dBµV/m @ 5427.7 MHz (-9.5 dB)
3	а	100 - 5500MHz	-	14	Band Edge 5460 - 5470 MHz	15E	50.3 dBµV/m @ 5470.0 MHz (-3.7 dB)
	а	140 - 5700MHz	-	14	Band Edge 5725MHz	15E	52.7 dBµV/m @ 5725.0 MHz (-1.3 dB)
4	а	149 - 5745MHz	-	18	Band Edge 5725MHz	15.407(b)(4)(i)	64.2 dBµV/m @ 5649.8 MHz (-4.1 dB)
4	а	165 - 5825MHz	-	18	Band Edge 5850MHz	15.407(b)(4)(i)	64.7 dBµV/m @ 5926.9 MHz (-3.6 dB)

	RTS WE ENGINEER	RSUCCESS				EM	C Test Data
Client	: Google Inc					Job Number:	JD101591
M						T-Log Number:	T101744
Model	HOME					Project Manager:	Deepa Shetty
Contact	: Dominik Me	nte				Project Coordinator:	-
Standard	: FCC 15.247	7/15.407/RSS-	-247			Class:	N/A
5	n20	36 - 5180MHz	-	16	Restricted Band Edge at 5150 MHz	15.209	53.8 dBµV/m @ 5150. MHz (-0.2 dB)
6	n20	64 - 5320MHz	-	16	Restricted Band Edge at 5350 MHz	15.209	52.0 dBµV/m @ 5350 MHz (-2.0 dB)
	n20	100 - 5500MHz	-	15	Restricted Band Edge at 5460 MHz	15.209	47.4 dBµV/m @ 5459 MHz (-6.6 dB)
7	n20	100 - 5500MHz	-	15	Band Edge 5460 - 5470 MHz	15E	53.2 dBµV/m @ 5470 MHz (-0.8 dB)
7	n20	136 - 5680MHz	-	16	Band Edge 5725MHz	15E	69.5 dBµV/m @ 5725 MHz (-4.5 dB)
	n20	140 - 5700MHz	-	13	Band Edge 5725MHz	15E	50.0 dBµV/m @ 5725 MHz (-4.0 dB)
0	n20	149 - 5745MHz	-	18	Band Edge 5725MHz	15.407(b)(4)(i)	68.4 dBµV/m @ 5653 MHz (-2.7 dB)
8	n20	165 - 5825MHz	-	17	Band Edge 5850MHz	15.407(b)(4)(i)	60.1 dBµV/m @ 5930 MHz (-8.2 dB)
)MHz Bar	dwith Modes						
9	n40	38 - 5190MHz	-	13	Restricted Band Edge at 5150 MHz	15.209	53.1 dBµV/m @ 5149 MHz (-0.9 dB)
10	n40	62 - 5310MHz	-	13	Restricted Band Edge at 5350 MHz	15.209	52.9 dBµV/m @ 5350 MHz (-1.1 dB)
	n40	102 - 5510MHz	-	14	Restricted Band Edge at 5460 MHz	15.209	53.2 dBµV/m @ 5460 MHz (-0.8 dB)
11	n40	102 - 5510MHz	-	12	Band Edge 5460 - 5470 MHz	15E	53.4 dBµV/m @ 5469 MHz (-0.6 dB)
	n40	134 - 5670MHz	-	14	Band Edge 5725MHz	15E	51.8 dBµV/m @ 5725 MHz (-2.2 dB)
10	n40	151 - 5755MHz	-	16	Band Edge 5725MHz	15.407(b)(4)(i)	64.1 dBµV/m @ 5643 MHz (-4.2 dB)
12	n40	159 - 5795MHz	-	16	Band Edge 5850MHz	15.407(b)(4)(i)	63.5 dBµV/m @ 5927 MHz (-4.8 dB)

Client <sup>.</sup>	Google Inc					Job Number:	JD101591
						T-Log Number:	
Model:	HOME				_	Project Manager:	
Contact:	Dominik Me	nte				Project Coordinator:	-
tandard:	FCC 15.247	/15.407/RSS	-247			Class:	N/A
/Hz Ban	dwith Modes						
13	ac80	42 - 5210MHz	-	9	Restricted Band Edge at 5150 MHz	15.209	50.9 dBµV/m @ 5139 MHz (-3.1 dB)
14	ac80	58 - 5290MHz	-	10	Restricted Band Edge at 5350 MHz	15.209	51.8 dBµV/m @ 5359 MHz (-2.2 dB)
15	ac80	106 - 5530MHz	-	8	Restricted Band Edge at 5460 MHz	15.209	51.4 dBµV/m @ 5459 MHz (-2.6 dB)
15	ac80	106 - 5530MHz	-	8	Band Edge 5460 - 5470 MHz	15E	51.4 dBµV/m @ 5460 MHz (-2.6 dB)
16	ac80	155 - 5775MHz	-	13	Band Edge 5725MHz	15.407(b)(4)(i)	65.4 dBµV/m @ 5642 MHz (-2.9 dB)
10	ac80	155 - 5775MHz	-	13	Band Edge 5850MHz	15.407(b)(4)(i)	64.0 dBµV/m @ 5922 MHz (-5.9 dB)



# EMC Test Data

Client:	Google Inc	Job Number:	JD101591
Model:	HOME	T-Log Number:	T101744
woder.	HOWE	Project Manager:	Deepa Shetty
Contact:	Dominik Mente	Project Coordinator:	-
Standard:	FCC 15.247/15.407/RSS-247	Class:	N/A

# Modifications Made During Testing

No modifications were made to the EUT during testing

# Deviations From The Standard

No deviations were made from the requirements of the standard.

# Procedure Comments:

Measurements performed in accordance with FCC KDB 789033

Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time Unless otherwise stated/noted, emission has duty cycle ≥ 98% and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold 50 traces. (method VB of KDB 789033)

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11a	6 Mbps	0.99	Yes	3.13	0	0	319
n20	MCS0	1.00	Yes	9.92	0	0	101
n40	MCS0	1.00	Yes	4.76	0	0	210
ac80	VHT SS1	0.99	Yes	2.25	0	0	444

#### Sample Notes

Sample S/N: 6629AZZB75 Driver: 1.21 Antenna: Internal

#### Measurement Specific Notes:

Note 1: For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector). Per KDB 789033 2) c) (i), compliance can be demonstrated by meeting the average and peak limits of 15.209, as an alternative.

Note: All testing performed on the Antenna 2 port (wifi set to 10 2 2), as this was worse case from preliminary measurements.

		RSUCCESS						EMC Test Da
Client:	Google Inc							Job Number: JD101591
Model:	HOME						T-	Log Number: T101744
							ect Manager: Deepa Shetty	
	Dominik Me						Project	Coordinator: -
Standard:	FCC 15.247	/15.407/RSS	5-247					Class: N/A
Run #1: Ra	diated Ban	dedge Meas	urements, 5	150-5250MF	łz			
		7/12/2016 0				onfig. Used:	1	
		Rafael Vare				fig Change:		
	est Location:					UT Voltage:		Z
						-		
Channel:	36 - 5180 M	Hz						
Fx Chain: Mode:	Antenna 2 a							
Data Rate:	6 Mbps							
		Signal Radia						
Frequency MHz	Level dBµV/m	Pol v/h	Limit	15.209 Margin	Detector Pk/QP/Avg	Azimuth	Height meters	Comments
Power setti		V/11		wargin	FNQF/Avy	degrees	meters	
5150.000	51.9	V	54.0	-2.1	AVG	52	1.0	
5148.560	67.8	V	74.0	-6.2	PK	52	1.0	
5150.000	50.9	H	54.0	-3.1 -8.3	AVG PK	232 232	1.6 1.6	
5149.280	65.7	п	74.0	-0.3	PN	232	1.0	
RB 1	MHz: VB 10	Hz Avo (Bla	ck Trace): R	B 1MHz VB	3MHz PK(Blue	Trace):V		
		1121119 (013			01 11 12 1 10(1010)	/		
	80.0-							
6	70.0-							i de hi
Amplitude (dBuV/m)	65.0-							way water water and a start water and
U D	60.0-				1.11	on the ball MA	MANAM	Maghine de La come :
itude	55.0-	****~~	with men	the state of the s	all the second second	WOLMAN -		
	50.0-	- Alwardes	hanne areas	Maller 1 1987				
Ę	45.0	$\overline{}$						
Amp		<u> </u>						
Amp	40.0-							
Am	35.0-							
Am		5115	5120	5125	5 5130 Frequency		35 5	140 5145 5150

Client:         Google Inc         Job Number:         JD101591           Model:         H0ME         T-Log Number:         T101744           Project Manager:         Deepa Shetty           Contact:         Dominik Mente         Project Coordinator:           Standard:         FCC 15.247/15.407/RSS-247         Class:         N/A           Run #2:         Radiated Bandedge Measurements, 5250-5350MHz         Config. Used: 1         Test:           Date of Test:         7/12/2016 0:00         Config. Used: 1         Test:           Test:         Date of Test:         7/12/2016 0:00         Config. Used: 1           Test:         Date of Test:         7/12/2016 0:00         Config. Used: 1           Test:         Date of Test:         7/12/2016 0:00         Config. Used: 1           Test:         Date of Test:         7/12/2016 0:00         Config. Used: 1           Standard:         Attenna 2         Config. Used: 1         Standard:           Jobi:         a         Jobi:         Test:         Attenna 2           Jobi:         a         Standard:         Attenna 2         Standard:           Jobi:         a         FCC 15:209         Detector         Azimuth         Height         Comments			RSUCCESS						EIVIO	C Test Da
Mode:         Project Manager:         Deepa Shetty           Contact:         Dominik Mente         Project Coordinator:         -           Standard:         FCC 15.247/15.407/RSS-247         Class:         N/A           Run #2:         Radiated Bandedge Measurements, 5250-5350MHz         Date of Test:         7/12/2016 0:00         Config. Used: 1           Test Engineer:         Rafael Varelas         Config. Config. Used: 1         Config.	Client	Google Inc							Job Number:	JD101591
Project Manager:         Deepa Shetty           Standard:         FCC 15.247/15.407/RSS-247         Class:         N/A           Nun #2:         Radiated Bandedge Measurements, 5250-5350MHz         Class:         N/A           Date of Test:         7/12/2016 0:00         Config. Used: 1         Class:         N/A           Test Engineer:         Rafael Varelas         Config. Used: 1         Config. Used: 1         Config. Used: 1           Test Location:         Channel:         C4 - 5320MHz         Config. Used: 1         Config. Used: 1           Xchannel:         64 - 5320MHz         Xchannel:         Config. Used: 1         Config. Used: 1           Xchannel:         64 - 5320MHz         Xchannel:         Config. Used: 1         Config. Used: 1           Xchannel:         64 - 5320MHz         Xchannel:         Config. Used: 1         Config. Used: 1           Xchain:         Anternal 2         Xchain:         Anternal 2         Xchain:         Xchain:           3500 Mbr.         Gage Signal Radiated Field Strength         Feequery         Level         Pol         FCC 15.20         Avg         Avg         Anternal         Scolool         Scolool         Scolool         Scolool         Scolool         Scolool         Scolool         Scolool         Scolool	Model	HOME							-	
Standard:         FCC 15 247/15.407/RSS-247         Class:         N/A           Run #2:         Radiated Bandedge Measurements, 5250-5350MHz         Date of Test:         7/12/2016 0:00         Config. Used: 1           Test Engineer:         Rafael Varelas         Config. Used: 1         Config. Used: 1           Test Engineer:         Rafael Varelas         Config. Used: 1         Config. Used: 1           Test Location:         Chamber 7         EUT Voltage: 120V / 60Hz         Config. Used: 1           Shannel:         64 - 5320MHz         Stantema 2         Stantema 2           Vace:         a         a         Bata Rate::         6 Mbps           S350 MHz         Bata Rate::         6 Mbps         FFCC 15.209         Detector         Azimuth         Height         Comments           MHz         dB <sub>II</sub> V/m         Vh         Limit         Margin         PK/QP/Avg         degrees         meters           S350.000         53.1         V         54.0         -0.9         AVG         47         1.8         S350.800         51.1         H         54.0         -2.9         AVG         230         1.4         S355.210         69.6         H         74.0         -4.4         PK         230         1.4         S355.000								-	-	
Run #2: Radiated Bandedge Measurements, 5250-5350MHz         Date of Test: 7/12/2016 0:00       Config. Used: 1         Test Engineer: Rafael Varelas       Config Change: none         Test Location: Chamber 7       EUT Voltage: 120V / 60Hz         Shannel:       64 - 5320MHz         x Chain: Antenna 2       Antenna 2         Jode:       a         Jata Rate:       6 Mbps         3350 MHz Band Edge Signal Radiated Field Strength         Frequency       Level         Pol       FCC 15.209         Detector       Azimuth         Height       Comments         MHZ       dBit//m         S350.000       53.1         V       54.0       -0.9         AVG       230       1.4         S351.840       70.0       V         74.0       -4.0       PK       47         S355.210       69.6       H       74.0       -2.9         RB 1 MHz; VB 10 Hz Avg (Black Trace); RB 1MHz VB 3MHz PK(Blue Trace); V       80.0         70.0       70.0       74.0       -4.4       PK       230       1.4         S355.210       69.6       H       74.0       -2.9       AVG       230       1.4								Project		
Date of Test: 7/12/2016 0:00 Test Engineer: Rafael Varelas Test Location: Chamber 7       Config Used: 1 Config Change: none EUT Voltage: 120V / 60Hz         Channel:       64 - 5320MHz Xochain: Antenna 2 Note: a Vata Rate: 6 Mbps       Attenna 2 Note: a Vata Rate: 6 Mbps         3350 MHz Band Edge Signal Radiated Field Strength       Frequency       Pol         Frequency       Level       Pol       FCC 15:209       Detector         MHz       dB <sub>IL</sub> V/m       Vh       Limit       Margin       Pk/QP/Avg       degrees         S350.000       53.1       V       54.0       -0.9       AVG       47       1.8         S350.000       51.1       H       54.0       -2.9       AVG       230       1.4         S350.000       51.0       H       74.0       4.4       PK       230       1.4         S350.000       53.0       53.0       53.0       53.0       53.0       53.0       53.0 <t< td=""><td>Standard</td><td>FCC 15.247</td><td>/15.407/RSS</td><td>-247</td><td></td><td></td><td></td><td></td><td>Class:</td><td>N/A</td></t<>	Standard	FCC 15.247	/15.407/RSS	-247					Class:	N/A
Test Engineer: Rafael Varelas       Config Čhange: none         Test Location: Chamber 7       EUT Voltage: 120V / 60Hz         Channel:       64 - 5320MHz         x Chain:       Antenna 2         /dode:       a         abata Rate:       6 Mbps         S350 MHz Band Edge Signal Radiated Field Strength         Frequency       Level         Pol       FCC 15.209         Detector       Azimuth         Height       Comments         MHz       dBµV/m         Vh       Limit         Margin       Pk/QP/Avg         degrees       meters         oweer setting = 16       1         5350.000       53.1       V         531.1       V       54.0       -0.9         AVG       230       1.4         5350.000       51.1       H       54.0       -2.9         AVG       230       1.4       1.4         5350.210       69.6       H       74.0       -4.4       PK       230       1.4         V       80.0       -       -       70.0       -       -       70.0       -       -       70.0       -       -       70.0	Run #2: R	adiated Ban	dedge Meas	urements, 5	250-5350MH	łz				
Test Location: Chamber 7       EUT Voltage: 120V / 60Hz         Shannel:       64 - 5320MHz         x Chain:       Antenna 2         Aode:       a         Jata Rate:       6 Mbps         S350 MHz       Band Edge Signal Radiated Field Strength         Frequency       Level       Pol       FCC 15.209       Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/h       Limit       Margin       Pk/QP/Avg       degrees       meters         S350.000       53.1       V       54.0       -0.9       AVG       47       1.8         S350.080       51.1       H       54.0       -2.9       AVG       230       1.4         S355.210       69.6       H       74.0       -4.4       PK       230       1.4         S355.210       69.6       H       74.0       -4.4       PK       230       1.4         S0.00       55.0       H       74.0       -4.4       PK       230       1.4         S0.0       60.0       H       74.0       -2.9       AVG       230       1.4         S0.0       53.0       5350       5360       5370       5375 <td></td> <td>Date of Test:</td> <td>7/12/2016 0</td> <td>:00</td> <td></td> <td>С</td> <td>onfig. Used:</td> <td>1</td> <td></td> <td></td>		Date of Test:	7/12/2016 0	:00		С	onfig. Used:	1		
Shannel:       64 - 5320MHz         x Chain:       Antenna 2         Jode:       a         Jata Rate:       6 Mbps         3350 MHz Band Edge Signal Radiated Field Strength         Frequency       Level         Pol       FCC 15.209         Detector       Azimuth         Height       Comments         MHz       dBµV/m         Vh       Limit         Margin       PK/QP/Avg         degrees       meters         S350.000       53.1         V       54.0       -0.9         AVG       47       1.8         S350.000       51.1       H       54.0         5350.1       V       54.0       -2.9         AVG       230       1.4       -         5350.210       69.6       H       74.0       -4.4         PK       230       1.4       -         5350.05       51.1       H Z Avg (Black Trace); RB 1MHz VB 3MHz PK(Blue Trace);V       -         60.0				las						
X Chain:       Antenna 2         Mode:       a         aata Rate:       6 Mbps         X350 MHz Band Edge Signal Radiated Field Strength         Frequency       Level       Pol       FCC 15.209       Detector       Azimuth       Height       Comments         MHz       dBµtV/m       v/h       Limit       Margin       Pk/QP/Avg       degrees       meters         S350.000       53.1       V       54.0       -0.9       AVG       47       1.8         S351.840       70.0       V       74.0       -4.0       PK       47       1.8         S355.210       69.6       H       74.0       -4.4       PK       230       1.4         S355.210       69.6       H       74.0       -4.4       PK       230       1.4         S0.0       75.0       -       -       -       -       -       -         90       50.0       -       -       -       -       -       -       -         90       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -	Т	est Location:	Chamber 7			E	UT Voltage:	120V / 60Hz	2	
X Chain:       Antenna 2         Jode:       a         Jata Rate:       6 Mbps         5350 MHz Band Edge Signal Radiated Field Strength         Frequency       Level       Pol       FCC 15.209       Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/h       Limit       Margin       Pk/QP/Avg       degrees       meters         S350.000       53.1       V       54.0       -0.9       AVG       47       1.8         S350.080       51.1       H       54.0       -2.9       AVG       230       1.4         S355.210       69.6       H       74.0       -4.4       PK       230       1.4         S355.210       69.6       H       74.0       -4.4       PK       230       1.4         S355.210       69.6       H       74.0       -4.4       PK       230       1.4         S0.0       75.0	Channel:	64 - 5320M	Hz							
Data Rate:       6 Mbps         3350 MHz Band Edge Signal Radiated Field Strength         Frequency       Level       Pol       FCC 15.209       Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/h       Limit       Margin       Pk/QP/Avg       degrees       meters         jower setting = 16       0       0       40       1.8       0       0         3350.000       53.1       V       54.0       -0.9       AVG       47       1.8         5350.080       51.1       H       54.0       -2.9       AVG       230       1.4         5350.080       51.0       H       74.0       -4.4       PK       230       1.4         60.0       -       -       -       -       -       -       -         61.0       -       -       -       -       - <td></td>										
3350 MHz Band Edge Signal Radiated Field Strength         Trequency       Level       Pol       FCC 15.209       Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/h       Limit       Margin       PK/OP/Avg       degrees       meters         Yower setting = 16       Image: Signal Radiated Field Strength       Image: Signal Radiated Field Strength       Image: Signal Radiated Field Strength         5350.000       53.1       V       54.0       -0.9       AVG       47       1.8         5350.000       51.1       H       54.0       -2.9       AVG       230       1.4         5350.010       51.1       H       54.0       -2.9       AVG       230       1.4         5350.020       51.1       H       54.0       -2.9       AVG       230       1.4         5350.030       51.1       H       54.0       -2.9       AVG       230       1.4         5350.05       69.6       H       74.0       -4.4       PK       230       1.4         70.0       -       -       -       -       -       -       -         60.0       -       -       -       -       -										
Frequency         Level         Pol         FCC 15.209         Detector         Azimuth         Height         Comments           MHz         dBµV/m         v/h         Limit         Margin         Pk/QP/Avg         degrees         meters           ower setting = 16	)ata Rate:	6 Mbps								
Frequency         Level         Pol         FCC 15.209         Detector         Azimuth         Height         Comments           MHz         dBµV/m         v/h         Limit         Margin         Pk/QP/Avg         degrees         meters           ower setting = 16	350 MHz	Band Fdae S	Sianal Radia	ted Field St	renath					
ower setting = 16       0       0       0         5350.000       53.1       V       54.0       -0.9       AVG       47       1.8         5351.840       70.0       V       74.0       -4.0       PK       47       1.8         5350.080       51.1       H       54.0       -2.9       AVG       230       1.4         5355.210       69.6       H       74.0       -4.4       PK       230       1.4         S355.210       69.6       H       74.0       -4.4       PK       230       1.4         RB 1 MHz; VB 10 Hz Avg (Black Trace); RB 1MHz VB 3MHz PK(Blue Trace);V       80.0       -       -       -         75.0       -       -       -       -       -       -       -         90       55.0       -       -       -       -       -       -       -         90       55.0       -						Detector	Azimuth	Height	Comments	
5350.000       53.1       V       54.0       -0.9       AVG       47       1.8         5351.840       70.0       V       74.0       -4.0       PK       47       1.8         5355.080       51.1       H       54.0       -2.9       AVG       230       1.4         5355.210       69.6       H       74.0       -4.4       PK       230       1.4         5355.210       69.6       H       74.0       -4.4       PK       230       1.4         65.0       -       -       -       -       4.4       PK       230       1.4         80.0       -       -       -       -       4.4       PK       230       1.4         80.0       -       -       -       -       -       -       -       -         65.0       -       -       -       -       -       -       -       -         99       50.0       -       -       -       -       -       -       -         45.0       -       -       -       -       -       -       -       -       -       -       -         90       5			v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
5351.840       70.0       V       74.0       -4.0       PK       47       1.8         5350.080       51.1       H       54.0       -2.9       AVG       230       1.4         5355.210       69.6       H       74.0       -4.4       PK       230       1.4         S355.210       69.6       H       74.0       -4.4       PK       230       1.4         RB 1       MHz; VB 10 Hz Avg (Black Trace); RB 1MHz VB 3MHz PK(Blue Trace); V       80.0			N/	54.0	0.0	A) (O	47	1.0		
5350.080     51.1     H     54.0     -2.9     AVG     230     1.4       5355.210     69.6     H     74.0     -4.4     PK     230     1.4         RB 1 MHz; VB 10 Hz Avg (Black Trace); RB 1MHz VB 3MHz PK(Blue Trace); V         80.0       70.0       65.0       75.0       75.0       75.0										
RB 1 MHz; VB 10 Hz Avg (Black Trace); RB 1MHz VB 3MHz PK(Blue Trace); V 80.0 75.0 70.0 65.0 90 95.0 45.0 45.0 5350 5355 5360 5365 5370 5375 5380 5385 5390										
80.0 75.0 70.0 65.0 90 90 90 90 90 55.0 45.0 50.0 45.0 50.0	5355.210	69.6	Н	74.0	-4.4	PK	230	1.4		
80.0 75.0 70.0 65.0 90 90 90 90 90 55.0 45.0 50.0 45.0 50.0										
75.0 70.0 65.0 60.0 55.0	RB	L MHz; VB 10	Hz Avg (Bla	ck Trace);  F	RB 1MHz VB	3MHz PK(Blue	e Trace);V			
70.0 65.0 60.0 9 9 55.0 50.0 45.0 40.0 35.0 5350 5355 5360 5365 5370 5375 5380 5385 5390		80.0-								
65.0 60.0 90 55.0 45.0 40.0 55		75.0-								
45.0- 40.0- 35.0- 5350 5355 5360 5365 5370 5375 5380 5385 5390		70.0-	ally at the		Di La					
45.0- 40.0- 35.0- 5350 5355 5360 5365 5370 5375 5380 5385 5390		65.0-	when he have	WWW.		Last Alter a				
45.0- 40.0- 35.0- 5350 5355 5360 5365 5370 5375 5380 5385 5390		60.0-		1 MW			Will A MULLIN	the late on the		
45.0- 40.0- 35.0- 5350 5355 5360 5365 5370 5375 5380 5385 5390	nde	55.0-				And other a	The Property			hall & h lb and to
45.0- 40.0- 35.0- 5350 5355 5360 5365 5370 5375 5380 5385 5390		50.0						and differ	Mar In Ala Mika a	MANDARY AND AND
35.0 - 5350 5355 5360 5365 5370 5375 5380 5385 5390	4	45.0-								
5350 5355 5360 5365 5370 5375 5380 5385 5390		40.0-							~~	
		35.0-,					,			
		5350	5355	5360	5365			75 53	380 5	385 5390
	1					(rioquone)	Zionie)			

	NTS	EMO	C Test Data
Client:	Google Inc	Job Number:	JD101591
Model:	HOME	T-Log Number:	T101744
woder.	NUME	Project Manager:	Deepa Shetty
Contact:	Dominik Mente	Project Coordinator:	-
Standard:	FCC 15.247/15.407/RSS-247	Class:	N/A

### Run #3: Radiated Bandedge Measurements, 5470-5725MHz

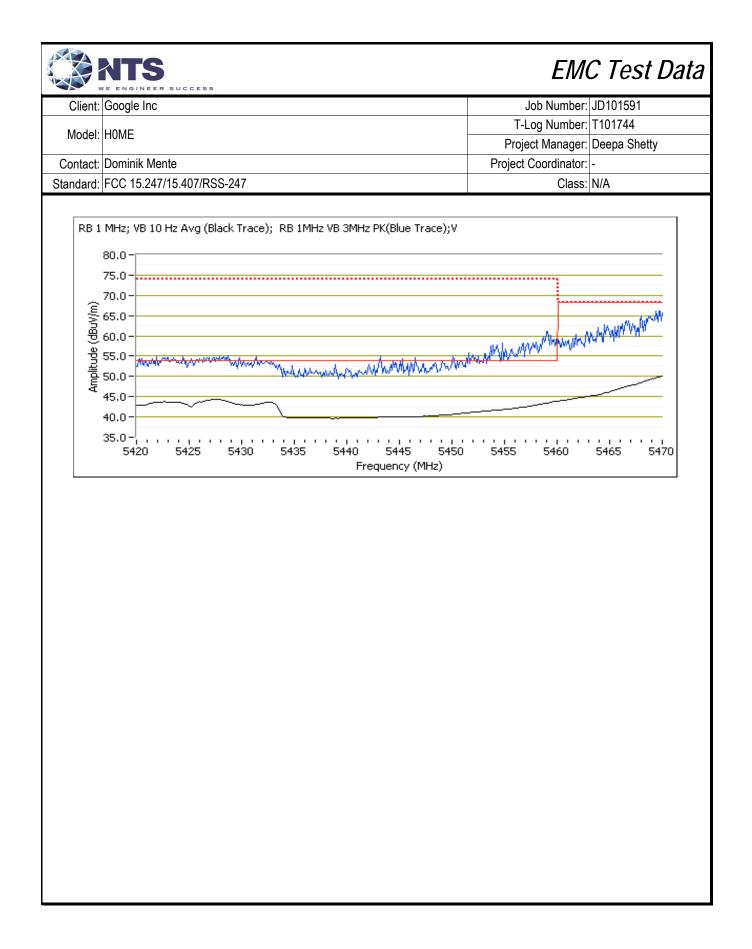
Date of Test: 7/12/2016 0:00 Test Engineer: Rafael Varelas Test Location: Chamber 7 Config. Used: 1 Config Change: none EUT Voltage: 120V / 60Hz

Channel: 100 - 5500MHz Tx Chain: Antenna 2 Mode: a Data Rate: 6 Mbps

#### 5460 MHz Band Edge Signal Radiated Field Strength

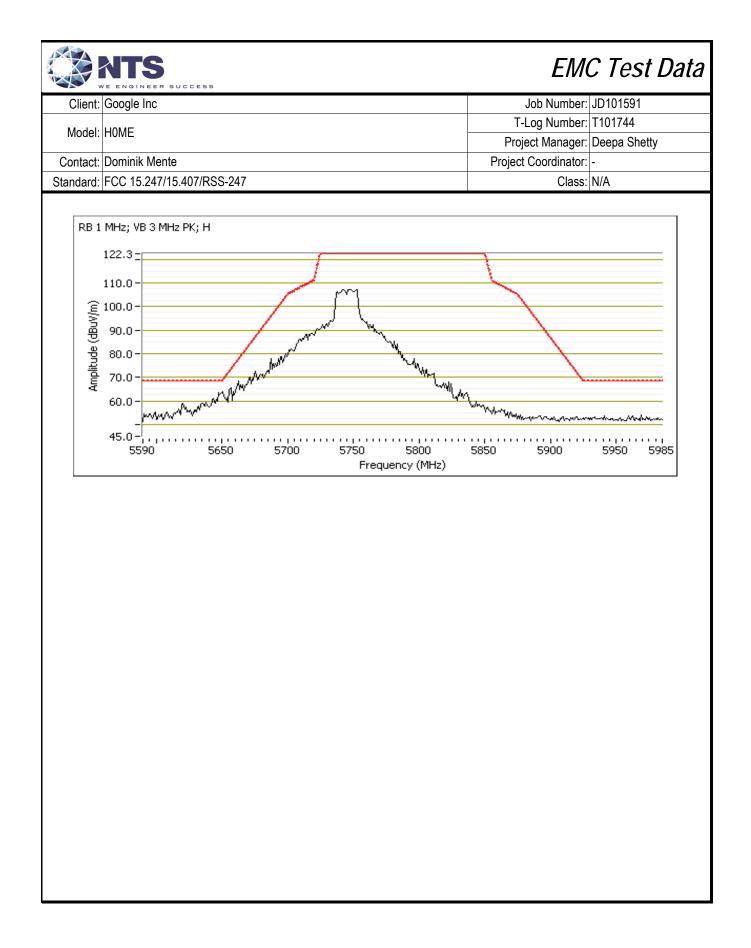
		ginaria						
Frequency	Level	Pol	FCC <sup>2</sup>	15.209	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
Power setti	ng = 14							
5460.000	44.1	V	54.0	-9.9	AVG	56	1.9	
5458.800	61.7	V	74.0	-12.3	PK	56	1.9	
5427.700	44.2	V	54.0	-9.8	AVG	56	1.9	
5431.740	54.9	V	74.0	-19.1	PK	56	1.9	
5427.670	44.5	Н	54.0	-9.5	AVG	226	1.0	
5427.420	56.0	Н	74.0	-18.0	PK	226	1.0	

Frequency	Level	Pol	15	5.E	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
Power setti	ng = 14							
5470.000	50.3	V	54.0	-3.7	AVG	56	1.9	
5469.820	67.2	V	74.0	-6.8	PK	56	1.9	
5469.820	67.2	V	68.3	-1.1	PK	56	1.9	
5469.920	49.8	Н	54.0	-4.2	AVG	226	1.0	
5468.460	66.8	Н	74.0	-7.2	PK	226	1.0	
5468.460	66.8	Н	68.3	-1.5	PK	226	1.0	



		SUCCESS							C Test Dat
Client:	Google Inc							Job Number:	
Model:	HOME							Log Number:	
<u> </u>	D						-	-	Deepa Shetty
	Dominik Mer		0.17				Project	Coordinator:	-
Standard:	FCC 15.247	/15.407/RSS	-247					Class:	N/A
Channel: Tx Chain: Mode: Data Rate:	140 - 5700M Antenna 2 a 6 Mbps								
	B <i>and Edge S</i> Level	<i>ignal Radia</i> Pol		r <i>ength</i> 5.E	Detector	Azimuth	Height	Comments	
Frequency MHz	dBµV/m	v/h	Limit	.∟ Margin	Pk/QP/Avg	degrees	meters	Comments	
Power setti		•,11		margin		409,000		1	
5725.080	51.7	V	54.0	-2.3	AVG	62	1.7	Note 1	
5727.080	69.5	V	74.0	-4.5	PK	62	1.7	Note 1	
5725.000	52.7	H	54.0	-1.3	AVG	232	1.3	Note 1	
5731.250	70.4	Н	74.0	-3.6	PK	232	1.3	Note 1	
itude	75.0 - 70.0 - 65.0 - 55.0 - 55.0 - 45.0 - 45.0 - 35.0 - 35.0 - 35.0 - 5725					5 575		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	۲60 5765

Model: I								Job Number:	JD101591
	HOME						T-	Log Number:	T101744
								-	Deepa Shetty
	Dominik Me						Project	Coordinator:	-
		/15.407/RSS			-			Class:	N/A
un #4: Rac	diated Band	ledge meas	urements, b	725-5850MH	12				
		7/13 & 7/20/				onfig. Used:			
	st Engineer: st Location:	Rafael Vare Chamber 7	las			fig Change: UT Voltage:		7	
100						or voltago.	120070011	-	
	149 - 5745N	lHz		Power settin	ng = 18				
x Chain: / lode:	Antenna 2 a								
ata Rate:	6 Mbps								
requency	Level	Pol	1	5.E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	Comments	
5649.840	64.2	V	68.3	-4.1	PK	50	1.7		MHz; VB: 3 MHz
5649.660	63.1	Н	68.3	-5.2	PK	233	1.1	POS; RB 1 N	MHz; VB: 3 MHz
Amplitude (dBuV/m) T	45.0-	~~~					wwwww		w
	5590	565	50 5	700 5	Frequenc	5800	5850	5900	5950 5985



		SUCCESS						EMC Test Da			
Client:	Google Inc							Job Number: JD101591			
Model:	HOME							Log Number: T101744			
								ect Manager: Deepa Shetty			
	Dominik Men						Project	Coordinator: -			
Standard:	FCC 15.247/	15.407/RSS	-247					Class: N/A			
hannel: x Chain: lode: vata Rate:	165 - 5825MHz Power setting = 18 Antenna 2 a 6 Mbps										
requency	Level	Pol	15	.E	Detector	Azimuth	Height	Comments			
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters				
5926.920	64.7 62.1	V H	68.3 68.3	-3.6 -6.2	PK PK	56 232	<u>1.8</u> 1.0	POS; RB 1 MHz; VB: 3 MHz			
5929.090	62.1 MHz; VB 3 M		00.3	-0.2	Γ'n	232	1.0	POS; RB 1 MHz; VB: 3 MHz			
Amplitude (dBuV)	110.0 - 100.0 - 90.0 - 80.0 - 70.0 - 60.0 - 45.0 - ,,,, 5590 MHz; VB 3 M	565	w/w//w///~			5800	5850	May			
	122.3						_				
				1			1				
	110.0-		,			L.M.	1				
Amplitude (dBuV/m)	100.0-						٩.,				
B	90.0-		-/-		مر مربع	par	WW.				
de	80.0-		1		N		VW.				
nplit	70.0-		/		. Marken			Wy .			
4	60.0-		Mr. Mr. M	MA	M.			Min Marine			
	when	mmmm	Mr. Mr. M					manthematheren			
	45.0- <mark>,,,,</mark> 5590	565		,	5750 5 Frequency	5800	5850	5900 5950 5985			

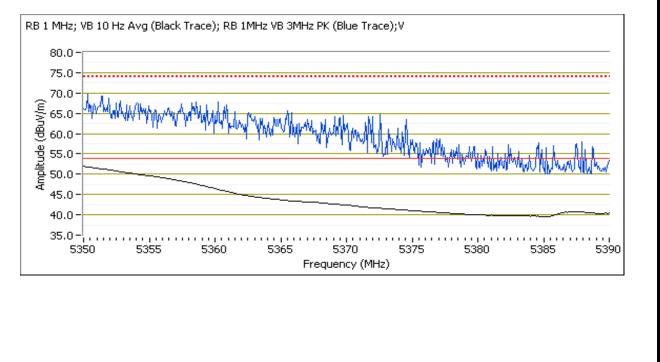
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Client	Google Inc	SUCCESS						Job Number:	JD101591
Model:         Project Manager:         Deepa Shetty           Contact:         Dominik Mente         Project Coordinator:         -           Standard:         FCC 15.247/15.407/RSS-247         Class:         N/A           tun #5:         Radiated Bandedge Measurements, 5150-5250MHz         Date of Test:         7/13/2016 0:00         Config. Used: 1           Test Engineer:         Rateal Varelas         Config Change: none         EUT Voltage:         120V / 60Hz           Chain:         Antenna 2         Iode:         n20         Date of Test:         7/13/2016           If S0 MHz         X Chain:         Antenna 2         Iode:         n20         Ided:         n20           vata Rate:         MCS0         If S0 MHz         X         Image: none         Image: none           Frequency         Pol         FCC 15.209         Detector         Azimuth         Height         Comments           MHz         dBµU/m         v/h         Limit         Margin         PK/QP/Avg         degrees         meters           S150.000         53.8         V         54.0         -0.2         AVG         169         1.6           5150.000         48.5         H         54.0         -5.5         AVG         305 <td></td>										
Contact:         Dominik Mente         Project Coordinator:           Standard:         FCC 15.247/15.407/RSS-247         Class:         N/A           tun #5:         Radiated Bandedge Measurements, 5150-5250MHz         Date of Test: 7/13/2016 0:00         Config. Used: 1           Test Engineer: Rated Varelas         Config Change: none         EUT Voltage: 120V / 60Hz           Shannel:         36 - 5180 MHz         EUT Voltage: 120V / 60Hz           x Chain:         Antenna 2         Iode: n20           vata Rate:         MCS0         MCS0 <i>i150 MHz Band Edge Signal Radiated Field Strength</i>	Model:	H0ME							-	
Standard         FCC 15 247/15.407/RSS-247         Class:         N/A           Nun #5:         Radiated Bandedge Measurements, 5150-5250MHz         Date of Test:         7/13/2016 0:00         Config. Used: 1           Test Engineer:         Rafael Varelas         Config. Config. Used: 1         Config. Used: 1           Test Engineer:         Rafael Varelas         Config. Config. Used: 1         Config. Used: 1           Test Location:         Chamber 7         EUT Voltage: 120V / 60Hz         Config. Used: 1           Schannel:         36 - 5180 MHz         X         Chain: Antenna 2         Code: n.20           Jode:         n.20         Date affael:         MCS0         MHz         X           State affael:         MCS0         State affael:         MCS0         State affae: State affael:         MCS0           State affael:         MCS0         State affae:	Contact:	Dominik Me	nte					-	-	
Test Engineer: Rafael Varelas Test Location: Chamber 7     Config Change: none EUT Voltage: 120V / 60Hz       Channel:     36 - 5180 MHz       'x Chain:     Antenna 2       Jode:     n.20       Data Rate:     MCS0       5150 MHz     Edge Signal Radiated Field Strength       Frequency     Level       Pol     FCC 15.209       Detector     Azimuth       Height     Comments       MHz     dBµV/m       Vh     Limit       MHz     16       5150.000     53.8       V     54.0       -0.2     AVG       169     1.6       5150.000     48.5       H     54.0       -5.5     AVG       305     1.1				5-247				,		
Test Engineer: Rafael Varelas Test Location: Chamber 7     Config Change: none EUT Voltage: 120V / 60Hz       Channel:     36 - 5180 MHz       'x Chain:     Antenna 2       Jode:     n.20       Data Rate:     MCS0       5150 MHz     Edge Signal Radiated Field Strength       Frequency     Level       Pol     FCC 15.209       Detector     Azimuth       Height     Comments       MHz     dBµV/m       Vh     Limit       MHz     16       5150.000     53.8       V     54.0       -0.2     AVG       169     1.6       5150.000     48.5       H     54.0       -5.5     AVG       305     1.1			-		150-5250MF		c			
Test Location: Chamber 7     EUT Voltage: 120V / 60Hz       Channel:     36 - 5180 MHz       fx Chain:     Antenna 2       Vode:     n 20       Data Rate:     MCS0       ST50 MHz Band Edge Signal Radiated Field Strength       Frequency     Level       Pol     FCC 15.209       Detector     Azimuth       Height     Comments       MHz     dBµV/m       v/h     Limit       Margin     Pk/QP/Avg       degrees     meters       20wer setting = 16     16       5150.000     53.8       V     54.0       -0.2     AVG       169     1.6       5149.920     70.6       V     74.0       5149.920     70.6       V     74.0       65.5     H       74.0     -8.5       PK     305       1.1     State										
Channel:       36 - 5180 MHz         Xx Chain:       Antenna 2         Jode:       n 20         Jata Rate:       MCS0         S150 MHz Band Edge Signal Radiated Field Strength       Erequency         Frequency       Level       Pol       FCC 15.209         Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/h       Limit       Margin         Power setting = 16       1       1       16         5150.000       53.8       V       54.0       -0.2       AVG       169       1.6         5150.000       65.5       H       74.0       -3.4       PK       169       1.6         5150.000       65.5       H       74.0       -8.5       PK       305       1.1         5145.430       65.5       H       74.0       -8.5       PK       305       1.1         V       80.0       -       -       -       -       -       -       -         90       95.0       -       -       -       8.5       PK       305       1.1       -         80.0       -       -       -       -       -       -				105					z	
Fix Chain:       Antenna 2         Mode:       n20         Data Rate:       MCS0         S150 MHz Band Edge Signal Radiated Field Strength         Frequency       Level       Pol       FCC 15.209       Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/h       Limit       Margin       Pk/QP/Avg       degrees       meters         Power setting = 16               S150.000       53.8       V       54.0       -0.2       AVG       169       1.6         5149.920       70.6       V       74.0       -3.4       PK       169       1.6         5150.000       48.5       H       54.0       -5.5       AVG       305       1.1         5150.000       48.5       H       74.0       -8.5       PK       305       1.1         5145.430       65.5       H       74.0       -8.5       PK       305       1.1         0.0-       -       -       -       -       -       -       -       -         90.05       -       -       -       -       -       -       -										
Mode:         n20           Data Rate:         MCS0           5150 MHz Band Edge Signal Radiated Field Strength         Frequency         Level         Pol         FCC 15.209         Detector         Azimuth         Height         Comments           MHz         dB <sub>IL</sub> V/m         V/h         Limit         Margin         Pk/QP/Avg         degrees         meters			Hz							
Data Rate:         MCS0           S150 MHz Band Edge Signal Radiated Field Strength           Frequency         Level         Pol         FCC 15.209         Detector         Azimuth         Height         Comments           MHz         dBµLV/m         v/h         Limit         Margin         Pk/QP/Avg         degrees         meters										
S150 MHz Band Edge Signal Radiated Field Strength           Frequency         Level         Pol         FCC 15.209         Detector         Azimuth         Height         Comments           MHz         dBµV/m         v/h         Limit         Margin         Pk/QP/Avg         degrees         meters           Power setting = 16         -         -         -         -         -         -           5150.000         53.8         V         54.0         -0.2         AVG         169         1.6         -           5150.000         48.5         H         54.0         -5.5         AVG         305         1.1           5145.430         65.5         H         74.0         -8.5         PK         305         1.1										
Frequency         Level         Pol         FCC 15.209         Detector         Azimuth         Height         Comments           MHz         dBµV/m         v/h         Limit         Margin         Pk/QP/Avg         degrees         meters           20wer setting = 16										
MHz         dBµV/m         v/h         Limit         Margin         Pk/QP/Avg         degrees         meters           Power setting = 16						· _ · · · · ·			1-	
Dower setting = 16         AVG         169         1.6           5150.000         53.8         V         54.0         -0.2         AVG         169         1.6           5149.920         70.6         V         74.0         -3.4         PK         169         1.6           5150.000         48.5         H         54.0         -5.5         AVG         305         1.1           5145.430         65.5         H         74.0         -8.5         PK         305         1.1           S145.430         65.5         H         74.0         -8.5         PK         305         1.1					1				Comments	
5150.000       53.8       V       54.0       -0.2       AVG       169       1.6         5149.920       70.6       V       74.0       -3.4       PK       169       1.6         5150.000       48.5       H       54.0       -5.5       AVG       305       1.1         5145.430       65.5       H       74.0       -8.5       PK       305       1.1         5145.430       65.5       H       74.0       -8.5       PK       305       1.1         80.0       -       -       -       -       -       -       -       -         70.0       -       65.0       -			V/N	Limit	wargin	PK/QP/Avg	degrees	meters		
5150.000     48.5     H     54.0     -5.5     AVG     305     1.1       5145.430     65.5     H     74.0     -8.5     PK     305     1.1         RB 1 MHz; VB 10 Hz Avg (Black Trace); RB 1MHz VB 3MHz PK (Blue Trace); V         80.0     -       75.0     -       65.0     -       65.0     -       75.0     -       65.0     -       65.0     -       65.0     -       65.0     -       65.0     -       65.0     -       65.0     -       65.0     -       65.0     -       65.0     -       65.0     -       65.0     -       65.0     -       65.0     -       65.0     -       65.0     -       65.0     -       90     -       910     -       910     -       910     -       910     -       910     -       910     -       911     -       911     5115       5120     5125       5130     5135 <t< td=""><td></td><td></td><td>V</td><td>54.0</td><td>-0.2</td><td>AVG</td><td>169</td><td>1.6</td><td></td><td></td></t<>			V	54.0	-0.2	AVG	169	1.6		
5145.430     65.5     H     74.0     -8.5     PK     305     1.1         RB 1 MHz; VB 10 Hz Avg (Black Trace); RB 1MHz VB 3MHz PK (Blue Trace); V         80.0         70.0         65.0         65.0         70.0         65.0         70.0         65.0         70.0         65.0         70.0         65.0         70.0         70.0         65.0         70.0         65.0         70.0         65.0         70.0         65.0         60.0         90         70.0         910         70.0         70.0         70.0         70.0         70.0         70.0         70.0         70.0         70.0         70.0         70.0         70.0         70.0         70.0         70.0		70.6		74.0	-3.4	PK	169			
RB 1 MHz; VB 10 Hz Avg (Black Trace); RB 1MHz VB 3MHz PK (Blue Trace); V 80.0 75.0 70.0										
80.0- 75.0- 70.0- 65.0- 65.0- 55.0- 55.0- 40.0- 55.0- 5110 5115 5120 5125 5130 5135 5140 5145 5150	5145.430	65.5	H	74.0	-8.5	PK	305	1.1		
requery (ring)		80.0 - 75.0 - 70.0 - 65.0 - 60.0 - 55.0 - 55.0 - 45.0 - 45.0 - 40.0 - 35.0 -			<u>үрдүнүмү</u> лү 	5 5130		Murpulumu		
						Frequency	(MHz)			

	NTS	EMC Test Data
Client:	Google Inc	Job Number: JD101591
Madalı		T-Log Number: T101744
Model:	HUME	Project Manager: Deepa Shetty
Contact:	Dominik Mente	Project Coordinator: -
Standard:	FCC 15.247/15.407/RSS-247	Class: N/A
Standard:	FCC 15.247/15.407/RSS-247	Class: N/A

Date of Test: 7/13/2016 0:00 Test Engineer: Rafael Varelas Test Location: Chamber 7 Config. Used: 1 Config Change: none EUT Voltage: 120V / 60Hz

Channel: 64 - 5320MHz Tx Chain: Antenna 2 Mode: n20 Data Rate: MCS0

0000	ana Euge e	igna naaia		engin				
Frequency	Level	Pol	FCC <sup>2</sup>	15.209	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
Power setti	ng = 16							
5350.000	52.0	V	54.0	-2.0	AVG	178	1.3	
5352.240	69.4	V	74.0	-4.6	PK	178	1.3	
5350.080	51.0	Н	54.0	-3.0	AVG	236	1.7	
5350.960	67.8	Н	74.0	-6.2	PK	236	1.7	



	NTS Ve engineer success	EMC Test Data
Client:	Google Inc	Job Number: JD101591
Model:		T-Log Number: T101744
woder.	HOME	Project Manager: Deepa Shetty
Contact:	Dominik Mente	Project Coordinator: -
Standard:	FCC 15.247/15.407/RSS-247	Class: N/A

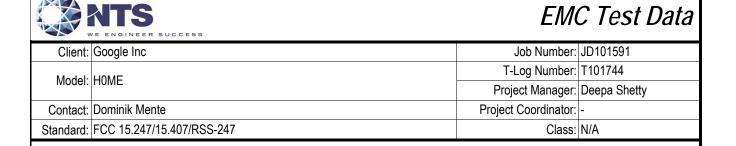
### Run #7: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 7/13/2016 0:00 Test Engineer: Rafael Varelas Test Location: Chamber 7

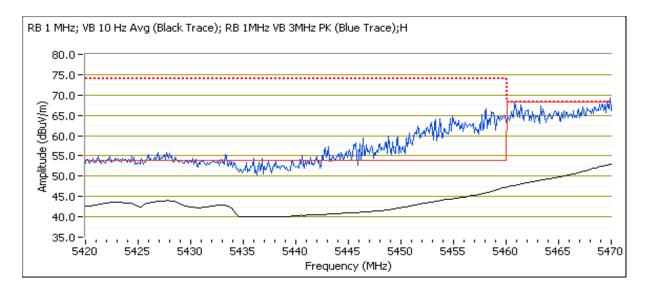
Config. Used: 1 Config Change: none EUT Voltage: 120V / 60Hz

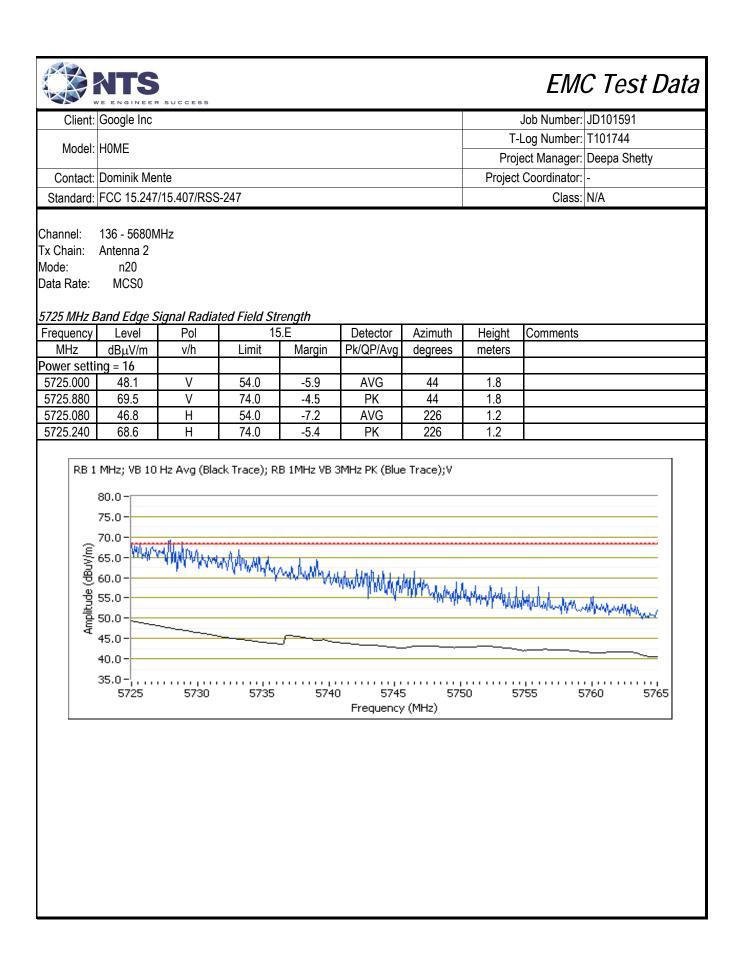
100 - 5500MHz Channel: Tx Chain: Antenna 2 Mode: n20 Data Rate: MCS0

		ginaria		- gui				
Frequency	Level	Pol	FCC 1	15.209	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
Power setti	ng = 15							
5460.000	45.9	V	54.0	-8.1	AVG	180	2.3	
5452.870	65.4	V	74.0	-8.6	PK	180	2.3	
5459.920	47.4	Н	54.0	-6.6	AVG	238	1.6	
5460.000	66.5	Н	74.0	-7.5	PK	238	1.6	



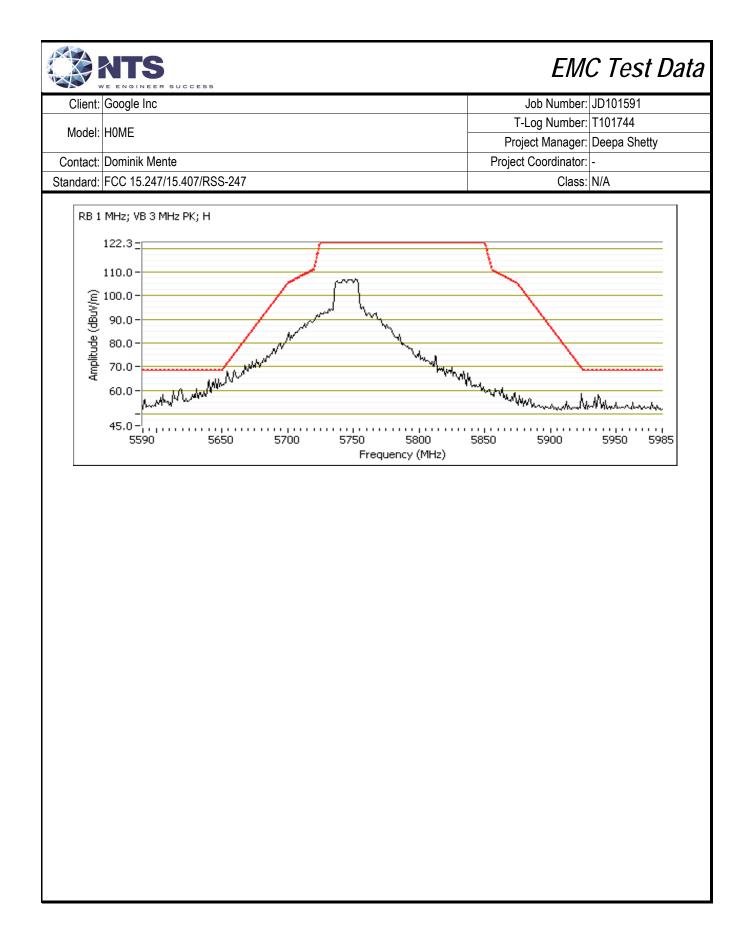
e n e nin ie e	and Euge e	igna nauaia		engin				
Frequency	Level	Pol	15	δ.Ε	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
Power setti	ng = 15							
5470.000	51.4	V	54.0	-2.6	AVG	180	2.3	Note 1
5469.020	67.9	V	74.0	-6.1	PK	180	2.3	Note 1
5470.000	53.2	Н	54.0	-0.8	AVG	238	1.6	Note 1
5469.000	69.5	Н	74.0	-4.5	PK	238	1.6	Note 1



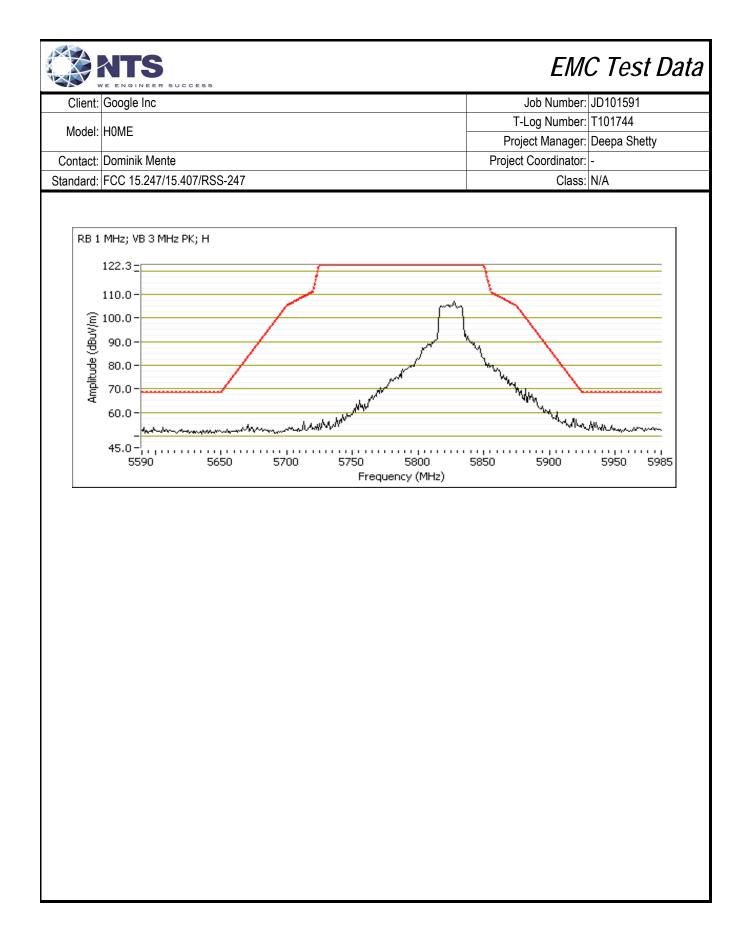


		SUCCESS							C Test Da
Client:	Google Inc							Job Number:	
Model:	HOME				Log Number:				
0	DansinilaMa			Project Manager: Deepa Shetty					
	Dominik Me		0.17				Project Coordinator: - Class: N/A		
Standard:	FCC 15.247	/15.407/RSS	-247					Class:	N/A
hannel:	140 - 5700N	/Hz							
	Antenna 2								
ode:	n20								
ata Rate:	MCS0								
725 MHz I	Band Edge S	Signal Radia	ted Field Sti	renath					
requency		Pol		5.E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
ower setti									
5725.000	50.0	V V	54.0	-4.0	AVG	63	1.7		
5732.540 5725.000	69.6 48.0	V H	74.0 54.0	-4.4 -6.0	PK AVG	63 251	1.7 1.3		
5726.280	67.0	H	74.0	-7.0	PK	251	1.3		
Amplitude (dBuV/m)	45.0-	5730		5740		5 575	Ммфлли 50 53		ин, ці, да лици. 

Client:	Google Inc							Job Number:	JD101591
							T-	Log Number:	
Model:	H0ME							-	Deepa Shetty
Contact:	Dominik Mer	nte					-	Coordinator:	
	FCC 15.247/		6-247				,	Class:	
Run #8: Ra	adiated Band	edge Meas	urements, 5	725-5850MH	Ηz				
1	Date of Test:	7/13/ & 7/20	/16		С	onfig. Used:	1		
	est Engineer:					fig Change:			
T	est Location:	Chamber 7				UT Voltage:		z	
Channel:	149 - 5745M	Hz		Power setti	ng = 18				
Tx Chain:	Antenna 2				0				
Node:	n20								
Data Rate:	MCS0								
Frequency	Level	Pol		5.E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
5653.770 5653.350	68.4 67.9	<u>Н</u> V	71.1 70.8	-2.7 -2.9	PK PK	231 55	1.1 1.5		MHz; VB: 3 MHz MHz; VB: 3 MHz
	MHz; VB 3 M							1. 00, 1.2	
	122.3			- [					
	110.0-			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~		L		
<u> </u>	100.0-			$ \downarrow$	1			<u> </u>	
Amplitude (dBuV/m)	90.0-			and the second	w.				
le (d	80.0-			ANDER	W.V.	a.		$\langle \rangle$	
olituo	00.0-		and and			When .			
Amp	70.0-		Mun				Ч. Л. "	<u> </u>	
	70.0- 60.0- MM	MM						multip	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
	45.0-								- condition of all the
	5590	565	50 5	700 5		0000	5850	5900	5950 5985
					Frequenc	o (MHa)			



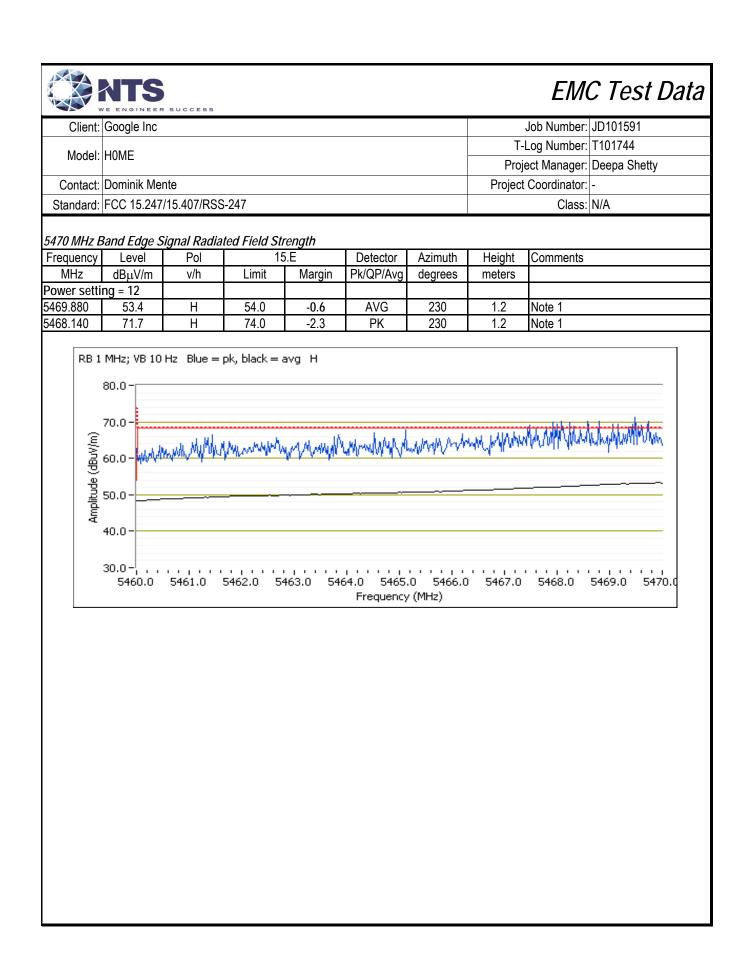
		SUCCESS						EMO	C Test Data
Client:	Google Inc							Job Number:	JD101591
Model	НОМЕ							Log Number:	
				Project Manager: Deepa Shetty					
	Dominik Me				Project	Coordinator:			
Standard:	FCC 15.247	/15.407/RSS	-247					Class:	N/A
	165 - 5825M Antenna 2 n20 MCS0	IHz		Power settin	ng = 17				
requency	Level	Pol	15	5.E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
ower settin		17	60.0	0.0		60	4.0		
5930.930 5926.170	60.1 57.8	V H	68.3 68.3	-8.2 -10.5	PK PK	60 232	<u>1.3</u> 1.0		MHz; VB: 3 MHz MHz; VB: 3 MHz
Amplitude (dBuV/m)	90.0 - 80.0 - 70.0 -	and the second of the second o							
	_				750 S Frequence	0080	5850	5900	5950 5985

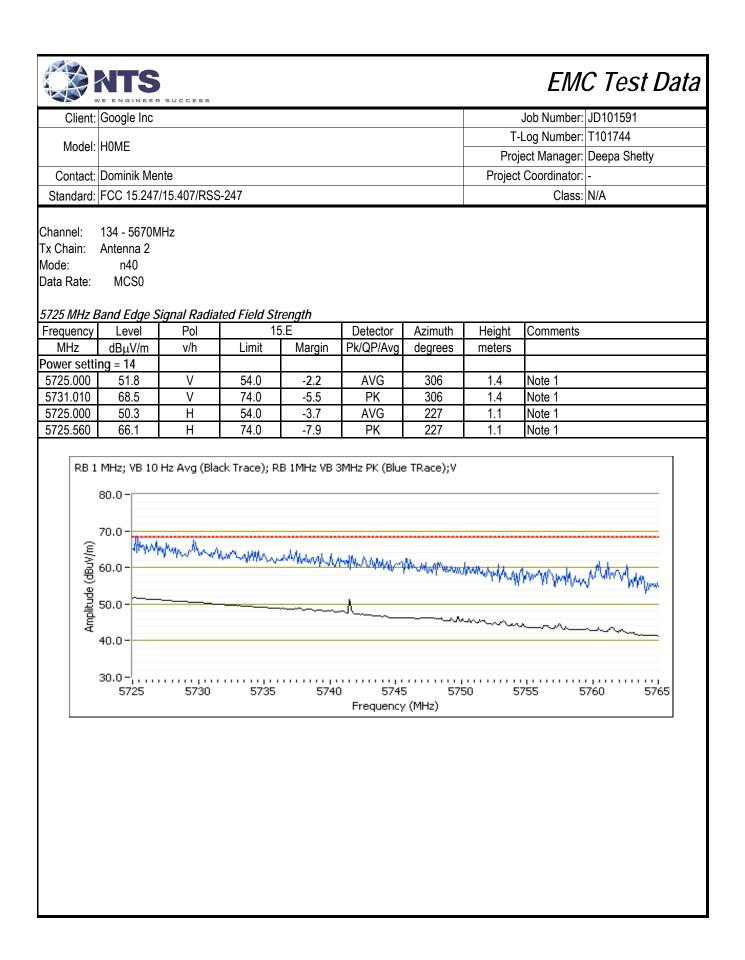


Client:	Google Inc	SUCCESS						Job Number:	ID101591
								Log Number:	
Model:	HOME				-	Deepa Shetty			
Contact.	Dominik Me	nte					-	Coordinator:	
	FCC 15.247		-247				110,000	Class:	
	adiated Ban			150-5250MF	łz			01000.	
		Ū							
	Date of Test:					onfig. Used:			
	est Engineer: est Location:		/ R. vareias			fig Change:	120V / 60Hz	7	
					L	or voltage.	1200 / 00112	<u>_</u>	
Channel:	38 - 5190 M	Hz							
Tx Chain:	Antenna 2								
Mode: Data Rate:	n40 MCS0								
Jala Rale.	INICSU								
5150 MHz E	Band Edge S	Signal Radia	ted Field Sti	rength					
Frequency	Level	Pol		15.209	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
Power setti 5149.920	ing = 13 53.1	V	54.0	-0.9	AVG	158	1.49		
5149.920	71.5	V	74.0	-0.9 -2.5	PK	158	1.49		
5150.000	50.8	Ĥ	54.0	-3.2	AVG	228	1.57		
5146.710	66.7	Н	74.0	-7.3	PK	228	1.57		
RB 1 Amplitude (dBuV/m)	MHz; VB 10 80.0 - 70.0 - 60.0 - 50.0 - 40.0 -	Hz Blue =	pk, black = ;	avg V 					what when the second se

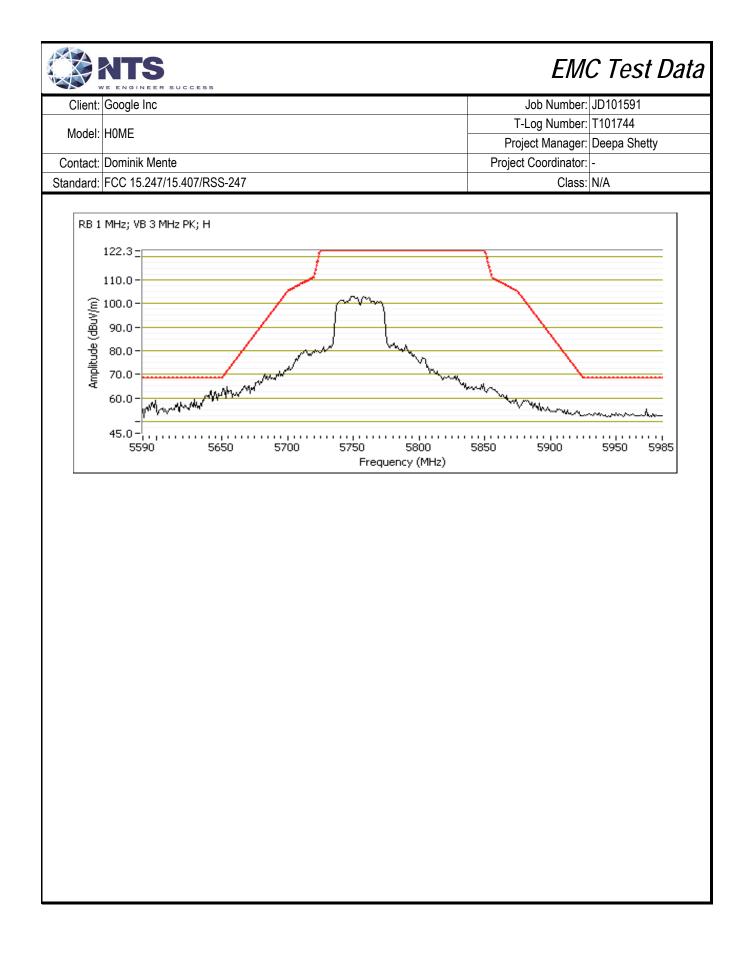
		SUCCESS						EMO	C Test Data
Client	: Google Inc							Job Number:	JD101591
							T-Log Number: T		T101744
Model	: H0ME						Proje	ect Manager:	Deepa Shetty
Contact	: Dominik Mer	nte					Project	Coordinator:	-
Standard	: FCC 15.247	/15.407/RSS	-247					Class:	N/A
Run #10: I	Radiated Ban	dedge Meas	surements,	5250-5350N	IHz				
Te	Date of Test: est Engineer: est Location:	John Caizzi			Con	onfig. Used: ifig Change: UT Voltage:	none	z	
Channel: Fx Chain: Mode: Data Rate:	62 - 5310MH Antenna 2 n40 MCS0 Band Edge S		ted Field Stu	renath					
Frequency		Pol	FCC 1		Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
ower sett	ing = 13								
5350.000	52.9	V	54.0	-1.1	AVG	50	1.86		
5352.080	71.4	V	74.0	-2.6	PK	50	1.86		
5350.080 5351.840	51.8 70.0	H H	54.0 74.0	-2.2 -4.0	AVG PK	229 229	1.26 1.26		
BB BB BB BB BB BB BB BB BB BB BB BB BB	50.0 - 40.0 -	<i>тили</i> ц		MMyymld	5 5370	) 537	<mark>ьф.Аф.</mark>  75 53	//////////////////////////////////////	фил <u>ичичи</u> 385 5390
					Frequency	r (MHz)			

Client	Google Ind	ER SUCCESS						Job Number:	JD101591
		,						Log Number:	
Model:	H0ME								Deepa Shetty
Contact:	Dominik N	ente					_	Coordinator:	-
		7/15.407/RSS	-247				Tiojoot	Class:	N/A
		andedge Mea		5470-5725N	1H7			01035.	IN/74
		indeage mea	Surements,	5470 57250					
		t: 7/14/2016 0				onfig. Used:			
		r: John Caizzi	/ R. Varelas			fig Change:			
T	est Locatior	n: Chamber 7			E	UT Voltage:	120V / 60H	Z	
Channel:	102 - 5510	MH7							
Tx Chain:	Antenna 2								
Mode:	n40								
Data Rate:	MCS0								
5460 MHZ E Frequency	1	Signal Radia Pol		r <i>engtn</i> 15.209	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	Comments	
Power setti		•,	2	margin	i it di <i>n</i> tig	augioco	motoro		
5460.000	53.2	Н	54.0	-0.8	AVG	228	1.23		
5459.520	67.8	Н	74.0	-6.2	PK	228	1.23		
5460.000	51.6	V	54.0	-2.4	AVG	174	2.31		
5460.000	66.4	V	74.0	-7.6	PK	174	2.31		
RB 1	MHz; VB 1	0 Hz Blue =	pk, black = a	avg H					
	80.0								
	00.0								
	70.0-								
Î									1 and
1/2/18	60.0-					-	1.1.4.8	1 AND AND	Malatinhywhy
e (			A	and the set of	marchine	hange the alers	WWWWWWWW	Moto alter i i	
litud	50.0-	menter and the second	t Maca Anthra Ita	Address of a					
Amplitude (dBuV/m)					~			-	
	40.0-		_						
									455 5460
	30.0-, , ,		- 400	5435		) 544	<del>1</del> 5 54	450 5	
	30.0- <mark>,,,</mark> 5420	5425	5430		Frequency	(MHz)			455 5460





Onorit.	Google Inc							Job Number:	JD101591
Model:	HOME							Log Number:	
							-	-	Deepa Shetty
	Dominik Me		0.47				Project	Coordinator:	
	FCC 15.247 Radiated Bar				1117			Class:	N/A
.uii#12. r	aulateu Dai	ideuge mea	surements,	5725-565010	INZ				
	Date of Test:					onfig. Used:			
	est Engineer: est Location:		185			fig Change: UT Voltage:		z	
						Ū			
Channel: x Chain:	151 - 5755M Antenna 2	1Hz		Power setti	ng = 16				
Aode:	n40								
Data Rate:	MCS0								
Frequency	Level	Pol	1:	5.E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
5643.440 5645.940	64.1 62.4	V H	68.3 68.3	-4.2 -5.9	PK PK	50 233	1.7 1.3		MHz; VB: 3 MHz MHz; VB: 3 MHz
0010.010	02.1		00.0	0.0		200	1.0	1 00,1011	
RB 1	MHz; VB 3 N	/Hz PK; V							
	122.3 -								
	110.0-				500				
	100.0-			[	** [				
Amplitude (dBuV/m)	90.0-			. the	L.				
litude	80.0-		1	1 martin		Ъ.			
Amp	70.0		- market population	A*		Monthly	Andy	~	
	60.0 - Aud	n	p.Angew.				an yeers for	the way and	hardenne
	45.0-	iallo col						· ····	-trady have a second
	45.0 - 1 - 1 5590	56	50 53	700 5	5750	5800	5850	5900	5950 5985
					Frequenc	v (MHz)			



	NTS	ER SUCCESS						EMC Test Data
Client:	Google Inc							Job Number: JD101591
Model:							T-	Log Number: T101744
							Proj	ect Manager: Deepa Shetty
	Dominik M						Project	Coordinator: -
Standard:	FCC 15.24	7/15.407/RSS	-247					Class: N/A
channel: ix Chain: lode: Data Rate:	159 - 5795 Antenna 2 n40 MCS0	MHz		Power settir	ng = 16			
requency	Level	Pol	15	.E	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5927.310	63.5	V	68.3	-4.8	PK	55	1.6	POS; RB 1 MHz; VB: 3 MHz
5921.880	60.3	H MHz PK; V	70.6	-10.3	PK	230	1.0	POS; RB 1 MHz; VB: 3 MHz
Amplitude (dBuV/m)	5590	./₩µ.л.л/\//^^ 565 MHz PK; H				5800		1 May Mar
	122.3 <u>-</u> 110.0 - 100.0 - 90.0 -		/	5	, server l	the state of the s	·\u	
Amp	70.0 - 60.0 - 45.0 - , , 5590		Andrew Arek	//////////////////////////////////////	5750 5	5800	5850	14.4 
					Frequenc			

Client	Google Inc	SUCCESS						Job Number:	JD101591
								Log Number:	
Model:	HOME							•	Deepa Shetty
Contact	Dominik Me	nte					-	Coordinator:	
	FCC 15.247		_2/17				Појсог	Class:	
	Radiated Bar			5150 52501	147			01835.	IN/A
un #15. 1		lucuye mea		5150-525010	11 12				
	Date of Test:					onfig. Used:			
	est Engineer:		as			fig Change:			
Т	est Location:	Chamber 7			E	UT Voltage:	120V / 60H	Z	
Channel:	42 - 5210Mł	47							
x Chain:	Antenna 2	12							
lode:	ac80								
ata Rate:	VHT SS1								
	D / - · ·		, , , , , , , , , , , , , , , , , , , ,						
	Band Edge S	<i>ignal Radia</i> Pol		<i>rength</i> 15.209	Detector	Azimuth	Hoight	Comments	
Frequency MHz	Level dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	Height meters	Comments	
Power sett		V/11	Linin	Margin	i ivozi /Avg	ucyrcco	meters		
139.500	50.9	V	54.0	-3.1	AVG	56	1.9		
139.740	66.0	V	74.0	-8.0	PK	56	1.9		
139.500	45.7	Н	54.0	-8.3	AVG	303	1.0		
137.740	60.2	Н	74.0	-13.8	PK	303	1.0		
	80.0 - 75.0 - 70.0 - 65.0 - 55.0 - 55.0 - 45.0 - 45.0 - 40.0 -		μντ <i>κ</i> Ψη			14400/144444444444444444444444444444444			W/www.wyllyn

Client:         Google Inc         Job Number:         Jol 1011591           Model:         H0ME         T-Log Number:         T011744           Project Manager:         Deepa Shetty           Contact:         Dominik Mente         Project Contaction:           Standard:         FCC 15 247/15 407/RSS-247         Class:         N/A           Run #14:         Radiated Bandedge Measurements, 5250-5350MHz         Config. Used: 1         Test Engineer:         Test Engineer:         Rafeel Varelas         Config. Used: 1           Test Engineer:         Rafeel Varelas         Config. Used: 1         Config. Used: 1         Test Engineer:         Test Engineer:         Rafeel Varelas         Config. Used: 1           Channel:         58 - 5290MHz         Kr. Anim:         Antenna 2         Wode:         ac80           Data Rate:         VHT SS1         S350 MHz         Eur Voltage:         120V / 60Hz           S350 MHz         Europic Level         Pol         FCC 15.209         Detector         Azimuth         Height         Comments           MHz         dBiµ/m         V/h         Limit         Margin         PK/OP/Avg         degrees         meters         S360.20         S39.540         51.8         V         54.0         -2.2         AVG			SUCCESS							C Test Da
Model:         HUME         Project Manager:         Deepa Shetty           Contact:         Dominik Mente         Project Coordinator:         -           Standard:         FCC 15.247/15.407/RSS-247         Class:         N/A           un #14:         Radiated Bandedge Measurements, 5250-5350MHz         Class:         N/A           un #14:         Radiated Bandedge Measurements, 5250-5350MHz         Config. Used: 1         Class:         N/A           un #14:         Radiated Jarelas         Config. Used: 1         Class:         N/A           Test Engineer:         Rafel Varelas         Config. Used: 1         Class:         N/A           transference:         Change:         none         EUT Voltage:         120V / 60Hz           thannel:         58 - 5290MHz         X         Chain:         Antenna 2         lode:         ac80           tata Rate:         VHT SS1         330 MHz Band Edge Signal Radiated Field Strength         Frequency         Level         Poi         FCC 15/209         Detector         Azimuth         Height         Comments           MHz         BlyWm         v/h         Limit         Margin         Pk/QP/Avg         degrees         meters           ower setting = 10         S0.00         S1.0         H <td>Client:</td> <td>Google Inc</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Client:	Google Inc								
Project Manager:         Deepa Shetty           Contact:         Dominik Mente         Project Coordinator:         -           Standard:         FCC 15.247/15.407/RSS-247         Class:         N/A           Unn #14:         Radiated Bandedge Measurements, 5250-5350MHz         Config. Used: 1         -           Date of Test:         7/14/2016 0:00         Config. Used: 1         -           Test Engineer:         Rafael Varelas         Config Change: none         -           Test Location:         Chanse:         120V / 60Hz         -           *channel:         58 - 5290MHz         -         -           x Chair:         Antenna 2         -         -         -           idoe:         ac80         -         -         -         -           idata Rate:         VHT SS1         -         -         -         -         -           350.540         51.8         V         54.0         -2.2         AVG         175         1.3         -         -           359.540         51.0         H         54.0         -3.0         AVG         223         1.9         -         -           359.060         67.9         H         74.0         -6.1	Model:	HOME							-	
Standard:         FCC 15.247/15.407/RSS-247         Class:         N/A           tun #14:         Radiated Bandedge Measurements, 5250-5350MHz         Date of Test:         714/2016 0:00         Config. Used: 1           Test Engineer:         Rafael Varelas         Config. Used: 1         Config. Used: 1           Test Engineer:         Rafael Varelas         Config. Change: none         EUT Voltage: 120V / 60Hz           Xchain:         Antenna 2         Voltage: 120V / 60Hz         Voltage: 120V / 60Hz           Xchain:         Antenna 2         Voltage: 120V / 60Hz         Voltage: 120V / 60Hz           Xchain:         Antenna 2         Voltage: 120V / 60Hz         Voltage: 120V / 60Hz           Xchain:         Antenna 2         Voltage: 120V / 60Hz         Voltage: 120V / 60Hz           Xchain:         Antenna 2         Voltage: 120V / 60Hz         Voltage: 120V / 60Hz           Xchain:         Antenna 2         Voltage: 120V / 60Hz         Voltage: 120V / 60Hz           Xstoain:         Antenna 2         Voltage: 120V / 60Hz         Voltage: 120V / 60Hz           Xstoain:         Antenna 2         Voltage: 120V / 60Hz         Voltage: 120V / 60Hz           Xstoain:         Stoain:         Vitteen 2         Voltage: 120V / 60Hz         Voltage: 120V / 60Hz           Xstoain: <t< td=""><td></td><td></td><td>.1.</td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td></t<>			.1.					-		
Run #14:       Radiated Bandedge Measurements, 5250-5350MHz         Date of Test:       7/14/2016 0:00       Config Change: none         Test Engineer:       Rafael Varelas       Config Change: none         Test Location:       Chamber 7       EUT Voltage: 120V / 60Hz         Channel:       58 - 5290MHz       X         X Chain:       Antenna 2         Iode:       ac80         Data Rate:       VHT SS1         3350 MHz       Band Edge Signal Radiated Field Strength         Frequency       Level       Pol         FCC 15.209       Detector       Azimuth         MHz       dBµV/m       v/h         Limit       Margin       Pk/QP/Avg       degrees         MHz       dBµV/m       v/h       Limit       Margin         359.540       51.8       V       54.0       -2.2       AVG       175       1.3         360.260       69.3       V       74.0       -6.1       PK       223       1.9       359.00       67.9       H       74.0       -6.1       PK       223       1.9       359.00         75.0				A 1-				Project		
Date of Test: 7/14/2016 0:00 Test Engineer: Rafael Varelas Test Location: Chamber 7       Config. Used: 1 Config Change: none EUT Voltage: 120V / 60Hz         Shannel:       58 - 5290MHz x Chain: Antenna 2 lode:       EUT Voltage: 120V / 60Hz         Stannel:       58 - 5290MHz x Chain: Antenna 2 lode:       Rest Price Poil         Stan Rate:       VHT SS1         Stan Rate:       VS10         Stan Rate:       VS10 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Class:</td><td>N/A</td></td<>									Class:	N/A
Test Engineer: Rafael Varelas       Config Change: none         Test Location: Chamber 7       EUT Voltage: 120V / 60Hz         Shannel: 58 - 5290MHz       X Chain: Antenna 2         Node:       ac80         Vata Rate: VHT SS1       Stanuth         Stanuth       Height         Comments       MHz         MHz       Band Edge Signal Radiated Field Strength         Trequency       Level         Pol       FCC 15.209         Detector       Azimuth         MHz       dBµV/m         V/h       Limit         Margin       Pk/QP/Avg         Stanuth       Height         Comments       meters         Stanuth       Vh Limit         Margin       Pk/QP/Avg         Stanuth       Height         Stanuth       Yeight         Stanuth       Yei	.un #14: k	adiated Ban	idedge Mea	surements,	5250-5350N	IHZ				
Test Engineer: Rafael Varelas       Config Change: none         Test Location: Chamber 7       EUT Voltage: 120V / 60Hz         Ithannel: 58 - 5290MHz       X Chain: Antenna 2         Node:       ac80         Iata Rate: VHT SS1       3350 MHz Band Edge Signal Radiated Field Strength         Trequency       Level         Pol       FCC 15.209         Detector       Azimuth         Height       Comments         MHz       dBµV/m         V/h       Limit         Margin       PK/QP/Avg         ass.540       51.8         350.260       69.3         0.11       H         359.060       67.9         H       74.0         -6.1       PK         223       1.9         359.060       67.9         H       74.0         -6.1       PK         223       1.9         359.060       67.9         -70.0       -70.0         -70.0       -70.0         -70.0       -70.0         -70.0       -70.0         -70.0       -70.0         -70.0       -70.0         -70.0       -70.0	ſ	Date of Test:	7/14/2016 0	:00		C	onfia. Used:	1		
Test Location: Chamber 7       EUT Voltage: 120V / 60Hz         Channel:       58 - 5290MHz         x Chain:       Antenna 2         Jode:       ac80         Jata Rate:       VHT SS1         3350 MHz Band Edge Signal Radiated Field Strength         Frequency       Level       Pol         FCC 15.209       Detector       Azimuth       Height         Comments       MHz       dBµV/m       v/h       Limit         MHz       dBµV/m       v/h       Limit       Margin       Pk/QP/Avg       degrees         ower setting = 10       D       Comments       D       D       D       D       D         389.540       51.8       V       54.0       -2.2       AVG       175       1.3       D							-			
x Chain:       Antenna 2         tode:       ac80         ata Rate:       VHT SS1         3350 MHz Band Edge Signal Radiated Field Strength         Frequency       Level       Pol       FCC 15.209       Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/h       Limit       Margin       Pk/QP/Avg       degrees       meters									Z	
X Chain:       Antenna 2         Mode:       ac80         Jata Rate:       VHT SS1         5350 MHz Band Edge Signal Radiated Field Strength         Frequency       Level       Pol         FCC 15.209       Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/h       Limit       Margin       Pk/QP/Avg       degrees       meters         Power setting = 10       -       -       -       -       -       -       -         2000       69.3       V       74.0       -4.7       PK       175       1.3       -										
Mode:       ac80         Data Rate:       VHT SS1         5350 MHz Band Edge Signal Radiated Field Strength       Ercquency       Level       Pol       FCC 15.209       Detector       Azimuth       Height       Comments         MHz       dBµV/m       V/h       Limit       Margin       Pk/VQP/Avg       degrees       meters       Powersetting = 10         S359.540       51.8       V       54.0       -2.2       AVG       175       1.3         S360.260       69.3       V       74.0       -4.7       PK       175       1.3         S360.100       51.0       H       54.0       -3.0       AVG       223       1.9         S359.060       67.9       H       74.0       -6.1       PK       223       1.9         S359.060       67.9       H       74.0       -6.1       PK       223       1.9         S359.060       67.9       H       74.0       -6.1       PK       223       1.9         S0.0			lz							
Data Rate:       VHT SS1         5350 MHz Band Edge Signal Radiated Field Strength         Frequency       Level       Pol       FCC 15.209       Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/h       Limit       Margin       Pk/QP/Avg       degrees       meters         Ower setting = 10       V       54.0       -2.2       AVG       175       1.3         3359.540       51.8       V       54.0       -2.2       AVG       175       1.3         360.260       69.3       V       74.0       -4.7       PK       175       1.3         360.100       51.0       H       54.0       -3.0       AVG       223       1.9         3359.060       67.9       H       74.0       -6.1       PK       223       1.9         RB 1 MHz; VB 10 Hz Avg (Black Trace); RB 1MHz VB 3MHz PK (Blue Trace); V       80.0       -70.0       -75.0       -75.0       -75.0         9       50.0       -75.0       -75.0       -75.0       -75.0       -75.0       -75.0       -75.0         9       50.0       -75.0       -75.0       -75.0       -75.0       -75.0       -75.0       -75.0										
S350 MHz Band Edge Signal Radiated Field Strength         Frequency       Level       Pol       FCC 15.209       Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/h       Limit       Margin       Pk/QP/Avg       degrees       meters         Jower setting = 10       Image: Comments       Image: Comments       Image: Comments       Image: Comments         359.540       51.8       V       54.0       -2.2       AVG       175       1.3         360.260       69.3       V       74.0       -4.7       PK       175       1.3         360.100       51.0       H       54.0       -3.0       AVG       223       1.9         359.060       67.9       H       74.0       -6.1       PK       223       1.9         Other Avg (Black Trace); RB 1MHz VB 3MHz PK (Blue Trace);V         0										
Frequency         Level         Pol         FCC 15.209         Detector         Azimuth         Height         Comments           MHz         dBµV/m         v/h         Limit         Margin         Pk/QP/Avg         degrees         meters										
MHz         dBµV/m         V/h         Limit         Margin         Pk/QP/Avg         degrees         meters           Power setting = 10									I -	
Dower setting = 10       0									Comments	
3359.540       51.8       V       54.0       -2.2       AVG       175       1.3         360.260       69.3       V       74.0       -4.7       PK       175       1.3         360.100       51.0       H       54.0       -3.0       AVG       223       1.9         359.060       67.9       H       74.0       -6.1       PK       223       1.9         359.060       67.9       H       74.0       -6.1       PK       223       1.9         80.0       -       -       -       -       65.0       -       -       -         70.0       -       -       -       -       -       -       -       -         90       55.0       -       -       -       -       -       -       -         91       55.0       -			v/h	Limit	Margin	PK/QP/Avg	degrees	meters		
360.260       69.3       V       74.0       -4.7       PK       175       1.3         360.100       51.0       H       54.0       -3.0       AVG       223       1.9         359.060       67.9       H       74.0       -6.1       PK       223       1.9         RB 1 MHz; VB 10 Hz Avg (Black Trace); RB 1MHz VB 3MHz PK (Blue Trace); V       80.0       -       -       -         70.0       -       -       -       -       -       -       -       -         9       55.0       -			V	54.0	-2.2	AVG	175	13		
360.100       51.0       H       54.0       -3.0       AVG       223       1.9         359.060       67.9       H       74.0       -6.1       PK       223       1.9         RB 1 MHz; VB 10 Hz Avg (Black Trace); RB 1MHz VB 3MHz PK (Blue Trace); V         80.0       -										
RB 1 MHz; VB 10 Hz Avg (Black Trace); RB 1MHz VB 3MHz PK (Blue Trace); V         80.0         75.0         70.0         65.0         Multiple         65.0         Multiple         65.0         Multiple         65.0         Multiple         65.0         Multiple         60.0         90         50.0			Н							
80.0 - 75.0 - 70.0 - (w) 65.0 - 60.0 - 9010 - 55.0 - 50.0 -	359.060	67.9	Н	74.0	-6.1	PK	223	1.9		
40.0 - 35.0 -	Amplitude (dBuv/m)	80.0 - 75.0 - 65.0 - 65.0 - 55.0 - 55.0 - 50.0 - 45.0 - 40.0 - 35.0 -	www.v^d/www 		/~~~~	5 5370	······································		·	

# Client: Google Inc Job Number: JD101591 Model: HOME T-Log Number: T101744 Contact: Dominik Mente Project Manager: Deepa Shetty Standard: FCC 15.247/15.407/RSS-247 Class: N/A

## Run #15: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 7/14/2016 0:00 Test Engineer: Rafael Varelas Test Location: Chamber 7

Config. Used: 1 Config Change: none EUT Voltage: 120V / 60Hz

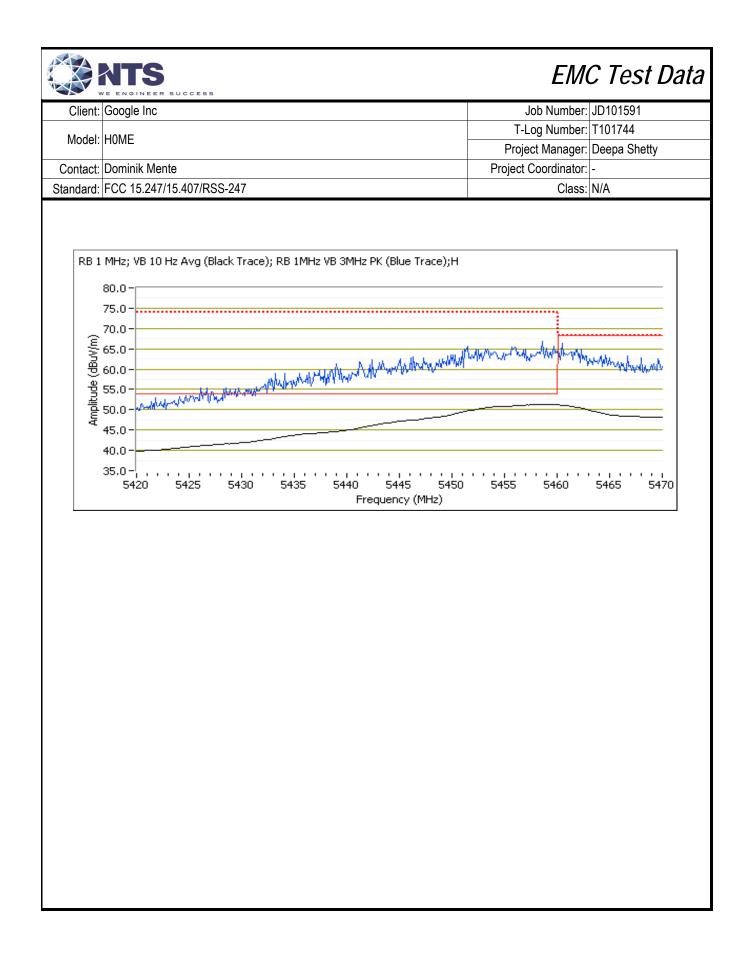
Channel: 106 - 5530MHz Tx Chain: Antenna 2 Mode: ac80 Data Rate: VHT SS1

### *5460 MHz Band Edge Signal Radiated Field Strength*

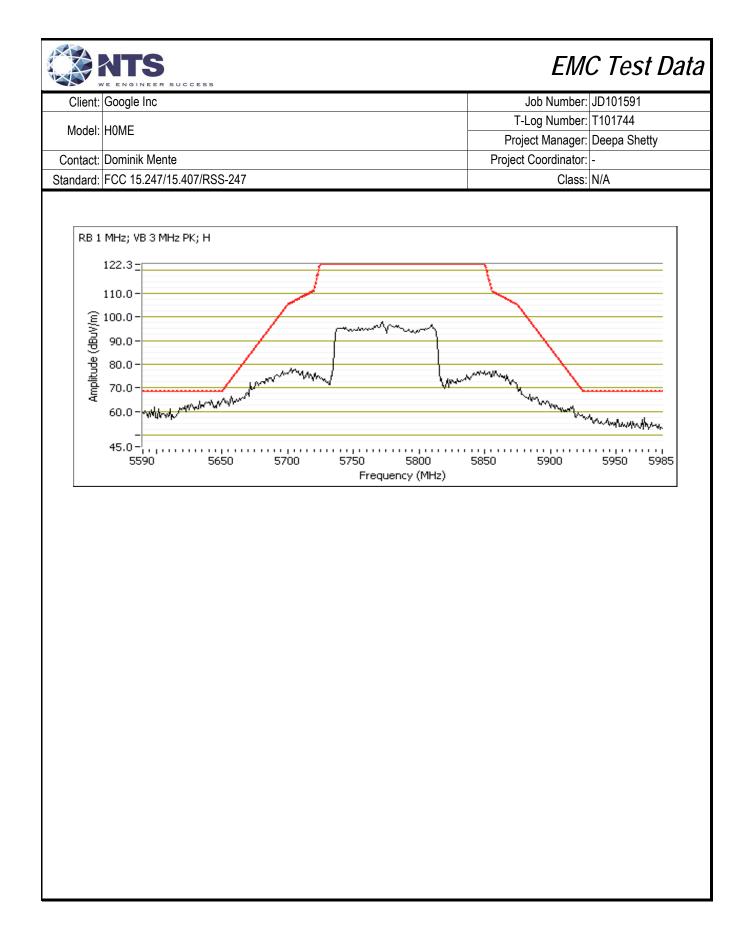
		3						
Frequency	Level	Pol	FCC 1	5.209	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
Power setti	ng = 8							
5459.440	51.4	V	54.0	-2.6	AVG	41	2.0	
5457.270	66.0	V	74.0	-8.0	PK	41	2.0	
5459.280	51.4	Н	54.0	-2.6	AVG	224	1.2	
5456.470	66.6	Н	74.0	-7.4	PK	224	1.2	

### 5470 MHz Band Edge Signal Radiated Field Strength

		5		<u> </u>				
Frequency	Level	Pol	15	5.E	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
Power setti	ng = 8							
5460.020	51.2	V	54.0	-2.8	AVG	41	2.0	note 1
5460.100	66.5	V	74.0	-7.5	PK	41	2.0	note 1
5460.240	51.4	Н	54.0	-2.6	AVG	224	1.2	note 1
5460.280	66.8	Н	74.0	-7.2	PK	224	1.2	note 1



Google I	nc					1	Job Number:	JD101591
						T-I	Log Number:	T101744
						Proje	ect Manager:	Deepa Shetty
						Project		
FCC 15.	247/15.407/RSS	-247					Class:	N/A
adiated	Bandedge Mea	surements,	5725-5850N	lHz				
)ata of T	oct: 7/1/ & 7/20/	16		C	onfia Llead	1		
							z	
			Power setti	ng = 13				
					<b>.</b>			
			1				Comments	
				2				
		69.9	-5.9	PK	54	1.8		
		68.3	-2.9	PK	232	1.0		
60.8	H	70.0	-9.2	PK	232	1.0		
MULTER UT								
MHZ; VE	6 3 MHZ PK; V							
122.3 -			- [					
110.0-						~		
			ſ	man grand	m		$\backslash$	
90.0-								
80.0-		- mark	man		and the second	Jun Mr.		
70.0-			· · · ·		W	- on the	Wheel is	
60.0-	harmonterfaither	JI'NY <sup>C</sup>					- man water	Marchard I. H.
-								
45.0-1 559				5750	5800	5850	5900	5950 5985
. JJ:	×0 50,		,00 .	Frequenc		3030	3900	3930 3903
	H0ME Dominik FCC 15. adiated Date of To st Engine st Locati 155 - 57 Antenna ac80 VHT SS Level dBµV/ 64.8 64.0 65.4 60.8 MH2; VE 122.3 = 110.0 - 90.0 - 80.0 - 70.0 - 60.0 - -	Dominik Mente           FCC 15.247/15.407/RSS           adiated Bandedge Meas           Date of Test: 7/14 & 7/20/           st Engineer: Rafael Vare           est Location: Chamber 7           155 - 5775MHz           Antenna 2           ac80           VHT SS1           Level         Pol           dBµV/m         v/h           64.8         V           64.0         V           65.4         H           60.8         H           MHz; VB 3 MHz PK; V           122.3 =           110.0 -           90.0 -           80.0 -           70.0 -           60.0 -	Google Inc         H0ME         Dominik Mente         FCC 15.247/15.407/RSS-247         adiated Bandedge Measurements,         Date of Test: 7/14 & 7/20/16         st Engineer: Rafael Varelas         est Location: Chamber 7         155 - 5775MHz         Antenna 2         ac80         VHT SS1         Level       Pol         14       68.3         64.0       V         69.9         65.4       H         68.3         60.8       H         70.0         80.0         70.0         60.0         400	Google Inc           H0ME           Dominik Mente           FCC 15.247/15.407/RSS-247           adiated Bandedge Measurements, 5725-5850W           Date of Test: 7/14 & 7/20/16           st Engineer: Rafael Varelas           set Location: Chamber 7           155 - 5775MHz           Antenna 2           ac80           VHT SS1             Level         Pol         15.E           dBµV/m         v/h         Limit         Margin           64.8         V         68.3         -3.5           64.0         V         69.9         -5.9           65.4         H         68.3         -2.9           60.8         H         70.0         -9.2   MHz; VB 3 MHz PK; V	H0ME         Dominik Mente         FCC 15.247/15.407/RSS-247         adiated Bandedge Measurements, 5725-5850MHz         Date of Test: 7/14 & 7/20/16       C         st Engineer: Rafael Varelas       Cor         st Location: Chamber 7       E         155 - 5775MHz       Power setting = 13         Antenna 2       ac80         VHT SS1       Velocation         Level       Pol       15.E       Detector         dBµV/m       v/h       Limit       Margin       Pk/QP/Avg         64.8       V       68.3       -3.5       PK         65.4       H       68.3       -2.9       PK         60.8       H       70.0       -9.2       PK         90.0       -       -       -       -         90.0       -       -       -       -       -         60.0       -       -       -       -       -       -         90.0       -       -       -       -       -       -       -         60.0       -       -       -       -       -       -       -       -         60.0       -       -       -	Google Inc           H0ME           Dominik Mente           FCC 15.247/15.407/RSS-247           adiated Bandedge Measurements, 5725-5850MHz           Date of Test: 7/14 & 7/20/16         Config. Used:           st Engineer: Rafael Varelas         Config Change:           st Location: Chamber 7         EUT Voltage:           155 - 5775MHz         Power setting = 13           Antenna 2         ac80           VHT SS1         Level           Level         Pol           15.E         Detector           Azimuth         dBµV/m           dBµV/m         V/h           Limit         Margin           PK/QP/Avg         degrees           64.8         V           66.4         H           66.4         H           70.0         -9.2           PK         232           MHz; VB 3 MHz PK; V         122.3           10.0         Mum           60.0         Mum           60.0         Mum           60.0         Mum           60.0         Mum	Image: Constraint of the system         T           H0ME         Project           Dominik Mente         Project           FCC 15.247/15.407/RSS-247         adiated Bandedge Measurements, 5725-5850MHz           Date of Test: 7/14 & 7/20/16         Config. Used: 1           st Engineer: Rafael Varelas         Config Change: none           st Location: Chamber 7         EUT Voltage: 120V / 60H:           155 - 5775MHz         Power setting = 13           Antenna 2         ac80           VHT SS1         Evel           Level         Pol         15.E           Detector         Azimuth         Height           dBµV/m         v/h         Limit           Margin         Pk/QP/Avg         degrees           64.8         V         68.3         -3.5           64.8         V         68.3         -2.9           MHz; VB 3 MHz PK; V         122.3         1.0           00.0         -         -         -           00.0         -         -         -         -           00.0         -         -         -         -         -           00.0         -         -         -         -         -         -     <	HOME         T-Log Number: Project Manager:           Dominik Mente         Project Coordinator:           FCC 15.247/15.407/RSS-247         Class:           adiated Bandedge Measurements, 5725-5850MHz         Class:           adiated Bandedge Measurements, 5725-5850MHz         Config. Used: 1           St Engineer: Rafael Varelas         Config Change: none           est Location: Chamber 7         EUT Voltage: 120V / 60Hz           155 - 5775MHz         Power setting = 13           Antenna 2         ac80           VHT SS1         Margin           Evel         Pol           15.E         Detector           64.8         V           64.8         V           64.0         V           65.4         H           66.4         H           66.8         H           70.0         -9.2           PK         232           10.0         -           10.0         -           90.0         -



# EMC Test Data

Model: H Contact: D	Dominik Mer CC 15.247	nte /15.407/RSS	-247			Job Number: T-Log Number: Project Manager:	T101744
Contact: D	Dominik Mer CC 15.247		-247			Project Manager:	
Contact: D	Dominik Mer CC 15.247		-247			•	Deepa Shetty
	CC 15.247		-247				
Standard: F		/15.407/RSS	-247			Project Coordinator:	
	D					Class:	N/A
Fest Speci			and FCC	15.407 (	UNII) Radiated Sp	ourious Emissior	IS
·	Objective:				perform final qualification	n testing of the EUT with	respect to the
	all local su	pport equipm			turntable for radiated spur located 3 meters from the		noted.
Ambient C		Te Re	emperature: el. Humidity:				
Summary o	of Result	S					
Run #	Mode	Channel	Target Power	Passing Power	Test Performed	Limit	Result / Margin
Scans on "cer	nter" chann	el in all four (	(dBm) OFDM mode	Setting s to determin	ne the worst case mode.		
	a	40 - 5200MHz	-	19			45.9 dBµV/m @ 20800.1 MHz (-8.1 d
1	n20	40 - 5200MHz	-	19	Radiated Emissions,	FCC 15.209 / 15 E	44.5 dBµV/m @ 20800.0 MHz (-9.5 d
	n40	38 - 5190MHz	-	16	1 - 40 GHz		44.0 dBµV/m @ 20760.0 MHz (-10.0 d 45.2 dBu\//m @
	ac80	42 - 5210MHz	-	13			45.3 dBµV/m @ 20840.0 MHz (-8.7 d
leasurement	ts on low ar	nd high chanr	nels in worst	case OFDM	mode.		• • •
2	а	36 - 5180MHz	-	17	Radiated Emissions,	FCC 15.209 / 15 E	45.7 dBµV/m @ 20720.0 MHz (-8.3 d
-	а	48 - 5240MHz	-	19	1 - 40 GHz		56.5 dBµV/m @ 10484.9 MHz (-11.8 d

**NTS** 

Client:         Google Inc         Job Number:         JD101591           Model:         H0ME         T-Log Number:         T101744           Project Manager:         Deepa Shetty           Contact:         Dominik Mente         Project Coordinator:           Standard:         FCC 15.247/15.407/RSS-247         Class:         N/A           Scans on "center" channel in all four OFDM modes to determine the worst case mode.         40.9 dBµV/m( MHz (-13.1 44.0 dBµV)         MHz (-13.1 44.0 dBµV/ 10600.5 MHz (- 38.2 dBµV/m( 41.0 dBµV/m( 42.4 dBµV/m( 42.4 dBµV/m( 1064.5 MHz (- 38.2 dBµV/m( 41.0 dBµV/m( 42.4 dBµV/m( 42.4 dBµV/m( 1064.5 MHz (- 38.2 dBµV/m( 41.0 dBµV/m( 42.4 dBµV/m( 1064.5 MHz (- 42.4 dBµV/m( 1064.5 MHz (- 47.3 dBµV/m( 45.5 dBµV/m( 11160.1 MHz (- 45.5 dBµV/m( 11160.1 MHz (- 44.3 dBµV/m( 11160.0 MHz (- 44.3 dBµV/m( 44.3 dBµV/m(	
Model:         HUME         Project Manager:         Deepa Shetty           Contact:         Dominik Mente         Project Coordinator:         -           Standard:         FCC 15.247/15.407/RSS-247         Class:         N/A           cans on "center" channel in all four OFDM modes to determine the worst case mode.         40.9 dBµV/m ( MHz (-13.1)         40.9 dBµV/m ( MHz (-13.1)           a         60 - 5300MHz         -         19         Radiated Emissions, 1 - 40 GHz         FCC 15.209 / 15 E         40.9 dBµV/m ( MHz (-13.1)           a         5200MHz         -         19         Radiated Emissions, 1 - 40 GHz         FCC 15.209 / 15 E         40.9 dBµV/m ( MHz (-13.0)           teasurements on low and high channels in worst-case OFDM mode.         52.00MHz         -         14         140 GHz           f         n20         52 -         19         Radiated Emissions, 1 - 40 GHz         FCC 15.209 / 15 E         57.0 dBµV/ 10514.3 MHz (- 42.4 dBµV/ 10640.5 MHz (- 45.5 dBµV/ 11160.1 MHz (- 45.5 dBµV/ 11160.1 MHz (- 45.5 dBµV/ 11160.1 MHz (- 45.5 dBµV/ 11160.1 MHz (- 44.3 dBµV/ 11160.0 MHz (- 44.3 dBµV/ 11160.0 MHz (- 44.3 dBµV/ 11160.0 MHz (- 44.3 dBµV/ 11160.0 MHz (- 44.3 dBµV/	
Contact:         Dominik Mente         Project Manager:         Deepa Shetty           Standard:         FCC 15.247/15.407/RSS-247         Class:         NA           cans on "center" channel in all four OFDM modes to determine the worst case mode.         40.9 dBµV/m ( MHz (-13.1 44.0 dBµV/ 1060.5 MHz (-13.1 44.0 dBµV/ 1060.5 MHz (-13.1 44.0 dBµV/ 1060.5 MHz (-13.1 44.0 dBµV/ 1060.5 MHz (-13.1 44.0 dBµV/m ( 38.2 dBµV/ 21101.1 MHz (- 38.2 dBµV/ 21101.1 MHz (- 41.0 dBµV/m (0 MHz (-13.1 44.0 dBµV/m (0 MHz (-13.1 44.0 dBµV/m (0 MHz (-13.1 44.0 dBµV/m (0 MHz (-13.1 44.0 dBµV/m (0 MHz (-13.1)           4         n20         58 - 5290MHz         -         14           1         -         17         Radiated Emissions, 1 - 40 GHz         FCC 15.209 / 15 E         57.0 dBµV/ 10514.3 MHz (- 42.4 dBµV/ 10640.5 MHz (- 42.4 dBµV/ 11160.1 MHz (- 45.5 dBµV/ 11160.1 MHz (- 44.3 dBµV/ 11160.1 MHz (- 44.3 dBµV/ 11160.1 MHz (- 44.3 dBµV/	
Standard:         FCC 15.247/15.407/RSS-247         Class:         N/A           cans on "center" channel in all four OFDM modes to determine the worst case mode.         40.9 dBµV/m ( MHz (-13.1 44.0 dBµV/ 10600.5 MHz (- 38.2 dBµV/ 21101.1 MHz (- 38.2 dBµV/ 21101.1 MHz (- 38.2 dBµV/ 21101.1 MHz (- 41.0 dBµV/ 10600.5 MHz (- 38.2 dBµV/ 21101.1 MHz (- 41.0 dBµV/ 10514.3 MHz (- 41.0 dBµV/ 10514.3 MHz (- 42.4 dBµV/ 10514.3 MHz (- 42.4 dBµV/ 10640.5 MHz (- 3300MHz - 10640.5 MHz (- 10640.5 MHz (- 42.4 dBµV/ 10640.5 MHz (- 46.1 dBµV/ 11160.1 MHz (- 46.1 dBµV/ 11160.1 MHz (- 45.5 dBµV/ 11160.1 MHz (- 45.5 dBµV/ 11100.0 MHz (- 44.3 dBµV/ 1100.0 MHz (- 44.3 dBµV/ 1100	
$\frac{a}{5300MHz} = \frac{a}{5300MHz} = \frac{a}{116} + \frac{a}{5200MHz} = \frac{a}{116} + \frac{a}{5580MHz} = \frac{a}{17} + \frac{a}{110} +$	
$3 \frac{\begin{vmatrix} a & 60 - & - & 19 \\ 5300MHz & - & 19 \\ \hline n20 & 5300MHz & - & 19 \\ \hline n40 & 54 - & - & 17 \\ \hline ac80 & 58 - & - & 14 \\ \hline ac80 & 58 - & - & 14 \\ \hline \hline ac80 & 5290MHz & - & 14 \\ \hline \hline ac80 & 5290MHz & - & 14 \\ \hline \hline ac80 & 5290MHz & - & 14 \\ \hline \hline ac80 & 52 - & - & 19 \\ \hline n20 & 64 - & - & 19 \\ \hline n20 & 64 - & - & 17 \\ \hline cans on "center" channel in all four OFDM modes to determine the worst case mode. \\ \hline \hline ac80 & 5580MHz & - & 19 \\ \hline n20 & 64 - & - & 17 \\ \hline cans on "center" channel in all four OFDM modes to determine the worst case mode. \\ \hline \hline ac80 & 116 - & - & 19 \\ \hline n20 & 116 - & - & 19 \\ \hline n20 & 116 - & - & 19 \\ \hline n40 & 110 - & - & 17 \\ \hline \hline n40 & 110 - & - & 17 \\ \hline \hline n40 & 110 - & - & 17 \\ \hline \hline n40 & 110 - & - & 17 \\ \hline \hline n40 & 110 - & - & 17 \\ \hline \hline n40 & 110 - & - & 17 \\ \hline \hline n40 & 110 - & - & 17 \\ \hline \hline n40 & 110 - & - & 17 \\ \hline \hline n40 & 110 - & - & 17 \\ \hline \hline n40 & 106 - & & 17 \\ \hline \hline \hline n40 & 106 - & & 17 \\ \hline \hline \hline \hline n40 & 110 - & - & 17 \\ \hline \hline \hline \hline n40 & 110 - & - & 17 \\ \hline \hline \hline \hline \hline n40 & 110 - & - & 17 \\ \hline \hline \hline \hline \hline n40 & 100 - & & & 17 \\ \hline \hline \hline \hline \hline \hline \hline n40 & 110 - & - & 17 \\ \hline \hline \hline \hline \hline \hline \hline \hline \hline n40 & 110 - & - & 17 \\ \hline \hline \hline \hline \hline \hline \hline \hline n40 & 110 - & - & 17 \\ \hline $	
$3 \begin{array}{ c c c c c c c c } \hline a & 60 & - & 19 \\ \hline n20 & 5300 \text{MHz} & - & 19 \\ \hline n20 & 5300 \text{MHz} & - & 19 \\ \hline n40 & 54 & - & 17 \\ \hline ac80 & 58 & - & 14 \\ \hline ac80 & 58 & - & 14 \\ \hline \hline ac80 & 5290 \text{MHz} & - & 14 \\ \hline \hline ac80 & 5290 \text{MHz} & - & 14 \\ \hline \hline ac80 & 5290 \text{MHz} & - & 14 \\ \hline \hline ac80 & 5290 \text{MHz} & - & 14 \\ \hline \hline ac80 & 5290 \text{MHz} & - & 14 \\ \hline \hline ac80 & 5290 \text{MHz} & - & 14 \\ \hline \hline ac80 & 5290 \text{MHz} & - & 14 \\ \hline \hline ac80 & 520 \text{MHz} & - & 19 \\ \hline n20 & 64 & - & 17 \\ \hline ac80 & 64 & - & 17 \\ \hline ac80 & 520 \text{MHz} & - & 17 \\ \hline \hline ac80 & 526 \text{OMHz} & - & 19 \\ \hline ac80 & 5260 \text{MHz} & - & 19 \\ \hline ac80 & 5260 \text{MHz} & - & 17 \\ \hline \hline ac80 & 5260 \text{MHz} & - & 17 \\ \hline \hline ac80 & 5580 \text{MHz} & - & 17 \\ \hline \hline ac80 & 5580 \text{MHz} & - & 17 \\ \hline ac80 & 5580 \text{MHz} & - & 19 \\ \hline ac80 & 16 & - & 19 \\ \hline ac80 & 5580 \text{MHz} & - & 19 \\ \hline ac80 & 16 & - & 19 \\ \hline ac80 & 16 & - & 19 \\ \hline ac80 & 116 & - & 19 \\ \hline ac80 & 116 & - & 19 \\ \hline ac80 & 116 & - & 19 \\ \hline ac80 & 110 & - & 17 \\ \hline ac80 & 110 & - & 17 \\ \hline bcc & 1006 & - & 17 \\ \hline construct & c$	
$3 \begin{array}{ c c c c c c c c } \hline a & 5300 \text{MHz} & - & 19 \\ \hline n20 & 60 & - & 19 \\ \hline n20 & 5300 \text{MHz} & - & 19 \\ \hline n40 & 54 & - & 17 \\ \hline ac80 & 58 & - & 14 \\ \hline \end{array} \begin{array}{ c c c c c } \hline rack & 5270 \text{MHz} & - & 17 \\ \hline ac80 & 58 & - & 14 \\ \hline \end{array} \begin{array}{ c c c } \hline rack & 5270 \text{MHz} & - & 14 \\ \hline \end{array} \end{array} \begin{array}{ c c } \hline \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	dB)
$\frac{1}{160.1} + \frac{1}{100} + $	-10.0 c
$\frac{ac80}{4} = \frac{5290 \text{MHz}}{5290 \text{MHz}} = \frac{14}{14} + \frac{14}{14}$	-15.8 c
$4 \frac{n20}{n20} \frac{52}{5260MHz} - \frac{19}{10514.3 MHz} (-\frac{19}{10514.3 MHz}) = \frac{19}{10514.3 MHz} Radiated Emissions, 1 - 40 GHz} FCC 15.209 / 15 E \frac{57.0 dB\muV}{10514.3 MHz} (-\frac{42.4 dB\muV}{10640.5 MHz}) = \frac{10514.3 MHz}{10640.5 MHz} (-\frac{10514.3 MHz}{10640.5 MHz}) = \frac{10514.3 MHz}{10640.5 MHz} = \frac{10514.3 MHz}{10640.5 MHz} (-\frac{10514.3 MHz}{10640.5 MHz}) = \frac{10514.3 MHz}{10640.5 MHz} = \frac{10514.3 MHz}{10640.5 MHz} (-\frac{10514.3 MHz}{10640.5 MHz}) = \frac{10514.3 MHz}{10640.5 MHz} = \frac{10514.3 MHz}{11160.1 MHz} = \frac{10514.3 MHz}{11100.0 MHz} = \frac{10514.3 MHz}{1100.0 M$	-
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	ma
n20         5320MHz         -         17         10640.5 MHz (-           cans on "center" channel in all four OFDM modes to determine the worst case mode.         47.3 dBµV/           a         116 - 5580MHz         -         19           n20         5580MHz         -         19           n20         5580MHz         -         19         Radiated Emissions, 1 - 40 GHz         FCC 15.209 / 15 E         47.3 dBµV/ 11160.1 MHz (-           5         n40         110 - 5550MHz         -         17         Radiated Emissions, 1 - 40 GHz         FCC 15.209 / 15 E         47.3 dBµV/ 11100.0 MHz (-	-11.3 c
a         116 - 5580MHz         -         19         47.3 dBµV/ 11160.1 MHz ( 46.1 dBµV/ 11160.1 MHz ( 46.1 dBµV/ 11160.1 MHz ( 46.1 dBµV/ 11160.1 MHz ( 45.5 dBµV/ 11100.0 MHz ( 45.5 dBµV/ 11100.0 MHz ( 44.3 dBµV/ 11100.0 MHz ( 44.3 dBµV/ 11100.0 MHz ( 44.3 dBµV/ 11100.0 MHz ( 44.3 dBµV/	-
a     5580MHz     -     19       n20     116 - 5580MHz     -     19       n20     5580MHz     -     19       n40     110 - 5550MHz     -     17       n40     106 - 5550MHz     -     17   FCC 15.209 / 15 E	m
5 <u>n20</u> <u>5580MHz</u> - <u>19</u> n40 <u>106</u> - <u>17</u> <u>106</u> - <u>17</u> <u>106</u> - <u>17</u> <u>106</u> - <u>17</u> <u>106</u> - <u>17</u> <u>106</u> - <u>11160.1 MHz</u> ( <u>11160.1 MHz</u> ( <u>45.5 dBµV/</u> <u>11100.0 MHz</u> ( <u>44.3 dBµV/</u>	(-6.7 d
n40 5550MHz - 17 11100.0 MHz ( 106 - 44.3 dBuV/	(-7.9 d
44.3 dBμV/	(-8.5 d
ac80 5530MHz - 14 11060.0 MHz (	
easurements on low and high channels in worst-case OFDM mode.	
a         100 - 5500MHz         -         19         Radiated Emissions,         FCC 15.209 / 15 E         41.5 dBµV/ 10999.9 MHz (-           6         -         -         19         Radiated Emissions,         FCC 15.209 / 15 E         10999.9 MHz (-	-12.5 c
a 144- 5720MHz - 19 1 - 40 GHz 1 - 60 13.203 / 13 L 44.8 dBµV/ 11440.0 MHz (	

		RSUCCESS				EM	C Test Data
Client:	Google Inc					Job Number	: JD101591
N4. 1.1						T-Log Number	: T101744
Model:	HUME					Project Manager	: Deepa Shetty
Contact:	Dominik Me	ente				Project Coordinator	: -
Standard:	FCC 15.247	7/15.407/RSS	-247			Class	: N/A
Scans on "c	enter" chanr	nel in all four (	OFDM mode	es to determin	ne the worst case mode.		
	а	157 - 5785MHz	-	18			45.0 dBµV/m @ 11570.0 MHz (-9.0 dB)
7	n20	157 - 5785MHz	-	18	Radiated Emissions,		44.2 dBµV/m @ 11570.0 MHz (-9.8 dB)
Ι	n40	151 - 5755MHz	-	16	1 - 40 GHz	FCC 15.209 / 15 E	43.8 dBµV/m @ 11590.1 MHz(-10.2 dB)
	ac80	155 - 5775MHz	-	13			43.7 dBµV/m @ 11550.1 MHz (-10.3 dB)
Measureme	nts on low a	nd high chanr	els in worst	-case OFDM	mode.		
8	а	149 - 5745MHz	-	18	Radiated Emissions,	FCC 15.209 / 15 E	44.7 dBµV/m @ 11490.0 MHz (-9.3 dB)
0	а	165 - 5825MHz	-	18	1 - 40 GHz	FUU 13.2097 13 E	43.3 dBµV/m @ 11650.2 MHz (-10.7 dB)

## Modifications Made During Testing

No modifications were made to the EUT during testing

# Deviations From The Standard

No deviations were made from the requirements of the standard.

## Procedure Comments:

Measurements performed in accordance with FCC KDB 789033

Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time

Unless otherwise stated/noted, emission has duty cycle ≥ 98% and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold 50 traces. (method VB of KDB 789033)

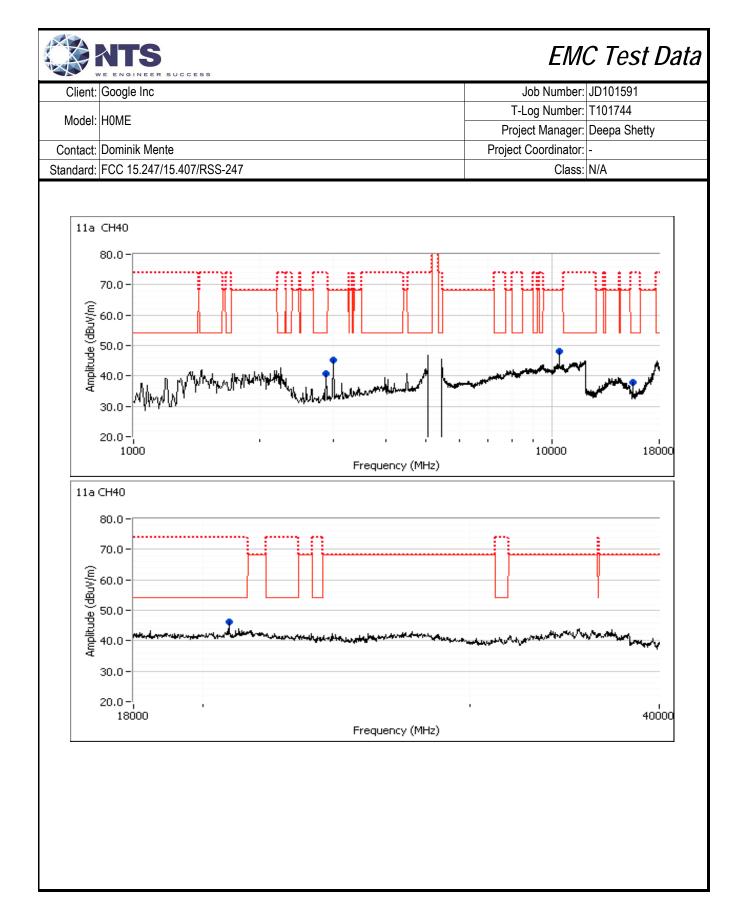
N	lode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
	11a	6 Mbps	0.99	Yes	3.13	0	0	319
	n20	MCS0	1.00	Yes	9.92	0	0	101
	n40	MCS0	1.00	Yes	4.76	0	0	210
a	ac80	VHT SS1	0.99	Yes	2.25	0	0	444

Sample Notes

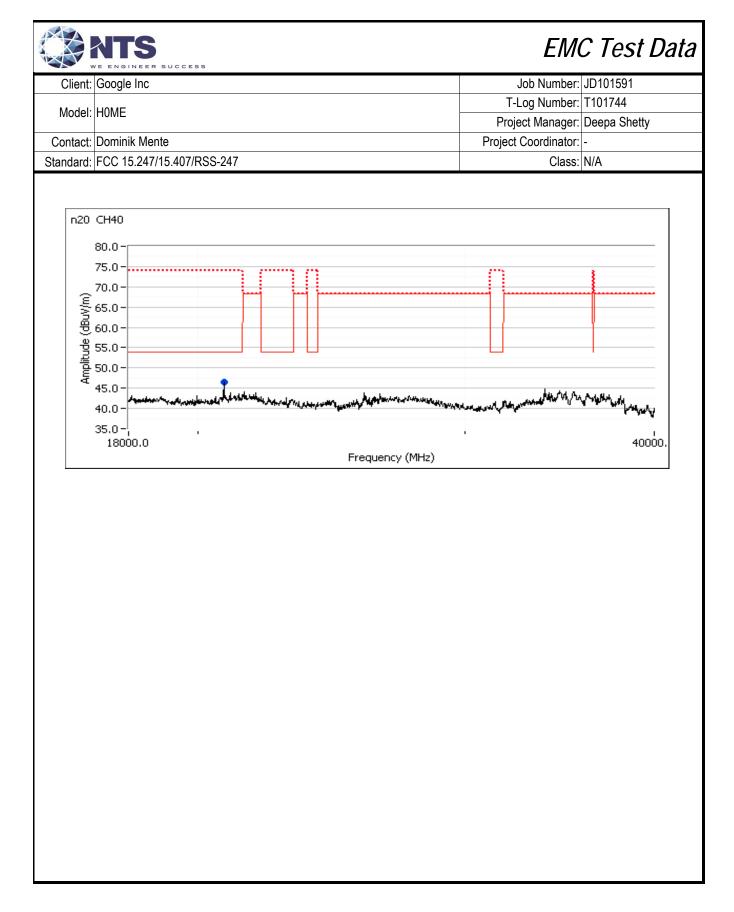
Sample S/N: 6629AZZB75 Driver: 1.21 Antenna: Internal

	E ENGINEER SUCCESS	EMO	C Test Data
Client:	Google Inc	Job Number:	JD101591
		T-Log Number:	T101744
Model:	HUME	Project Manager:	Deepa Shetty
Contact:	Dominik Mente	Project Coordinator:	-
Standard:	FCC 15.247/15.407/RSS-247	Class:	
	nent Specific Notes:		
	For emissions in restricted bands, the limit of 15.209 was used which require	es average and peak me	asurements.
Note 2	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (€ required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector). Pe demonstrated by meeting the average and peak limits of 15.209, as an alter	68.3dBuV/m). The meas er KDB 789033 2) c) (i), c	urement method
Note: All te	ting performed on the Antenna 2 port (wifi set to 10 2 2), as this was worse of	case from preliminary me	asurements.
Preliminary	neasurement demonstrated no spurious emissions below 1GHz.		

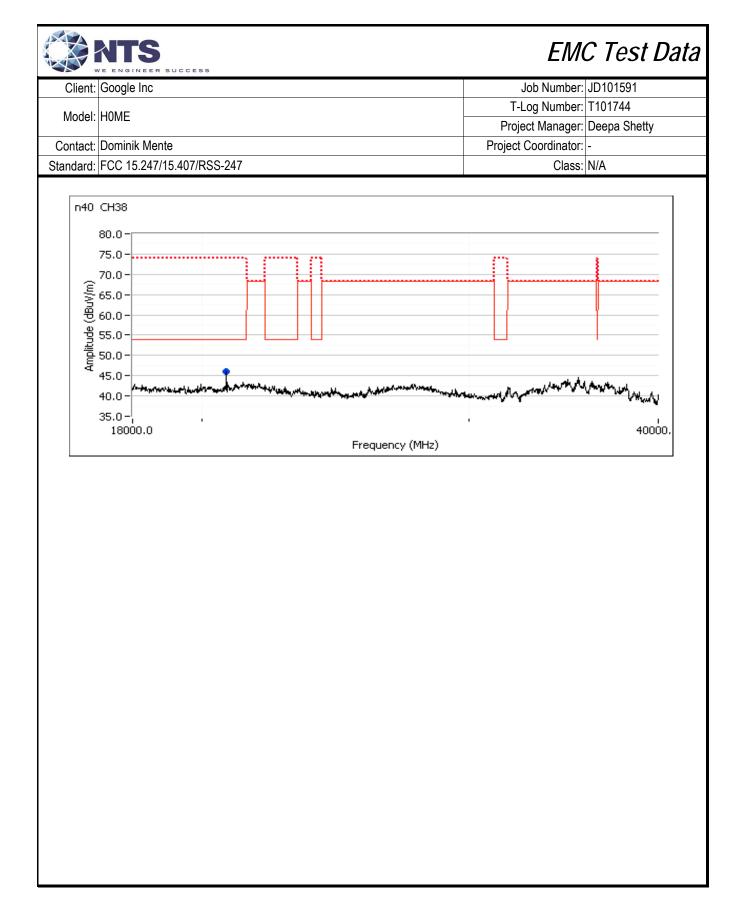
Client <sup>.</sup>	Google Inc	SUCCESS						Job Number:	JD101591
								Log Number:	
Model:	H0ME							•	Deepa Shetty
Contact	Dominik Me	nto						Coordinator:	
	FCC 15.247		C 017				Filleci	Class:	
				40.000 MHz	. Operation in	n the 5150-5	250 MHz B		
					•				
	Date of Test:		i / R. Varelas			onfig. Used: ifig Change:			
	est Location:					UT Voltage:		7	
					L	or voltage.	1200 / 00112	-	
#1a: C	enter Chann	el							
nnel:	40		Mode:	а					
	Antenna 2		Data Rate:	a 6 Mbps					
ency	Level	Pol	15.209	9 / 15E	Detector	Azimuth	Height	Comments	
lz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
	ng 19								
6.800	56.2	Н	68.3	-12.1	PK	258	1.3		
8.600	43.4	Н	54.0	-10.6	AVG	327	1.7		
94.270	54.7	Н	74.0	-19.3	PK	327	1.7		
00.050	43.7	Н	54.0	-10.3	AVG	342	1.7	<u> </u>	
00.200	52.1	Н	74.0	-21.9	PK	342	1.7		

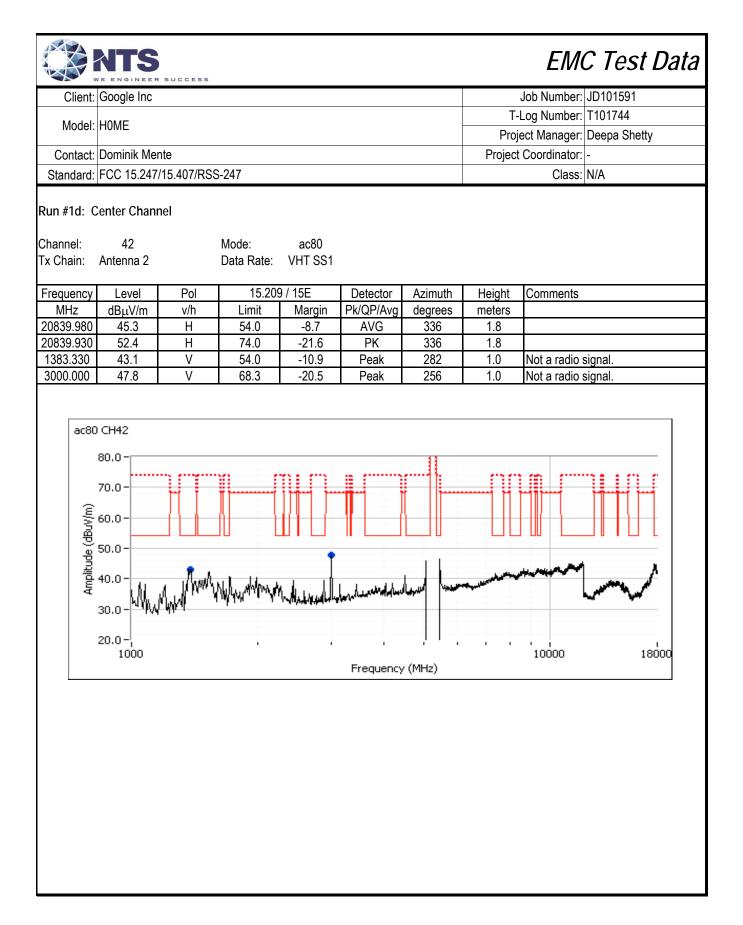


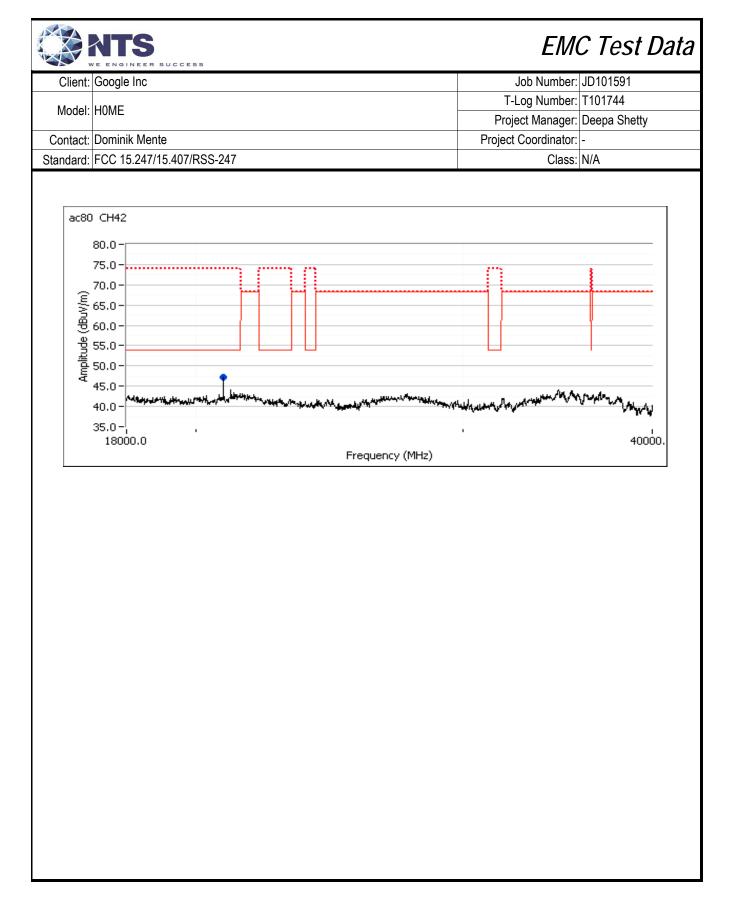
		SUCCESS						EMO	C Test Data
Client:	Google Inc							Job Number:	JD101591
Madal	HOME						T-	Log Number:	T101744
woder.							Proj	ect Manager:	Deepa Shetty
Contact:	Dominik Me	nte					Project	Coordinator:	-
Standard:	FCC 15.247	/15.407/RSS	6-247					Class:	N/A
Run #1b: (	Center Chan	nel							
I	Date of Test:	7/12/2016 0	):00		С	onfig. Used:	1		
	est Engineer:		/ R. Varelas			fig Change:			
Te	est Location:	Chamber 7			E	UT Voltage:	120V / 60H	Z	
Channel:	40		Mode:	11n20					
Tx Chain:	Antenna 2		Data Rate:	MCS0					
Frequency		Pol		9 / 15E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
20799.960 20799.890	44.5 51.4	H H	54.0 74.0	-9.5 -22.6	AVG PK	<u>333</u> 333	1.77 1.77		
1920.500	44.4	V	68.3	-22.0	PK	315	1.77		
2435.300	47.8	V	68.3	-20.5	PK	270	1.00		
2880.000	41.0	V	54.0	-13.0	AVG	222	1.51		
2880.200	46.2	V	74.0	-27.8	PK	222	1.51		
10399.120	56.0	Н	68.3	-12.3	PK	282	1.55		
dBuV/(m)	CH40 80.0 - 70.0 - 60.0 - 50.0 - 40.0 - 30.0 -	 	j j j j j j j j j j j j j j j j j j j					10000	

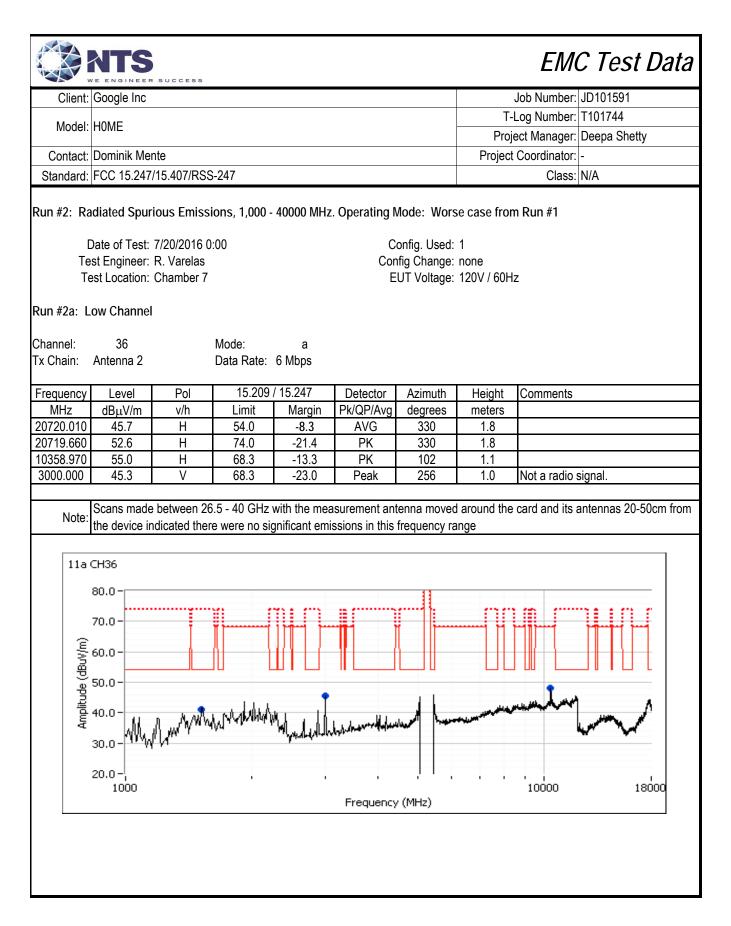


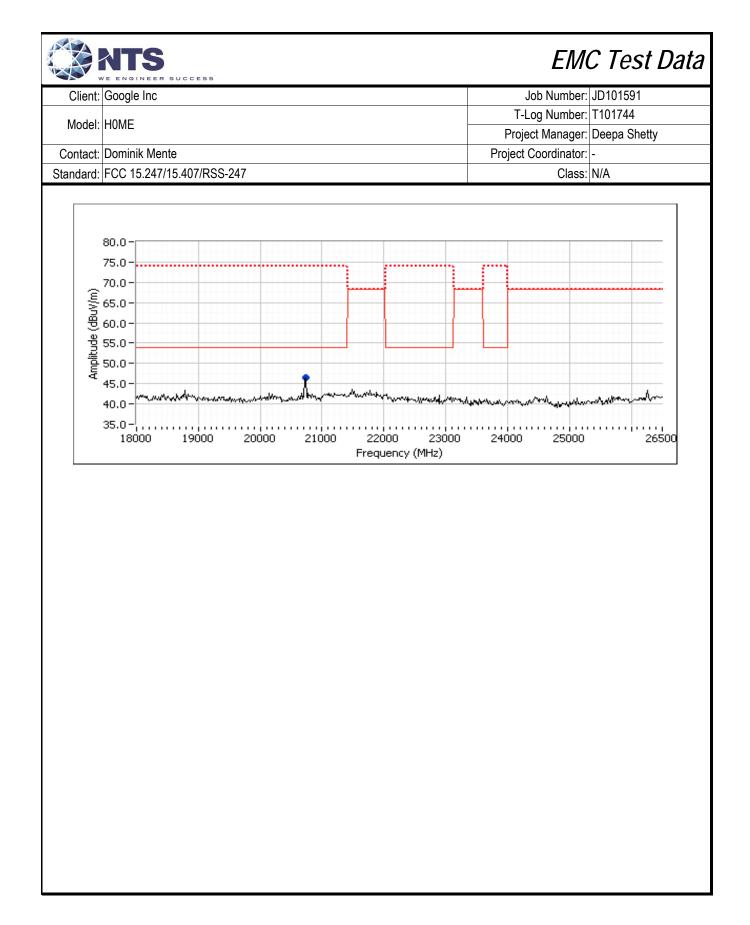
		SUCCESS							C Test Data
Client:	Google Inc							Job Number:	
Model:	HOME							Log Number:	
									Deepa Shetty
	Dominik Mer						Project	Coordinator:	
Standard:	FCC 15.247/	15.407/RS	5-247					Class:	N/A
un #1c: C	enter Chanr	el							
hannel:	38		Mode:	11n40					
x Chain:	Antenna 2		Data Rate:	MCS0					
	<b>-</b>							T	
requency	Level	Pol	15.209		Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
0759.960 0759.860	44.0 52.5	<u>H</u> H	54.0 74.0	-10.0 -21.5	AVG PK	332 332	1.80 1.80		
9433.330	52.5 <i>42.1</i>	<u>н</u> V	68.3	-21.5 -26.2	PK Peak	332 140	1.80	Not from EL	IT
4 <i>33.330</i> 879.950	42.7	V V	54.0	-20.2	AVG	248	1.24		
880.110	46.8	V	74.0	-27.2	PK	248	1.24		
992.630	54.1	V	68.3	-14.2	PK	244	1.00		
Amplitude (dBu	70.0 - 60.0 - 50.0 - 40.0 - 30.0 - 20.0 -	An Mar						10000	
	1000				Frequency	(MHz)		10000	18000











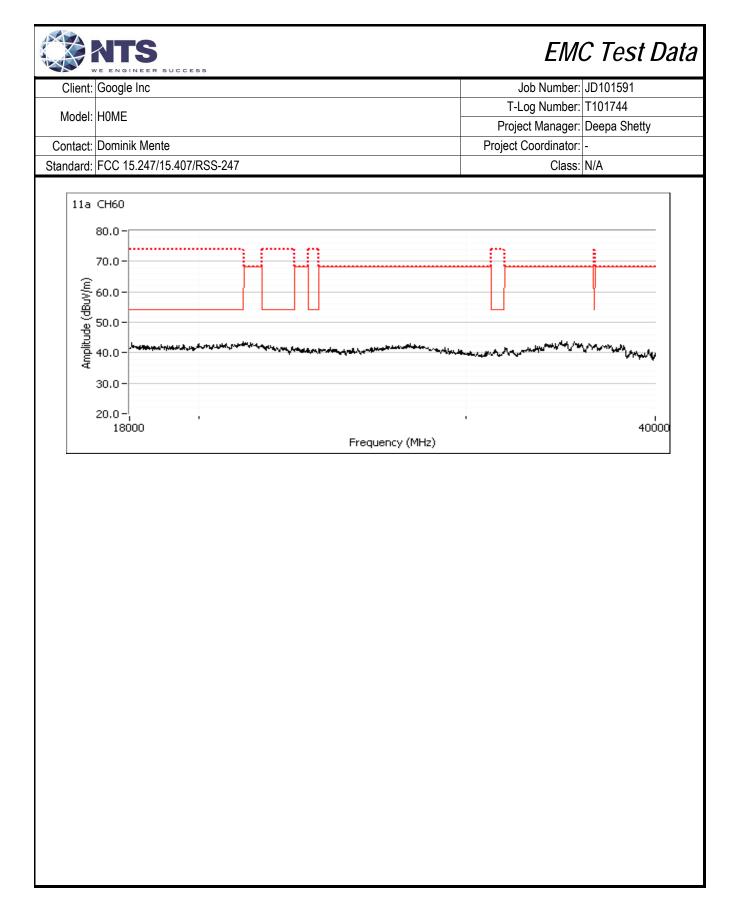
	NTS	EMO	C Test Data
Client:	Google Inc	Job Number:	JD101591
Model:	HOME	T-Log Number:	T101744
woder.	HUME	Project Manager:	Deepa Shetty
Contact:	Dominik Mente	Project Coordinator:	-
Standard:	FCC 15.247/15.407/RSS-247	Class:	N/A

## Run #2b: High Channel

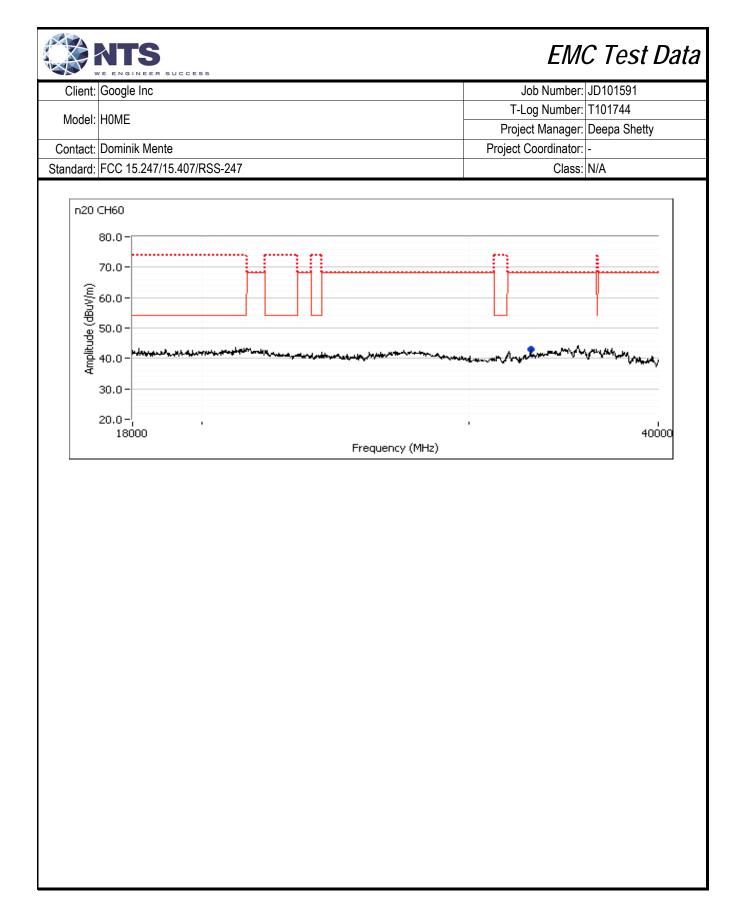
Channel:	48	Mode:	а
Tx Chain:	Antenna 2	Data Rate:	6 Mbps

Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
Power setti	ng 19							
10484.930	56.5	Н	68.3	-11.8	PK	258	1.2	
20960.120	41.7	Н	54.0	-12.3	AVG	314	1.5	
20960.300	51.7	Н	74.0	-22.3	PK	314	1.5	

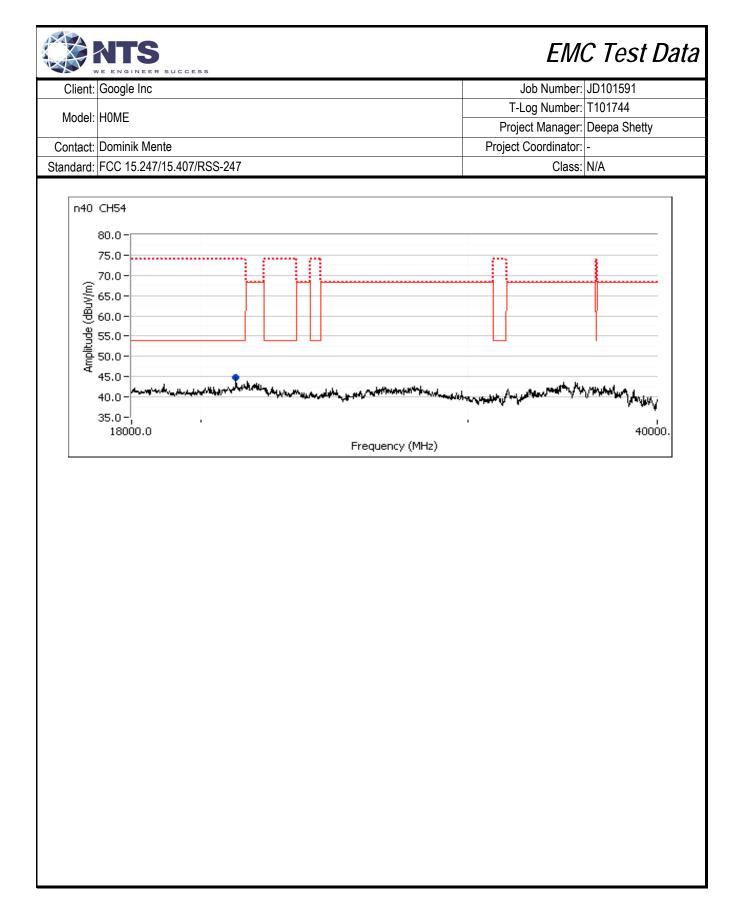
Model:   Contact:   Standard:   Run #3, Radi Da Test Test Run #3a: Cer Channel: x Chain: A Frequency MHz 10600.070 10601.170 2128.130	Google Inc HOME Dominik Mente TCC 15.247/11 Tated Spuriou ate of Test: 7/ t Engineer: Jo t Location: Cl nter Channel 60 Antenna 2 Level dBµV/m	5.407/RSS Is Emissio 12/2016 0 ohn Caizzi hamber 7	ons, 1,000 - 4 :00	10,000 MHz	Con	n the 5250-5 onfig. Used: fig Change: UT Voltage:	T-I Project 5350 MHz B 1 none	
Contact: C Standard: F Run #3, Radi Da Test Tes Run #3a: Cer Channel: x Chain: A Frequency MHz 10600.070 10601.170 2128.130	Dominik Mente CC 15.247/19 Jated Spuriou ate of Test: 7/ t Engineer: Jo t Location: Cl nter Channel 60 Antenna 2 Level	5.407/RSS Is Emissio 12/2016 0 ohn Caizzi hamber 7	ons, 1,000 - 4 :00 / R. Varelas Mode:		Con	onfig. Used: fig Change:	Project Project 5350 MHz B 1 none	ect Manager: Deepa Shetty Coordinator: - Class: N/A
Contact: C Standard: F Run #3, Radi Da Test Tes Run #3a: Cer Channel: x Chain: A Frequency MHz 10600.070 10601.170 2128.130	Dominik Mente CC 15.247/19 Jated Spuriou ate of Test: 7/ t Engineer: Jo t Location: Cl nter Channel 60 Antenna 2 Level	5.407/RSS Is Emissio 12/2016 0 ohn Caizzi hamber 7	ons, 1,000 - 4 :00 / R. Varelas Mode:		Con	onfig. Used: fig Change:	Project 5350 MHz B 1 none	Coordinator: - Class: N/A
Standard: F Run #3, Radi Da Test Tes Run #3a: Cer Channel: X Chain: A Frequency MHz 10600.070 10601.170 2128.130	CC 15.247/15 dated Spuriou ate of Test: 7/ t Engineer: Jo st Location: Cl nter Channel 60 Antenna 2 Level	5.407/RSS Is Emissio 12/2016 0 ohn Caizzi hamber 7	ons, 1,000 - 4 :00 / R. Varelas Mode:		Con	onfig. Used: fig Change:	5350 MHz B 1 none	Class: N/A
2un #3, Radi Da Test Test Run #3a: Cer Channel: X Chain: A Frequency MHz 10600.070 10601.170 2128.130	ated Spuriou ate of Test: 7/ t Engineer: Jo t Location: C nter Channel 60 Antenna 2 Level	is Emissio 12/2016 0 ohn Caizzi hamber 7	ons, 1,000 - 4 :00 / R. Varelas Mode:		Con	onfig. Used: fig Change:	1 none	and
Da Test Tes Run #3a: Cer Channel: x Chain: A Frequency MHz 10600.070 10601.170 2128.130	ate of Test: 7/ t Engineer: Jo st Location: Cl nter Channel 60 Antenna 2 Level	12/2016 0 ohn Caizzi hamber 7	:00 / R. Varelas Mode:		Con	onfig. Used: fig Change:	1 none	
Channel: x Chain: A Frequency MHz 10600.070 10601.170 2128.130	60 Antenna 2 Level			а				
MHz 10600.070 10601.170 2128.130				6 Mbps				
MHz 10600.070 10601.170 2128.130		Pol	15.209	/ 15E	Detector	Azimuth	Height	Comments
10600.070 10601.170 2128.130		v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
10601.170 2128.130	40.9	V	54.0	-13.1	AVG	290	1.60	
2128.130	52.5	V	74.0	-21.5	PK	290	1.60	
	39.2	V	68.3	-29.1	PK	226	1.00	Not a radio signal.
2991.670	45.0	V	68.3	-23.3	Peak	262	1.0	Not a radio signal.
4475.800	43.4	V	68.3	-24.9	PK	251	1.00	Not a radio signal.
9522.130	50.3	V	68.3	-18.0	PK	273	2.50	Not a radio signal.
Amplitude (dBuV/m) 5 5 5 5	CH60 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 1000	n Marila			Frequency			

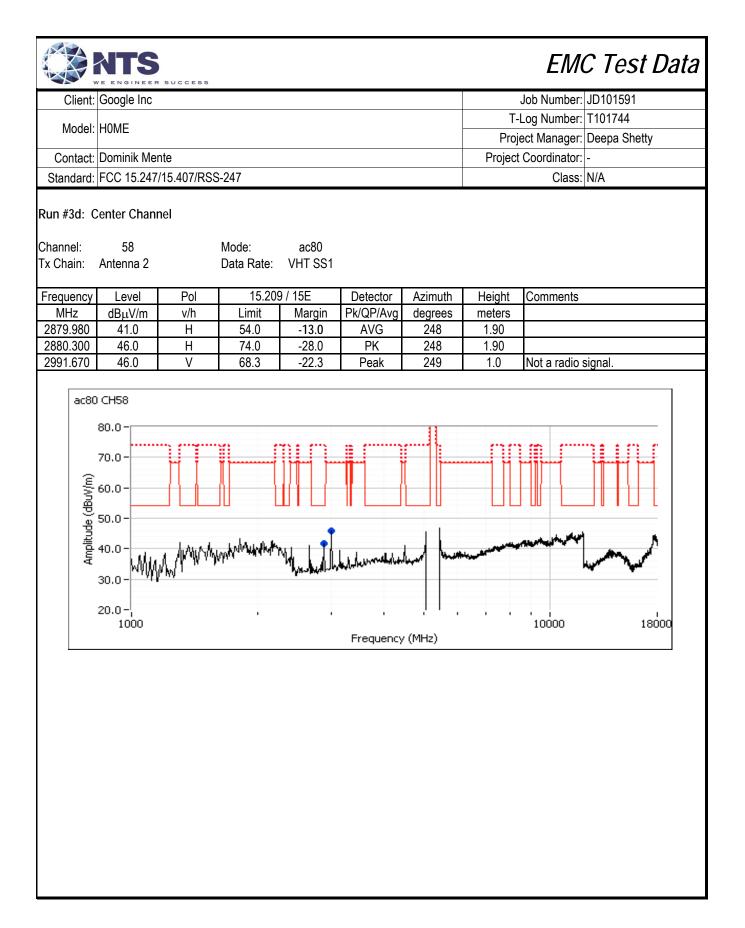


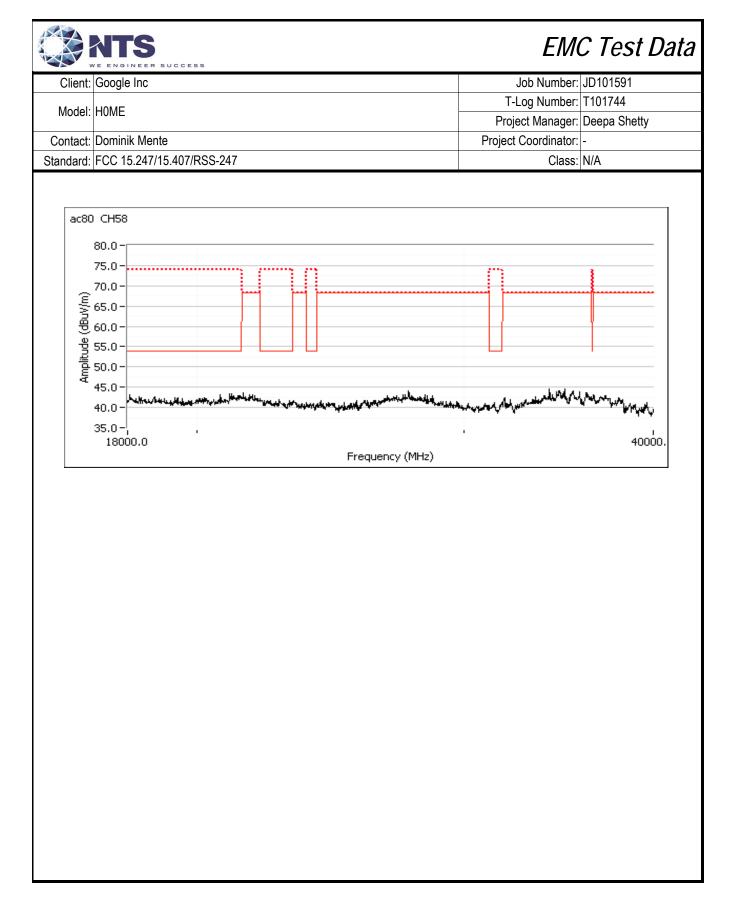
		SUCCESS						EM	C Test Data
Client:	Google Inc							Job Number:	JD101591
							T-l	_og Number:	T101744
Model:	HUME						Proje	ect Manager:	Deepa Shetty
Contact:	Dominik Mer	nte					Project	Coordinator:	-
Standard:	FCC 15.247	/15.407/RSS	6-247					Class:	N/A
Run #3b: C	Center Chanı	nel							
	Date of Test:					onfig. Used:			
	st Engineer:		/ R. Varelas			fig Change:			
le	est Location:	Chamber /			E	UT Voltage:	120V / 60Hz	Z	
Channel: Tx Chain:	60 Antenna 2		Mode: Data Rate:	11n20 MCS0					
Frequency	Level	Pol	15.209	) / 15E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	Commenta	
Power setti		.,							
10600.450	44.0	Н	54.0	-10.0	AVG	258	1.1		
10600.350	55.6	Н	74.0	-18.4	PK	258	1.1		
15898.530 15899.130	43.5 56.6	<u>Н</u> Н	54.0 74.0	-10.5 -17.4	AVG PK	328 328	1.6 1.6		
Amplitude (dBuV/m)	CH60 80.0 - 70.0 - 60.0 - 50.0 - 40.0 - 30.0 - 20.0 - 1000	1 Martha Ma			Frequency			10000	18000

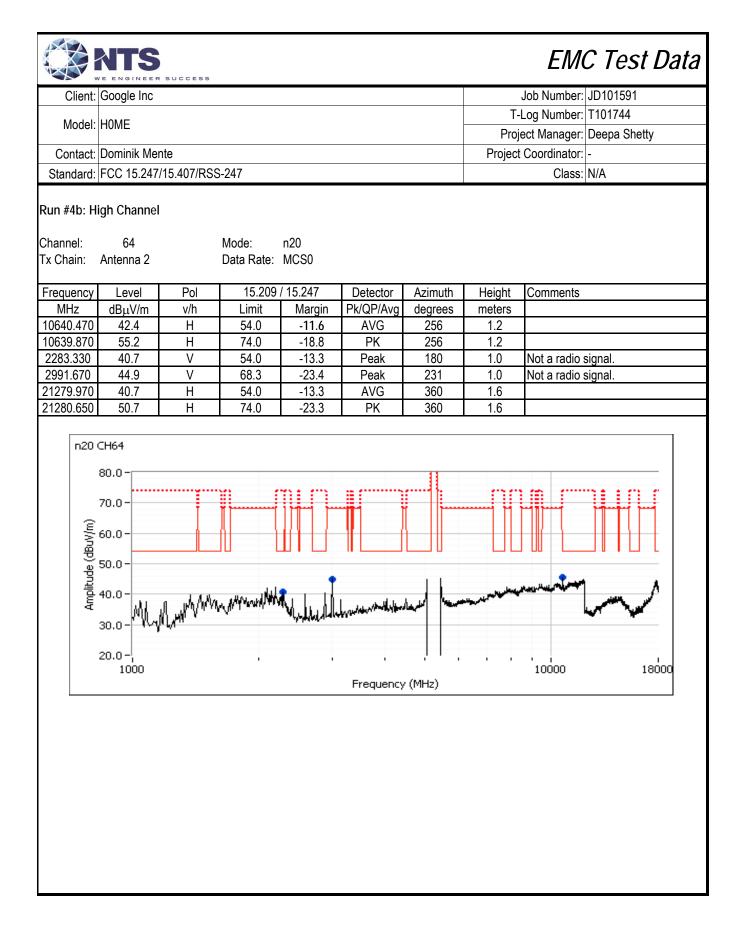


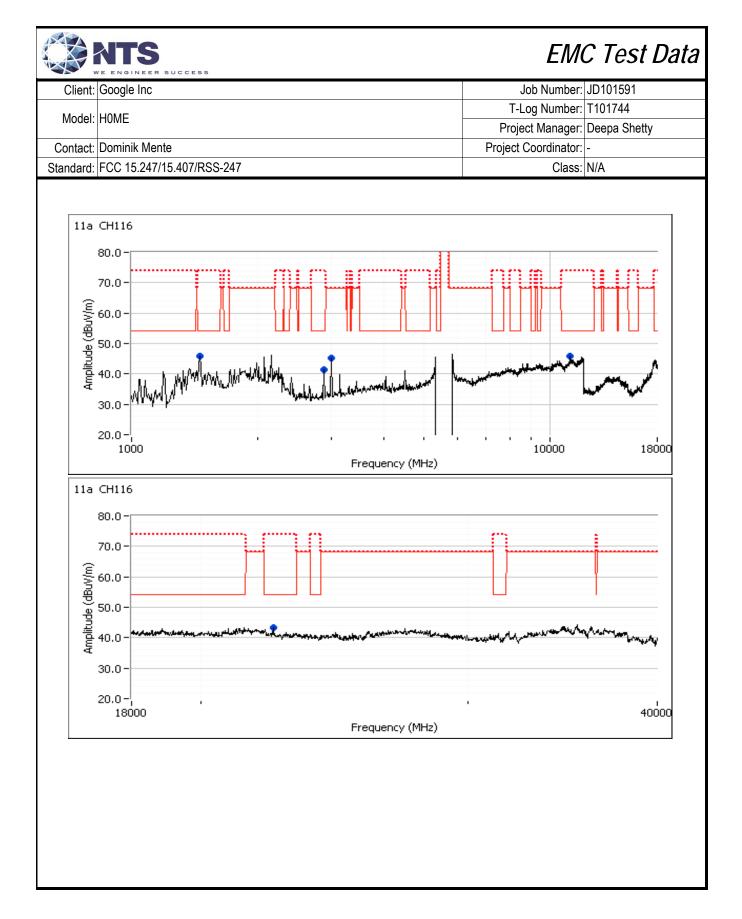
		SUCCESS						EMO	C Test Data
	Google Inc							Job Number:	JD101591
Madal	HOME						T-	Log Number:	T101744
woder.							Proj	ect Manager:	Deepa Shetty
Contact:	Dominik Mei	nte					Project	Coordinator:	-
Standard:	FCC 15.247	/15.407/RSS	5-247					Class:	N/A
Run #3c: C	Center Chanr	nel							
	Date of Test:					onfig. Used:			
	est Engineer:		/ R. Varelas			fig Change:			
le	est Location:	Chamber /			E	UT Voltage:	120V / 60H	Z	
Channel:	54		Mode:	11n40					
Tx Chain:	Antenna 2		Data Rate:	MCS0					
Fraguera		Del	15 000	9 / 15E	Detector	A mine with	Hoisht	Commont	
Frequency MHz	Level dBµV/m	Pol v/h	Limit	Margin	Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments	
21101.090	38.2	H	54.0	-15.8	AVG	262	1.01		
21105.950	50.5	Н	74.0	-23.5	PK	262	1.01		
2576.530 2991.670	52.3 46.0	V	68.3 68.3	-16.0 -22.3	PK Peak	295 246	1.00 1.00	Not a radio s	· .
Amplitude (dBuV/m)	CH54 80.0 - 70.0 - 60.0 - 50.0 - 40.0 - 30.0 - 20.0 - 1000	 /////////////////////////////	i i i i i i i i i i i i i i i i i i i		Frequency	(MHz)		10000	18000



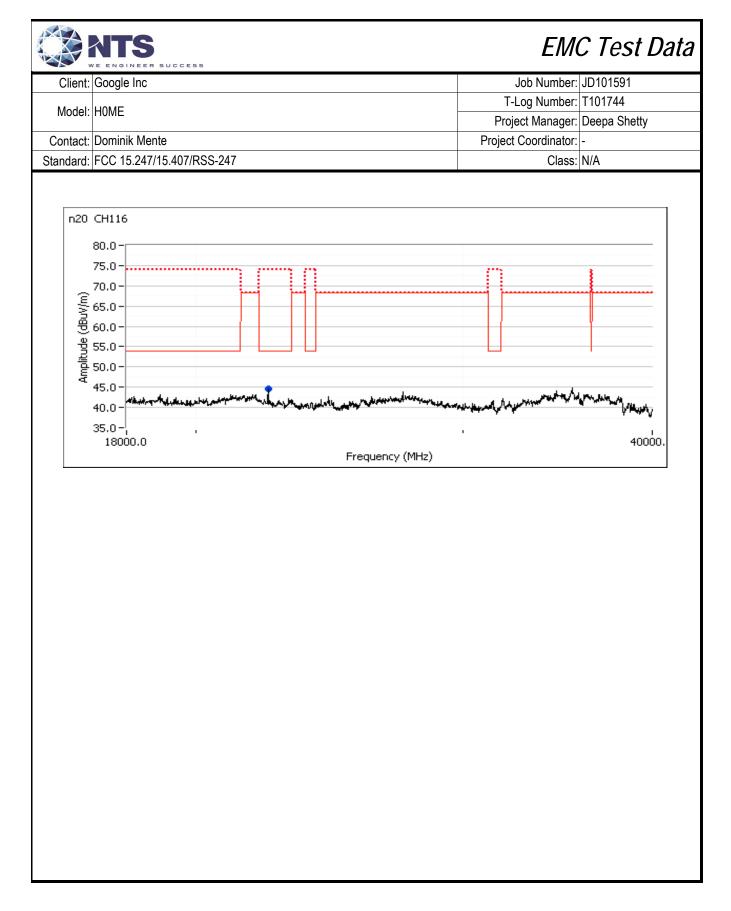


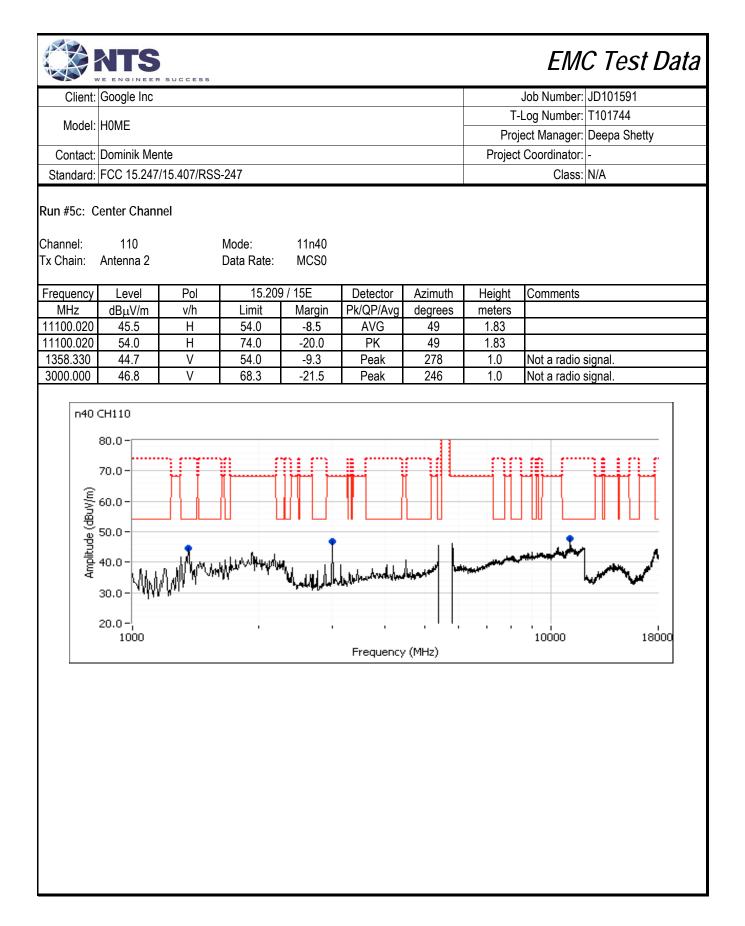


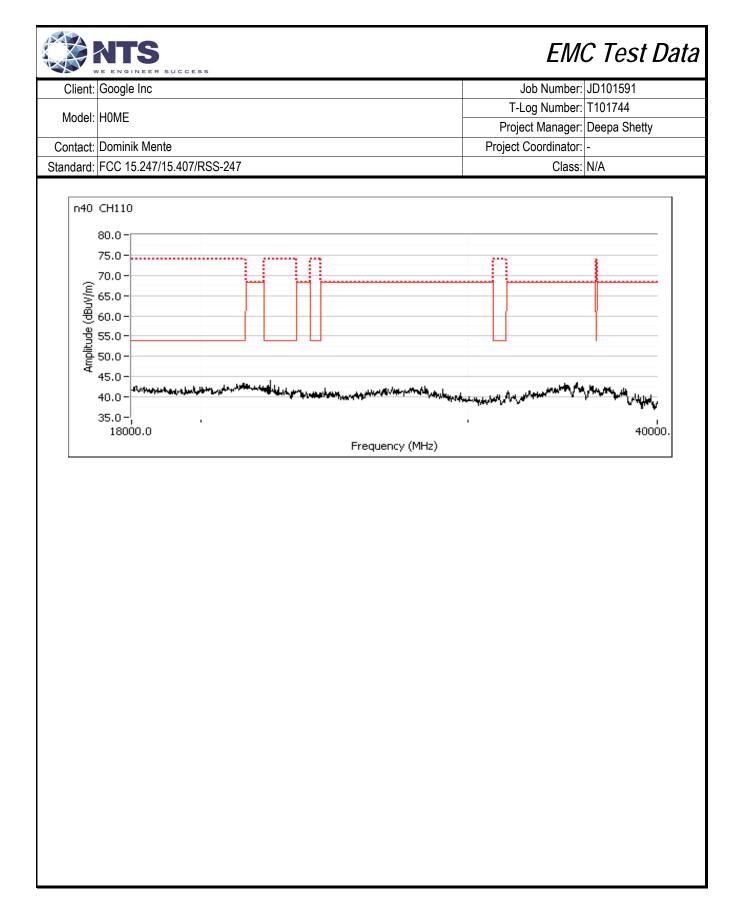


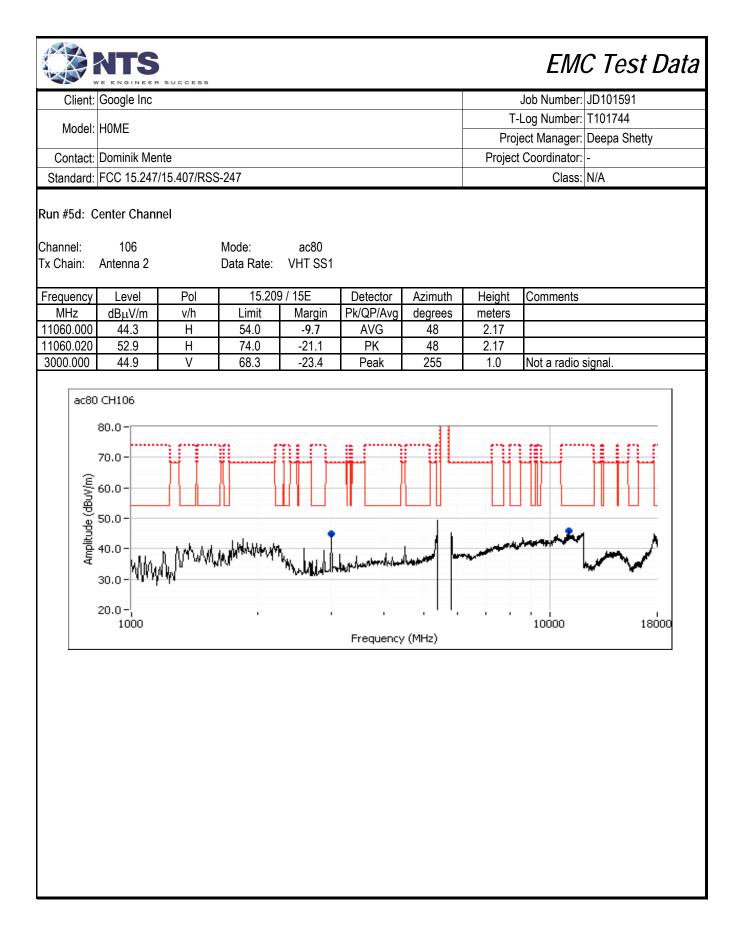


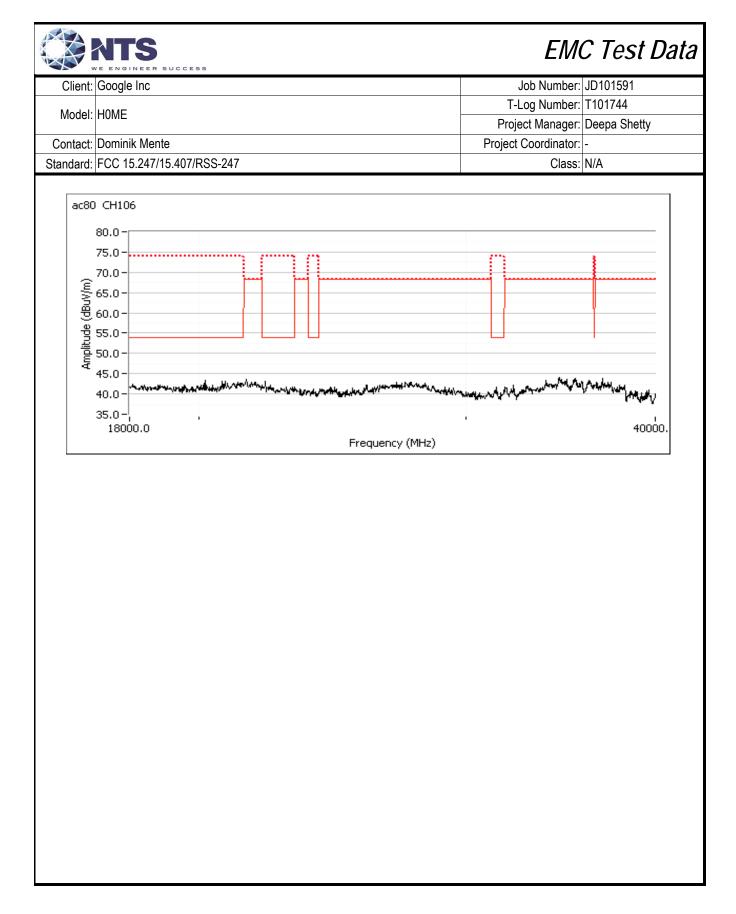
Model:         H0ME         T-Log Number:         T101744           Project Manager:         Deepa Shetty           Contact:         Dominik Mente         Project Coordinator:           Standard:         FCC 15.247/15.407/RSS-247         Class:         N/A           Run #5b:         Center Channel	Model:         H0ME         T-Log Number:         T101744           Project Manager:         Deepa Shetty           Contact:         Dominik Mente         Project Coordinator:           Standard:         FCC 15 247/15 407/RSS-247         Class:         N/A           Run #5b: Center Channel         Date of Test:         7/12/2016 0:00         Config: Used: 1           Test Engineer:         John Caizzi / R. Varelas         Config Change: none           Test Location:         Chamber 7         EUT Voltage: 120V / 60Hz           Channel:         116         Mode:         11n20           Trequency         Level         Pol         15209 / 15E         Detector         Azimuth         Height         Comments           MHz         dBµ.V/m         vh         Limit         Margin         Pk/QP/Avg         degrees         meters           11160.050         46.1         H         54.0         -7.9         AVG         47         1.85           1375.000         43.7         V         54.0         -10.3         Peak         265         1.0         Not a radio signal.           22320.110         39.4         H         54.0         -14.6         AVG         1.32         22320.10         32.4	Client:	Google Inc	SUCCESS						Job Number: JD101591
Model:         HMME         Project Manager:         Deepa Shetty           Contact:         Dominik Mente         Project Coordinator:         -           Standard:         FCC 15.247/15.407/RSS-247         Class:         N/A           Run #5b:         Center Channel         Est Engineer:         John Caizzi / R. Varelas         Config. Used:         1           Test Engineer:         John Caizzi / R. Varelas         Config. Used:         1         EUT Voltage:         120V / 60Hz           Channel:         116         Mode:         11n20         EUT Voltage:         120V / 60Hz           Channel:         116         Mode:         11n20         EUT Voltage:         120V / 60Hz           Standard:         Antenna 2         Data Rate:         MCS0         MCS0         Engineer:         Intel Standard:           Frequency         Level         Pol         15.209 / 15E         Detector         Azimuth         Height         Comments           MHz         dBiJV/m         v/h         Limit         Margin         Pk/QP/Avg         degrees         meters         11160.000         13.2         2931.670         46.2         V         68.3         -22.1         Peak         243         1.0         Not a radio signal. <tr< td=""><td>Model:         HMLE         Project Manager:         Deepa Shetty           Contact:         Dominik Mente         Project Coordinator:         -           Standard:         FCC 15.247/15.407/RSS-247         Class:         N/A           Run #5b:         Center Channel         Date of Test:         7/12/2016 0:00         Config. Used: 1           Test Engineer:         John Caizzi / R. Varelas         Config. Used: 1         Config. Used: 1           Test Engineer:         John Caizzi / R. Varelas         Config. Change: none         EUT Voltage: 120V / 60Hz           Channel:         116         Mode:         11n20         EUT Voltage:         120V / 60Hz           Channel:         116         Mode:         11n20         EUT Voltage:         120V / 60Hz           Stannel:         116         Mode:         11n20         EUT Voltage:         120V / 60Hz           Trest Engineer:         Data Rate:         MCS0         MCS0         Europic Anterna 2         Data Rate:         MCS0           Frequency         Level         Pol         15.209 / 15E         Detector         Azimuth         Height         Comments           11160.050         46.1         H         54.0         10.0         Not a radio signal.         22320.110         39.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr<>	Model:         HMLE         Project Manager:         Deepa Shetty           Contact:         Dominik Mente         Project Coordinator:         -           Standard:         FCC 15.247/15.407/RSS-247         Class:         N/A           Run #5b:         Center Channel         Date of Test:         7/12/2016 0:00         Config. Used: 1           Test Engineer:         John Caizzi / R. Varelas         Config. Used: 1         Config. Used: 1           Test Engineer:         John Caizzi / R. Varelas         Config. Change: none         EUT Voltage: 120V / 60Hz           Channel:         116         Mode:         11n20         EUT Voltage:         120V / 60Hz           Channel:         116         Mode:         11n20         EUT Voltage:         120V / 60Hz           Stannel:         116         Mode:         11n20         EUT Voltage:         120V / 60Hz           Trest Engineer:         Data Rate:         MCS0         MCS0         Europic Anterna 2         Data Rate:         MCS0           Frequency         Level         Pol         15.209 / 15E         Detector         Azimuth         Height         Comments           11160.050         46.1         H         54.0         10.0         Not a radio signal.         22320.110         39.									
Standard:         FCC 15.247/15.407/RSS-247         Class:         N/A           Run #5b:         Center Channel         Date of Test:         7/12/2016 0:00         Config. Used: 1           Test Engineer:         John Caizzi / R. Varelas         Config Change: none         EUT Voltage: 120V / 60Hz           Test Location:         Channel:         116         Mode:         11n20           Channel:         116         Mode:         11n20           Frequency         Level         Pol         15.209 / 15E         Detector         Azimuth         Height         Comments           MHz         dBµ/Vm         v/h         Limit         Margin         Pk/QP/Avg         degrees         meters           11160.050         46.1         H         54.0         -10.3         Peak         265         1.0         Not a radio signal.           22320.110         39.4         H         54.0         -14.6         AVG         0         1.32           22320.110         39.4         H         54.0         -14.46         AVG         0         1.32           22320.110         39.4         H         54.0         -14.16         AVG         0         1.32           22320.110         49.9	Standard:         FCC 15.247/15.407/RSS-247         Class:         N/A           Run #5b:         Center Channel         Date of Test:         7/12/2016 0:00         Config. Used: 1           Test Engineer:         John Caizzi / R. Varelas         Config. Used: 1         Config. Config. Used: 1           Test Engineer:         John Caizzi / R. Varelas         Config. Used: 1         Config. Used: 1           Test Location:         Chamber 7         EUT Voltage: 120V / 60Hz         Channel:           The Antenna 2         Data Rate:         MCSO         MCSO         Media           Frequency         Level         Pol         15.209 / 15E         Detector         Azimuth         Height         Comments           MHZ         dB <sub>LU</sub> /Vm         Vh         Limit         Margin         PK/OP/Avg         degrees         meters           11160.050         46.1         H         54.0         -7.9         AVG         47         1.85           1375.000         43.7         V         64.0         -10.3         Peak         265         1.0         Not a radio signal.           22320.110         39.4         H         54.0         -14.6         AVG         0         1.32           70.0         -0.0         -0.	Model:	HOME							•
Run #5b: Center Channel         Date of Test: 7/12/2016 0:00       Config. Used: 1         Test Engineer: John Caizzi / R. Varelas       Config Change: none         Test Location: Chamber 7       EUT Voltage: 120V / 60Hz         Channel: 116       Mode: 11n20         Channel: 116       Mode: 11n20         Trequency       Level       Pol       15209 / 15E       Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/h       Limit       Margin       PK/QP/Avg       degrees       meters	Run #5b: Center Channel Date of Test: 7/12/2016 0:00 Test Engineer: John Caizzi / R. Varelas Test Location: Chamber 7 Channel: 116 Mode: 11n20 Tx Chain: Antenna 2 Data Rate: MCS0 Frequency Level Pol 15:209 / 15E Detector Azimuth Height Comments MHz dB <sub>µ</sub> V/m V/h Limit Margin PK/QP/Avg degrees meters 11160.050 46.1 H 54.0 -7.9 AVG 47 1.85 11160.050 46.1 H 54.0 -7.9 AVG 47 1.85 11160.030 54.6 H 74.0 -19.4 PK 47 1.85 11160.030 54.6 H 74.0 -19.4 PK 47 1.85 11160.030 46.2 V 68.3 -22.1 Peak 243 1.0 Not a radio signal. 2230.110 39.4 H 54.0 -14.6 AVG 0 1.32 22324.410 49.9 H 74.0 -24.1 PK 0 1.32 $\int_{0.0}^{70.0} - \int_{0.0}^{0.0} - \int_{0.0}$	Contact:	Dominik Mer	nte					-	
Date of Test: 7/12/2016 0:00 Test Engineer: John Caizzi / R. Varelas Test Location: Chamber 7 Cannel: 116 K Chain: Antenna 2 Mode: 11n20 Tx Chain: Antenna 2 Pol = 15209/15E Detector Azimuth Height Comments Pk/QP/Avg degrees meters 11160.050 46.1 H 54.0 -7.9 AVG 47 1.85 11160.050 44.1 H 54.0 -7.9 AVG 47 1.85 1175.000 43.7 V 54.0 -10.3 Peak 265 1.0 Not a radio signal. 2991.670 46.2 V 68.3 -22.1 Peak 243 1.0 Not a radio signal. 22324.410 49.9 H 74.0 -24.1 PK 0 1.32 22324.410 49.9 H 74.0 -24.1 PK 0 1.32 PK =	Test Engineer: John Caizzi / R. Varelas Test Location: Chamber 7 EUT Voltage: 120V / 60Hz Channel: 116 Mode: 11n20 Tx Chain: Antenna 2 Data Rate: MCS0 $ \frac{Frequency}{IMHz} \frac{Level}{MHz} \frac{Pol}{Vh} \frac{15.209 / 15E}{Limit} \frac{Detector}{Margin} \frac{Azimuth}{Pk/QP/Avg} \frac{Height}{degrees} \frac{meters}{meters} \frac{11160.050}{11160.050} \frac{46.1}{46.1} \frac{H}{14.54.0} \frac{54.0}{-7.9} \frac{-7.9}{AVG} \frac{47}{47} \frac{1.85}{1.85} \frac{100}{1.32} \frac{100}{122320.110} \frac{46.2}{991.670} \frac{V}{68.3} \frac{-22.1}{-22.1} \frac{Peak}{243} \frac{265}{1.0} \frac{100}{Not a radio signal.} \frac{22320.410}{22324.410} \frac{49.9}{49.9} \frac{H}{14.0} \frac{54.0}{-24.1} \frac{-14.6}{PK} \frac{AVG}{0} \frac{0}{1.32} \frac{12}{1000} \frac{1000}{1000} $	Standard:	FCC 15.247	/15.407/RSS	-247					Class: N/A
Date of Test: 7/12/2016 0:00 Test Engineer: John Caizzi / R. Varelas Test Location: Chamber 7 Cannel: 116 K Chain: Antenna 2 requency Level Pol 15209 / 15E Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 11160.050 46.1 H 54.0 -7.9 AVG 47 1.85 11160.050 44.1 H 54.0 -7.9 AVG 47 1.85 1176.000 43.7 V 54.0 -10.3 Peak 265 1.0 Not a radio signal. 2991.670 46.2 V 66.3 -22.1 Peak 243 1.0 Not a radio signal. 22324.410 49.9 H 74.0 -24.1 PK 0 1.32 22324.410 49.9 H 74.0 -24.1 PK 0 1.32 requency Level 0 0 1.32 requency 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	$\begin{array}{c} \text{Date of Test: } 7/12/2016 0:00 \\ \text{Test Engineer: John Caizzi / R. Varelas} \\ \text{Test Location: Chamber 7} \\ \text{Test Location: Chamber 7} \\ \text{Channel: } 116 \\ \text{Channel: } 116 \\ \text{Channel: Antenna 2} \\ \hline \text{Data Rate: } MCS0 \\ \hline \hline \\ \hline $	Run #5b· C	Center Chan	nel						
Test Engineer: John Caizzi / R. Varelas Test Location: Chamber 7 EUT Voltage: none EUT Voltage: 120V / 60Hz Channel: 116 Mode: 11n20 Tx Chain: Antenna 2 Data Rate: MCS0 Frequency Level Pol 15.209 / 15E Detector Azimuth Height Comments MHz dB <sub>LV/m</sub> v/h Limit Margin Pk/QP/Avg degrees meters 11160.050 46.1 H 54.0 -7.9 AVG 47 1.85 11160.300 54.6 H 74.0 -19.4 PK 47 1.85 11160.300 54.6 H 74.0 -19.4 PK 47 1.85 11375.000 43.7 V 54.0 10.3 Peak 265 1.0 Not a radio signal. 2991.670 46.2 V 68.3 -22.1 Peak 243 1.0 Not a radio signal. 22320.110 39.4 H 54.0 -14.6 AVG 0 1.32 22324.410 49.9 H 74.0 -24.1 PK 0 1.32 $n^{20} CH116$	Test Engineer: John Caizzi / R. Varelas Test Location: Chamber 7 EUT Voltage: 120V / 60Hz Channel: 116 Mode: 11n20 Tx Chain: Antenna 2 Data Rate: MCS0 $ \frac{Frequency}{IMHz} \frac{Level}{dB_{II}V/m} \frac{V/h}{v/h} \frac{Limit}{Margin} \frac{Margin}{Pk/QP/Avg} \frac{Pcgrees}{degrees} \frac{meters}{meters} \frac{Meters}{mete$				.00		-	<b>f</b>	4	
Test Location: Chamber 7       EUT Voltage: 120V / 60Hz         Channel:       116       Mode:       11n20         Data Rate:       MCS0         Frequency       Level       Pol       15.209 / 15E       Detector       Azimuth       Height       Comments         MHz       dB <sub>II</sub> V/m       v/h       Limit       Margin       Pk/QP/Avg       degrees       meters         11160.050       46.1       H       54.0       -7.9       AVG       47       1.85         1375.000       43.7       V       54.0       -10.3       Peak       265       1.0       Not a radio signal.         2930.10       39.4       H       54.0       -14.6       AVG       0       1.32         22320.110       39.4       H       54.0       -14.6       AVG       0       1.32         2232.0.10       39.4       H       54.0       -14.6       AVG       0       1.32         2232.0.10       39.4       H       54.0       -14.6       AVG       0       1.32         200 CH116	Test Location: Chamber 7       EUT Voltage: 120V / 60Hz         Channel:       116       Mode:       11n20         Tx Chain:       Antenna 2       Data Rate:       MCS0         Frequency       Level       Pol       15.209 / 15E       Detector       Azimuth       Height       Comments         MHz       dBjuV/m       v/h       Limit       Margin       PK/OP/Avg       degrees       meters         11160.050       46.1       H       54.0       -7.9       AVG       47       1.85         11160.300       54.6       H       74.0       -10.3       Peak       265       1.0       Not a radio signal.         2991.670       46.2       V       68.3       -22.1       Peak       243       1.0       Not a radio signal.         22320.110       39.4       H       54.0       -14.6       AVG       0       1.32         22324.410       49.9       H       74.0       -24.1       PK       0       1.32         (Mode grade g									
Tx Chain:       Antenna 2       Data Rate:       MCS0         Frequency       Level       Pol       15.209 / 15E       Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/n       Limit       Margin       Pk/QP/Avg       degrees       meters         11160.050       46.1       H       54.0       -7.9       AVG       47       1.85         11160.300       54.6       H       74.0       -19.4       PK       47       1.85         1375.000       43.7       V       54.0       -10.3       Peak       265       1.0       Not a radio signal.         2991.670       46.2       V       68.3       -22.1       Peak       243       1.0       Not a radio signal.         22320.110       39.4       H       54.0       -14.6       AVG       0       1.32         22324.410       49.9       H       74.0       -24.1       PK       0       1.32         0       0       0       0       0       0       0       0       0       0         0       0       0       0       0       0       0       0       0       0       0 <td>Tx Chain:       Antenna 2       Data Rate:       MCS0         Frequency       Level       Pol       15.209 / 15E       Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/h       Limit       Margin       Pk/QP/Avg       degrees       meters         11160.050       46.1       H       54.0       -7.9       AVG       47       1.85         11160.300       54.6       H       74.0       -19.4       PK       47       1.85         1375.000       43.7       V       54.0       -10.3       Peak       265       1.0       Not a radio signal.         2991.670       46.2       V       68.3       -22.1       Peak       243       1.0       Not a radio signal.         22320.110       39.4       H       54.0       -14.6       AVG       0       1.32         22324.410       49.9       H       74.0       -24.1       PK       0       1.32         0       0       0       0       0       0       0       0       0         0       0       0       0       0       0       0       0       0       0         0<!--</td--><td></td><td></td><td></td><td>,</td><td></td><td></td><td></td><td></td><td>Z</td></td>	Tx Chain:       Antenna 2       Data Rate:       MCS0         Frequency       Level       Pol       15.209 / 15E       Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/h       Limit       Margin       Pk/QP/Avg       degrees       meters         11160.050       46.1       H       54.0       -7.9       AVG       47       1.85         11160.300       54.6       H       74.0       -19.4       PK       47       1.85         1375.000       43.7       V       54.0       -10.3       Peak       265       1.0       Not a radio signal.         2991.670       46.2       V       68.3       -22.1       Peak       243       1.0       Not a radio signal.         22320.110       39.4       H       54.0       -14.6       AVG       0       1.32         22324.410       49.9       H       74.0       -24.1       PK       0       1.32         0       0       0       0       0       0       0       0       0         0       0       0       0       0       0       0       0       0       0         0 </td <td></td> <td></td> <td></td> <td>,</td> <td></td> <td></td> <td></td> <td></td> <td>Z</td>				,					Z
Tx Chain:       Antenna 2       Data Rate:       MCSO         Frequency       Level       Pol       15:209 / 15E       Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/n       Limit       Margin       Pk/QP/Avg       degrees       meters         11160.050       46.1       H       54.0       -7.9       AVG       47       1.85         11160.300       54.6       H       74.0       -19.4       PK       47       1.85         1375.000       43.7       V       54.0       -10.3       Peak       265       1.0       Not a radio signal.         2991.670       46.2       V       68.3       -22.1       Peak       243       1.0       Not a radio signal.         22320.110       39.4       H       54.0       -14.6       AVG       0       1.32         22324.410       49.9       H       74.0       -24.1       PK       0       1.32         0       0       0       0       0       0       0       0       0       0         0       0       0       0       0       0       0       0       0       0       0 <td>Tx Chain:       Antenna 2       Data Rate:       MCS0         Frequency       Level       Pol       15.209 / 15E       Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/h       Limit       Margin       Pk/QP/Avg       degrees       meters         11160.050       46.1       H       54.0       -7.9       AVG       47       1.85         11160.300       54.6       H       74.0       -19.4       PK       47       1.85         1375.000       43.7       V       54.0       -10.3       Peak       265       1.0       Not a radio signal.         2991.670       46.2       V       68.3       -22.1       Peak       243       1.0       Not a radio signal.         22320.110       39.4       H       54.0       -14.6       AVG       0       1.32         22324.410       49.9       H       74.0       -24.1       PK       0       1.32         0.0      </td> <td></td> <td>440</td> <td></td> <td>M</td> <td>44 00</td> <td></td> <td>-</td> <td></td> <td></td>	Tx Chain:       Antenna 2       Data Rate:       MCS0         Frequency       Level       Pol       15.209 / 15E       Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/h       Limit       Margin       Pk/QP/Avg       degrees       meters         11160.050       46.1       H       54.0       -7.9       AVG       47       1.85         11160.300       54.6       H       74.0       -19.4       PK       47       1.85         1375.000       43.7       V       54.0       -10.3       Peak       265       1.0       Not a radio signal.         2991.670       46.2       V       68.3       -22.1       Peak       243       1.0       Not a radio signal.         22320.110       39.4       H       54.0       -14.6       AVG       0       1.32         22324.410       49.9       H       74.0       -24.1       PK       0       1.32         0.0		440		M	44 00		-		
Frequency         Level         Pol         15.209 / 15E         Detector         Azimuth         Height         Comments           MHz         dBµV/m         v/h         Limit         Margin         Pk/QP/Avg         degrees         meters           11160.050         46.1         H         54.0         -7.9         AVG         47         1.85           11160.300         54.6         H         74.0         -19.4         PK         47         1.85           1375.000         43.7         V         54.0         -10.3         Peak         265         1.0         Not a radio signal.           2991.670         46.2         V         68.3         -22.1         Peak         243         1.0         Not a radio signal.           22320.110         39.4         H         54.0         -14.6         AVG         0         1.32           22324.410         49.9         H         74.0         -24.1         PK         0         1.32           0.0	Frequency         Level         Pol         15.209 / 15E         Detector         Azimuth         Height         Comments           MHz         dB <sub>IL</sub> V/m         v/h         Limit         Margin         Pk/QP/Avg         degrees         meters									
MHz         dBµV/m         V/h         Limit         Margin         Pk/QP/Avg         degrees         meters           11160.050         46.1         H         54.0         -7.9         AVG         47         1.85           1375.000         43.7         V         54.0         -10.3         Peak         265         1.0         Not a radio signal.           2991.670         46.2         V         68.3         -22.1         Peak         243         1.0         Not a radio signal.           22320.110         39.4         H         54.0         -14.6         AVG         0         1.32           22324.410         49.9         H         74.0         -24.1         PK         0         1.32	MHz         dBµV/m         v/h         Limit         Margin         PK/QP/Avg         degrees         meters           11160.050         46.1         H         54.0         -7.9         AVG         47         1.85           11160.050         46.1         H         74.0         -19.4         PK         47         1.85           1375.000         43.7         V         54.0         -10.3         Peak         265         1.0         Not a radio signal.           2991.670         46.2         V         68.3         -22.1         Peak         243         1.0         Not a radio signal.           22320.110         39.4         H         54.0         -14.6         AVG         0         1.32           22324.410         49.9         H         74.0         -24.1         PK         0         1.32	A Onum.								
11160.050       46.1       H       54.0       -7.9       AVG       47       1.85         11160.000       54.6       H       74.0       -19.4       PK       47       1.85         1375.000       43.7       V       54.0       -10.3       Peak       265       1.0       Not a radio signal.         2991.670       46.2       V       68.3       -22.1       Peak       243       1.0       Not a radio signal.         22320.110       39.4       H       54.0       -14.6       AVG       0       1.32         22324.410       49.9       H       74.0       -24.1       PK       0       1.32         n20 CH116       60.0       - <t< td=""><td>11160.050       46.1       H       54.0       -7.9       AVG       47       1.85         11160.300       54.6       H       74.0       -19.4       PK       47       1.85         1375.000       43.7       V       54.0       -10.3       Peak       265       1.0       Not a radio signal.         2991.670       46.2       V       68.3       -22.1       Peak       243       1.0       Not a radio signal.         22320.110       39.4       H       54.0       -14.6       AVG       0       1.32         22324.410       49.9       H       74.0       -24.1       PK       0       1.32</td><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td><td></td><td>Comments</td></t<>	11160.050       46.1       H       54.0       -7.9       AVG       47       1.85         11160.300       54.6       H       74.0       -19.4       PK       47       1.85         1375.000       43.7       V       54.0       -10.3       Peak       265       1.0       Not a radio signal.         2991.670       46.2       V       68.3       -22.1       Peak       243       1.0       Not a radio signal.         22320.110       39.4       H       54.0       -14.6       AVG       0       1.32         22324.410       49.9       H       74.0       -24.1       PK       0       1.32					1				Comments
11160.300       54.6       H       74.0       -19.4       PK       47       1.85         1375.000       43.7       V       54.0       -10.3       Peak       265       1.0       Not a radio signal.         2991.670       46.2       V       68.3       -22.1       Peak       243       1.0       Not a radio signal.         22320.110       39.4       H       54.0       -14.6       AVG       0       1.32         22324.410       49.9       H       74.0       -24.1       PK       0       1.32         70.0       -0.0       -0.0       -0.0       -0.0       -0.0       -0.0       -0.0         90       60.0       -0.0       -0.0       -0.0       -0.0       -0.0       -0.0       -0.0       -0.0         90       60.0       -0.0       -0.0       -0.0       -0.0       -0.0       -0.0       -0.0       -0.0       -0.0       -0.0       -0.0       -0.0       -0.0       -0.0       -0.0       10000       18000	11160.300       54.6       H       74.0       -19.4       PK       47       1.85         1375.000       43.7       V       54.0       -10.3       Peak       265       1.0       Not a radio signal.         2991.670       46.2       V       68.3       -22.1       Peak       243       1.0       Not a radio signal.         22320.110       39.4       H       54.0       -14.6       AVG       0       1.32         22324.410       49.9       H       74.0       -24.1       PK       0       1.32         n20 CH116       60.0						ě.			
1375.000       43.7       V       54.0       -10.3       Peak       265       1.0       Not a radio signal.         2991.670       46.2       V       68.3       -22.1       Peak       243       1.0       Not a radio signal.         22320.110       39.4       H       54.0       -14.6       AVG       0       1.32         22324.410       49.9       H       74.0       -24.1       PK       0       1.32         n20 CH116         0       0.0       -0.0       -0.0       -0.0       -0.0       -0.0       -0.0         0       0.0       -0.0       -0.0       -0.0       -0.0       10000       18000	1375.000       43.7       V       54.0       -10.3       Peak       265       1.0       Not a radio signal.         2991.670       46.2       V       68.3       -22.1       Peak       243       1.0       Not a radio signal.         22320.110       39.4       H       54.0       -14.6       AVG       0       1.32         22324.410       49.9       H       74.0       -24.1       PK       0       1.32         n20 CH116       60.0									
2991.670         46.2         V         68.3         -22.1         Peak         243         1.0         Not a radio signal.           22320.110         39.4         H         54.0         -14.6         AVG         0         1.32           22320.410         49.9         H         74.0         -24.1         PK         0         1.32           70.0         -         -         -         0         1.32         -         -           70.0         -         -         0         1.32         -         -         -           90.0         -         -         -         0         1.32         -         -           1000         -         -         -         -         0         1.32         -	2991.670         46.2         V         68.3         -22.1         Peak         243         1.0         Not a radio signal.           22320.110         39.4         H         54.0         -14.6         AVG         0         1.32           22320.110         49.9         H         74.0         -24.1         PK         0         1.32           22324.410         49.9         H         74.0         -24.1         PK         0         1.32									Not a radio signal.
22320.110 39.4 H 54.0 -14.6 AVG 0 1.32 22324.410 49.9 H 74.0 -24.1 PK 0 1.32	22320.110 39.4 H 54.0 -14.6 AVG 0 1.32 22324.410 49.9 H 74.0 -24.1 PK 0 1.32 n20 CH116									
n20 CH116 80.0 70.0 (Who go of the second	n20 CH116 80.0 70.0 (W) 60.0 90.0 40.0 30.0 10000 10000 10000 10000 10000 10000 10000 10000 10000			Н						
80.0 70.0 70.0 60.0 50.0 40.0 30.0 10000 10000 10000 10000 10000 10000 10000	80.0 70.0 70.0 60.0 50.0 40.0 30.0 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000	22324.410	49.9	Н	74.0	-24.1	PK	0	1.32	
		Amplitude (dBuV/m)	80.0 - 70.0 - 60.0 - 50.0 - 40.0 - 30.0 -	) ( ] N M <sup>A</sup> M		1) 				
		L								





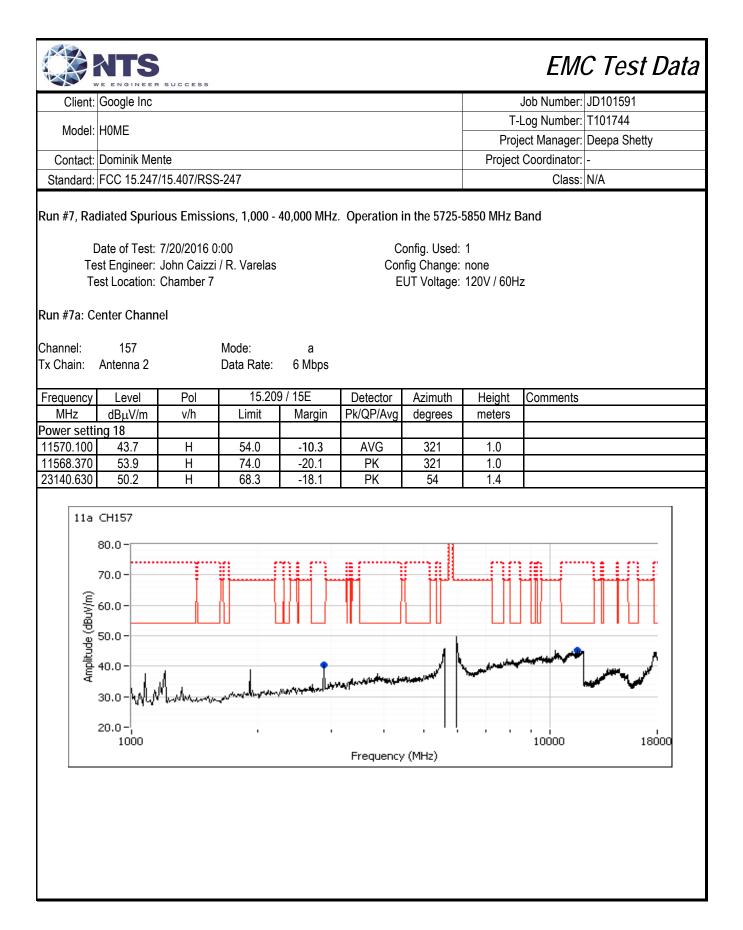


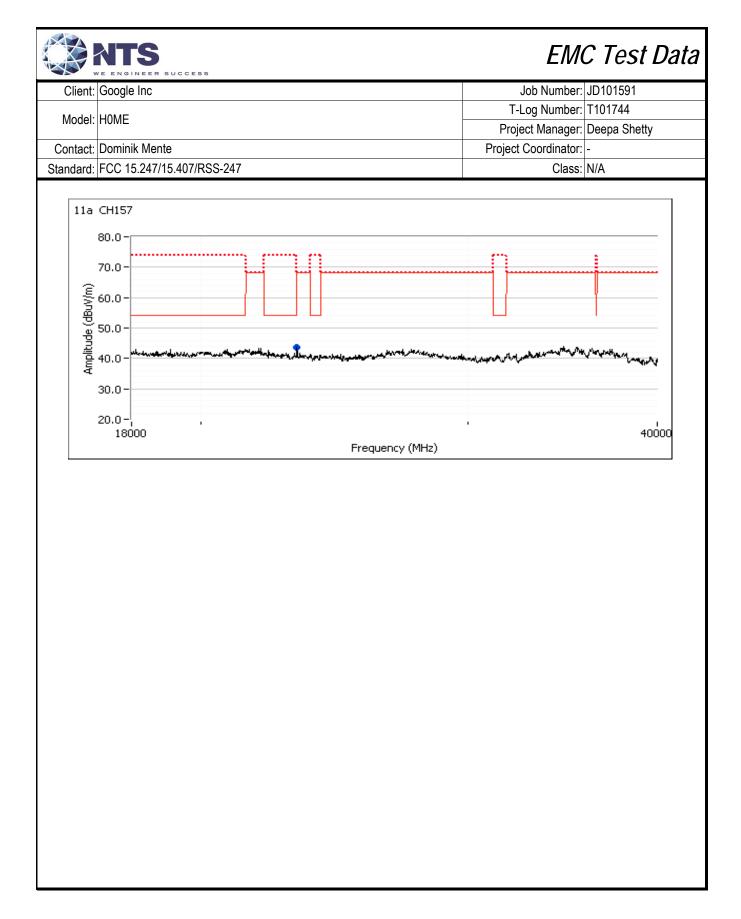




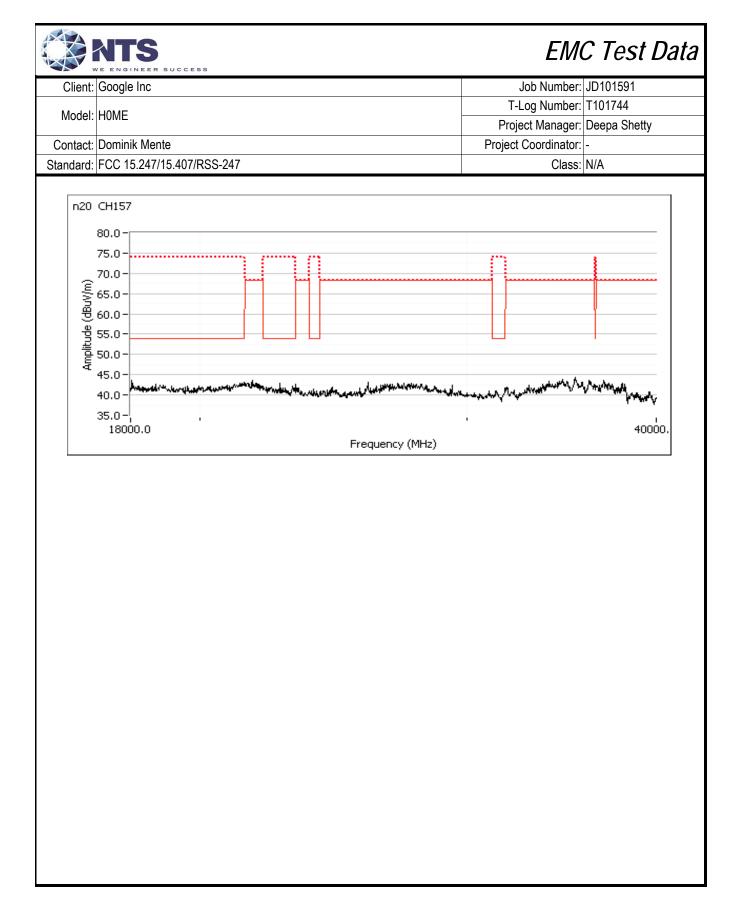
		SUCCESS						EMC Test Data		
Client: G	Google Inc						1	Job Number: JD101591		
Model: H							T-Log Number: T101744			
							Project Manager: Deepa Shetty			
Contact: D	Dominik Men	te					Project	Coordinator: -		
Standard: F	CC 15.247/	15.407/RSS	5-247					Class: N/A		
	liated Spuri ate of Test: 7 t Engineer: 1	7/20/2016 0	:00	40000 MHz	C	Node: Wors onfig. Used: fig Change:	1	n Run #5		
Tes	st Location: (	Chamber 7				UT Voltage:		Ζ		
Run #6a: Lov Channel: Tx Chain: A	w Channel 100 Antenna 2		Mode: Data Rate:	a 6 Mbps						
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
10999.870	41.5	Н	54.0	-12.5	AVG	266	1.0			
11004.420	52.6	Н	74.0	-21.4	PK	266	1.0			
2266.670	39.1	V	54.0	-14.9	Peak	169	1.0	Not a radio signal.		
2991.670 22000.370	45.4 50.4	V H	68.3 68.3	-22.9 -17.9	Peak PK	230 12	1.0 1.9	Not a radio signal.		
21 Amplitude (dBuV/m) 15 15 15	H100 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 1000	Lwww	han the second s		Frequency					

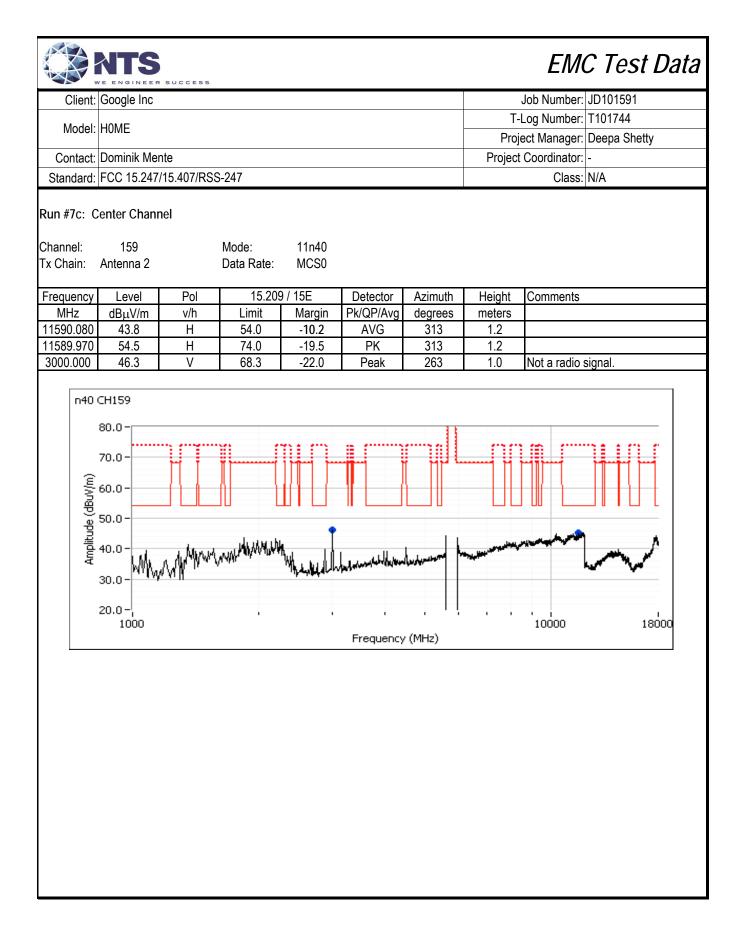
	NTS							EMO	C Test Data
Client:	Google Inc	SUCCESS						Job Number:	ID101501
Cilent.	Google Inc							Log Number:	
Model:	HOME								Deepa Shetty
Contacti	Dominik Mer	, to							
			047				Project	Coordinator:	
	FCC 15.247		5-247					Class:	N/A
Run #6b: H	gn Channel								
Channel:	144		Mode:	а					
	Antenna 2		Data Rate:						
<b>_</b>	1		45.000	45.047	D. L. L.	A 1	11.2.1.0		
Frequency MHz	Level	Pol v/h	15.2097 Limit	/ 15.247 Margin	Detector Pk/QP/Avg	Azimuth	Height	Comments	
Power setti	dBµV/m	V/I1	LIIIIL	Margin	FINGFIAVG	degrees	meters		
11440.000	44.8	Н	54.0	-9.2	AVG	317	1.0		
11439.870	54.8	H	74.0	-19.2	PK	317	1.0		
22880.150	43.4	Н	54.0	-10.6	AVG	64	1.2		
22879.900	51.3	Н	74.0	-22.7	PK	64	1.2		

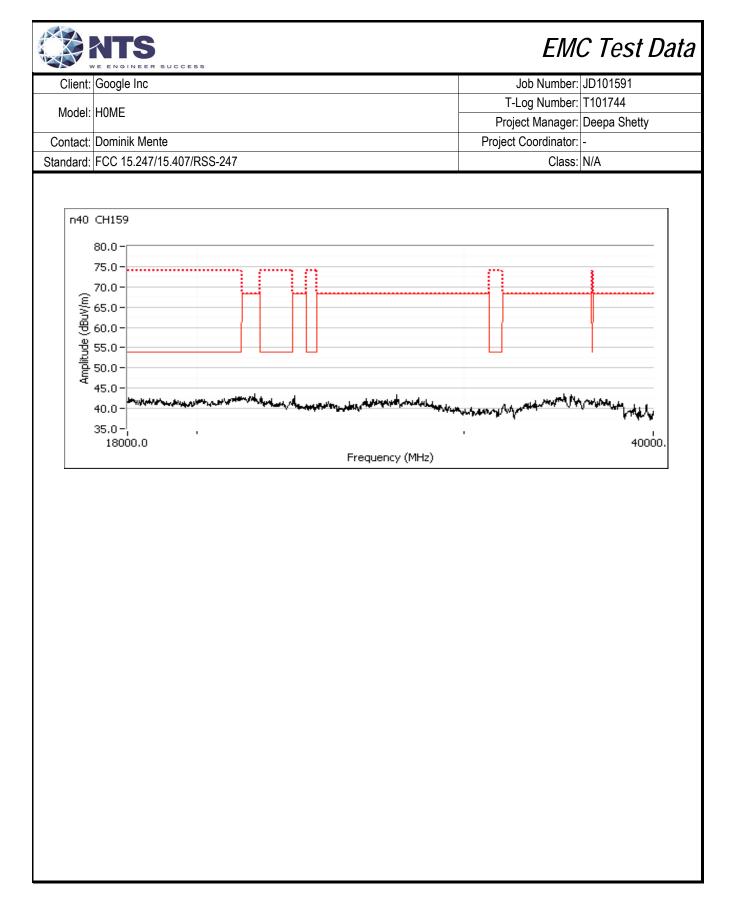


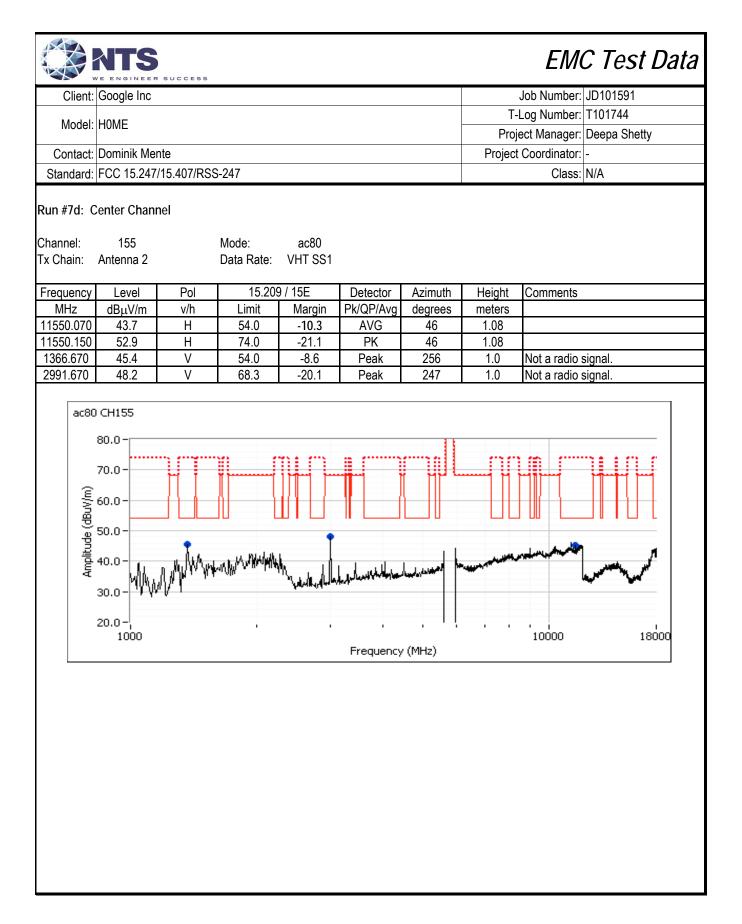


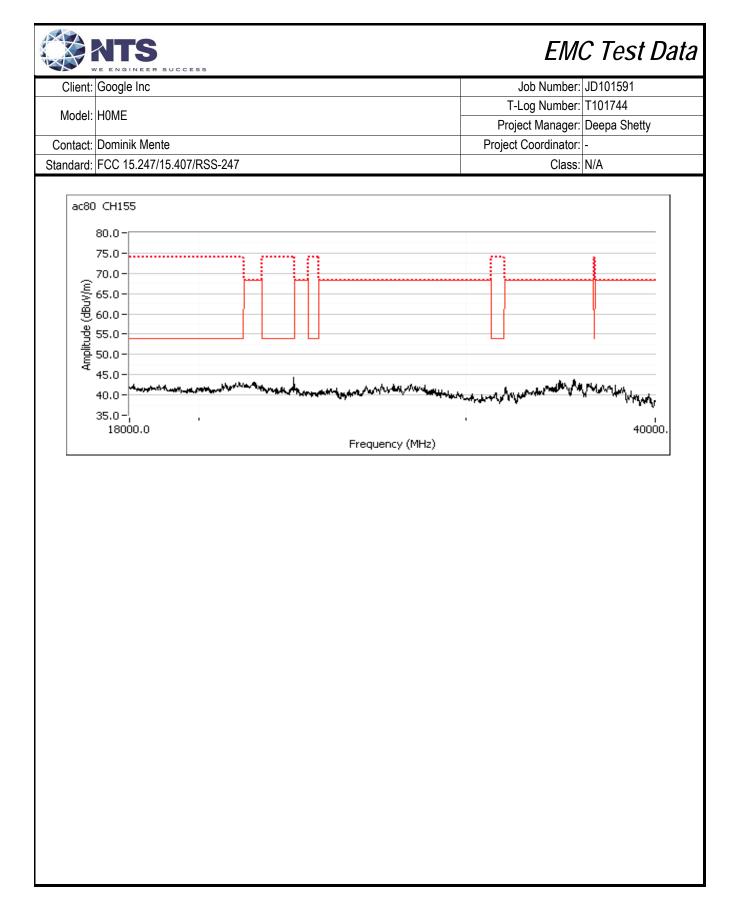
		SUCCESS						EMO	C Test Data
Client:	Google Inc							Job Number:	JD101591
Model:							T-	Log Number:	T101744
							Proje	ect Manager:	Deepa Shetty
Contact:	Dominik Me	nte					Project	Coordinator:	-
Standard:	FCC 15.247	/15.407/RSS	5-247					Class:	N/A
	Center Chani Date of Test:		:00		C	onfig. Used:	1		
	est Engineer: est Location:		/ R. Varelas	ifig Change: UT Voltage:		Z			
Channel: Tx Chain:	157 Antenna 2		Mode: Data Rate:	11n20 MCS0					
Frequency	Level	Pol	15.209	9 / 15E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
11570.000	44.2	H	54.0	-9.8	AVG	44	1.00		
11565.180 2583.330	54.5 43.0	H V	74.0 68.3	-19.5 -25.3	PK Peak	44 296	1.00 1.0	Not a radio s	signal
2991.670	45.7	V	68.3	-23.5	Peak	230	1.5	Not a radio s	
Image: model         Image: model<									











		RSUCCESS						EMC Test	
Client:	Google Inc	A BUCCESS					Job Number: JD101591		
Model:							T-Log Number: T101744		
MODEI.							Proje	ect Manager: Deepa Shetty	
Contact:	Dominik Me	nte					Project	Coordinator: -	
Standard:	tandard: FCC 15.247/15.407/RSS-247 Class: N							Class: N/A	
				40000 MHz	. Operating N			n Run #7	
		7/20/2016 0				onfig. Used:			
	st Engineer: est Location:	Rafael Vare Chamber 7	105			fig Change: UT Voltage:		7	
					L	or voltage.	120 0 / 00112	-	
Run #8a: L	ow Channel	l							
Channel:	149		Mode:	а					
	Antenna 2		Data Rate:						
				•					
Frequency	Level	Pol		/ 15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	ļ	
Power setti			<b>F</b> 4 0	0.0	A1/0		4.0		
11490.030	44.7	H	54.0	-9.3	AVG	55 55	1.0		
11490.000 22980.170	54.7 42.7	H H	74.0 54.0	-19.3 -11.3	PK AVG	55 64	1.0 1.4		
22980.070	50.6	H	74.0	-23.4	PK	64	1.4		
	igh Channel	I	Mode:	а					
Channel: Tx Chain:	165 Antenna 2		Data Rate:	•					
Channel: Tx Chain: Frequency	Antenna 2 Level	Pol	15.209	/ 15.247	Detector			Comments	
Channel: Tx Chain: Frequency MHz	Antenna 2 Level dBµV/m	Pol v/h		•	Detector Pk/QP/Avg		Height meters	Comments	
Channel: Tx Chain: Frequency MHz Power setti	Antenna 2 Level dBµV/m ng 18	v/h	15.209 Limit	/ 15.247 Margin	Pk/QP/Avg	degrees	meters	Comments	
Channel: Tx Chain: Frequency	Antenna 2 Level dBµV/m		15.209	/ 15.247				Comments	

V	WE ENGINEER SUCCESS									
Client:	Google Inc	Job Number:	JD101591							
Model:	HOME	T-Log Number:	T101744							
woder.		Project Manager:	Deepa Shetty							
Contact:	Dominik Mente	Project Coordinator:	-							
Standard:	FCC 15.247/15.407/RSS-247	Class:	N/A							

## RSS-247 and FCC 15.247 (DTS) Radiated Spurious Emissions

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

### General Test Configuration

NTS

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT, unless otherwise noted.

### Ambient Conditions:

Temperature:	22.6 °C
Rel. Humidity:	35 %

### Summary of Results - Device Operating in the 2400-2483.5 MHz Band

- L									
	Run #	Mode	Channel	Target Power (dBm)	Passing Power Setting	Test Performed	Limit	Result / Margin	
L				(ubiii)	ocung				
			2402MHz		6	Radiated Emissions,	FCC Part 15.209 /	49.4 dBµV/m @ 4924.0	
	BLE + 11b	DLE + 110	2462MHz	-	18	1 - 25 GHz	15.247( c)	MHz (-4.6 dB)	
			2480MHz		6	Radiated Emissions,	FCC Part 15.209 /	46.5 dBµV/m @	
		BLE + 11a	5200MHz	-	19	1 - 25 GHz	15.247( c)	20800.1 MHz (-7.5 dB)	

### Modifications Made During Testing

No modifications were made to the EUT during testing

### Deviations From The Standard

No deviations were made from the requirements of the standard.

#### Sample Notes

Sample S/N: 6629AZZB75 Driver: 1.21 Antenna: Internal



Client:	Google Inc	Job Number:	JD101591
Model:	HOME	T-Log Number:	T101744
wodel:	TIONE	Project Manager:	Deepa Shetty
Contact:	Dominik Mente	Project Coordinator:	-
Standard:	FCC 15.247/15.407/RSS-247	Class:	N/A

### Procedure Comments:

Measurements performed in accordance with FCC KDB 558074

Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time

Unless otherwise stated/noted, emission has duty cycle ≥ 98% and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold.

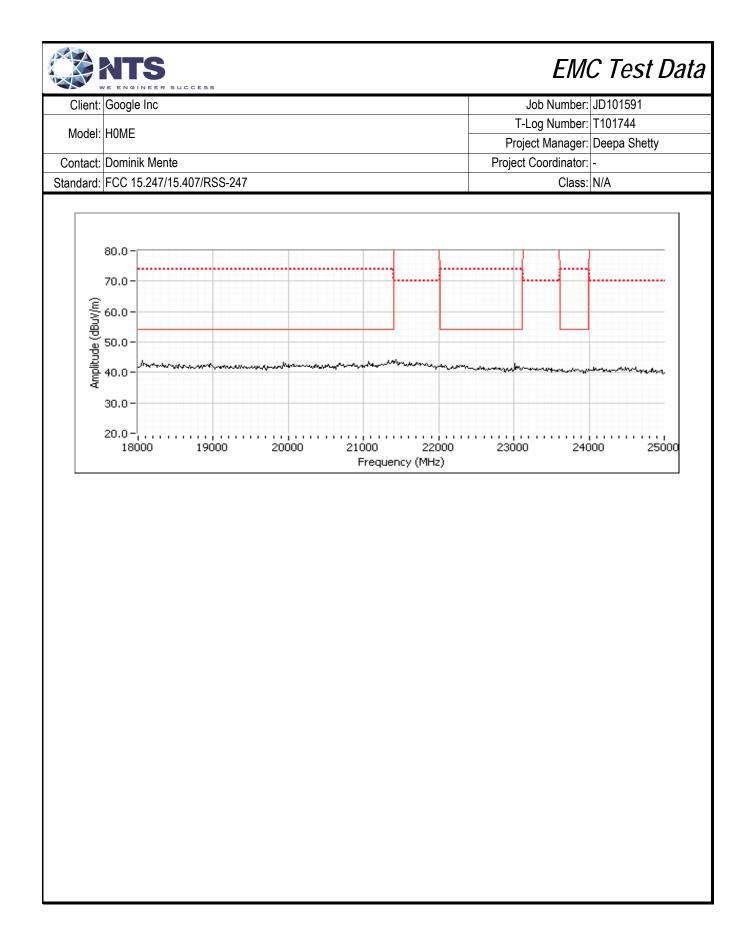
Band reject filter used

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
BLE	1Mbps	0.61	Yes	0.383	2.2	4.3	2611
11b	1 Mbps	1.00	Yes	18.95	0	0	53
11g/a	6 Mbps	0.99	Yes	3.13	0	0	319

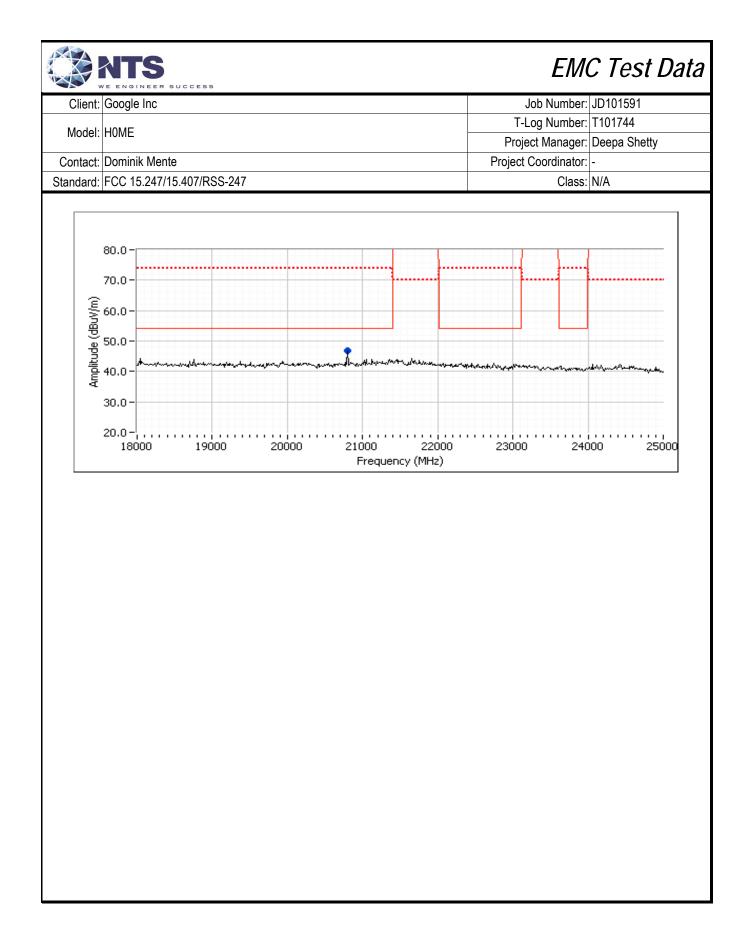
#### Measurement Specific Notes:

Note 1:	Emission in non-restricted band, but limit of 15.209 used.
Note 2:	Emission in non-restricted band, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
	Emission has constant duty cycle < 98%, average measurement performed: RBW=1MHz, VBW>1/T but not less than 10Hz,
Note 4:	peak detector, linear averaging, auto sweep, trace average 100 traces, measurement corrected by Linear voltage correction
	factor
Note 6:	Emission has non constant duty cycle < 98%, average measurement performed: RBW=1MHz, VBW> 1/T, peak detector,
NOLE 0.	linear average mode, sweep time auto, max hold. Max hold for 50*(1/DC) traces

	VE ENGINEER	SUCCESS						EIV/Q	C Test Data
Client:	Google Inc						,	Job Number:	JD101591
							T-l	_og Number:	T101744
Model:	HUME						Proje	ect Manager:	Deepa Shetty
Contact:	Dominik Mer	nte						Coordinator:	
	FCC 15.247		5-247				,	Class:	
I Te Te	adiated Spur Date of Test: est Engineer: est Location: Radiated Spu	7/26/2016 8 Rafael Vare FT Chambe	& 7/27/16 elas & John C er #7		C Con	onfig. Used: fig Change: UT Voltage:	None		
Cull#Id. M	aulateu Spu	IIIOUS EIIIIS	510115						
Channel: Tx Chain:	2402MHz Aux		Mode: Data Rate:	BLE 1Mbps					
Channel: Tx Chain:	2462 MHz Aux		Mode: Data Rate:	b 1Mbps					
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
7385.180	46.3	V	54.0	-7.7	AVG	32	1.0	RB 1 MHz;V	B 10 Hz;Peak
7384.840	53.9	V	74.0	-20.1	PK	32	1.0		B 3 MHz;Peak
4924.010	49.4	V	54.0	-4.6	AVG	33	1.6		B 10 Hz;Peak
4924.150	53.0	V	74.0	-21.0	PK	33	1.6		B 3 MHz;Peak
7205.460	47.3	V	54.0	-6.7	Avg	334	1.6		3 kHz;Peak VAVG 10
7206.670	52.5	V V	74.0	-21.5	PK Deek	334	1.6		B 3 MHz;Peak
2991.670	45.9	V	-	-	Peak	254	1.0	Not radio sig	Inal
dBuV/m)	2402 MHz & 80.0 - 70.0 - 60.0 - 50.0 - 40.0 - 30.0 -	WIFI 802.11	ь 2462 MHz		hall-barrenal-see				
	20.0 -  1000			' '	, Frequency	(MH-2)		10000	18000



		SUCCESS						EM	C Test Data
Client:	Google Inc							Job Number:	JD101591
Madalı							T-	Log Number:	T101744
Model:	HUME						Proj	ect Manager:	Deepa Shetty
Contact:	Dominik Mer	nte					Project	Coordinator:	-
Standard:	FCC 15.247/	'15.407/RS	S-247					Class:	N/A
Run #1b: R	adiated Spur	rious Emis	sions						
Channel:	2480MHz		Mode:	BLE					
	Aux		Data Rate:	1Mbps					
Channel:	5200 MHz		Mode:	11a					
Tx Chain:	Aux		Data Rate:	6 Mbps					
Frequency	Level	Pol	15.209	15 2/7	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	Comments	
2996.160	45.9	V	-	-	Peak	244	1.0	Not radio sig	anal
4973.200	43.9	V	54.0	-10.1	Avg	254	1.9		kHz;Peak VAVG 100
4973.470	51.8	V	74.0	-22.2	PK	254	1.9		/B 3 MHz;Peak
10406.440	57.4	Н	68.3	-10.9	PK	94	1.1		/B 3 MHz;Peak
15600.130	42.8	V	54.0	-11.2	AVG	55	1.8		
15602.800	54.8	V	74.0	-19.2	PK	55	1.8		
20800.120	46.5	Н	54.0	-7.5	AVG	266	1.6		
20800.070	52.9	Н	74.0	-21.1	PK	266	1.6		
Amplitude (dBuV/m)	2480 MHz & V 80.0 - 70.0 - 60.0 - 50.0 - 40.0 - 30.0 - 20.0 - 1000	wiFi 802.1	1a 5200 MHz					10000	





Client:	Google Inc	Job Number:	ID101591
Product		T-Log Number:	
System Configuration:		Project Manager:	
, ,	Dominik Mente	Project Coordinator:	
Emissions Standard(s):	FCC 15.247/15.407/RSS-247	, Class:	
Immunity Standard(s):		Environment:	-

## **EMC** Test Data

For The

## **Google Inc**

Product

HOME

Date of Last Test: 8/1/2016

	L'ENGINEER SUCCESS		
Client:	Google Inc	Job Number:	JD101591
Model:	LOWE	T-Log Number:	T102213
wouer.	TIOME	Project Manager:	Deepa Shetty
Contact:	Dominik Mente	Project Coordinator:	-
Standard:	FCC 15.247/15.407/RSS-247	Class:	N/A

## RSS-247 (LELAN) and FCC 15.407(UNII) Antenna Port Measurements Power, PSD, Bandwidth and Spurious Emissions

Test Specific Details

NTS

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

### Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Power, 5150 - 5250MHz	15.407(a) (1) (iv)	Pass	a: 18.1dBm (64.6 mW) n20: 18.1dBm (64.6 mW) n40: 13.1dBm (20.4 mW) ac80: 8.4dBm (6.9 mW)
1	PSD, 5150 - 5250MHz	15.407(a) (1) (iv)	Pass	a: 6.6 dBm/MHz n20: 6.4 dBm/MHz n40: -2.4 dBm/MHz ac80: -12.0 dBm/MHz
1	Power, 5150 - 5250MHz	RSS-247 6.2.1 (1)	Pass	a: 16.0dBm (39.8 mW) n20: 16.0dBm (39.8mW) n40: 13.1dBm (20.4 mW) ac80: 8.4dBm (6.9 mW)
1	PSD, 5150 - 5250MHz	RSS-247 6.2.1 (1)	Pass	a: 4.3 dBm/MHz n20: 4.0 dBm/MHz n40: -2.4 dBm/MHz ac80: -12.0 dBm/MHz
1	Power, 5250 - 5350MHz	15.407(a) (2), RSS-247 6.2.2 (1)	Pass	a: 17.8dBm (60.3 mW) n20: 17.7dBm (58.9 mW) n40: 15.8dBm (38.0 mW) ac80: 9.1dBm (8.1 mW)
1	PSD, 5250 - 5350MHz	15.407(a) (2), RSS-247 6.2.2 (1)	Pass	a: 4.8 dBm/MHz n20: 4.6 dBm/MHz n40: -0.9 dBm/MHz ac80: -11.1 dBm/MHz
1	Max EIRP 5250 - 5350MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm.		EIRP = 23.5 dBm (223.9 mW)

Client:	Google Inc			,	Job Number:	JD101591	
Model:				T-l	og Number:	T102213	
woder:	HUME			Project Manager: Deepa Shetty			
Contact:	Dominik Me	ente		Project	Coordinator:	-	
Standard:	FCC 15.247	7/15.407/RSS-247			Class:	N/A	
_							
Ru	n #	Test Performed	Limit	Pass / Fail	Result / Mar a: 16.4dBm		
	I	Power, 5470 - 5725MHz	15.407(a) (2)	Pass	n20: 16.5dB n40: 14.9dB	(43.7 mW) m (44.7 mW) m (30.9 mW) Bm (16.6 mW)	
	1	PSD, 5470 - 5725MHz	15.407(a) (2)	Pass	a: 4.9 dBm/l n20: 4.3 dBr n40: 0.4 dBr ac80: -6.6 d	m/MHz m/MHz	
,	1	Power, 5470 - 5725MHz	RSS-247 6.2.3 (1)	Pass	a: 16.4dBm n20: 16.5dB n40: 14.9dB		
1 PSD, 5470 - 5725MI		PSD, 5470 - 5725MHz	RSS-247 6.2.3 (1)	a: 4.9 dBm/MHz n20: 4.3 dBm/MHz n40: 0.4 dBm/MHz ac80: -6.6 dBm/MH		m/MHz m/MHz	
,	1	Max EIRP 5470 - 5725MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm.	Pass		dBm (218.8 mW)	
	1	Power, 5725 - 5850MHz	15.407(a) (3) RSS-247 6.2.4 (1)	Pass	n40: 15.3dB	(58.9 mW) m (55.0 mW) m (33.9 mW) Vm (17.0 mW)	
	1	PSD, 5725 - 5850MHz	15.407(a) (3) RSS-247 6.2.4 (1)	Pass	a: 4.1 dBm/l n20: 3.8 dBr n40: -1.0 dB ac80: -7.1 d	m/MHz 8m/MHz	
	1	26dB Bandwidth	15.407 (Information only)	-	> 20MHz for		
	1	99% Bandwidth	RSS 210 (Information only)	N/A	a: 64.0 MHz n20: 62.7 M n40: 56.9 M ac80: 140.6	Hz Hz	
	2	Antenna Conducted - Out of Band Spurious	15.407(b) -27dBm/MHz		All emissions below the -27dBm/MHz limit		

	E ENGINEER SUCCESS	EMO	C Test Data
Client:	Google Inc	Job Number:	JD101591
Model:	LOME	T-Log Number:	T102213
woder.	HOME	Project Manager:	Deepa Shetty
Contact:	Dominik Mente	Project Coordinator:	-
Standard:	FCC 15.247/15.407/RSS-247	Class:	N/A

### General Test Configuration

When measuring the conducted emissions from the EUT's antenna port, the antenna port of the EUT was connected to the spectrum analyzer or power meter via a suitable attenuator to prevent overloading the measurement system. All measurements are corrected to allow for the external attenuators and cables used.

Ambient Conditions:	Temperature:	25 °C
	Rel. Humidity:	43 %

### Modifications Made During Testing

No modifications were made to the EUT during testing

### Deviations From The Standard

No deviations were made from the requirements of the standard.

### Procedure Comments:

Measurements performed in accordance with FCC KDB 789033

	Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
ĺ	11a	6	0.99	Yes	3.13	0	0	319
	n20	MCS0	1.00	Yes	9.92	0	0	101
	n40	MCS0	1.00	Yes	4.76	0	0	210
	ac80	VHT SS1	0.99	Yes	2.25	0	0	444

### Sample Notes

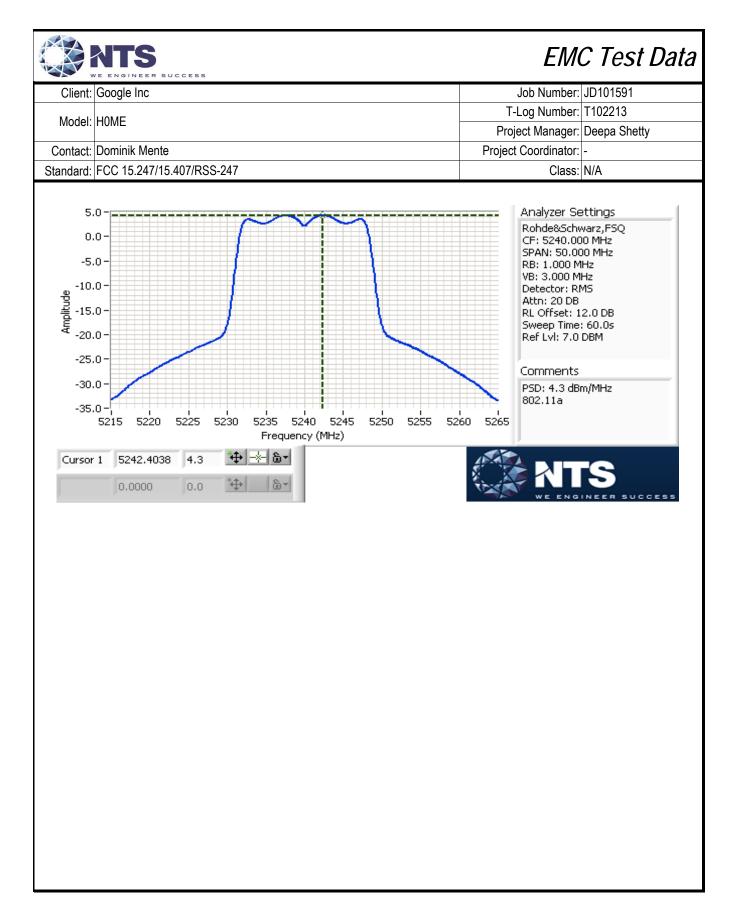
Sample S/N: 6629AZZB6W Driver: 1.21 Measurements performed on the worse case output (Antenna 2) based on preliminary measurements. All calculations using the

Note: Only plots of the worse case results are provided

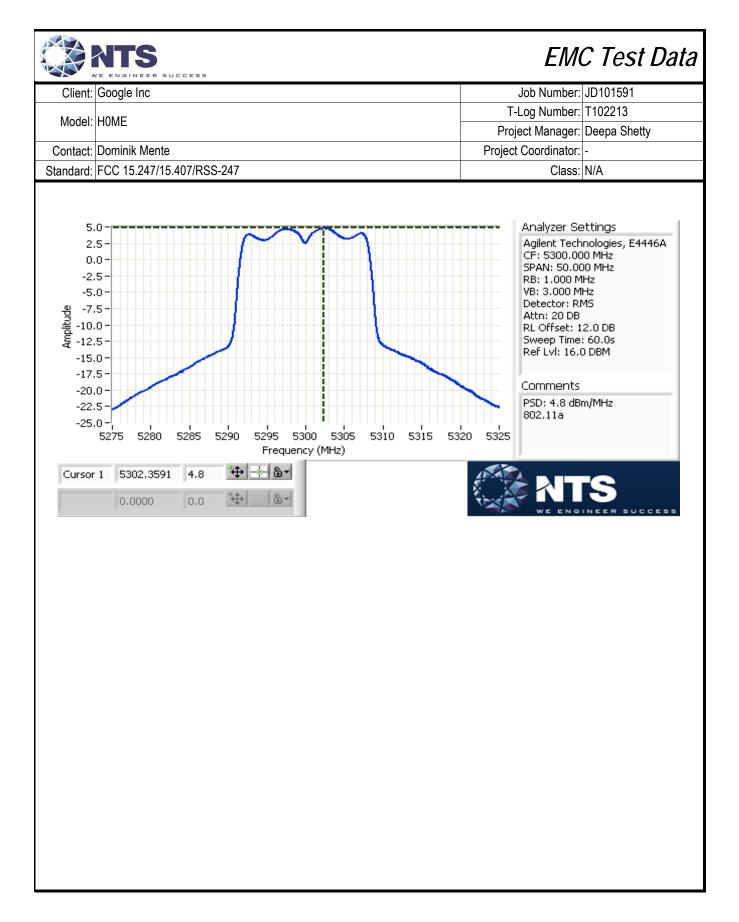
					EMO	C Test Data
Client:	Google Inc				Job Number:	JD101591
					T-Log Number:	T102213
Model:	HUME				Project Manager:	Deepa Shetty
Contact:	Dominik Mente				Project Coordinator:	-
Standard:	FCC 15.247/15.407/RSS	-247			Class:	N/A
[	ndwidth, Output Power a Date of Test: 07/25/16 st Engineer: Rafael Varel		Spectral De	nsity - MIMO Systems Config. Used: Config Change:		
	est Location: Lab 3			EUT Voltage:	120V / 60Hz	
Note 1:	measured using: RBW=	IMHz, VB=3	MHz, Spar	cept for channels that spar n > OBW, # of points in swi nuous, duty cycle $\ge 98\%$ )	eep ≥ 2*span/RBW, auto	sweep, RMS detector,
Note 2:	on (transmitted signal wa	s continuous	s, duty cycle	,		
Note 4:	99% Bandwidth measure times OBW.	d in accorda	nce with C6	3.10 - RB between 1-5 % (	of OBW and VB ≥ 3*RB, \$	Span between 1.5 and 5
FCC UNII-1		Pwr	PSD	_		
	Outdoor AP	30	17	FCC only		
х	Indoor AP Station (e.g. Client)	30 24	17	-		
	Outdoor AP (>30° Elv.)	24	11	EIRP		
				_		

	JD101591	Job Number:							Google Inc	Client:
		Log Number:								
		ect Manager:							HOME	Model:
,		Coordinator:	-					nte	Dominik Me	Contact:
		Class:	-,				6-247		FCC 15.247	
		0.000							I	
		23.8	r	239.9	Max EIRP:			0 MHz Band a Gain (dBi):	e - 5150-525 Antenna	ISO Device
Resu	łz	PSD <sup>2</sup> dBm/MH	F					26dB BW	Software	requency
11030	Limit	Calculated	Measured	Limit	Calculated	Measured	%	(MHz)	Setting	(MHz)
										802.11a
Pas	11.0	4.0	4.0	24.0	15.3	15.3	99.0		16.0	5180
Pas	11.0	6.6	6.6 6.2	24.0	18.1	18.1	99.0		19.0	5200 5240
Pas	11.0	6.2	0.2	24.0	18.0	18.0	99.0		19.0 20MHz	5240 802.11n 2
Pas	11.0	3.8	3.8	24.0	15.4	15.4	100.0		16.0	5180
Pas	11.0	6.4	6.4	24.0	18.1	18.1	100.0		19.0	5200
Pas	11.0	5.9	5.9	24.0	18.0	18.0	100.0		19.0	5240
										802.11n 4
Pas	11.0	-2.4	-2.4	24.0	12.2	12.2	100.0		13.0	5190
Pas	11.0	-2.4	-2.4	24.0	13.1	13.1	100.0		14.0	5230 802.11ac
Pas	11.0	-12.0	-12.0	24.0	8.4	8.4	99.0		9.0	5210
	warz,FSQ )0 MHz )0 MHz Hz Hz MS 2.0 DB : 60.0s DBM	Analyzer Se Rohde&Schw CF: 5200.00 SPAN: 50.00 RB: 1.000 M VB: 3.000 M Detector: RM Attn: 20 DB RL Offset: 1 Sweep Time: Ref Lvl: 7.01 Comments PSD: 6.6 dBr 802.11a	20 5225	5215 52	205 5210	5 5200 5 equency (MH;	5190 5195	0 5185	0 - 0 - 0 - 0 - 0 - 0 -	
CESS						) •	⊕ 8	436 6.6	0.0000	Cursor

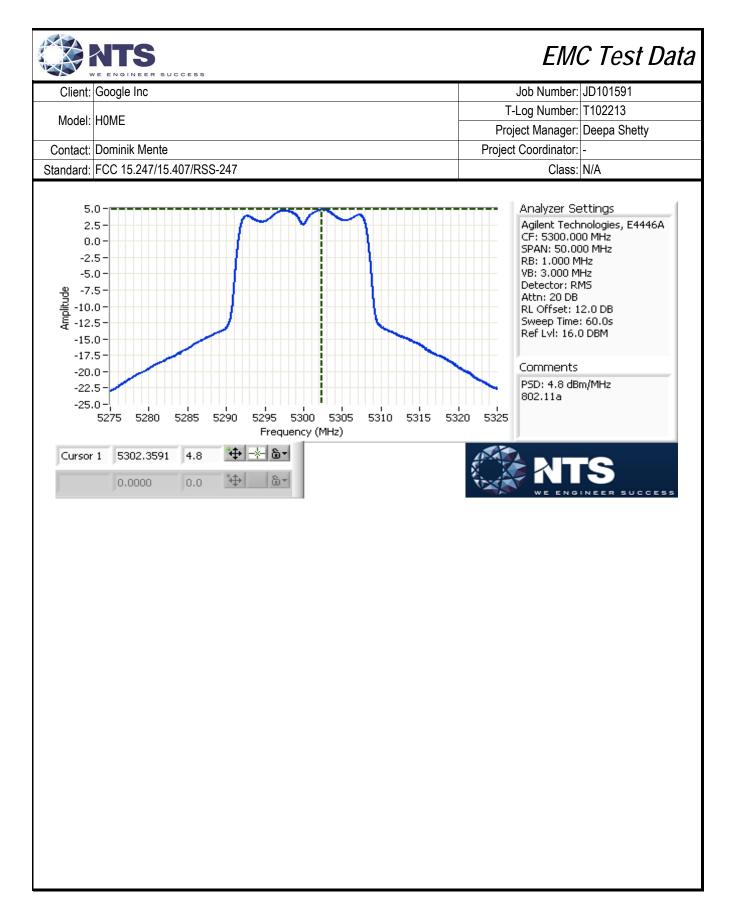
Client:	Google Inc							Job Number:	JD101591	
								_og Number:		
Model:	HOME							ect Manager:		tv
Contact	Dominik Mei	nto					-	Coordinator:		
	FCC 15.247		047				Појесс	Class:		
Standard:	FUU 15.247	/15.407/RSS	-247					Class:	N/A	
ISO Devic	e - 5150-525	0 MHz Band	I - Industry (	Canada						
		a Gain (dBi):	5.7		Max EIRP:	549.5	mW	27.4	dBm	
requency			Duty Cycle	Output	Power <sup>1</sup> dBm (	EIRP)	PSD <sup>2</sup>	<sup>2</sup> dBm/MHz (	EIRP)	
	Software	99% BW	200, 0,000	weasured	Calculated		weasured	Calculated	,	Result
(MHz)	Setting	(MHz)	%	(conducted		Limit	(conducted	(EIRP)	Limit <sup>3</sup>	rtooun
802.11a				)	(EIRP)		)	(EIRP)		
5180	16.0	17.3	99.0	15.3	21.0	22.4	4.0	4.0	4.3	Pass
5200	16.0	28.5	99.0 99.0	15.2	20.9	23.0	3.9	3.9	4.3	Pass
5240	17.0	20.3	99.0	16.0	20.3	23.0	4.3	4.3	4.3	Pass
802.11n 2		20.0	00.0	10.0	21.7	20.0	4.0	4.0	4.0	1 400
5180	16.0	18.6	100.0	15.4	21.1	22.7	3.8	3.8	4.3	Pass
5200	16.0	33.6	100.0	15.2	20.9	23.0	3.7	3.7	4.3	Pass
5240	17.0	35.0	100.0	16.0	21.7	23.0	4.0	4.0	4.3	Pass
802.11n 4										
5190	13.0	41.3	100.0	12.2	17.9	23.0	-2.4	-2.4	4.3	Pass
5230	14.0	36.8	100.0	13.1	18.8	23.0	-2.4	-2.4	4.3	Pass
802.11ac	80MHz									
5210	9.0	77.3	99.0	8.4	14.1	23.0	-12.0	-12.0	4.3	Pass
-10. -25. -25. -25. -25. -35. -40. -45. -50.	0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 -	ŧ00 -7.0	<b>⊕</b> -∻ 8	equency (MH:	z)	52 <sup>1</sup> 10 52 17.280 26.0		Analyzer Se Rohde&Schu CF: 5180.00 SPAN: 100.0 RB: 300 kHz VB: 1.000 kHz Attn: 30 DB RL Offset: C Sweep Time Ref LvI: 5.0 Comments 99% BW: 1 802.11a	warz, FSQ 00 MHz 000 MHz Hz DS 1.0 DB : 20.0ms DBM	



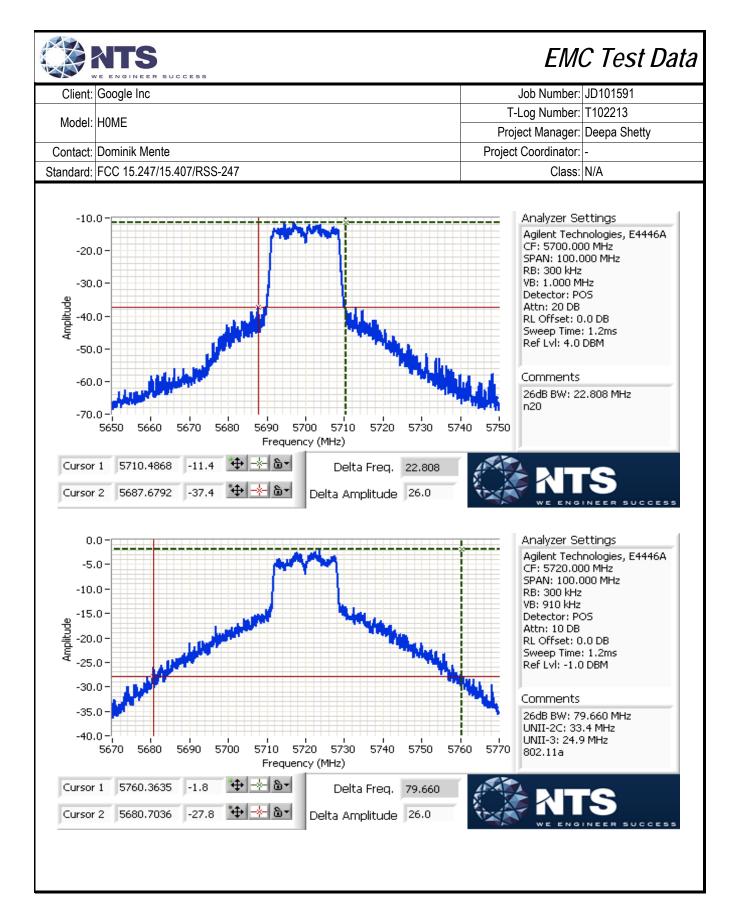
Client	Google Inc	SUCCESS						Job Number:	ID101501	
Cilent.								og Number:		
Model:	H0ME							ect Manager:		hv
Contact:	Dominik Mer	nto						Coordinator:		ıy
	FCC 15.247		2017				Појесі	Class:		
Stanuaru.	1 00 13.247	15.407/100	5-241					01855.	IN/A	
ISO Devic	e - 5250-535	0 MHz Band	I - FCC							
		a Gain (dBi):			Max EIRP:	223.9	) mW	23.5	dBm	
requency	Software	26dB BW	Duty Cycle	Out	tput Power <sup>1</sup> dl	3m	Р	SD <sup>2</sup> dBm/MH	z	
(MHz)	Setting	(MHz)	%		Calculated	Limit		Calculated	Limit	Resul
802.11a			/0	modourou	Galdalatoa	2	modourou	Galoalatoa	Linit	
5260	19.0	66.4	99.0	17.8	17.8	24.0	4.2	4.2	11.0	Pass
5300	19.0	43.3	99.0	17.5	17.5	24.0	4.8	4.8	11.0	Pass
5320	16.0	29.5	99.0	14.5	14.5	24.0	2.0	2.0	11.0	Pass
802.11n 2	20MHz									
5260	19.0	48.2	100.0	17.7	17.7	24.0	3.9	3.9	11.0	Pass
5300	19.0	48.9	100.0	17.5	17.5	24.0	4.6	4.6	11.0	Pass
5320	16.0	29.1	100.0	14.5	14.5	24.0	1.7	1.7	11.0	Pass
802.11n 4										
5270	17.0	87.5	100.0	15.8	15.8	24.0	-0.9	-0.9	11.0	Pass
5310	13.0	40.6	100.0	11.8	11.8	24.0	-4.0	-4.0	11.0	Pass
802.11ac				<u> </u>						_
5290	10.0	142.4	99.0	9.1	9.1	24.0	-11.1	-11.1	11.0	Pass
-10. -20. -90 -30. -111 -50. -60.	0 - 0 - 0 -	Manada	J					Analyzer Se Agilent Tech CF: 5320.00 SPAN: 100.0 RB: 300 kHz VB: 1.000 MI Detector: PC Attn: 20 DB RL Offset: 0 Sweep Time: Ref LvI: 4.0 I Comments 26dB BW: 29 n20	nologies, E44 0 MHz 100 MHz Hz SS .0 DB : 1.2ms DBM	146A
-70. Cursor Cursor	5270 528 1 5335.88	386 -7.4	5300 5310 Fre	iquency (MHa	330 5340 z) Delta Freq. Amplitude	29.143	360 5370			CESS

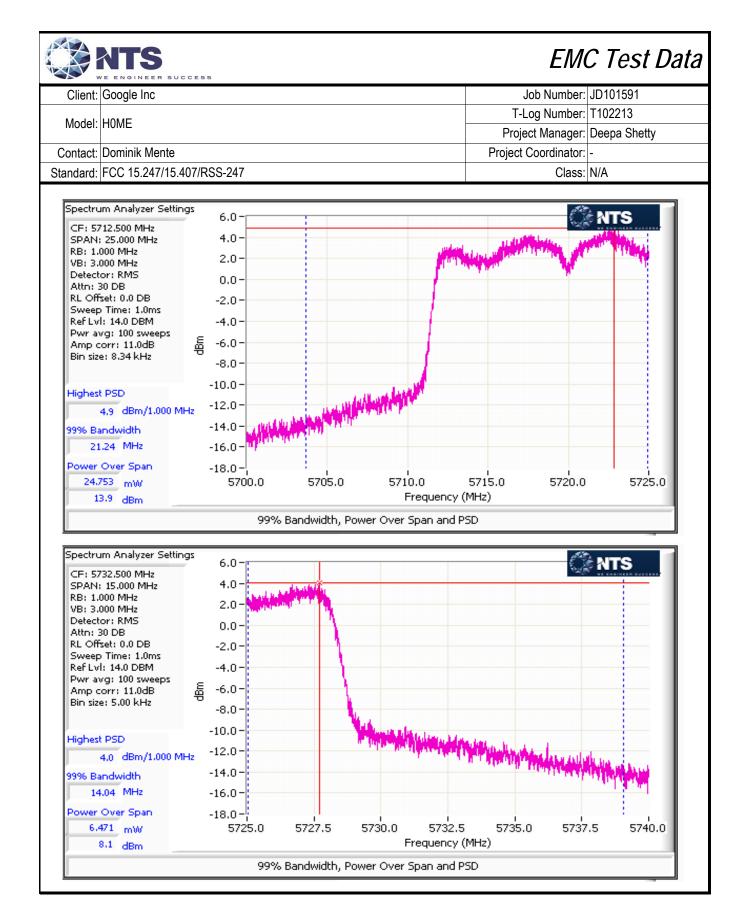


Client:	Google Inc	SUCCESS						Job Number:	JD101591	
Model:	HOME						Т	-Log Number:	T102213	
MOUEI.							Pro	ject Manager:	Deepa Shet	ty
	Dominik Mer						Projec	t Coordinator:	-	
Standard:	FCC 15.247	/15.407/RSS	6-247					Class:	N/A	
SISO Devic	e - 5250-535	0 MHz Band	d - Industry (	Canada						
		a Gain (dBi):			Max EIRP:	223.9	mW	23.5	dBm	
requency	Software	99% BW	Duty Cycle	Out	tput Power <sup>1</sup> dE	3m		PSD <sup>2</sup> dBm/MH	z	Desult
(MHz)	Setting	(MHz)	%	Measured	Calculated	Limit	Measured	Calculated	Limit <sup>3</sup>	Result
802.11a						-			Liiii	
5260	19.0	41.2	99.0	17.8	17.8	24.0	4.2	4.2	11.0	Pass
5300	19.0	28.3	99.0	17.5	17.5	24.0	4.8	4.8	11.0	Pass
5320	16.0	17.0	99.0	14.5	14.5	23.3	2.0	2.0	11.0	Pass
802.11n 2							-			
5260	19.0	32.3	100.0	17.7	17.7	24.0	3.9	3.9	11.0	Pass
5300	19.0	30.1	100.0	17.5	17.5	24.0	4.6	4.6	11.0	Pass
5320	16.0	18.1	100.0	14.5	14.5	23.6	1.7	1.7	11.0	Pass
802.11n 4		20.0	100.0	15.0	15.0	24.0	0.0	0.0	11.0	Deee
5270 5310	17.0 13.0	39.0 36.2	100.0 100.0	15.8 11.8	15.8 11.8	24.0 24.0	-0.9 -4.0	-0.9 -4.0	11.0 11.0	Pass Pass
802.11ac		JU.Z	100.0	11.0	11.0	24.0	-4.0	-4.0	11.0	1 455
5290	10.0	76.4	99.0	9.1	9.1	24.0	-11.1	-11.1	11.0	Pass
0. -10. -20. -30. -30. -40. -50. -60. -70.	0 - 0 - 0 - 0 - 0 -	0 52 <sup>'</sup> 90	5300 5310	1 5320 5 quency (MH:	330 5340	5350 53	<b>11</b> 160 5370	Analyzer Se Agilent Techr CF: 5320.00 SPAN: 100.0 RB: 300 kHz VB: 1.000 MH Detector: PC Attn: 20 DB RL Offset: 0. Sweep Time: Ref LvI: 4.0 H Comments 99% BW: 17 802.11a	nologies, E4 0 MHz 00 MHz Hz 55 .0 DB 1.2ms DBM	446A
Cursor			+ + 8 + + 8	è• (	Delta Freq. Amplitude	17.000 26.0			S NEER SUG	CESS

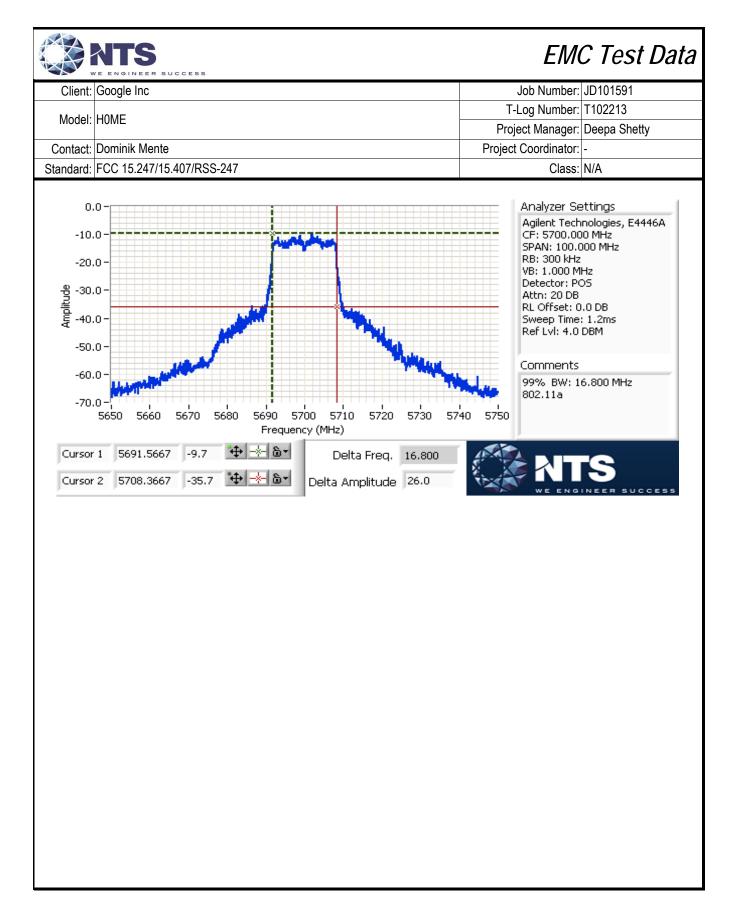


Client:	nt: Google Inc							Job Number:		JD101591	
		T-Log Number:									
Model:	Model: H0ME							0			
Contact:	Dominik Mer	nto			Coordinator:						
	FCC 15.247	Class: N/A									
Standard:	FUU 15.247	/15.40//RSS	-247					Class:	N/A		
	e - 5470-572										
SISO Devic		a Gain (dBi):	5.7		Max EIRP:	166.0	m\W	22.2	dBm		
Freeseware	Software	26dB BW		0.4				SD <sup>2</sup> dBm/MF	47		
Frequency	Setting	(MHz)	Duty Cycle		tput Power <sup>1</sup> dE					Resul	
(MHz)	Setting	(11112)	%	Measured	Calculated	Limit	Measured	Calculated	Limit		
<u>302.11a</u> 5500	14.0	24.2	99.0	12.2	12.2	24.0	-0.2	-0.2	11.0	Pass	
5580	14.0	80.3	99.0 99.0	12.2	12.2	24.0	2.7	-0.2	11.0	Pass	
5700	19.0	26.8	99.0	10.4	12.8	24.0	-1.0	-1.0	11.0	Pass	
	hin 5470-572			12.0	12.0	24.0	-1.0	-1.0	11.0	1 433	
5720	19.0	33.4	99.0	13.9	13.9	24.0	4.9	4.9	11.0	Pass	
	hin 5725-585						•				
5720	19.0	-	99.0	8.1	8.1	30.0	3.0	3.0	30.0	Pass	
802.11n 20l	MHz										
5500	15.0	30.8	100.0	13.1	13.1	24.0	0.5	0.5	11.0	Pass	
5580	19.0	84.8	100.0	16.5	16.5	24.0	2.4	2.4	11.0	Pass	
5700	13.0	22.8	100.0	11.7	11.7	24.0	-2.4	-2.4	11.0	Pass	
	hin 5470-572						-		-		
5720	19.0	45.9	100.0	13.8	13.8	24.0	4.3	4.3	11.0	Pass	
	hin 5725-585	0 MHz band									
5720	19.0	-	100.0	8.5	8.5	30.0	4.1	4.1	30.0	Pass	
802.11n 40		40.0	400.0	40.4	40.4	04.0	5.0	- 0	44.0		
5510	12.0	40.6 97.9	100.0	10.4	10.4	24.0	-5.8	-5.8	11.0	Pass	
5550 5670	17.0 14.0	96.9	100.0 100.0	14.9 12.4	14.9 12.4	24.0 24.0	-1.8 -1.8	-1.8 -1.8	11.0 11.0	Pass Pass	
	hin 5470-572			12.4	12.4	24.0	-1.0	-1.0	11.0	F 855	
5710	17.0	67.0	100.0	13.5	13.5	24.0	0.4	0.4	11.0	Pass	
	hin 5725-585			10.0	10.0	21.0	0.1	0.1	11.0	1 400	
5710	17.0	-	100.0	3.8	3.8	30.0	0.3	0.3	30.0	Pass	
802.11ac 80	OMHz										
5530	8.0	82.0	99.0	6.7	6.7	24.0	-13.4	-13.4	11.0	Pass	
5610	14.0	196.7	99.0	12.2	12.2	24.0	-8.3	-8.3	11.0	Pass	
	hin 5470-572										
5690	14.0	132.2	99.0	10.5	10.5	24.0	-6.6	-6.6	11.0	Pass	
	hin 5725-585										
5690	14.0	-	99.0	-2.3	-2.3	30.0	-6.9	-6.9	30.0	Pass	

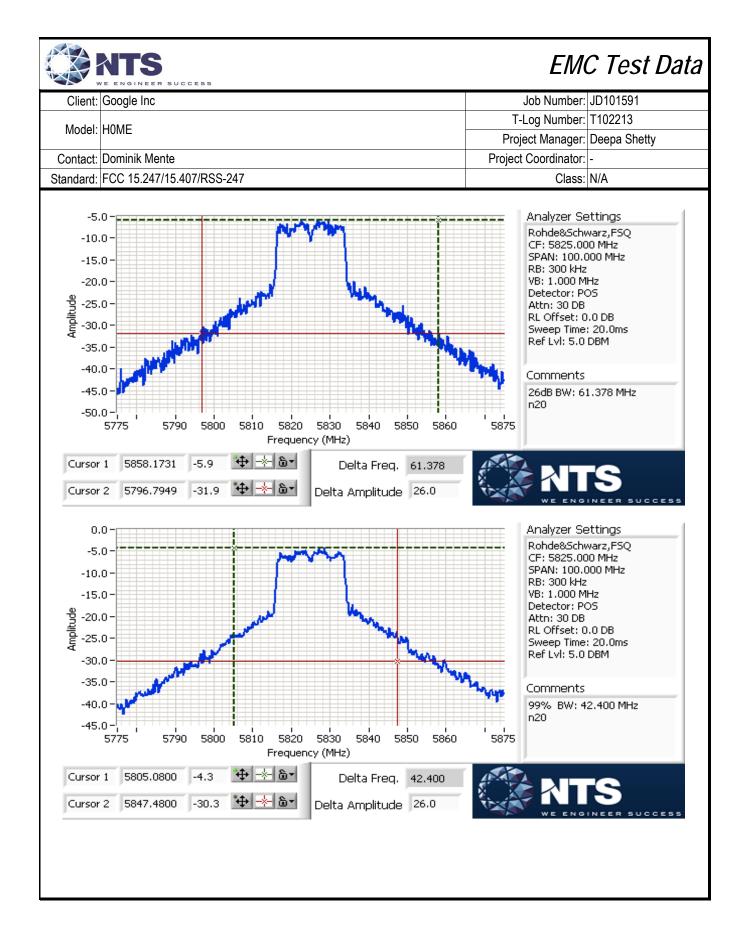




Client:	nt: Google Inc							Job Number:		JD101591	
						T-Log Number: Project Manager:					
Model:	lodel: H0ME										
Contact:	: Dominik Mente							Project Coordinator:		,	
	FCC 15.247		-247		Class:						
	e - 5470-572				Max EIRP:	166.0		22.2	dBm		
Frequency	Software	99% BW	Duty Cycle	Out	tput Power <sup>1</sup> dI	3m	PSD <sup>2</sup> dBm/MHz			Result	
(MHz)	Setting	(MHz)	%	Measured	Calculated	Limit	Measured	Calculated	Limit <sup>3</sup>	i tesu	
802.11a											
5500	14.0	16.9	99.0	12.2	12.2	23.3	-0.2	-0.2	11.0	Pass	
5580	19.0	57.1	99.0	16.4	16.4	24.0	2.7	2.7	11.0	Pass	
5700	14.0	16.8	99.0	12.8	12.8	23.3	-1.0	-1.0	11.0	Pass	
	hin 5470-572								1	1	
5720	19.0	33.4	99.0	13.9	13.9	24.0	4.9	4.9	11.0	Pass	
	hin 5725-585			0.4	0.4	00.0	4.0	4.0	00.0		
5720	19.0	24.9	99.0	8.1	8.1	30.0	4.0	4.0	30.0	Pass	
802.11n 20 5500	MHZ 15.0	10.0	100.0	13.1	13.1	00.6	0.5	0.5	11.0	Deer	
5580	15.0	18.0 57.9	100.0	16.5	16.5	23.6 24.0	2.4	2.4	11.0	Pass Pass	
5700	13.0	17.9	100.0	10.5	10.5	23.5	-2.4	-2.4	11.0	Pass	
	hin 5470-572			11.7	11.7	20.0	-2.7	-2.7	11.0	1 433	
5720	19.0	35.3	100.0	13.8	13.8	24.0	4.3	4.3	11.0	Pass	
	hin 5725-585										
5720	19.0	26.8	100.0	8.5	8.5	30.0	4.1	4.1	30.0	Pass	
802.11n 40	MHz										
5510	12.0	36.3	100.0	10.4	10.4	24.0	-5.8	-5.8	11.0	Pass	
5550	17.0	44.0	100.0	14.9	14.9	24.0	-1.8	-1.8	11.0	Pass	
5670	17.0	56.9	100.0	15.4	15.4	24.0	-1.8	-1.8	11.0	Pass	
	hin 5470-572			46 -	(a - 1		<b>a</b> <i>i</i>	a :	44.5		
5710	17.0	50.4	100.0	13.5	13.5	24.0	0.4	0.4	11.0	Pass	
5710	hin 5725-585 17.0		· /	20	3.8	20.0	0.2	0.3	20.0	Dece	
5710 802.11ac 80		19.8	100.0	3.8	J.Ö	30.0	0.3	0.3	30.0	Pass	
5530	8.0	76.3	99.0	6.7	6.7	24.0	-13.4	-13.4	11.0	Pass	
	0.0 hin 5470-572			0.1	0.1	27.V	10.4	10.4	11.0	1 433	
5690	14.0	90.6	99.0	10.5	10.5	24.0	-6.6	-6.6	11.0	Pass	
	hin 5725-585							2.0			
5690	14.0	20.1	99.0	-2.3	-2.3	30.0	-6.9	-6.9	30.0	Pass	



	WE ENGINEER	SUCCESS							C Test	Duiu		
Client:	: Google Inc							Job Number: JD101591				
Model:	I: HOME							T-Log Number: T102213 Project Manager: Deepa Shetty				
Contact:	Dominik Me	nte		Project Coordinator: -								
Standard:	FCC 15.247	/15.407/RSS	6-247		Class:	N/A						
SISO Devid	e - 5725-585	0 MHz Band	I - FCC									
	Antenna	a Gain (dBi):	5.7		Max EIRP:	218.8	mW	23.4	dBm			
Frequency	Software	26dB BW	Duty Cycle	Out	tput Power <sup>1</sup> d	Bm	Р	SD <sup>2</sup> dBm/MF	lz			
(MHz)	Setting	(MHz)	%		Calculated	Limit		Calculated		Result		
802.11a	Ĵ	, ,	70	Measurea	Calculated	LIIII(	Mcasurca	Calculated	Liint			
5745	18	89.7	99	17.1	17.1	30.0	3.7	3.7	17.0	Pass		
5785	18	89.6	99	17.5	17.5	30.0	3.9	3.9	17.0	Pass		
5825	18	87.8	99	17.0	17.7	30.0	4.1	4.1	17.0	Pass		
802.11n 20	-					• •						
5745	18	80.8	100	17.1	17.1	30.0	3.5	3.5	17.0	Pass		
5785	18	89.7	100	17.4	17.4	30.0	3.8	3.8	17.0	Pass		
5825	17	61.4	100	16.5	16.5	30.0	3.4	3.4	17.0	Pass		
802.11n 40	MHz											
5755	16	91.3	100	15.1	15.1	30.0	-1.2	-1.2	17.0	Pass		
5795	16	93.1	100	15.3	15.3	30.0	-1.0	-1.0	17.0	Pass		
802.11ac 8	OMHz											
5775	13	200.9	99	12.3	12.3	30.0	-7.1	-7.1	17.0	Pass		
SISO Devic	e - 5725-585 Antenna	0 MHz Banc a Gain (dBi):	I - Industry ( 5.7	Canada	Max EIRP:	221.0	mW	23.4	dBm			
Frequency	Software	99% BW	Duty Cycle	Out	tput Power <sup>1</sup> d	Rm	PSD <sup>2</sup> dBm/MHz					
	Setting	(MHz)	%		Calculated	Limit	Measured			Result		
(MHz)	oottiing	()	70	Measured	Calculated	LITTIL	Measured	Calculated	Limit <sup>3</sup>			
802.11a	10	<b>F0 7</b>	00	17 1	17.4	20.0	27	27	17.0	Dees		
5745	18	58.7	99	17.1	17.1	30.0	3.7	3.7	17.0	Pass		
570 <i>E</i>	18 18	64.0 62.6	99 99	17.5 17.7	17.5 17.7	30.0 30.0	3.9 4.1	3.9 4.1	17.0 17.0	Pass Pass		
5785			33	17.7	17.7	30.0	4.1	4.1	17.0	F855		
5825		02.0										
5825 802.11n 20	MHz	-		17 1	17 1	30.0	35	3.5	17 N	Dace		
5825 802.11n 20 5745	MHz 18	57.6	100	17.1 17.4	17.1 17.4	30.0	3.5	3.5	17.0 17.0	Pass		
5825 802.11n 20 5745 5785	MHz 18 18	57.6 62.7	100 100	17.4	17.4	30.0	3.8	3.8	17.0	Pass		
5825 802.11n 20 5745 5785 5825	MHz 18 18 17	57.6	100									
5825 802.11n 20 5745 5785 5825 802.11n 40	MHz 18 18 17 MHz	57.6 62.7 42.4	100 100 100	17.4 16.5	17.4 16.5	30.0 30.0	3.8 3.4	3.8 3.4	17.0 17.0	Pass Pass		
5825 302.11n 20 5745 5785 5825 302.11n 40 5755	MHz 18 18 17 MHz 16	57.6 62.7 42.4 44.0	100 100 100 100	17.4 16.5 15.1	17.4 16.5 15.1	30.0 30.0 30.0	3.8 3.4 -1.2	3.8 3.4 -1.2	17.0 17.0 17.0	Pass Pass Pass		
5825 302.11n 20 5745 5785 5825 302.11n 40 5755 5795	MHz 18 18 17 MHz 16 16	57.6 62.7 42.4	100 100 100	17.4 16.5	17.4 16.5	30.0 30.0	3.8 3.4	3.8 3.4	17.0 17.0	Pass Pass		
5825 302.11n 20 5745 5785 5825 302.11n 40 5755 5795 802.11ac 8	MHz 18 17 MHz 16 0MHz	57.6 62.7 42.4 44.0 50.2	100 100 100 100 100	17.4 16.5 15.1 15.3	17.4 16.5 15.1 15.3	30.0 30.0 30.0 30.0 30.0	3.8 3.4 -1.2 -1.0	3.8 3.4 -1.2 -1.0	17.0 17.0 17.0 17.0	Pass Pass Pass Pass Pass		
5825 302.11n 20 5745 5785 5825 302.11n 40 5755 5795	MHz 18 18 17 MHz 16 16	57.6 62.7 42.4 44.0	100 100 100 100	17.4 16.5 15.1	17.4 16.5 15.1	30.0 30.0 30.0	3.8 3.4 -1.2	3.8 3.4 -1.2	17.0 17.0 17.0	Pass Pass Pass		





### End of Report

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