Issuing Laboratory:
Intertek Testing Services Hong Kong Limited

Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.

HOKLAS 005
TEST

TEST REPORT

Report No.: 13051267HKG-002

Hallmark Cards, Inc.

Application
For
Certification
(Original Grant)
(FCC ID: SQ9XKT1292)
(IC: 5768A-XKT1292)

Transceiver

Prepared and Checked by:

Lau Chin Yu, Benny
Lead Engineer

Approved by:

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Assistant Manager
Date: June 25, 2013

Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.

GENERAL INFORMATION

Hallmark Cards, Inc.
BRAND NAME: Hallmark, MODEL: XKT1292
FCC ID: SQ9XKT1292
IC: 5768A-XKT1292

Grantee:	Hallmark Cards, Inc.
Grantee Address:	2501 McGee, MD 166, PO Box 419580, Missouri, Kansas City, U.S.A.
Contact Person:	Ronald Carlson/ Phu Dang
Tel:	816 5074150
Fax:	N/A
e-mail:	rcarlson@hallmark.com / pdang2@hallmark.com
Manufacturer:	Jetta Company Limited
Manufacturer Address:	Jetta House, 19 On Kui Street, On Lok Tsuen, Fanling, Hong Kong.
Brand Name:	Hallmark
Model:	XKT1292
Type of EUT:	Transceiver
Description of EUT:	Disney Continuity Minnie
Serial Number:	N/A
FCC ID / IC:	SQ9XKT1292 / 5768A-XKT1292
Date of Sample Submitted:	May 23, 2013
Date of Test:	May 29-30, 2013
Report No.:	13051267HKG-002
Report Date:	June 25, 2013
Environmental Conditions:	Temperature: +10 to 40°C Humidity: 10 to 90%

Intertek Testing Services Hong Kong Ltd.
2/F., Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong.
Tel: (852) 2173 8888 Fax: (852) 2785 5487 Website: www.hk.intertek-etlsemko.com

SUMMARY OF TEST RESULT

Hallmark Cards, Inc.
BRAND NAME: Hallmark, MODEL: XKT1292
FCC ID: SQ9XKT1292
IC: 5768A-XKT1292

TEST SPECIFICATION	REFERENCE	RESULTS
Transmitter Field Strength and Bandwidth Requirement	15.249 / RSS-210 A2.9	Pass

The equipment under test is found to be complying with the following standards:
FCC Part 15, October 1, 2011 Edition
RSS-210 Issue 8, December 2010
RSS-Gen Issue 3, December 2010

Note: 1. The EUT uses a permanently attached antenna which, in accordance to section 15.203, is considered sufficient to comply with the pervisions of this section.
2. Pursuant to FCC part 15 Section 15.215(c), the 20 dB 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.

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1.0 General Description

1.1 Product Description

The equipment under test (EUT) is the Disney Continuity Minnie operating at three channels (2422MHz, 2446MHz and 2460MHz). The EUT is powered by 4.5VDC (3 x 1.5V "AAA" size battery). There are five model styles in Wireless music band. When the EUT is put together with other model style members in the band, it will sing and move along with other model style members as the members communicate via the three RF channels. After powered up, the EUT will scan the ambient field strength among the three channels. Then the EUT will dominate the channel of least ambient field strength.

Antenna Type : Internal, Integral

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

1.2 Related Submittal(s) Grants

The Certification procedure of transceiver (with FCC ID: SQ9XKT1291, SQ9XKT1293, SQ9XKT1294, SQ9XKT1295) for this transceiver (FCC ID: SQ9XKT1292) are being processed as the same time of this application.

The receiver for this transceiver is exempted from the Part 15 technical rules per 15.101(b).

1.3 Test Methodology

Radiated emission measurements were performed according to the procedures in ANSI C63.4 (2009). All radiated measurements were performed in an Open Area Test Site. Preliminary scans were performed in the Open Area Test Site only to determine 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.

1.4 Test Facility

The open area test site used to collect the radiated data is located at Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. This test facility and site measurement data have been placed on file with the FCC and IC.

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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 device was powered by 3 x new 1.5V “AAA” battery.

For maximizing emissions, 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 reported in Exhibit 3.0.

The unit was operated standalone and placed in the center of the turntable.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was mounted to a plastic stand if necessary and placed on the wooden turntable, which enabled the 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. Once the unit is powered up, it transmits the RF signal continuously.

2.3 Special Accessories

There are no special accessories necessary for compliance of this product.

2.4 Equipment Modification

Any modifications installed previous to testing by Hallmark Cards, Inc. will be incorporated in each production model sold/leased in the United States and Canada.

No modifications were installed by Intertek Testing Services Hong Kong Ltd.

2.5 Measurement Uncertainty

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

Uncertainty and Compliance - Unless the standard specifically states that measured values are to be extended by the measurement uncertainty in determining compliance, all compliance determinations are based on the actual measured value.

2.6 Support Equipment List and Description

N/A.

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3.0 **Emission Results**

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

3.1 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any), Average Factor (optional) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CF - AG - 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
AV = Average Factor in dB

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows:

FS = RR + LF

where FS = Field Strength in dBµV/m
RR = RA - AG - AV in dBµV
LF = CF + AF in dB

Assume a receiver reading of 52.0 dBµV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB are added. The amplifier gain of 29 dB and average factor of 5 dB are subtracted, giving a field strength of 32 dBµV/m. This value in dBµV/m was converted to its corresponding level in µV/m.

RA = 52.0 dBµV/m
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
AV = 5.0 dB
FS = RR + LF
FS = 18 + 9 = 27 dBµV/m

RR = 18.0 dBµV
LF = 9.0 dB

Level in µV/m = Common Antilogarithm [(27 dBµV/m)/20] = 22.4 µV/m

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3.2 Radiated Emission Configuration Photograph

The worst case in radiated emission was found at 4892 MHz

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

3.3 Radiated Emission Data

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.

Judgment: Passed by 0.9 dB margin compared with average limit

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Applicant: Hallmark Cards, Inc. Date of Test: May 29-30, 2013
Model: XKT1292
Worst-Case Operating Mode: Transmitting

Table 1

Radiated Emissions
Pursuant to FCC Part 15 Section 15.249 Requirement

Lowest Channel

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
V	2422.000	94.1	33	29.4	18	72.5	94.0	-21.5
V	***4844.000***	***69.0***	***33***	***34.9***	***18***	***52.9***	***54.0***	***-1.1***
H	***7266.000***	***50.4***	***33***	***37.9***	***18***	***37.3***	***54.0***	***-16.7***
H	9688.000	45.8	33	40.4	18	35.2	54.0	-18.8
H	***12110.000***	***45.5***	***33***	***40.5***	***18***	***35.0***	***54.0***	***-19.0***
H	14532.000	46.9	33	38.4	18	34.3	54.0	-19.7

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
V	2422.000	94.1	33	29.4	90.5	114.0	-23.5
V	***4844.000***	***69.0***	***33***	***34.9***	***70.9***	***74.0***	***-3.1***
H	***7266.000***	***50.4***	***33***	***37.9***	***55.3***	***74.0***	***-18.7***
H	9688.000	45.8	33	40.4	53.2	74.0	-20.8
H	***12110.000***	***45.5***	***33***	***40.5***	***53.0***	***74.0***	***-21.0***
H	14532.000	46.9	33	38.4	52.3	74.0	-21.7

NOTES: 1. Peak Detector Data unless otherwise 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 sign in the column shows value below limit.

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

5. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

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Applicant: Hallmark Cards, Inc. Date of Test: May 29-30, 2013
Model: XKT1292
Worst-Case Operating Mode: Transmitting

Table 2

Radiated Emissions
Pursuant to FCC Part 15 Section 15.249 Requirement

Middle Channel

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
V	2446.000	94.2	33	29.4	18	72.6	94.0	-21.4
V	***4892.000***	***69.2***	***33***	***34.9***	***18***	***53.1***	***54.0***	***-0.9***
H	***7338.000***	***50.5***	***33***	***37.9***	***18***	***37.4***	***54.0***	***-16.6***
H	9784.000	45.8	33	40.4	18	35.2	54.0	-18.8
H	***12230.000***	***45.6***	***33***	***40.5***	***18***	***35.1***	***54.0***	***-18.9***
H	14676.000	46.9	33	38.4	18	34.3	54.0	-19.7

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
V	2446.000	94.2	33	29.4	90.6	114.0	-23.4
V	***4892.000***	***69.2***	***33***	***34.9***	***71.1***	***74.0***	***-2.9***
H	***7338.000***	***50.5***	***33***	***37.9***	***55.4***	***74.0***	***-18.6***
H	9784.000	45.8	33	40.4	53.2	74.0	-20.8
H	***12230.000***	***45.6***	***33***	***40.5***	***53.1***	***74.0***	***-20.9***
H	14676.000	46.9	33	38.4	52.3	74.0	-21.7

NOTES: 1. Peak Detector Data unless otherwise 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 sign in the column shows value below limit.

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

5. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

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Applicant: Hallmark Cards, Inc. Date of Test: May 29-30, 2013
Model: XKT1292
Worst-Case Operating Mode: Transmitting

Table 3

Radiated Emissions
Pursuant to FCC Part 15 Section 15.249 Requirement

Highest Channel

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (dB)	Calculated at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
V	2460.000	93.8	33	29.4	18	72.2	94.0	-21.8
V	***4920.000***	***69.1***	***33***	***34.9***	***18***	***53.0***	***54.0***	***-1.0***
H	***7380.000***	***50.4***	***33***	***37.9***	***18***	***37.3***	***54.0***	***-16.7***
H	9840.000	45.8	33	40.4	18	35.2	54.0	-18.8
H	***12300.000***	***45.5***	***33***	***40.5***	***18***	***35.0***	***54.0***	***-19.0***
H	14760.000	47.2	33	38.4	18	34.6	54.0	-19.4

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
V	2460.000	93.8	33	29.4	90.2	114.0	-23.8
V	***4920.000***	***69.1***	***33***	***34.9***	***71.0***	***74.0***	***-3.0***
H	***7380.000***	***50.4***	***33***	***37.9***	***55.3***	***74.0***	***-18.7***
H	9840.000	45.8	33	40.4	53.2	74.0	-20.8
H	***12300.000***	***45.5***	***33***	***40.5***	***53.0***	***74.0***	***-21.0***
H	14760.000	47.2	33	38.4	52.6	74.0	-21.4

NOTES: 1. Peak Detector Data unless otherwise 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 sign in the column shows value below limit.

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

5. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

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4.0 Equipment Photographs

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

5.0 Product Labelling

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

6.0 Technical Specifications

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

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 and Canada.

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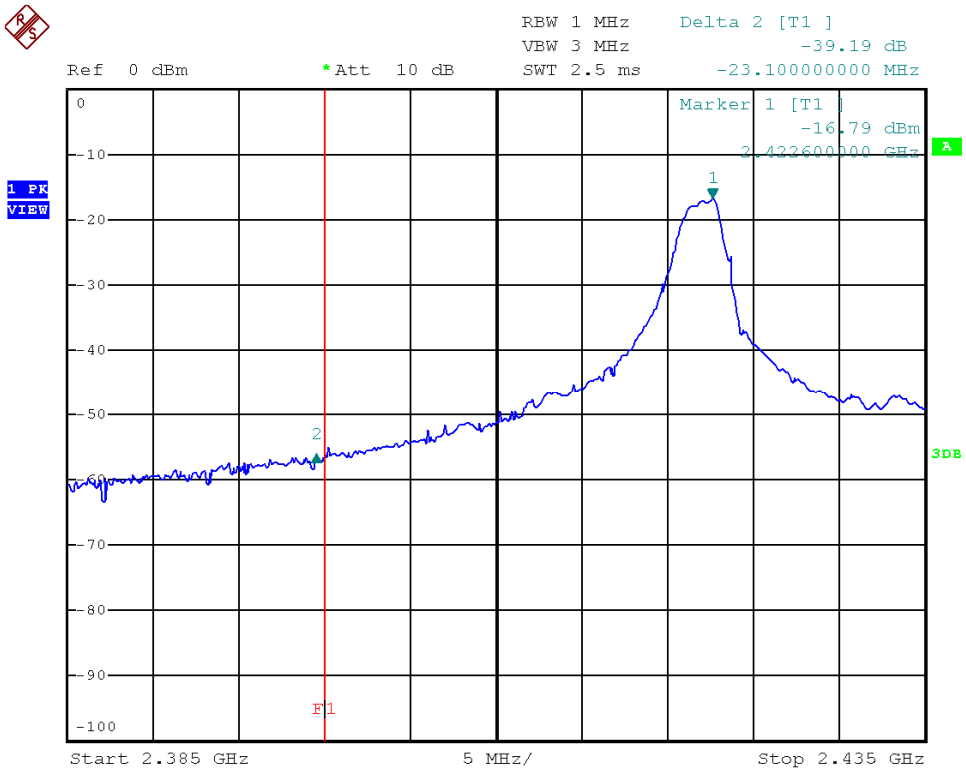
8.0 Miscellaneous Information

The miscellaneous information includes details of the test procedure and measured bandwidth / calculation of factor such as pulse desensitization and averaging factor (calculation and timing diagram).

8.1 Measured Bandwidth

From the following plots, they show that the fundamental emissions are confined in the specified band (2400MHz to 2483.5MHz). In case of the fundamental emissions are within two standard bandwidths from the bandedge, the delta measurement technique is used for determining bandedge compliance. Standard bandwidth is the bandwidth specified by ANSI C63.4 (2009) for frequency being measured.

Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50dB below the level of the fundamental or to the general radiated emissions limits in Section 15.209 / Table 5 of RSS-Gen, whichever is the lesser attenuation, which meet the requirement of part 15.249(d) / RSS-210 A2.9(b).



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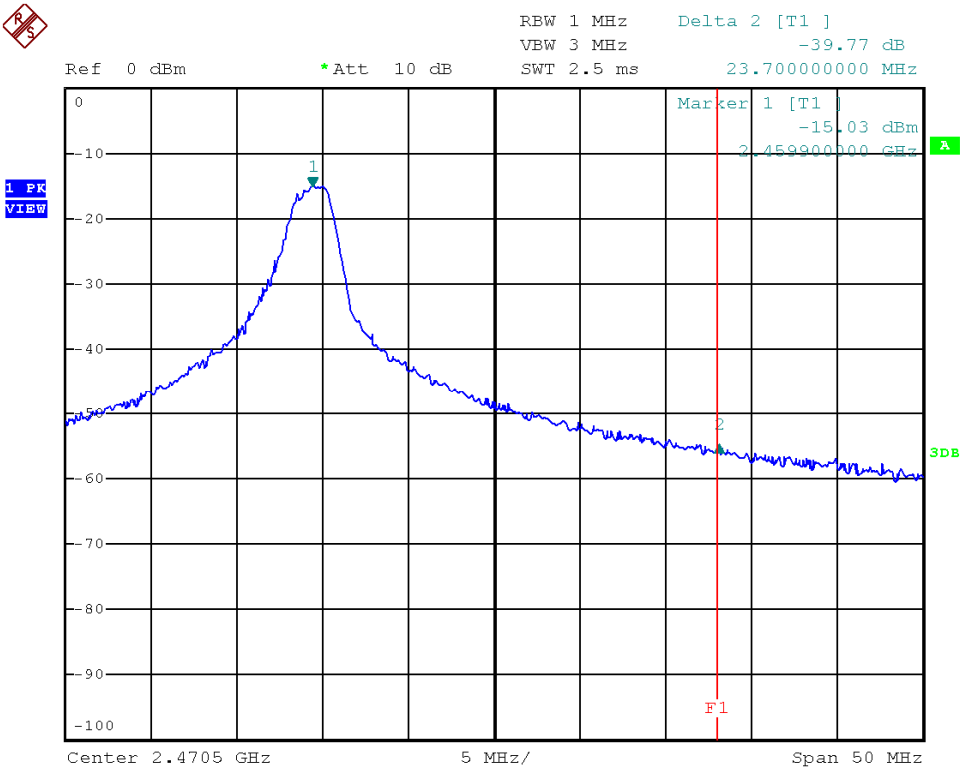

Peak Measurement

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

Channel	Fundamental Emission (average value) (dBuV/m)	Delta (dB)	Average Resultant Field Strength (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)
Lowest	72.5	39.19	33.31	54	-20.69
Highest	72.2	39.77	32.43	54	-21.57

Channel	Fundamental Emission (peak value) (dBuV/m)	Delta (dB)	Peak Resultant Field Strength (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)
Lowest	90.5	39.19	51.31	74	-22.69
Highest	90.2	39.77	50.43	74	-23.57

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

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8.2 Discussion of Pulse Desensitization

Pulse desensitivity is not applicable for this device. The effective period (Teff) is approximately 12.48ms for a digital "1" bit which illustrated on technical specification, with a resolution bandwidth (3dB) of 3MHz, so the pulse desensitivity factor is 0dB.

8.3 Calculation of Average Factor

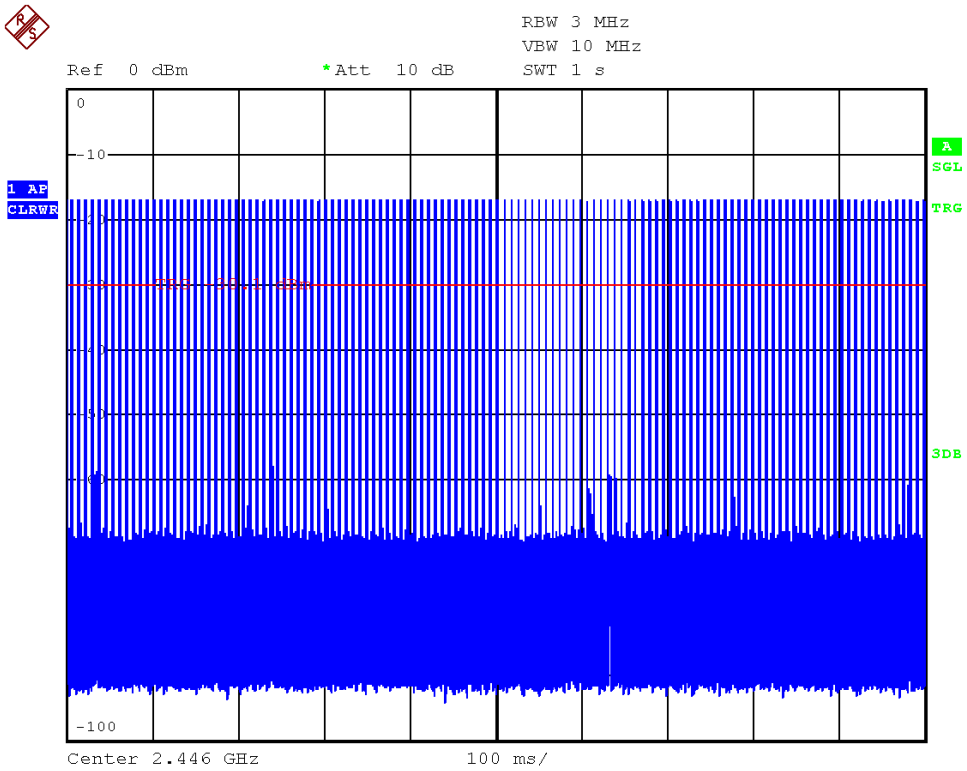
The duty cycle is simply the on-time divided by the period:

The duration of one cycle = 100 ms

Effective period of the cycle = 320us x (13 x 3) = 12.48ms

DC = 12.48/100 = 0.1248

Therefore, the averaging factor is found by 20log 0.1248 = -18.0dB.



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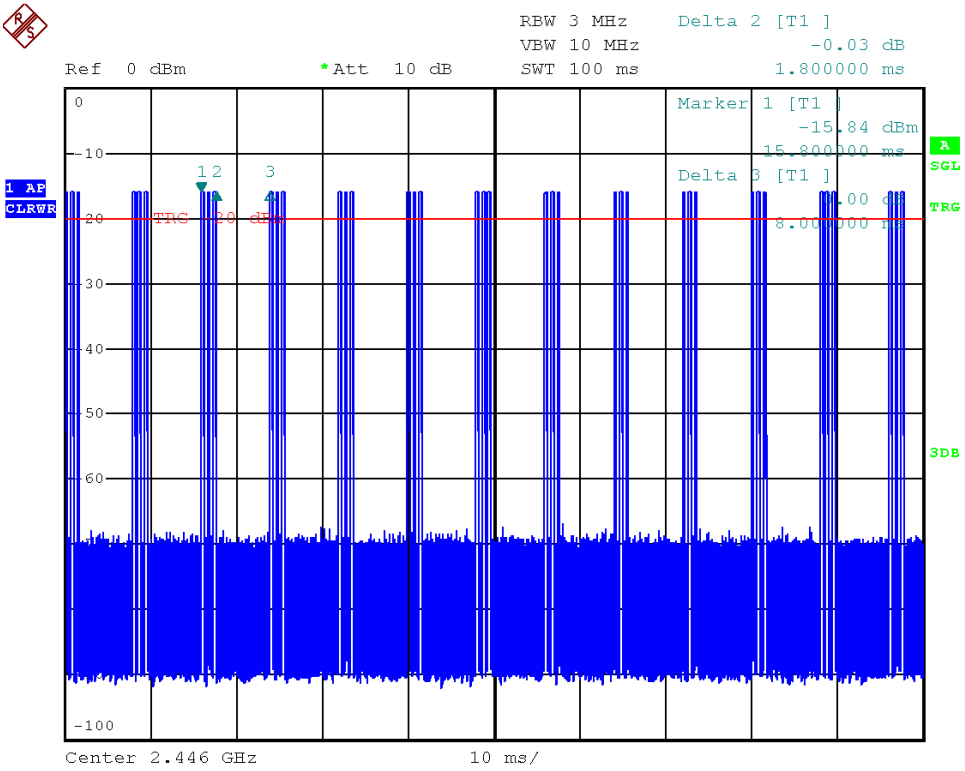

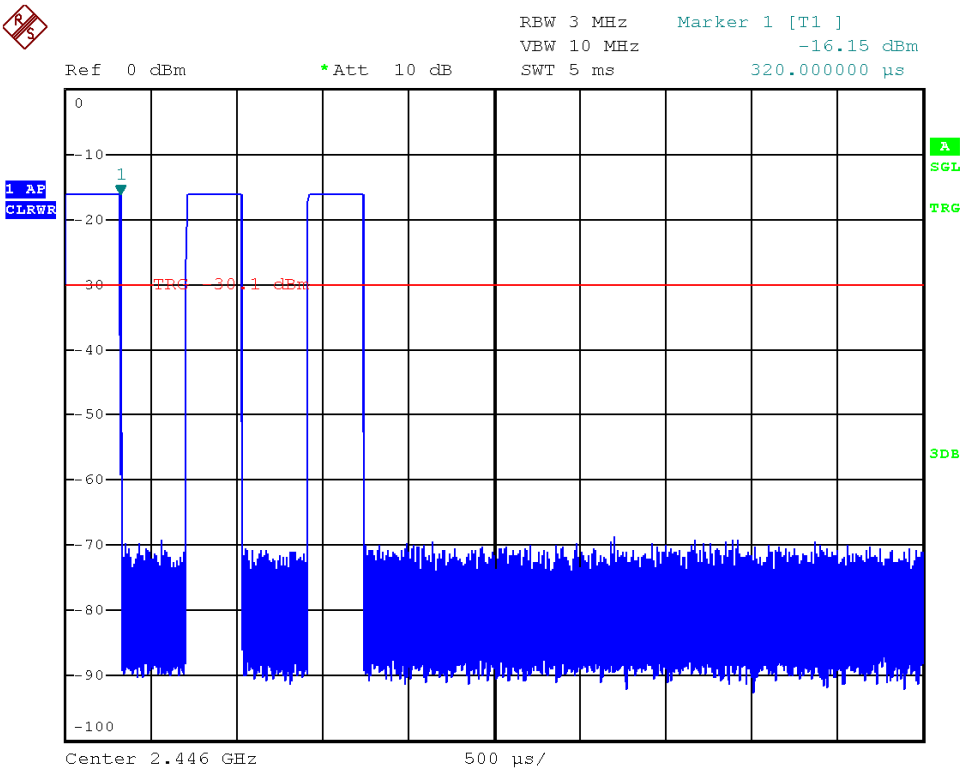

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8.4 Emissions Test Procedures

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

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.4 (2009). A typical or an unmodulated CW signal at the operating frequency of the EUT has been supplied to the EUT for all measurements. Such a signal is supplied by a signal generator and an antenna in close proximity to the EUT. The signal level is sufficient to stabilize the local oscillator of the EUT.

The transmitting equipment under test (EUT) is placed on a wooden turntable which is four feet in diameter and approximately one meter 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 axis to obtain maximum emission levels. The antenna height and polarization are also varied during the testing to search for maximum signal levels. The height of the antenna is varied from one to four meters.

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. A detailed description for the calculation of the average factor can be found in Exhibit 8.3.

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.

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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 were made as described in ANSI C63.4 (2009).

The IF bandwidth used for measurement of radiated signal strength was 100 kHz or greater when frequency is below 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. A discussion of whether pulse desensitivity is applicable to this unit is included in this report (See Exhibit 8.1). 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 forbidden 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, unless otherwise reported. Measurements taken at a closer distance are so marked.

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9.0 **Equipment List**

1) Radiated Emissions Test

Equipment	EMI Test Receiver	Spectrum Analyzer	Biconical Antenna
Registration No.	EW-2500	EW-2188	EW-0571
Manufacturer	R&S	AGILENTTECH	EMCO
Model No.	ESCI	E4407B	3104C
Calibration Date	Mar. 22, 2013	Nov. 05, 2012	Apr. 05, 2012
Calibration Due Date	Feb. 28, 2014	Nov. 05, 2013	Oct. 05, 2013

Equipment	Log Periodic Antenna (200 - 1000)MHz	Double Ridged Guide Antenna	Broad-Band Horn Antenna with frequency range 14G - 40GHz
Registration No.	EW-1042	EW-1015	EW-1679
Manufacturer	EMCO	EMCO	SCHWARZBECK
Model No.	3148	3115	BBHA9170
Calibration Date	Apr. 25, 2012	Mar. 5, 2013	Apr. 01, 2013
Calibration Due Date	Oct. 25, 2013	Sept. 5, 2014	Apr. 01, 2014

2) Bandedge Measurement

Equipment	Spectrum Analyzer
Registration No.	EW-2253
Manufacturer	R&S
Model No.	FSP40
Calibration Date	Apr. 24, 2013
Calibration Due Date	Apr. 24, 2014

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