Lionel L.L.C.

Application For Certification
(FCC ID: LIV-LCFRX2G4)

The Polar Express Remote Set
Additional Names: Lionel 2-4-2 Remote Scout Steam Set, 2-4-2 Remote Xmas Set, Alien Invasion Remote RS-3 Set , Santa Fe RS-3 Remote Scout Freight Set, Peanuts Halloween 2-4-2 Remote Set, 0-8-0 Chattanooga Set, Pennsylvania Flyer Remote Set

Model: 6-30218
Additional Models: 6-30183, 6-30205, 6-30206, 6-30207, 6-30214, 6-30228, 6-30233

Brand Name: Lionel

2.4GHz Transceiver

Report No.: 130530020SZN-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 [10-1-12]

Prepared and Checked by:

Sign on file

Jimmy Wen
Assistant Engineer

Approved by:

Digitally signed by Andy Yan
Location: Intertek Testing Services

Andy Yan
Project Engineer
Date: September 12, 2013

TRF No.: FCC 15C_TX_b

Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch
6F, D Block, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China

Tel: (86 755) 8601 6288 Fax: (86 755) 8601 6751 Website: www.china.intertek-etlsemko.com

LIST OF EXHIBITS

INTERTEK TESTING SERVICES

MEASUREMENT/TECHNICAL REPORT

Lionel L.L.C.

Model: 6-30218

FCC ID: LIV-LCFRX2G4

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

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

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 [10-1-12 Edition] provision.

Report prepared by:

Jimmy Wen
Intertek Testing Services Shenzhen Ltd.
Kejiyuan Branch
6F, Block D, Huahan Building, Langshan Road,
Nanshan District, Shenzhen, P. R. China
Phone: (86 755) 8614 0713
Fax: (86 755) 8601 6751

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Exhibit type	File Description	Filename
Test Report	Test Report	report.pdf
Test Setup Photo	Radiated Emission	radiated photos.pdf
Test Setup Photo	Conducted Emission	conducted photos.pdf
Test Report	Bandedge Plot	bandedge.pdf
Test Report	20dB BW Plot	bw.pdf
Test Report	Timing Plot	af.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	Letter of Agency	agency.pdf

EXHIBIT 1

GENERAL DESCRIPTION

1.0 General Description

1.1 Product Description

The Equipment under Test (EUT) is a car unit for The Polar Express Remote Set model: 6-30218 operating at 2.4GHz band. It is powered by a AC/DC adapter (Model: YF1802000K3-UL, Input: 100~240V, 50/60Hz, 0.85A, Output: DC 18V, 2000mA)

The Models: 6-30183, 6-30205, 6-30206, 6-30207, 6-30214, 6-30228, 6-30233 are the same as the Model: 6-30218 in hardware aspect. The difference in model number and Engine Type serves as marketing purpose only.

Antenna Type: Integral antenna

Type of modulation: GFSK modulation

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

1.2 Related Submittal(s) Grants

This is an application for certification of a car unit for The Polar Express Remote Set, and corresponding remote contoller (The Polar Express Remote Set) which associated with this EUT, has FCC ID: LIV-LCFTX2G4 and has been filed at the same time.

1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2009). 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 shield room used to collect the radiated data and conducted data are **Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch** and located at 6F, Block D, 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).

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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 C63.4 (2009).

The EUT was powered by a AC/DC adapter (Input: AC 120V, 60Hz, Output: DC 18V, 2000mA). Only the worst case data was reported.

For maximizing emissions below 30 MHz, the EUT was rotated through 360°, the centre of the loop antenna was placed 1 meter above the ground, and the antenna polarization was changed. For maximizing emission at and above 30 MHz, the EUT was rotated through 360°, 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 report in Exhibit 3.0.

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

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT and all cables were insulated, if required, from the ground plane by up to 12 mm of insulating material. which enabled the Testing Engineer to maximize emissions through its placement in the three orthogonal axes.

2.2 EUT Exercising Software

There was no special software to exercise the device.

2.3 Special Accessories

No special accessories used.

2.4 Equipment Modification

Any modifications installed previous to testing by Lionel L.L.C. 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.
AC/DC adapter	YEE FU	Model: YF1802000K3-UL Input: 100~240V, 50/60Hz, 0.85A Output: DC 18V, 2000mA
Remote Controller	Lionel	6-30218

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 + AV

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
AV = Average Factor 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 + AV

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, and the resultant average factor was -10 dB. The net field strength for comparison to the appropriate emission limit is 32 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
AV = -10 dB
FS = 62 + 7.4 + 1.6 - 29 + 0 + (-10) = 32 dBµV/m

Level in µV/m = Common Antilogarithm [(32 dBµV/m)/20] = 39.8 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. Numbers with a minus sign are below the limit.

Worst Case Radiated Emission
at
32.780 MHz

Judgement: Passed by 8.6 dB

TEST PERSONNEL:

Sign on file

Jimmy Wen, Assistant Engineer
Typed/Printed Name

September 12, 2013
Date

Applicant: Lionel L.L.C. Date of Test: September 12, 2013
Model: 6-30218
Sample: 1/1
Worst Case Operating Mode: Transmit

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	32.005	24.7	20.0	17.9	22.6	40.0	-17.4
Horizontal	70.010	23.3	20.0	16.0	19.3	40.0	-20.7
Horizontal	111.021	14.6	20.0	23.6	18.2	43.5	-25.3
Vertical	32.780	33.8	20.0	17.6	31.4	40.0	-8.6
Vertical	39.700	24.3	20.0	17.2	21.5	40.0	-18.5
Vertical	86.020	35.2	20.0	15.4	30.6	40.0	-9.4

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)

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

Worst Case Radiated Emission
at
7440.000 MHz

Judgement: Passed by 7.7 dB

TEST PERSONNEL:

Sign on file

Jimmy Wen, Assistant Engineer
Typed/Printed Name

September 12, 2013
Date

Applicant: Lionel L.L.C. Date of Test: September 12, 2013
Model: 6-30218
Sample: 1/1
Worst Case Operating Mode: Transmit

Table 2

Radiated Emissions

(2401.000MHz)

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)
Vertical	2401.000	102.1	36.7	28.5	93.9	114.0	-20.1
Vertical	4802.000	56.9	36.7	34.6	54.8	74.0	-19.2
Vertical	7203.000	65.5	36.1	33.1	62.5	74.0	-11.5

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (-dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Vertical	2401.000	102.1	36.7	28.5	17.1	76.8	94.0	-17.2
Vertical	4802.000	56.9	36.7	34.6	17.1	37.7	54.0	-16.3
Vertical	7203.000	65.5	36.1	33.1	17.1	45.4	54.0	-8.6

Notes: 1. Peak Detector Data unless otherwise stated.

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: Jimmy Wen

Applicant: Lionel L.L.C. Date of Test: September 12, 2013
Model: 6-30218
Sample: 1/1
Worst Case Operating Mode: Transmit

Table 3

Radiated Emissions

(2438.000MHz)

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)
Vertical	2438.000	103.7	36.7	28.5	95.5	114.0	-18.5
Vertical	4876.000	55.3	36.7	34.8	53.4	74.0	-20.6
Vertical	7314.000	65.8	36.1	33.3	63.0	74.0	-11.0

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (-dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Vertical	2438.000	103.7	36.7	28.5	17.1	78.4	94.0	-15.6
Vertical	4876.000	55.3	36.7	34.8	17.1	36.3	54.0	-17.7
Vertical	7314.000	65.8	36.1	33.3	17.1	45.9	54.0	-8.1

Notes: 1. Peak Detector Data unless otherwise stated.

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: Jimmy Wen

Applicant: Lionel L.L.C. Date of Test: September 12, 2013
Model: 6-30218
Sample: 1/1
Worst Case Operating Mode: Transmit

Table 4

Radiated Emissions

(2480.000MHz)

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)
Vertical	2480.000	102.5	36.7	28.5	94.3	114.0	-19.7
Vertical	4960.000	58.6	36.7	34.8	56.7	74.0	-17.3
Vertical	7440.000	66.2	36.1	33.3	63.4	74.0	-10.6

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (-dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Vertical	2480.000	102.5	36.7	28.5	17.1	77.2	94.0	-16.8
Vertical	4960.000	58.6	36.7	34.8	17.1	39.6	54.0	-14.4
Vertical	7440.000	66.2	36.1	33.3	17.1	46.3	54.0	-7.7

Notes: 1. Peak Detector Data unless otherwise stated.

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: Jimmy Wen

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 Live-Conducted Configuration
at
27.770 MHz

Judgement: Passed by 23.1 dB margin

TEST PERSONNEL:

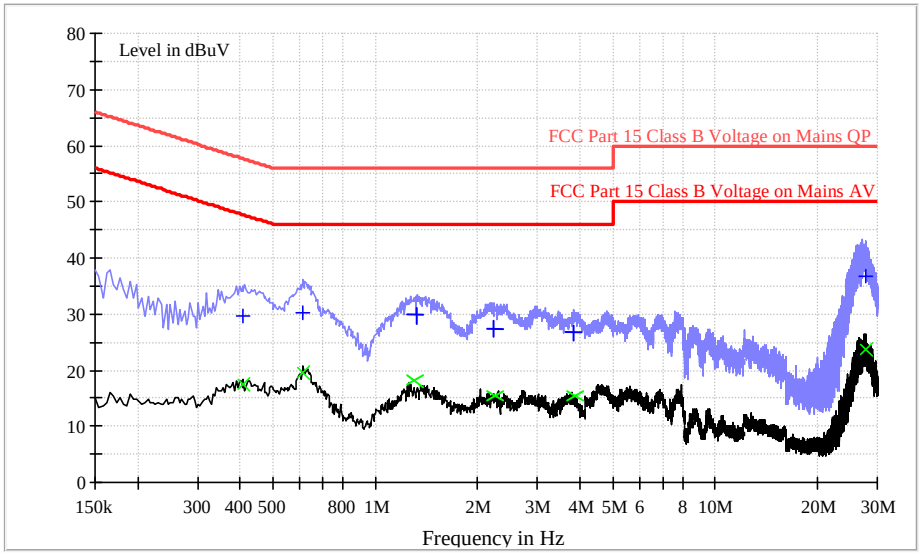
Sign on file

Jimmy Wen, Assisant Engineer
Typed/Printed Name

September 12, 2013
Date

Applicant: Lionel L.L.C. Date of Test: September 12, 2013
Model: 6-30218
Sample: 1/1
Worst Case Operating Mode: Transmit(2438.000MHz)

Conducted Emission Test - FCC



Result Table QP

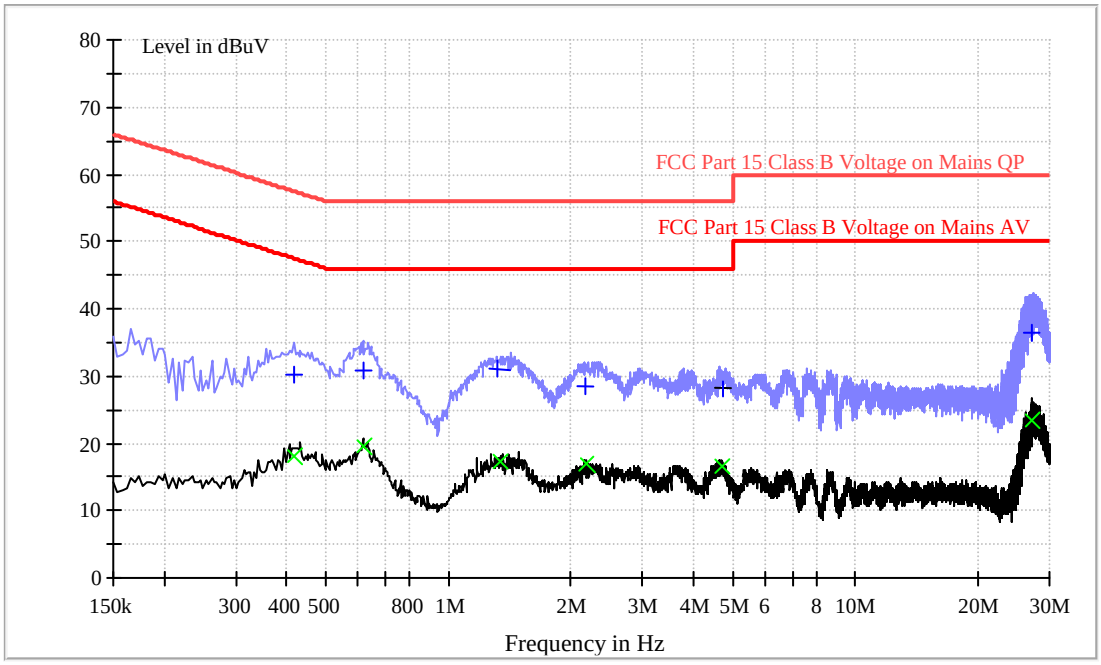
Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.411	29.6	L1	9.6	28.0	57.6
0.614	30.4	L1	9.6	25.6	56.0
1.454	28.1	L1	9.7	27.9	56.0
2.156	26.5	L1	9.8	29.5	56.0
3.764	26.1	L1	9.9	29.9	56.0
27.770	36.9	L1	10.1	23.1	60.0

Result Table AV

Frequency (MHz)	Average (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.411	17.0	L1	9.6	30.1	47.6
0.614	19.9	L1	9.6	26.1	46.0
1.454	17.2	L1	9.7	29.1	46.0
2.156	15.5	L1	9.8	30.2	46.0
3.764	15.6	L1	9.9	30.3	46.0
27.770	23.7	L1	10.1	26.3	50.0

Applicant: Lionel L.L.C. Date of Test: September 12, 2013
Model: 6-30218
Sample: 1/1
Worst Case Operating Mode: Transmit(2438.000MHz)

Conducted Emission Test - FCC



Result Table QP

Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.418	30.2	N	9.6	27.3	57.5
0.618	30.5	N	9.6	25.5	56.0
1.487	31.7	N	9.6	24.3	56.0
2.288	28.5	N	9.4	27.5	56.0
4.685	28.9	N	9.2	27.1	56.0
27.174	36.5	N	10.2	23.5	60.0

Result Table AV

Frequency (MHz)	Average (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.418	18.1	N	9.6	29.4	47.5
0.618	19.7	N	9.6	26.3	46.0
1.487	16.9	N	9.6	29.1	46.0
2.288	15.7	N	9.4	30.3	46.0
4.685	16.6	N	9.2	29.4	46.0
27.174	24.5	N	10.2	25.5	50.0

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

For electronic filing, the plot shows the fundamental emission when modulated is saved with filename: be.pdf. From the plot, the field strength of any emissions outside of the specified frequency band are attenuated to the general radiated emission limits in section 15.209. It fulfils the requirement of 15.249(d).

Peak Measurement

Bandedge compliance is determined by applying marker-delta method, i.e (Bandedge Plot).

(i) Lower channel 2401.000MHz:

Peak Resultant field strength = Fundamental emissions (peak value) – delta from the bandedge plot

= 93.9 dBµv/m-26.0 dB
= 67.9 dBµv/m

Average Resultant field strength = Fundamental emissions (Average value) – delta from the bandedge plot
= 76.8 dBµv/m-26.0 dB
= 50.8 dBµv/m

(ii) Upper channel 2480.000MHz:

Peak Resultant field strength = Fundamental emissions (peak value) – delta from the bandedge plot

= 94.3 dBµv/m-42.7 dB
= 51.6 dBµv/m

Average Resultant field strength = Fundamental emissions (Average value) – delta from the bandedge plot
= 77.2 dBµv/m-42.7 dB
= 34.5 dBµv/m

The resultant field strength meets the general radiated emission limit in section 15.209, which does not exceed 74dBµv/m (Peak Limit) and 54dBµv/m (Average Limit).

8.1 Bandedge Plot (cont'd)

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.The effective period (T_{eff}) is approximately 480 µs for a digital "1" bit, as shown in the plots of Exhibit 8.3. With a resolution bandwidth (3 dB) of 100 kHz, the pulse desensitivity factor was 0 dB.

8.3 Calculation of Average Factor

Averaging factor in dB = 20 log (duty cycle)

The specification for output field strengths in accordance with the FCC rules specify measurements with an average detector. During testing, a spectrum analyzer incorporating a peak detector was used. Therefore, a reduction factor can be applied to the resultant peak signal level and compared to the limit for measurement instrumentation incorporating an average detector.

The time period over which the duty cycle is measured is 100 milliseconds, or the repetition cycle, whichever is a shorter time frame. The worst case (highest percentage on) duty cycle is used for the calculation. The duty cycle is measured by placing the spectrum analyzer in zero scan (receiver mode) and linear mode at maximum bandwidth (3 MHz at 3 dB down) and viewing the resulting time domain signal output from the analyzer on a Tektronix oscilloscope. The oscilloscope is used because of its superior time base and triggering facilities.

A plot of the worst-case duty cycle as detected in this manner are saved with filename: af.pdf

The duty cycle is simply the on-time divided by the period:

The duration of one cycle = 17.220ms
Effective period of the cycle = 480us x 5 = 2.4ms

DC = 5 x 480us / 17.220ms = 0.1394 or 13.94%

Therefore, the averaging factor is found by 20 $\log_{10}$ 0.1394 = -17.1 dB

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 C63.4 - 2009.

the EUT and all cables were insulated, if required, from the ground plane by up to 12 mm of insulating material. 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 adjust 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. Average readings, when required, are taken by measuring the duty cycle of the equipment under test and subtracting the corresponding amount in dB from the measured peak readings.

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 C63.4 - 2009.

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.

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EXHIBIT 10

TEST EQUIPMENT LIST

10.0 **Test Equipment List**

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-03	BiConiLog Antenna	ETS	3142C	00066460	29-Jun-13	29-Jun-14
SZ185-01	EMI Receiver	R&S	ESCI	100547	12-Mar-13	12-Mar-14
SZ061-07	Pyramidal Horn Antenna	ETS	3160-09	00083067	21-Jul-13	21-Jan-14
SZ061-08	Horn Antenna	ETS	3115	00092346	03-Nov-12	03-Nov-13
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	13-May-13	13-May-14
SZ056-03	Spectrum Analyzer	R&S	FSP 30	101148	12-Mar-13	12-Mar-14
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	12-Mar-13	12-Mar-14
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	02-Mar-13	02-Mar-14
SZ062-02	RF Cable	RADIALL	RG 213U	--	20-Jul-13	20-Jan-14
SZ062-06	RF Cable	RADIALL	0.04-26.5GHz	--	20-Jul-13	20-Jan-14
SZ062-12	RF Cable	RADIALL	0.04-26.5GHz	--	22-Apr-13	22-Oct-13
SZ067-04	Notch Filter	Micro-Tronics	BRM50702-02	--	21-May-13	21-May-14
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	5-Nov-12	5-Nov-13
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	5-Nov-12	5-Nov-13
SZ187-02	Two-Line V-Network	R&S	ENV216	100073	5-Nov-12	5-Nov-13
SZ188-03	Shielding Room	ETS	RFD-100	4100	23-April-13	23-Oct-13