

DesignTech International Inc.

**Application
For
Certification**

900MHz 20 Channel Analog Modulation Cordless Phone

(FCC ID: ELG30911)

05061381
TL/ Ann Choy
August 17, 2005

- 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.
- This report shall not be reproduced except in full without prior authorization from Intertek Testing Services Hong Kong Limited.
- 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.

INTERTEK TESTING SERVICES

LIST OF EXHIBITS

INTRODUCTION

<i>EXHIBIT 1:</i>	General Description
<i>EXHIBIT 2:</i>	System Test Configuration
<i>EXHIBIT 3:</i>	Emission Results
<i>EXHIBIT 4:</i>	Equipment Photographs
<i>EXHIBIT 5:</i>	Product Labelling
<i>EXHIBIT 6:</i>	Technical Specifications
<i>EXHIBIT 7:</i>	Instruction Manual
<i>EXHIBIT 8:</i>	Security Code Information

INTERTEK TESTING SERVICES

MEASUREMENT/TECHNICAL REPORT

DesignTech International Inc. - Model(s): 30911

FCC ID: ELG30911

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

Equipment Type : DXT - Cordless Telephone

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

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

If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [10-01-04
Edition] Provision.

Report prepared by:

Tommy Leung
Intertek Testing Services Hong Kong Ltd.
2/F., Garment Centre,
576 Castle Peak Road,
Kowloon, Hong Kong.
Phone : 852-2173-8538
Fax: 852-2741-1693

INTERTEK TESTING SERVICES

Table of Contents

1.0	<u>General Description</u>	2
1.1	Product Description	2
1.2	Purpose of Application	2
1.3	Related Submittal(s) Grants	3
1.4	Test Methodology	3
1.5	Test Facility	3
2.0	<u>System Test Configuration</u>	5
2.1	Justification	5
2.2	EUT Exercising Software	5
2.3	Support Equipment List and Description	6
2.4	Measurement Uncertainty	7
2.5	Equipment Modification	7
3.0	<u>Emission Results</u>	9
3.1	Field Strength Calculation	10
3.2	Radiated Emission Configuration Photograph - Base Unit	11
3.3	Radiated Emission Data - Base Unit	12
3.4	Radiated Emission Configuration Photograph - Handset	15
3.5	Radiated Emission Data - Handset	16
3.6	Radiated Emission on the bandedge	19
3.7	Line Conducted Configuration Photograph - Base Unit	20
3.8	Line Conducted Emission Data - Base Unit	21
4.0	<u>Equipment Photographs</u>	24
5.0	<u>Product Labelling</u>	26
6.0	<u>Technical Specifications</u>	28
7.0	<u>Instruction Manual</u>	30
8.0	<u>Security Code Information</u>	32

INTERTEK TESTING SERVICES

List of attached file

Exhibit type	File Description	filename
Test Report	Test Report	report.pdf
Operation Description	Technical Description	descri.pdf
Test Setup Photo	Radiated Emission for Base	config photos.doc
Test Setup Photo	Radiated Emission for Handset	config photos.doc
Test Report	Emission Plot	emission.pdf
Test Setup Photo	Conducted Emission	config photos.doc
Test Report	Conducted Emission Test Result	conduct.pdf
External Photo	External Photo	external photos.doc
Internal Photo	Internal Photo	internal photos_base.doc internal photos_handset.doc
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
ID Label/Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf
User Manual	FCC Information	fcc information.pdf

INTERTEK TESTING SERVICES

EXHIBIT 1
GENERAL DESCRIPTION

INTERTEK TESTING SERVICES

1.0 General Description

1.1 Product Description

The 30911 is a 900MHz 20 Channel Analog Modulation Cordless Phone. The unit is capable of either tone or pulse dialing. The internal power supply's isolation is accomplished through a power transformer having an adequate dielectric rating. The circuit wiring is consistent under the requirement of part 68.

The handset unit consists of a Panic button and hang-up/Test button which is provided to control pick and release telephone line in a toggle base.

The base unit has a set up button, which is used to register the handset unit.

The antennas used in base unit and handset are integral, and the tested sample is a prototype.

The circuit description is saved with filename: descri.pdf

Connection between the device and the telephone network is accomplished through the use of USOC RJ11C in the 2-wire loop calling central office line.

INTERTEK TESTING SERVICES

1.2 Related Submittal(s) Grants

This is an Application for Certification of a cordless telephone system. Two transmitters are included in this Application. This specific report details the emission characteristics of each transmitter. The receivers are subject to the verification authorization process, in accordance with 15.101(b). A verification report has been prepared for the receiver sections of each device. The device is also subject to Part 68 Registration.

1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003). All measurements were performed in Open Area Test Sites. Preliminary scans were performed in the Open Area Test Sites 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 and conducted measurement facility 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 fully placed on file with the FCC.

INTERTEK TESTING SERVICES

EXHIBIT 2
SYSTEM TEST CONFIGURATION

INTERTEK TESTING SERVICES

2.0 System Test Configuration

2.1 Justification

For emissions testing, the equipment under test (EUT) was setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables were manipulated to produce worst case emissions. The handset was powered by a fully charged battery.

For the measurements, the EUT is attached to a plastic stand if necessary and placed on the wooden turntable. If the base unit attaches to peripherals, they are connected and operational (as typical as possible). The handset is remotely located as far from the antenna and the base as possible to ensure full power transmission from the base. Else, the base is wired to transmit full power without modulation.

The signal is maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater. The spurious emissions more than 20 dB below the permissible value are not reported.

2.2 EUT Exercising Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use.

INTERTEK TESTING SERVICES

2.3 Support Equipment List and Description

The FCC ID's for all equipment, plus descriptions of all cables used in the tested system are:

HARDWARE:

The unit was operated standalone. An AC adapter and a battery (provided with the unit) were used to power the device. Their description are listed below.

- (1) Base Unit: An AC adaptor (120VAC to 12VDC 300mA, Model: YL-41120300D)
- (2) Handset: A "AAA" size 1.5VDC alkaline battery

CABLES:

- (1) Telecommunication cable with RJ11C connectors (1m, unshielded), terminated

OTHERS:

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

INTERTEK TESTING SERVICES

2.4 Measurement Uncertainty

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

2.5 Equipment Modification

Any modifications installed previous to testing by DesignTech International Inc. will be incorporated in each production model sold/leased in the United States.

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

All the items listed under section 2.0 of this report are confirmed by:

Confirmed by:

*Tommy Leung
Assistant Manager
Intertek Testing Services
Agent for DesignTech International Inc.*

 Signature
Sept 26, 2005 Date

INTERTEK TESTING SERVICES

EXHIBIT 3
EMISSION RESULTS

INTERTEK TESTING SERVICES

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.

INTERTEK TESTING SERVICES

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) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG$$

where FS = Field Strength in $\text{dB}\mu\text{V}/\text{m}$

RA = Receiver Amplitude (including preamplifier) in $\text{dB}\mu\text{V}$

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB

AG = Amplifier Gain 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 $\text{dB}\mu\text{V}/\text{m}$

RR = RA - AG in $\text{dB}\mu\text{V}$

LF = CF + AF in dB

Assume a receiver reading of 52.0 $\text{dB}\mu\text{V}$ 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, giving a field strength of 32 $\text{dB}\mu\text{V}/\text{m}$. This value in $\text{dB}\mu\text{V}/\text{m}$ was converted to its corresponding level in $\mu\text{V}/\text{m}$.

$$RA = 52.0 \text{ dB}\mu\text{V}$$

$$AF = 7.4 \text{ dB}$$

$$CF = 1.6 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$FS = RR + LF$$

$$FS = 23 + 9 = 32 \text{ dB}\mu\text{V}/\text{m}$$

$$RR = 23.0 \text{ dB}\mu\text{V}$$

$$LF = 9.0 \text{ dB}$$

$$\text{Level in } \mu\text{V}/\text{m} = \text{Common Antilogarithm } [(32 \text{ dB}\mu\text{V}/\text{m})/20] = 39.8 \mu\text{V}/\text{m}$$

INTERTEK TESTING SERVICES

3.2 Radiated Emission Configuration Photograph - Base Unit

Worst Case Radiated Emission

at 902.800 MHz

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

INTERTEK TESTING SERVICES

3.3 Radiated Emission Data - Base Unit

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

Judgement : Passed by 3.7 dB margin

TEST PERSONNEL:

Jess

Tester Signature

Jess Tang, Engineer

Typed/Printed Name

Sept 21, 2005

Date

INTERTEK TESTING SERVICES

Company: DesignTech International Inc.
Model: 30911
Mode : TX-Channel 1

Date of Test: June 21-August 12, 2005

Table 1, Base unit

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre- Amp (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
H	902.800	74.3	16	32.0	90.3	94	-3.7
V	451.400	24.6	16	26.0	34.6	46	-11.4
H	*1354.200	47.2	34	26.1	39.3	54	-14.7
H	1805.600	48.1	34	27.2	41.3	54	-12.7
H	*2257.000	47.3	34	29.4	42.7	54	-11.3
H	*2708.400	47.2	34	30.4	43.6	54	-10.4
V	3159.800	47.0	34	31.9	44.9	54	-9.1
V	*3611.200	45.8	34	33.3	45.1	54	-8.9
V	*4062.600	45.9	34	34.8	46.7	54	-7.3
H	*4514.000	45.1	34	34.9	46.0	54	-8.0

NOTES: 1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meters. 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.

5. Radiated emission measurement were performed the lowest radio frequency signal generated in the device which is greater than 9kHz to 10GHz.

* Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Jess Tang

INTERTEK TESTING SERVICES

Company: DesignTech International Inc.
Model: 30911
Mode : TX-Channel 20

Date of Test: June 21-August 12, 2005

Table 2, Base unit

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
H	904.700	73.4	16	32.0	89.4	94	-4.6
V	452.350	25.8	16	26.0	35.8	46	-10.2
H	*1357.050	47.6	34	26.1	39.7	54	-14.3
H	1809.400	48.4	34	27.2	41.6	54	-12.4
H	*2261.750	47.7	34	29.4	43.1	54	-10.9
H	*2714.100	47.5	34	30.4	43.9	54	-10.1
V	3166.450	47.3	34	31.9	45.2	54	-8.8
V	*3618.800	46.2	34	33.3	45.5	54	-8.5
V	*4071.150	46.2	34	34.8	47.0	54	-7.0
H	*4523.500	45.8	34	34.9	46.7	54	-7.3

NOTES:

1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. 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.
5. Radiated emission measurement were performed the lowest radio frequency signal generated in the device which is greater than 9kHz to 10GHz.

* Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Jess Tang

INTERTEK TESTING SERVICES

3.4 Radiated Emission Configuration Photograph - Handset

Worst Case Radiated Emission

at 3708.800 MHz

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

INTERTEK TESTING SERVICES

3.5 Radiated Emission Data - Handset

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

Judgement : Passed by 0.1 dB margin

TEST PERSONNEL:

Jess

Tester Signature

Jess Tang, Engineer

Typed/Printed Name

Sept 21, 2005

Date

INTERTEK TESTING SERVICES

Company: DesignTech International Inc.
Model: 30911
Mode : TX-Channel 1

Date of Test: June 21-August 12, 2005

Table 3, Handset

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre- Amp (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
V	925.300	75.5	16	33.0	92.5	94	-1.5
V	462.650	28.1	16	26.0	38.1	46	-7.9
V	*1387.950	47.7	34	26.1	39.8	54	-14.2
V	1850.600	48.1	34	27.2	41.3	54	-12.7
V	*2313.250	48.2	34	29.4	43.6	54	-10.4
V	*2775.900	50.3	34	30.4	46.7	54	-7.3
V	3238.550	55.7	34	31.9	53.6	54	-0.4
V	*3701.200	54.4	34	33.3	53.7	54	-0.3
V	*4163.850	49.3	34	34.8	50.1	54	-3.9
V	*4626.500	49.1	34	34.9	50.0	54	-4.0

NOTES: 1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meters. 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.

5. Radiated emission measurement were performed the lowest radio frequency signal generated in the device which is greater than 9kHz to 10GHz.

* Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Jess Tang

INTERTEK TESTING SERVICES

Company: DesignTech International Inc.
Model: 30911
Mode : TX-Channel 20

Date of Test: June 21-August 12, 2005

Table 4, Handset

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
V	927.200	76.4	16	33.0	93.4	94	-0.6
V	463.600	27.8	16	26.0	37.8	46	-8.2
V	*1390.800	47.8	34	26.1	39.9	54	-14.1
V	1854.400	48.4	34	27.2	41.6	54	-12.4
V	*2318.000	48.7	34	29.4	44.1	54	-9.9
V	*2781.600	51.7	34	30.4	48.1	54	-5.9
V	3245.200	55.8	34	31.9	53.7	54	-0.3
V	*3708.800	54.6	34	33.3	53.9	54	-0.1
V	*4172.400	50.1	34	34.8	50.9	54	-3.1
V	*4636.000	47.1	34	34.9	48.0	54	-6.0

NOTES:

1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. 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.
5. Radiated emission measurement were performed the lowest radio frequency signal generated in the device which is greater than 9kHz to 10GHz.

* Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Jess Tang

INTERTEK TESTING SERVICES

3.6 Radiated Emission on the bandedge

From the following plots, they show that the fundamental emissions are confined in the specified band and they are at least 50dB below the carrier level at band edge (902MHz and 928MHz). It meets the requirement of section 15.249(d).

Please refer to the following plots for radiated emission on the bandedge:

Plot B1A: Base Unit - Low Channel Emissions

Plot B1B: Base Unit - High Channel Emissions

Plot H1A: Handset - Low Channel Emissions

Plot H1B: Handset - High Channel Emissions

For electronic filing, the above plots are saved with filename: emission.pdf

INTERTEK TESTING SERVICES

3.7 Line Conducted Configuration Photograph - Base Unit

Worst Case Line-Conducted Configuration

For electronic filing, the worst case line conducted configuration photographs are saved with filename: config photos.doc

INTERTEK TESTING SERVICES

3.8 Line Conducted Emission Data

The data on the following pages list the significant emission frequencies, the limit, and the margin of compliance.

Judgement : Passed by more than 20 dB margin

TEST PERSONNEL:

Jess

Tester Signature

Jess Tang, Engineer

Typed/Printed Name

Sept 21, 2005

Date

INTERTEK TESTING SERVICES

Company: DesignTech International Inc.
Model: 30911

Date of Test: June 21-August 12, 2005

Conducted Emissions

For electronic filing, the conducted emission test result is saved with filename:
conduct.pdf

EXHIBIT 4
EQUIPMENT PHOTOGRAPHS

INTERTEK TESTING SERVICES

4.0 Equipment Photographs

For electronic filing, the photographs are saved with filename: external photos.doc & internal photos.doc

INTERTEK TESTING SERVICES

EXHIBIT 5
PRODUCT LABELLING

INTERTEK TESTING SERVICES

5.0 Product Labelling

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

INTERTEK TESTING SERVICES

EXHIBIT 6
TECHNICAL SPECIFICATIONS

INTERTEK TESTING SERVICES

6.0 Technical Specifications

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

INTERTEK TESTING SERVICES

EXHIBIT 7
INSTRUCTION MANUAL

INTERTEK TESTING SERVICES

7.0 Instruction Manual

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

Please note that the required FCC Information to the User is saved with filename: fcc information.pdf.

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

INTERTEK TESTING SERVICES

EXHIBIT 8
SECURITY CODE INFORMATION

INTERTEK TESTING SERVICES

8.0 Security code information

The telephone has an internal security code with 65,536 possible combinations. The following steps will reset the code randomly to a new combination.

1. Press the “SET UP” button on the BASE UNIT. The red “SCANNING” light will come on
2. Press and hold the “PANIC” button and the “BATTERY TEST” buttons together
3. The red light will go out on the BASE UNIT. This indicates the HANDSET and the BASE UNIT are synchronized