GREE Electric Appliances, Inc. of Zhuhai

Application
For
Certification

FCC ID: 2ADAP-CS532Y

WiFi Module

Model: CS532Y

Brand Name: GREE

Report No.: 150715018SZN-002

We hereby certify that the sample of the above item is considered to comply with the requirements of FCC Part 15, Subpart C for Intentional Radiator, mention 47 CFR [10-1-14]

Prepared and Checked by:	Approved by:
Sign on file	Digitally signed by Andy Yan Location: Intertek Testing Services
Jenner Liu *Engineer*	*Andy Yan* *Senior Project Engineer* *Date: September 15, 2015*

TRF No.: FCC 15C_TX_c

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LIST OF EXHIBITS

MEASUREMENT/TECHNICAL REPORT

GREE Electric Appliances, Inc. of Zhuhai

MODEL: CS532Y

FCC ID: 2ADAP-CS532Y

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

Equipment Type: DXX - Part 15 Low Power Communication Device Transmitter

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

If yes, defer until: _____ date

Company Name agrees to notify the Commission by: _____ date

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

Transition Rules Request per 15.37? Yes _____ No X

If no, assumed Part 15, Subpart C for intentional radiator – the new 47 CFR [10-1-14 Edition] provision.

Report prepared by:

Jenner Liu
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Test Report	Test Report	report.pdf
Test Setup Photo	Radiated Emission	radiated photos.pdf
Test Setup Photo	Conducted Emission	conducted photos.pdf
Test Report	20dB BW Plot	bw.pdf
External Photo	External Photo	external photos.pdf
Internal Photo	Internal Photo	internal photos.pdf
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
Operation Description	Technical Description	descri.pdf
ID Label/Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf
Cover Letter	Confidentiality Letter	request.pdf
Cover Letter	Certification of Agreement	agreement.pdf
Cover Letter	Letter of Agency	agency.pdf

EXHIBIT 1

GENERAL DESCRIPTION

1.0 General Description

1.1 Product Description

The equipment under test (EUT) is a WiFi Module with 2.4GHz transmitter module operating at 2424.999878-2475.187622MHz. The EUT was powered by D.C. 3.3V. For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna
Modulation Type: 2-FSK

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

1.2 Related Submittal(s) Grants

This is an application of 2.4GHz transmitter portion for the WiFi Module, and the WiFi transmitter portion is subject to the report 150715018SZN-001.

1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.10: 2013. Radiated emission measurement was performed in Semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application. All other measurements were made in accordance with the procedures in part 2 of CFR 47.

1.4 Test Facility

The Semi-anechoic chamber and shielding room used to collect the radiated data and conducted data are **Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch** and located at 6F, D Block, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China. This test facility and site measurement data have been fully placed on file with the FCC(Registration Number: 242492).

EXHIBIT 2

SYSTEM TEST CONFIGURATION

2.0 System Test Configuration

2.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.10: 2013.

The EUT was powered by D.C. 3.3V through USB adaptor and the USB adaptor was powered through the USB port of Laptop during the testing (AC 120V/60Hz for laptop power supply). Only the worst case data was reported.

The simultaneous transmission spurious was tested, only the worst case data was recorded in this report.

For maximizing emissions, the EUT was rotated through 360°, the EUT was placed on the styrene turntable with 0.8m up to 1GHz and 1.5 m above 1GHz. The antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. This step by step procedure for maximizing emissions led to the data reported in Exhibit 3.

The rear of unit was flushed with the rear of the table when it was powered by Laptop up to 1GHz and placed in the centre of turntable above 1GHz.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was placed on a turn table, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

2.2 EUT Exercising Software

The EUT exercise program (provided by client) used during testing was designed to exercise the various system components in a manner similar to a typical use.

2.3 Special Accessories

No special accessories used.

2.4 Equipment Modification

Any modifications installed previous to testing by GREE Electric Appliances, Inc. of Zhuhai will be incorporated in each production model sold / leased in the United States.

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

2.5 Measurement Uncertainty

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

2.6 Support Equipment List and Description

Description	Manufacturer	Model No.
Laptop	LENOVO	X1
USB adaptor with USB cable (Un-shielded, 100cm)	N/A	N/A

EXHIBIT 3

EMISSION RESULTS

3.0 Emission Results

Data is included worst-case configuration (the configuration which resulted in the highest emission levels).

3.1 Radiated Test Results

A sample calculation, configuration photographs and data tables of the emissions are included.

3.1.1 Field Strength Calculation

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

FS = RA + AF + CF - AG + PD

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

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

FS = RA + AF + CF - AG + PD

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

RA = 62.0 dBµV
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
PD = 0 dB

FS = 62 + 7.4 + 1.6 - 29 + 0 = 42 dBµV/m

Level in µV/m = Common Antilogarithm [(32 dBµV/m)/20] = 125.9 µV/m

3.1.2 Radiated Emission Configuration Photograph

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

3.1.3 Radiated Emissions

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance, and simultaneous transmissions were considered. Numbers with a minus sign are below the limit.

Worst Case Radiated Emission
at
63.465 MHz

Judgement: Passed by 10.9 dB

TEST PERSONNEL:

Sign on file

Jenner Liu Engineer
Typed/Printed Name

September 15, 2015
Date

Applicant: GREE Electric Appliances, Inc. of Zhuhai
Date of Test: September 15, 2015
Model: CS532Y
Sample: 1/1
Worst Case Operating Mode: Transmitting

Table 1

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	63.433	37.0	20.0	7.8	24.8	40.0	-15.2
Horizontal	307.420	33.3	20.0	15.6	28.9	46.0	-17.1
Horizontal	480.080	31.0	20.0	19.9	30.9	46.0	-15.1
Vertical	63.465	41.3	20.0	7.8	29.1	40.0	-10.9
Vertical	297.235	32.7	20.0	15.2	27.9	46.0	-18.1
Vertical	518.395	32.1	20.0	20.5	32.6	46.0	-13.4

NOTES: 1. Quasi-Peak detector is used except for others stated.

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

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

4. All emissions are below the QP limit.

3.1.4 Transmitter Spurious Emissions (Radiated)

Worst Case Radiated Emission
at
2450.194 MHz

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

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance, and simultaneous transmissions were considered. Numbers with a minus sign are below the limit.

Judgement: Passed by 1.3 dB

TEST PERSONNEL:

Sign on file

Jenner Liu Engineer
Typed/Printed Name

September 15, 2015
Date

Applicant: GREE Electric Appliances, Inc. of Zhuhai
Date of Test: September 15, 2015
Model: CS532Y
Sample: 1/1
Worst Case Operating Mode: Transmitting

Table 2

Radiated Emissions
(2424.999878MHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2425.000	103.5	36.7	28.1	94.9	114.0	-19.1
Horizontal	4850.000	52.9	36.7	34.6	50.8	74.0	-23.2
Horizontal	7275.000	57.9	36.1	35.2	57.0	74.0	-17.0
Horizontal	9700.000	58.8	36.2	37.8	60.4	74.0	-13.6
Horizontal	2399.927	49.9	36.7	28.1	41.3	74.0	-32.7

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2425.000	101.2	36.7	28.1	92.6	94.0	-1.4
Horizontal	4850.000	41.4	36.7	34.6	39.3	54.0	-14.7
Horizontal	7275.000	43.9	36.1	35.2	43.0	54.0	-11.0
Horizontal	9700.000	44.2	36.2	37.8	45.8	54.0	-8.2
Horizontal	2399.927	47.0	36.7	28.1	38.4	54.0	-15.6

Notes: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

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

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

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

Test Engineer: Jenner Liu

Applicant: GREE Electric Appliances, Inc. of Zhuhai
Date of Test: September 15, 2015
Model: CS532Y
Sample: 1/1
Worst Case Operating Mode: Transmitting

Table 3

Radiated Emissions

(2450.193726MHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2450.194	103.7	36.7	28.1	95.1	114.0	-18.9
Horizontal	4900.388	53.7	36.7	34.8	51.8	74.0	-22.2
Horizontal	7350.582	55.8	36.1	37.0	56.7	74.0	-17.3
Horizontal	9800.776	58.2	36.2	38.2	60.2	74.0	-13.8

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2450.194	101.3	36.7	28.1	92.7	94.0	-1.3
Horizontal	4900.388	42.7	36.7	34.8	40.8	54.0	-13.2
Horizontal	7350.582	41.4	36.1	37.0	42.3	54.0	-11.7
Horizontal	9800.776	43.4	36.2	38.2	45.4	54.0	-8.6

Notes: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

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

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

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

Test Engineer: Jenner Liu

Applicant: GREE Electric Appliances, Inc. of Zhuhai
Date of Test: September 15, 2015
Model: CS532Y
Sample: 1/1
Worst Case Operating Mode: Transmitting

Table 4

Radiated Emissions
(2475.187622MHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2475.188	102.6	36.7	28.1	94.0	114.0	-20.0
Horizontal	4950.376	53.9	36.7	35.3	52.5	74.0	-21.5
Horizontal	7425.564	56.9	36.1	37.1	57.9	74.0	-16.1
Horizontal	9900.752	58.3	36.3	38.6	60.6	74.0	-13.4
Horizontal	2483.500	49.8	36.7	28.1	41.2	74.0	-32.8

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2475.188	99.8	36.7	28.1	91.2	94.0	-2.8
Horizontal	4950.376	42.0	36.7	35.3	40.6	54.0	-13.4
Horizontal	7425.564	41.6	36.1	37.1	42.6	54.0	-11.4
Horizontal	9900.752	43.1	36.3	38.6	45.4	54.0	-8.6
Horizontal	2483.500	46.7	36.7	28.1	38.1	54.0	-15.9

Notes: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

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

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

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

Test Engineer: Jenner Liu

3.2 Conducted Emission at Mains Terminal

3.2.1 Conducted Emissions Configuration Photograph

For electronic filing, the worst case conducted emission configuration photograph is saved with filename: conducted photos.pdf.

3.2.2 Conducted Emissions

Worst Case Neutral-Conducted Configuration
At

0.254 MHz

Judgement: Passed by 4.8dB margin

TEST PERSONNEL:

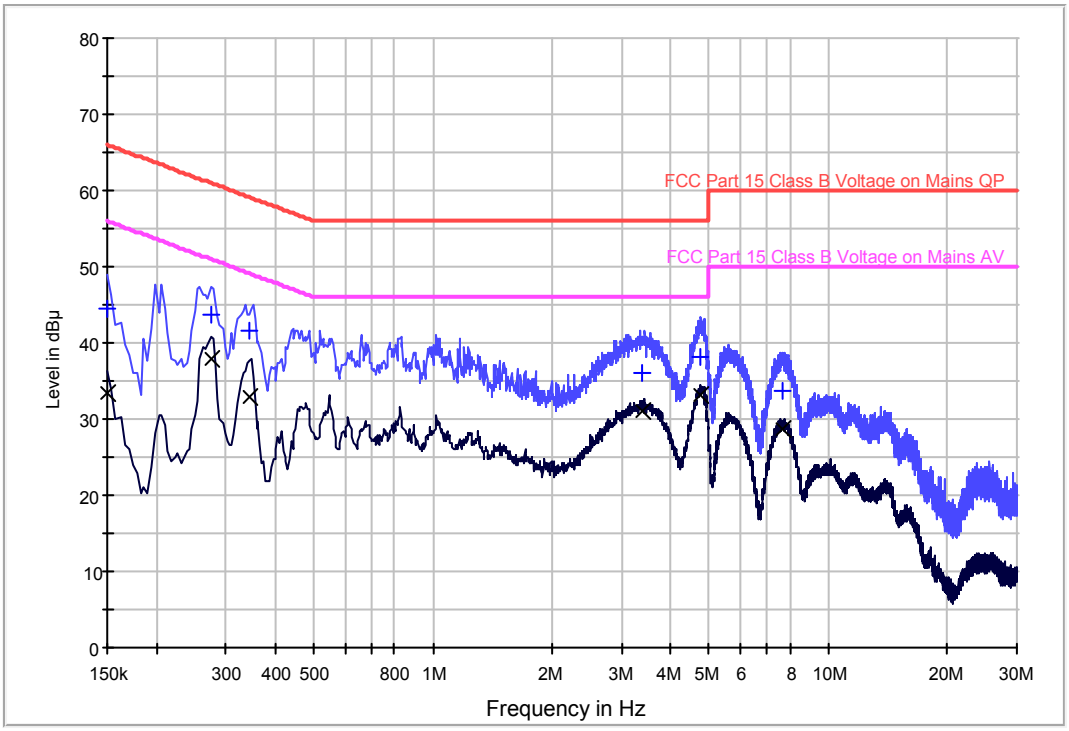
Sign on file

Jenner Liu Engineer
Typed/Printed Name

September 14, 2015
Date

Applicant: GREE Electric Appliances, Inc. of Zhuhai
Date of Test: September 14, 2015
Model: CS532Y
Sample: 1/1
Worst Case Operating Mode: Transmitting
Phase: Live

Conducted Emission Test - FCC



Result Table QP

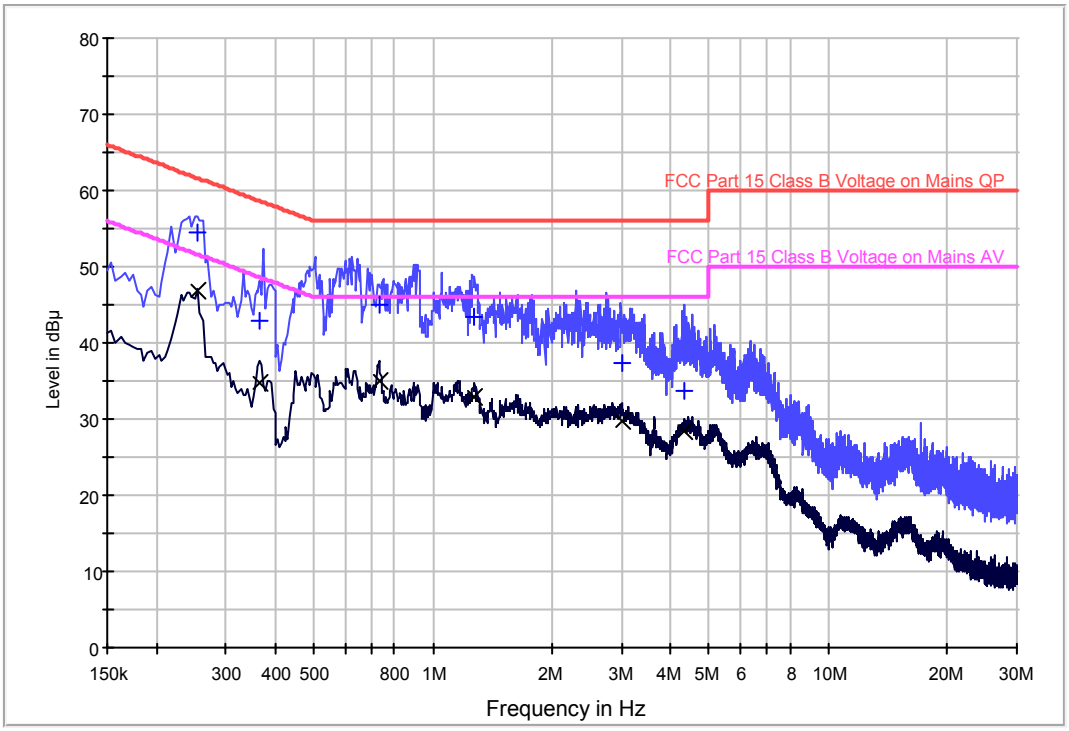
Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.150	44.4	L1	9.8	21.6	66.0
0.276	43.6	L1	9.9	17.3	60.9
0.342	41.5	L1	9.9	17.7	59.2
3.394	36.1	L1	10.0	19.9	56.0
4.730	38.2	L1	10.0	17.8	56.0
7.630	33.8	L1	10.0	26.2	60.0

Result Table AV

Frequency (MHz)	Average (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.150	33.4	L1	9.8	22.6	56.0
0.276	37.9	L1	9.9	13.0	50.9
0.342	32.9	L1	9.9	16.3	49.2
3.394	31.0	L1	10.0	15.0	46.0
4.730	33.1	L1	10.0	12.9	46.0
7.630	28.6	L1	10.0	21.4	50.0

Applicant: GREE Electric Appliances, Inc. of Zhuhai
Date of Test: September 14, 2015
Model: CS532Y
Sample: 1/1
Worst Case Operating Mode: Transmitting
Phase: Neutral

Conducted Emission Test - FCC



Result Table QP

Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.254	54.5	N	10.2	7.1	61.6
0.366	42.8	N	10.2	15.8	58.6
0.730	45.1	N	10.3	10.9	56.0
1.274	43.4	N	10.3	12.6	56.0
2.994	37.4	N	10.3	18.6	56.0
4.334	33.8	N	10.3	22.2	56.0

Result Table AV

Frequency (MHz)	Average (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.254	46.8	N	10.2	4.8	51.6
0.366	34.8	N	10.2	13.8	48.6
0.730	35.1	N	10.3	10.9	46.0
1.274	32.9	N	10.3	13.1	46.0
2.994	29.8	N	10.3	16.2	46.0
4.334	28.4	N	10.3	17.6	46.0

EXHIBIT 4

EQUIPMENT PHOTOGRAPHS

4.0 Equipment Photographs

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

EXHIBIT 5

PRODUCT LABELLING

5.0 Product Labelling

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

EXHIBIT 6

TECHNICAL SPECIFICATIONS

6.0 Technical Specifications

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

EXHIBIT 7

INSTRUCTION MANUAL

7.0 Instruction Manual

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

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

EXHIBIT 8

MISCELLANEOUS INFORMATION

8.0 Miscellaneous Information

This miscellaneous information includes details of the measured bandedge, the test procedure and calculation of factor such as pulse desensitization.

8.1 Bandedge Plot

Pursuant to FCC part 15 Section 15.215(c), the 20dB bandwidth of the emission was contained within the frequency band designated (mentioned as above) which the EUT operated. The effects, if any, from frequency sweeping, frequency hopping, other modulation techniques and frequency stability over excepted variations in temperature and supply voltage were considered.

Figure 8.1 Bandwidth

8.2 Discussion of Pulse Desensitization

Pulse desensitivity is not applicable for this device. With a resolution bandwidth (3dB) of 1MHz, so the pulse desensitivity factor is 0dB.

8.3 Calculation of Average Factor

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

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

8.4 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services in the measurements of transmitters operating under Part 15, Subpart C rules.

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.10: 2013.

The transmitting equipment under test (EUT) is placed on a styrene turntable which is four feet in diameter, up to 1GHz 0.8m and above 1GHz 1.5m in height above the ground plane. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The EUT is adjusted through all three orthogonal axes to obtain maximum emission levels. The antenna height and polarization are varied during the testing to search for maximum signal levels.

Detector function for radiated emissions is in peak mode.

The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower.

Detector function for conducted emissions is in QP & AV mode and IFBW setting is 9 kHz from the frequency band 150 kHz to 30MHz.

8.4 Emissions Test Procedures (cont'd)

The EUT is warmed up for 15 minutes prior to the test.

AC power to the unit is varied from 85% to 115% nominal and variation in the fundamental emission field strength is recorded. If battery powered, a new, fully charged battery is used.

Conducted measurements are made as described in ANSI C63.10: 2013.

The IF bandwidth used for measurement of radiated signal strength was 10 kHz for emission below 30 MHz and 120 kHz for emission from 30 MHz to 1000 MHz. Where pulsed transmissions of short enough pulse duration warrant, a greater bandwidth is selected according to the recommendations of Hewlett Packard Application Note 150-2. Above 1000 MHz, a resolution bandwidth of 1 MHz is used.

Transmitter measurements are normally conducted at a measurement distance of three meters. However, to assure low enough noise floor in the restricted bands and above 1 GHz, signals are acquired at a distance of one meter or less. All measurements are extrapolated to three meters using inverse scaling, but those measurements taken at a closer distance are so marked.

EXHIBIT 9

CONFIDENTIALITY REQUEST

9.0 Confidentiality Request

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

EXHIBIT10
TEST EQUIPMENT LIST

10.0 **Test Equipment List**

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-04	BiConiLog Antenna	ETS	3142C	00066460	19-Oct-2014	19-Oct-2015
SZ185-01	EMI Receiver	R&S	ESCI	100547	07-Feb-2015	07-Feb-2016
SZ061-09	Horn Antenna	ETS	3115	00092346	01-Nov-2014	01-Nov-2015
SZ061-07	Pyramidal Horn Antenna	ETS	3160-09	00083067	01-Sep-2015	01-Sep-2016
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	29-Apr-2015	29-Apr-2016
SZ056-06	Spectrum Analyzer	R&S	FSV40	101101	08-Jul-2015	08-Jul-2016
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	07-Feb-2015	07-Feb-2016
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	19-Apr-2014	19-Apr-2016
SZ062-02	RF Cable	RADIALL	RG 213U	--	30-Jun-2015	30-Dec-2015
SZ062-05	RF Cable	RADIALL	0.04-26.5GHz	--	07-Apr-2015	07-Oct-2015
SZ062-12	RF Cable	RADIALL	0.04-26.5GHz	--	07-Apr-2015	07-Oct-2015
SZ067-04	Notch Filter	Micro-Tronics	BRM50702-02	--	20-May-2015	20-May-2016
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	01-Nov-2014	01-Nov-2015
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	01-Nov-2014	01-Nov-2015
SZ187-02	Two-Line V-Network	R&S	ENV216	100073	24-Jun-2015	24-Jun-2016
SZ188-03	Shielding Room	ETS	RFD-100	4100	23-Aug-2014	23-Aug-2016