

**Daval Technologies LLC**

Application  
For  
Certification

Voice Activated Digital Voice and Telephone Recorder

**(FCC ID: UZN-DVL680007)**

06261241  
KL/ Ann Choy  
February 21, 2007

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**Intertek Testing Services Hong Kong Ltd.**

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## LIST OF EXHIBITS

### *INTRODUCTION*

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# INTERTEK TESTING SERVICES

## MEASUREMENT/TECHNICAL REPORT

**Daval Technologies LLC - Model: DVTR-680**  
**43-127**  
**FCC ID: UZN-DVL680007**

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

Equipment Type : JBP - Part 15 Class B Computer Device Peripheral

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 B for unintentional radiator - the new 47 CFR [04-05-05 Edition] Provision.

Report prepared by:

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# INTERTEK TESTING SERVICES

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## INTERTEK TESTING SERVICES

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### 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	config photos.doc
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.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

# **INTERTEK TESTING SERVICES**

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## **EXHIBIT 1 GENERAL DESCRIPTION**

## INTERTEK TESTING SERVICES

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### 1.0 General Description

#### 1.1 Product Description

The Equipment Under Test (EUT) is a Voice Activated Digital Voice and Telephone Recorder. The EUT is powered by either batteries or docking station, which is powered by an AC adaptor. The unit can operate as a voice recorder or a voice player. Files can be transferred via USB ports (on the unit or docking station) to computer. It can also be connected to corded phone for telephone recording feature. Microphone and headset can be plugged to the unit. Display, REC, Enter/Index, Play, FWD, RWD, stop, erase, menu/folder, Vol up & Vol down buttons are equipped.

The Model: 43-127 is the same as the Model: DVTR-680 in hardware aspect. The difference in model number serves as marketing strategy.

The circuit description is saved with filename: descri.pdf

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### 1.2 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.

### 1.3 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**

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### **EXHIBIT 2 SYSTEM TEST CONFIGURATION**

## INTERTEK TESTING SERVICES

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### 2.0 System Test Configuration

#### 2.1 Justification

For emissions testing, the equipment under test (EUT) was setup to normal operation for measurement. Care was taken to ensure proper power supply voltages during testing. During testing, all cables were manipulated to produce worst case emissions.

For the measurements, the EUT is attached to a plastic stand if necessary and placed on the wooden turntable. If the EUT attaches to peripherals, they are connected and operational (as typical as possible).

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 for frequencies below 1000 MHz. The resolution is 1 MHz or greater for frequencies above 1000 MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement were performed the lowest radio frequency signal generated in the device which is greater than 30 MHz to 1 GHz.

#### 2.2 EUT Exercising Software

The EUT exercise program (DVTR-680 Message Manager Software(MMS) Ver1.00 (January, 2006)) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use.

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### 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:*

An AC adaptor and a battery (provided with the unit) were used to power the device. Their description are listed below.

- (1) An AC adaptor for EUT (120VAC to 6VDC 300mA, Model: 273-1758) (Supplied by Client)
- (2) Operated Battery for EUT (2 x "AAA" size 1.5VDC battery) (Supplied by Intertek)
- (3) Switching model adaptor for notebook computer: (100-240VAC to 19.5VDC 3.3A, Model: PCGA-AC19V) (Supplied by Client)

#### *CABLES:*

- (1) 3m Telephone Line (Supplied by Intertek)
- (2) 1 x serial cable with 1 meter long (Supplied by Intertek)
- (3) 1 x parallel cable with 1 meter long (Supplied by Intertek)
- (4) 1 x USB cable with ferrite(s), 1.8m long (Supplied by Client)
- (5) 1 x handset cord with 0.4 meter long (Supplied by Client)

#### *OTHERS:*

- (1) Headset with 1.2m unshielded cable(Supplied by Client)
- (2) Microphone with 1.3m unshielded cable (Supplied by Client)
- (3) Simple Corded Phone, Model: FC2548W (Supplied by Intertek)
- (4) Notebook Computer with Docking Station, Model: PCG-6229 and PCGA-DSM5 DoC Product(Supplied by Client)

Radiated Emission Test: (Supplied by Intertek)

- (1) HP Printer, Model: C2642A, S/N: SG6121702C, FCC ID: B94C2642X
- (2) Hayes Modem, Model: 6800CN, S/N: A00900153317, FCC ID: BFJ9D907-00038

Conducted Emission Test: (Supplied by Intertek)

- (1) HP Printer, Model: C6431D, S/N: CN23B 680ZP, DoC Product
- (2) Genius Modem, Model: GM56EX, S/N: ZT5505000355, DoC Product

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### 2.4 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty 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.

### 2.5 Equipment Modification

Any modifications installed previous to testing by Daval Technologies LLC 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:*

*Lam Chun Cheong, Kenneth  
Assistant Supervisor  
Intertek Testing Services  
Agent for Daval Technologies LLC*



\_\_\_\_\_  
Signature

\_\_\_\_\_  
February 21, 2007

\_\_\_\_\_  
Date

## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 3 EMISSION RESULTS**

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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.

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### 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  $\text{dB}$   
               $AF$  = Antenna Factor in  $\text{dB}$   
               $AG$  = Amplifier Gain in  $\text{dB}$

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  $\text{dB}$

Assume a receiver reading of  $52.0 \text{ dB}\mu\text{V}$  is obtained. The antenna factor of  $7.4 \text{ dB}$  and cable factor of  $1.6 \text{ dB}$  is added. The amplifier gain of  $29 \text{ dB}$  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  $\mu\text{V}/\text{m}$ .

$RA = 52.0 \text{ dB}\mu\text{V}$	
$AF = 7.4 \text{ dB}$	$RR = 23.0 \text{ dB}\mu\text{V}$
$CF = 1.6 \text{ dB}$	$LF = 9.0 \text{ dB}$
$AG = 29.0 \text{ dB}$	
$FS = RR + LF$	
$FS = 23 + 9 = 32 \text{ dB}\mu\text{V}/\text{m}$	

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

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### 3.2 Radiated Emission Configuration Photograph

Worst Case Radiated Emission

at 313.346 MHz

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



## INTERTEK TESTING SERVICES

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### 3.3 Radiated Emission Data

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

Judgement : Passed by 4.0 dB margin

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#### **TEST PERSONNEL:**



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*Tester Signature*

Jess Tang, Lead Engineer  
*Typed/Printed Name*

February 21, 2007  
*Date*

## INTERTEK TESTING SERVICES

Company: Daval Technologies LLC  
Model: DVTR-680  
Mode : PC Download

Date of Test: December 1-11, 2006

Table 1

### Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre- Amp (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
V	48.253	39.0	16	11.0	34.0	40.0	-6.0
H	72.114	41.4	16	7.0	32.4	40.0	-7.6
H	96.626	37.9	16	12.0	33.9	43.5	-9.6
H	120.336	36.6	16	14.0	34.6	43.5	-8.9
H	144.242	40.0	16	14.0	38.0	43.5	-5.5
H	168.818	35.2	16	18.0	37.2	43.5	-6.3
H	192.498	34.4	16	16.0	34.4	43.5	-9.1
H	216.917	33.6	16	17.0	34.6	46.0	-11.4
H	240.665	32.0	16	19.0	35.0	46.0	-11.0
H	265.525	30.7	16	21.0	35.7	46.0	-10.3
H	289.237	30.2	16	22.0	36.2	46.0	-9.8
H	313.346	35.0	16	23.0	42.0	46.0	-4.0
H	337.719	32.3	16	24.0	40.3	46.0	-5.7
H	361.228	31.9	16	24.0	39.9	46.0	-6.1
H	385.634	31.5	16	24.0	39.5	46.0	-6.5
H	409.156	30.7	16	24.0	38.7	46.0	-7.3
H	433.917	29.5	16	25.0	38.5	46.0	-7.5
H	457.428	31.0	16	26.0	41.0	46.0	-5.0
H	482.236	28.0	16	26.0	38.0	46.0	-8.0

- NOTES:
1. Peak detector is used for the emission measurement.
  2. All measurements were made at 3 meters. Radiated 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 radiated 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.

Test Engineer: Jess Tang

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## INTERTEK TESTING SERVICES

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Company: Daval Technologies LLC  
Model: DVTR-680  
Mode : Playing with Docking

Date of Test: December 1-11, 2006

Table 2

### Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre- Amp (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
V	43.194	39.0	16	10.0	33.0	40.0	-7.0
V	86.734	40.8	16	8.0	32.8	40.0	-7.2
H	129.662	33.9	16	14.0	31.9	43.5	-11.6
H	172.575	29.0	16	18.0	31.0	43.5	-12.5
H	215.481	29.4	16	17.0	30.4	43.5	-13.1
H	258.242	24.9	16	21.0	29.9	46.0	-16.1
H	344.869	21.8	16	24.0	29.8	46.0	-16.2

- NOTES:
1. Peak detector is used for the emission measurement.
  2. All measurements were made at 3 meters. Radiated 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 radiated 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.

Test Engineer: Jess Tang

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## INTERTEK TESTING SERVICES

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Company: Daval Technologies LLC  
Model: DVTR-680  
Mode : Recording with Docking

Date of Test: December 1-11, 2006

Table 3

### Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre- Amp (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
V	43.330	39.4	16	10.0	33.4	40.0	-6.6
V	86.675	41.0	16	8.0	33.0	40.0	-7.0
H	129.995	34.8	16	14.0	32.8	43.5	-10.7
H	172.524	30.6	16	18.0	32.6	43.5	-10.9
H	215.406	31.0	16	17.0	32.0	43.5	-11.5
H	258.581	26.8	16	21.0	31.8	46.0	-14.2
H	344.249	22.6	16	24.0	30.6	46.0	-15.4

- NOTES:
1. Peak detector is used for the emission measurement.
  2. All measurements were made at 3 meters. Radiated 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 radiated 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.

Test Engineer: Jess Tang

## **INTERTEK TESTING SERVICES**

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### 3.4 Line Conducted Configuration Photograph - Base Unit

Worst Case Line-Conducted Configuration

at 12.050 MHz

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

## INTERTEK TESTING SERVICES

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### 3.5 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 4.0 dB margin

#### **TEST PERSONNEL:**



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*Tester Signature*

Jess Tang, Lead Engineer  
*Typed/Printed Name*

February 21, 2007  
*Date*

## **INTERTEK TESTING SERVICES**

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Company: Daval Technologies LLC  
Model: DVTR-680

Date of Test: December 1-11, 2006

### **Conducted Emissions**

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

## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 4 EQUIPMENT PHOTOGRAPHS**



## INTERTEK TESTING SERVICES

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### 4.0 Equipment Photographs

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

## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 5 PRODUCT LABELLING**

## INTERTEK TESTING SERVICES

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### 5.0 **Product Labelling**

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

## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 6 TECHNICAL SPECIFICATIONS**

## INTERTEK TESTING SERVICES

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### 6.0 Technical Specifications

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

**EXHIBIT 7  
INSTRUCTION MANUAL**

## INTERTEK TESTING SERVICES

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### 7.0 Instruction Manual

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

The required FCC Information to the User is stated on P.2, 9, 10 of the Instruction Manual.

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