

### Shenzhen Zoko Industry Development Co.,Ltd

Application For Certification

(FCC ID: 2AA7I-UE3)

**RFID** data collector

Model: UE3, U200, U201, U202, U203 Brand Name: ZOKO

902.75-927.25MHz Transceiver

Report No.: 131018005SZN-005

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:	Approved by:	
Sign on file		
Sen Lv	Billy Li	
Project Engineer	Supervisor	
-	Date: January 9, 2014	

- The test results reported in this test report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample
  may be said to have been obtained.
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- For Terms And Conditions of the services, it can be provided upon request.
- The evaluation data of the report will be kept for 3 years from the date of issuance.

TRF No.: FCC 15C\_TX\_b

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#### MEASUREMENT/TECHNICAL REPORT

Shenzhen Zoko Industry Development Co.,Ltd Model: UE3, U200, U201, U202, U203

FCC ID: 2AA7I-UE3

This report concerns (check one:)	Original Grant <u>X</u>	Class II Change							
Equipment Type: DXT - Part 15 Low Power Transceiver, Rx Verified									
Deferred grant requested per 47 CFR 0.4	-57(d)(1)(ii)? Yes	S No _X_							
	If yes, defer unti	l:date							
Company Name agrees to notify the Com	nmission by:	date							
of the intended date of announcement of date.	the product so that the								
Transition Rules Request per 15.37?	Yes	s No <u>X</u>							
If no, assumed Part 15, Subpart C for Edition] provision.	intentional radiator –	the new 47 CFR [10-1-12							
Report prepared by:									
	Sen Lv Intertek Testing Service Kejiyuan Branch 6F, Block D, Huahan Nanshan District, She Phone: (86 755) 860 Fax: (86 755) 860	Building, Langshan Road, enzhen, P. R. China 1 0653							

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#### List of attached file

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	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	Letter of Agency	agency.pdf	
Cover Letter	Certification Agreement	agreement.pdf	

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## EXHIBIT 1 GENERAL DESCRIPTION

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#### 1.0 **General Description**

#### 1.1 Product Description

The equipment under test (EUT) is a RFID data collector, it is able to read ID cards through 902.75-927.25MHz and transmit data through WiFi function operating at 2412-2462MHz. The EUT was powered by a 3.7 VDC Li-ion rechargeable battery which is charged by USB Power Adapter with AC 120V, 60Hz input. For more detail information pls. refer to the user manual.

The Models: U200, U201, U202, U203 are the same as the Model: UE3 in hardware and electronic aspect. They are just different in appearance, model number and brand name for trading purpose.

Antenna Type: Integral antenna Modulation Type: DSB-ASK

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

descri.pdf.

#### 1.2 Related Submittal(s) Grants

- 1. This is an application for certification of the RFID function operation at 902.75-927.25MHz.
- 2. WIFI Function: Refer to report 131018005SZN-004
- 3. Transfer data function: this function has been completed in DoC.

#### 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 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

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measurement data have been fully placed on file with the FCC (Registration Number: 242492).

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## EXHIBIT 2 SYSTEM TEST CONFIGURATION

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#### 2.0 **System Test Configuration**

#### 2.1 Justification

The system was configured for testing in a typical operation (as a customer would normally use it), and in the confines as outlined in ANSI C63.4 (2009).

The EUT was powered by a 3.7 VDC fully charged Li-ion rechargeable battery which is charged by USB Power Adapter with AC 120V, 60Hz input during the test.

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.

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 operation (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 engineering mode (provided by client) used during testing as similar to a typical use.

#### 2.3 Special Accessories

One shielded USB cable with a ferrite core is used.

#### 2.4 Equipment Modification

Any modifications installed previous to testing by Shenzhen Zoko Industry Development Co.,Ltd 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.

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## 2.6 Support Equipment List and Description

Description	Manufacturer	Model No.
110cm shielded USB Cable with a ferrite core	Shenzhen Zoko Industry Development Co.,Ltd	N/A
USB Power Adapter	Juxing Electronic (Huizhou) Co.,Ltd.	JXAS0050500100VU, Input: AC 100-240V; 50/60Hz Output: DC 5V; 1000mA

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## EXHIBIT 3 EMISSION RESULTS

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## 3.0 **Emission Results**

Data is included 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.

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#### 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  $dB\mu V/m$ 

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:

Assume a receiver reading of 62.0 dB $\mu$ V 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 dB $\mu$ V/m. This value in dB $\mu$ V/m was converted to its corresponding level in  $\mu$ V/m.

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

PD = 0 dB

 $FS = 62 + 7.4 + 1.6 - 29 + 0 = 42 \, dB\mu V/m$ 

Level in  $\mu$ V/m = Common Antilogarithm [(42 dB $\mu$ V/m)/20] = 125.9  $\mu$ V/m

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#### 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 901.9 MHz

Judgement: Passed by 1.5 dB

#### **TEST PERSONNEL:**

Sign on file

Sen Lv, Project Engineer
Typed/Printed Name

December 3, 2013

Date

TRF No.: FCC 15C\_TX\_b FCC ID: 2AA7I-UE3

Applicant: Shenzhen Zoko Industry Development Co.,Ltd

Model: UE3 Sample: 1/1

Worst Case Operating Mode: Transmit with charging

Table 1 **Radiated Emissions** 

Polarization	Frequency	Reading	Pre-	Antenna	Net	Limit	Margin
	(MHz)	(dBµV)	Amp	Factor	at 3m	at 3m	(dB)
			Gain	(dB)	(dBµV/m)	(dBµV/m)	
			(dB)				
Horizontal	30.000	25.0	20.0	17.1	22.1	40.0	-17.9
Horizontal	203.145	35.7	20.0	9.9	25.6	43.5	-17.9
Horizontal	259.405	32.6	20.0	13.8	26.4	46.0	-19.6
Horizontal	901.900	41.5	20.0	23.0	44.5	46.0	-1.5
Horizontal	928.100	39.9	20.0	23.0	42.9	46.0	-3.1
Vertical	41.155	24.9	20.0	9.8	14.7	40.0	-25.3
Vertical	86.260	28.1	20.0	6.8	14.9	40.0	-25.1
Vertical	518.395	22.1	20.0	16.3	18.4	46.0	-27.6
Vertical	901.900	41.3	20.0	23.0	44.3	46.0	-1.7
Vertical	928.100	40.9	20.0	23.0	43.9	46.0	-2.1

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.

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#### 3.1.4 Transmitter Spurious Emissions (Radiated)

Worst Case Radiated Emission at 3709.0 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. Numbers with a minus sign are below the limit.

Judgement: Passed by 2.7 dB

#### **TEST PERSONNEL:**

Sign on file

Sen Lv, Project Engineer
Typed/Printed Name

December 3, 2013

Date

TRF No.: FCC 15C\_TX\_b FCC ID: 2AA7I-UE3

Applicant: Shenzhen Zoko Industry Development Co.,Ltd

Model: UE3 Sample: 1/1

Worst Case Operating Mode: Transmit with charging

Table 2

#### **Radiated Emissions**

(902.75MHz)

							Quasi-Peak	
	Polarization	Frequency	Reading	Pre-	Antenna	Net	Limit	Margin
		(MHz)	(dBµV)	Amp	Factor	at 3m	at 3m	(dB)
		, ,		Gain	(dB)	(dBµV/m)	(dBµV/m)	, ,
				(dB)	, ,		, , ,	
ſ	Horizontal	902.750	91.7	36.9	23.0	77.8	94.0	-16.2

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	1805.500	59.6	36.7	29.8	52.7	74.0	-21.3
Horizontal	2708.200	49.6	36.7	31.1	44.0	74.0	-30.0
Horizontal	3611.000	56.8	36.5	31.9	52.2	74.0	-21.8

Polarization	Frequency	Reading	Pre-	Antenna	Net	Average Limit	Margin
	(MHz)	(dBµV)	Amp	Factor	at 3m	at 3m	(dB)
			Gain	(dB)	(dBµV/m)	(dBµV/m)	
			(dB)				
Horizontal	1805.500	54.1	36.7	29.8	47.2	54.0	-6.8
Horizontal	2708.200	37.0	36.7	31.1	31.4	54.0	-22.6
Horizontal	3611.000	47.7	36.5	31.9	43.1	54.0	-10.9

Notes:

- Quasi-peak is used for fundamental field strength, Peak detector is used for spurious emission with 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.

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Applicant: Shenzhen Zoko Industry Development Co.,Ltd

Model: UE3 Sample: 1/1

Worst Case Operating Mode: Transmit with charging

Table 3
Radiated Emissions
(914.75MHz)

						Quasi-Peak	
Polarization	Frequency	Reading	Pre-	Antenna	Net	Limit	Margin
	(MHz)	(dBµV)	Amp	Factor	at 3m	at 3m	(dB)
			Gain	(dB)	(dBµV/m)	(dBµV/m)	, ,
			(dB)		, ,	, , ,	
Horizontal	914.750	92.4	36.9	23.0	78.5	94.0	-15.5

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	1829.500	61.3	36.7	29.8	54.4	74.0	-19.6
Horizontal	2744.250	49.5	36.7	31.1	43.9	74.0	-30.1
Horizontal	3659.000	57.3	36.5	31.9	52.7	74.0	-21.3

Polarization	Frequency (MHz)	Reading (dBµV)	Pre- Amp	Antenna Factor	Net at 3m	Average Limit at 3m	Margin (dB)
	()	(======================================	Gain (dB)	(dB)	(dBµV/m)		(==)
Horizontal	1829.500	52.8	36.7	29.8	45.9	54.0	-8.1
Horizontal	2744.250	37.2	36.7	31.1	31.6	54.0	-22.4
Horizontal	3659.000	47.7	36.5	31.9	43.1	54.0	-10.9

Notes:

- Quasi-peak is used for fundamental field strength, Peak detector is used for spurious emission with 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.

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Applicant: Shenzhen Zoko Industry Development Co.,Ltd

Model: UE3 Sample: 1/1

Worst Case Operating Mode: Transmit with charging

## Table 4 Radiated Emissions (927.25MHz)

ſ							Quasi-Peak	
	Polarization	Frequency	Reading	Pre-	Antenna	Net	Limit	Margin
		(MHz)	(dBµV)	Amp	Factor	at 3m	at 3m	(dB)
				Gain	(dB)	(dBµV/m)	(dBµV/m)	
				(dB)				
	Horizontal	927.250	91.8	36.9	23.0	77.9	94.0	-16.1

Polarization	Frequency	Reading	Pre-	Antenna	Net	Peak Limit	Margin
	(MHz)	(dBµV)	Amp	Factor	at 3m	at 3m	(dB)
			Gain	(dB)	(dBµV/m)	(dBµV/m)	
			(dB)			, ,	
Horizontal	1854.500	56.7	36.7	29.8	49.8	74.0	-24.2
Horizontal	2481.750	49.2	36.7	31.1	43.6	74.0	-30.4
Horizontal	3709.000	65.0	36.5	31.9	60.4	74.0	-13.6

Polarization	Frequency	Reading	Pre-	Antenna	Net	Average Limit	Margin
	(MHz)	(dBµV)	Amp	Factor	at 3m	at 3m	(dB)
			Gain	(dB)	(dBµV/m)	(dBµV/m)	
			(dB)				
Horizontal	1854.500	47.9	36.7	29.8	41.0	54.0	-13.0
Horizontal	2481.750	36.4	36.7	31.1	30.8	54.0	-23.2
Horizontal	3709.000	55.9	36.5	31.9	51.3	54.0	-2.7

#### Notes:

- Quasi-peak is used for fundamental field strength, Peak detector is used for spurious emission with 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.

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- 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 -Conducted Configuration At

0.906 MHz

Judgement: Passed by 18.2 dB margin

#### **TEST PERSONNEL:**

Sign on file

Sen Lv, Project Engineer
Typed/Printed Name

November 29, 2013

Date

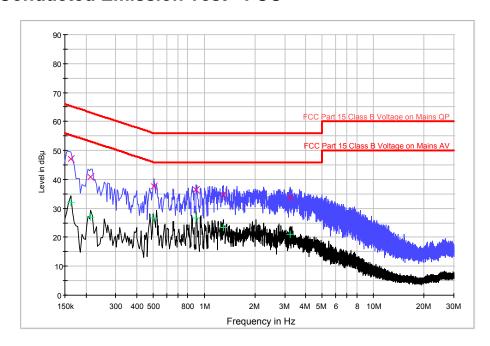
TRF No.: FCC 15C\_TX\_b FCC ID: 2AA7I-UE3

Applicant: Shenzhen Zoko Industry Development Co.,Ltd

Model: UE3 Sample: 1/1

Worst Case Operating Mode: Transmit with charging

#### **Conducted Emission Test - FCC**



#### Result Table QP

Frequency	QuasiPeak	Line	Corr.	Margin	Limit
(MHz)	(dB μ V)		(dB)	(dB)	(dB µ V)
0.162000	47.0	L1	9.8	18.4	65.4
0.214000	41.0	L1	9.7	22.0	63.0
0.506000	37.7	L1	9.7	18.3	56.0
0.898000	36.5	L1	9.8	19.5	56.0
1.298000	34.6	L1	9.8	21.4	56.0
3.246000	33.8	L1	9.8	22.2	56.0

#### Result Table AV

Frequency (MHz)	Average (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.162000	32.0	L1	9.8	23.4	55.4
0.214000	27.0	L1	9.7	26.0	53.0
0.506000	26.5	L1	9.7	19.5	46.0
0.898000	26.6	L1	9.8	19.4	46.0
1.298000	23.4	L1	9.8	22.6	46.0
3.246000	20.9	L1	9.8	25.1	46.0

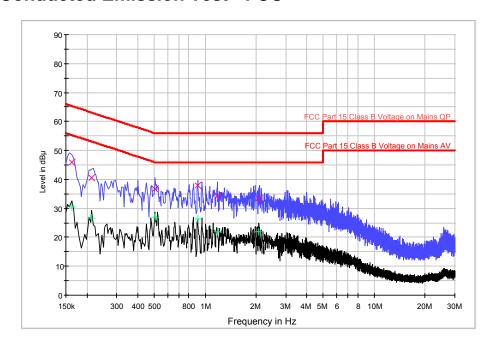
TRF No.: FCC 15C\_TX\_b FCC ID: 2AA7I-UE3

Applicant: Shenzhen Zoko Industry Development Co.,Ltd

Model: UE3 Sample: 1/1

Worst Case Operating Mode: Transmit with charging

#### **Conducted Emission Test - FCC**



#### Result Table QP

Frequency	QuasiPeak	Line	Corr.	Margin	Limit
(MHz)	(dB μ V)		(dB)	(dB)	(dB µ V)
0.162000	45.9	N	10.2	19.5	65.4
0.214000	40.5	N	10.2	22.5	63.0
0.502000	36.8	N	10.2	19.2	56.0
0.906000	37.8	N	10.3	18.2	56.0
1.182000	34.3	N	10.3	21.7	56.0
2.082000	33.4	N	10.4	22.6	56.0

#### Result Table AV

Frequency (MHz)	Average (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.162000	30.4	N	10.2	25.0	55.4
0.214000	26.5	N	10.2	26.5	53.0
0.502000	26.9	N	10.2	19.1	46.0
0.906000	26.5	N	10.3	19.5	46.0
1.182000	21.8	N	10.3	24.2	46.0
2.082000	22.0	N	10.4	24.0	46.0

TRF No.: FCC 15C\_TX\_b FCC ID: 2AA7I-UE3

## EXHIBIT 4 EQUIPMENT PHOTOGRAPHS

TRF No.: FCC 15C\_TX\_b FCC ID: 2AA7I-UE3

## 4.0 **Equipment Photographs**

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

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# EXHIBIT 5 PRODUCT LABELLING

TRF No.: FCC 15C\_TX\_b FCC ID: 2AA7I-UE3

#### 5.0 **Product Labelling**

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

TRF No.: FCC 15C\_TX\_b FCC ID: 2AA7I-UE3

## EXHIBIT 6 TECHNICAL SPECIFICATIONS

TRF No.: FCC 15C\_TX\_b FCC ID: 2AA7I-UE3

#### 6.0 <u>Technical Specifications</u>

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

TRF No.: FCC 15C\_TX\_b FCC ID: 2AA7I-UE3

## **EXHIBIT 7**

## **INSTRUCTION MANUAL**

TRF No.: FCC 15C\_TX\_b FCC ID: 2AA7I-UE3

#### 7.0 <u>Instruction Manual</u>

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.

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## EXHIBIT 8 MISCELLANEOUS INFORMATION

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#### 8.0 <u>Miscellaneous Information</u>

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

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#### 8.1 20dB BW 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

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#### 8.2 Discussion of Pulse Desensitization

Pulse desensitivity is not applicable for this device.

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#### 8.3 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 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 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.

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#### 8.3 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.

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## EXHIBIT 9 CONFIDENTIALITY REQUEST

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#### 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

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## 10.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-03	BiConiLog Antenna	ETS	3142C	00066460	20-Jul-13	20-Jan-14
SZ185-01	EMI Receiver	R&S	ESCI	100547	20-Jul-13	20-Jan-14
SZ061-08	Horn Antenna	ETS	3115	00092346	17-Oct-13	17-Apr-14
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	17-Oct-13	17-Apr-14
SZ056-03	Spectrum Analyzer	R&S	FSP 30	101148	20-Jul-13	20-Jan-14
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	18-Oct-13	18-Apr-14
SZ188-01	Anechoic Chamber	ETS	RFD-F/A- 100	4102	18-Oct-13	18-Apr-14
SZ062-02	RF Cable	RADIALL	RG 213U		20-Jul-13	20-Jan-14
SZ062-06	RF Cable	RADIALL	0.04- 26.5GHz		17-Oct-13	17-Apr-14
SZ062-12	RF Cable	RADIALL	0.04- 26.5GHz		17-Oct-13	17-Apr-14
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	18-Oct-13	18-Apr-14
SZ187-01	Two-Line V- Network	R&S	ENV216	100072	18-Oct-13	18-Apr-14
SZ187-02	Two-Line V- Network	R&S	ENV216	100073	18-Oct-13	18-Apr-14
SZ188-03	Shielding Room	ETS	RFD-100	4100	18-Oct-13	18-Apr-14

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