

May 20, 2006

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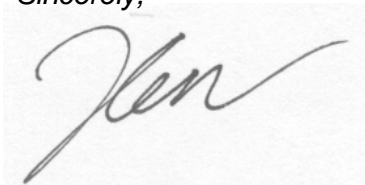
*Dear Mr. Timothy Lo:*

*Enclosed you will find your file copy of a Part 15 Certification (FCC ID: KT5P58XXH).*

*For your reference, TCB will normally take another 15 to 20 days for reviewing the report. Approval will then be granted when no query is sorted.*

*Please contact me if you have any questions regarding the enclosed material.*

*Sincerely,*

A handwritten signature in black ink, appearing to read 'Ken', is written on a light-colored rectangular background.

*Lam Chun Cheong, Kenneth  
Senior Lead Engineer*

*Enclosure*

**Integrated Display Technology Ltd.**

Application  
For  
Certification

900MHz/5.8GHz 20/40 Channel Analog Modulation Cordless Phone with  
Caller ID - (Handset)

**(FCC ID: KT5P58XXH)**

05260042  
KL/ Ann Choy  
May 20, 2006

- 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 Hong Kong Ltd.**

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## INTERTEK TESTING SERVICES

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### 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
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<i>EXHIBIT 8:</i>	Security Code Information
<i>EXHIBIT 9:</i>	Confidentiality Request

# INTERTEK TESTING SERVICES

## MEASUREMENT/TECHNICAL REPORT

Integrated Display Technology Ltd. - Model: PM5821, PM5805,  
PM5825, PM5827

FCC ID: KT5P58XXH

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 [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
Cover Page	Confidentiality Request	request.pdf
Test Report	Test Report	report.pdf
Operation Description	Technical Description	descri.pdf
Test Setup Photo	Radiated Emission for Handset	config photos.doc
Test Report	Emission Plot	emission.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
User Manual	FCC Information	fcc information.pdf

# **INTERTEK TESTING SERVICES**

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## **EXHIBIT 1 GENERAL DESCRIPTION**

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## INTERTEK TESTING SERVICES

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### 1.0 General Description

#### 1.1 Product Description

The PM5821 is a 900MHz/5.8GHz 20/40 Channel Analog Modulation Cordless Phone with Caller ID. Base unit and handset operate at frequency of 902.100MHz to 904.000MHz and 5863.800MHz to 5871.600MHz respectively. Base unit consists of 20 physical channels and 40 logical channels, whereas handset consists of 40 physical channels and 40 logical channels. 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 keypad with twelve standard keys (0,...9,\*,#), six function keys (REDIAL, MUTE, CID/VOL up, CID/VOL down, MEM, FLASH), and one channel switch key. A Phone key is provided to control pick/release telephone line in a toggle base.

The base unit has a page key, which is used to page the handset unit.

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

The handsets from model: PM5805, PM5825, PM5827 are the same as the Model: PM5821 in hardware aspect. PM5805, PM5825, PM5827 are sold with extra charging cradle. PM5821 (with one handset), PM5825 (with two handsets) and PM5827 (with three handsets) are additionally sold with base unit as well. The differences in model number and packaging configuration serve as marketing strategy only.

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

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### 1.2 Related Submittal(s) Grants

This is an Application for Certification of Handset of a cordless telephone system. The FCC ID of the associated Base Unit is KT5P58XXB and has been filed at the same time as 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

Radiated emission measurements was 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 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**

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## 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 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 base is remotely located as far from the antenna and the handset as possible to ensure full power transmission from the handset. Else, the handset 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 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 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

#### 2.2 EUT Exercising Software

The EUT exercise program used during radiated 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:*

The unit was operated standalone. A battery (provided with the unit) was used to power the device. This description is listed below.

- (1) Handset: A "Ni-MH" type rechargeable battery (3.6V 600mAh)

#### *CABLES:*

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

#### *OTHERS:*

- (1) A headset for telephone use with 1.2m unshielded cable permanently affixed. (Supplied by Intertek)

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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

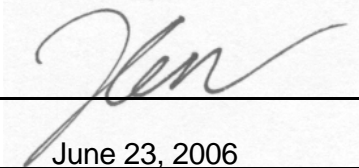
Any modifications installed previous to testing by Integrated Display Technology Ltd. will be incorporated in each production model sold/leased in the United States.

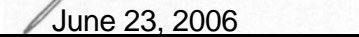
No modifications were installed by ETL Division, Intertek Testing Services Hong Kong Ltd.

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

*Confirmed by:*

*Lam Chun Cheong, Kenneth  
Senior Lead Engineer  
Intertek Testing Services  
Agent for Integrated Display Technology Ltd.*

\_\_\_\_\_  
Signature

\_\_\_\_\_  
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 - Handset

Worst Case Radiated Emission

at 2935.800 MHz

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

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### 3.3 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 0.2 dB margin

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#### **TEST PERSONNEL:**

  
\_\_\_\_\_  
Tester Signature

Jess Tang, Lead Engineer  
Typed/Printed Name

June 23, 2006  
Date

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## INTERTEK TESTING SERVICES

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Company: Integrated Display Technology Ltd.  
Model: PM5821  
Mode : TX-Channel 1

Table 1, Handset

### 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)
H	5863.800	86.5	33	36.6	90.1	94	-3.9
V	*977.300	23.9	16	33.0	40.9	54	-13.1
H	1954.600	57.0	33	27.2	51.2	54	-2.8
H	2931.900	56.3	33	30.4	53.7	54	-0.3
H	*3909.200	46.1	33	33.3	46.4	54	-7.6
V	*4886.500	38.0	33	34.9	39.9	54	-14.1
V	6841.100	47.1	33	36.9	51.0	54	-3.0
V	*11727.600	42.9	33	40.5	50.4	54	-3.6

- 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.
4. Horn antenna is used for the emission over 1000MHz.
- \* Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Jess Tang

Date of Test: December 29, 2005 to January 10, 2006

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## INTERTEK TESTING SERVICES

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Company: Integrated Display Technology Ltd.  
Model: PM5821  
Mode : TX-Channel 40

Table 2, Handset

### 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)
H	5871.600	86.1	33	36.6	89.7	94	-4.3
V	*978.600	23.7	16	33.0	40.7	54	-13.3
H	1957.200	56.0	33	27.2	50.2	54	-3.8
H	2935.800	56.4	33	30.4	53.8	54	-0.2
H	*3914.400	46.4	33	33.3	46.7	54	-7.3
V	*4893.000	38.0	33	34.9	39.9	54	-14.1
V	6850.200	47.2	33	36.9	51.1	54	-2.9
V	*11743.200	43.1	33	40.5	50.6	54	-3.4

- 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.
4. Horn antenna is used for the emission over 1000MHz.
- \* Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Jess Tang

Date of Test: December 29, 2005 to January 10, 2006

## INTERTEK TESTING SERVICES

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### 3.4 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 (5725MHz and 5875MHz). It meets the requirement of section 15.249(d).

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

Plot H1A: Handset - Low Channel Emissions

Plot H1B: Handset - High Channel Emissions

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

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## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 4 EQUIPMENT PHOTOGRAPHS**

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### 4.0 Equipment Photographs

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

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### **EXHIBIT 5 PRODUCT LABELLING**



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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.

## **INTERTEK TESTING SERVICES**

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### **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

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**

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### **EXHIBIT 8 SECURITY CODE INFORMATION**

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### 8.0 Security Code Information

The telephone has an internal security code with 65,536 possible combinations. Each time the HANDSET is placed on the BASE UNIT, the code is automatically set to a new combination.

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**INTERTEK TESTING SERVICES**

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**EXHIBIT 9  
CONFIDENTIALITY REQUEST**



## INTERTEK TESTING SERVICES

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### 9.0 **Confidentiality Request**

For electronic filing, a preliminary copy of the Confidentiality Request is saved with filename: request.pdf