



## **Integrated Display Technology Ltd.**

Application  
For  
Certification

Two Way Radio with FRS

**(FCC ID: KT5-TY380)**

HK08020027-1

TL/ ac

April 29, 2008

- The test report only allows to be revised within three years from its original issued date unless further standard or the requirement was noticed.
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## INTERTEK TESTING SERVICES

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## INTERTEK TESTING SERVICES

### MEASUREMENT/TECHNICAL REPORT

Application : Integrated Display Technology Ltd.  
Trade Name/Model No : TY-MAN/ TY380  
Oregon Scientific/ TP380  
Date : April 29, 2008

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

Equipment Type: FRF – Part 95 Family Radio Face Held Transmitter

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.

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
Operational Description	Technical Description	descri.pdf
RF Exposure Info	RF Safety	RF exposure info.pdf
Test Report	Modulation Frequency Response	mfr.pdf
Test Report	Modulation Limit Characteristic	mlc.pdf
Test Report	Audio Low Pass Filter Response	lpf.pdf
Test Report	Bandwidth Plot	bw.pdf
Test Setup Photos	Radiated Emission	config photos.pdf
Test Report	Spurious Emission	spurious.pdf
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
ID Label/Location Info	Label Artwork and Location	label.pdf
Cover Letter	Label Location Justification	justification.pdf
External Photos	External Photo	external photos.pdf
Internal Photos	Internal Photo	internal photos.pdf
Users Manual	User Manual	manual.pdf
Part List/Tune Up Info	Tune Up Procedure	tuneup.pdf
Part List/Tune Up Info	Part List	partlist.pdf
Cover Letter	Letter of Agency	letter of agency.pdf
Cover Letter	Confidentiality Request	request.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 Two Way Radio with FRS operating between 462.5625MHz and 467.7125MHz. The EUT is powered by 3.6V (3 x 1.2V "Ni-MH" type rechargeable battery) or 4.5V (3 x "AAA" size 1.5V alkaline batteries). According to the user manual instructions, the EUT is turned off while in charging tray.

##### Transmitter Portion

- (i) Type of Emission : FRS (Channel 1-14): 5K80F3E;
- (ii) Frequency Range : FRS 1-7 Channels from 462.5625MHz to 462.7125MHz;  
FRS 8-14 Channels from 467.5625MHz to 467.7125MHz
- (iii) Maximum Power Rating : FRS: 0.29W ERP
- (iv) Antenna Type : Integral
- (v) dc voltages of the final radio frequency amplifying device: 4.5V  
dc currents of the final radio frequency amplifying device: 400mA

The Model: Oregon Scientific TP380 is the same as the Model: TY-MAN TY380 in hardware aspect. The difference in model number serves as marketing strategy.

The brief circuit description is saved with filename: descri.pdf

## INTERTEK TESTING SERVICES

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### 1.2 Related Submittal(s) Grants

This is an Application for Certification of the transmitter portion of a FRS Transceiver. The receiver section of this Transceiver and digital device portion is subject to verification process.

### 1.3 Test Methodology

Radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003) and ANSI/TIA-603-C-2004. All measurement 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 the 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 emission data is located at Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. The test facility and site measurement data have been fully placed on file with the FCC.



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## **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

The device was configured for testing in a typical fashion (as a customer would normally use it). The device was placed on a turntable, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes. The device has been tested with headset and without headset when the radiated emissions are measured. The separation distances between human body and the device is greater than 1 cm when using provided belt clip.

The device was powered by 3 new "AAA" size 1.5V alkaline batteries or 3 fully charged Ni-MH rechargeable batteries. Data reported was the worst-case.

The frequency range from 30MHz to 10<sup>th</sup> harmonics was searched for spurious emissions from the device. Only those emissions reported were detected. All other emissions were at least 20 dB below the applicable limits.

## INTERTEK TESTING SERVICES

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### 2.2 EUT Exercising Software

There was no special software to exercise the device. Once the PTT button was pushed, a signal was transmitted.

### 2.3 Special Accessories

No special accessory is needed for compliance of this device.

### 2.4 Measurement Uncertainty

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

### 2.5 Equipment Modification

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

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

### 2.6 Support Equipment

A headset with 1.2m unshielded cable.

*Confirmed by:*

*Leung Wai Leung, Tommy  
Senior Manager  
Intertek Testing Services Hong Kong Ltd.  
Agent for Integrated Display Technology Ltd.*



\_\_\_\_\_  
Signature

April 29, 2008

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Date

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## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 3**

### **RF POWER OUTPUT**

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## INTERTEK TESTING SERVICES

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### 3.0 **RF Power Output (Section 2.1046(a), 95.639(d))**

#### A. Equipment Used

Equipment	Brand Name	Model No.
Log Periodic Antenna	EMCO	3148
Test receiver	Rohde & Schwarz	ESVS30
Tuned Dipole Antenna	CDI	A100
Signal Generator	IFR	2023B

#### B. Testing Procedure

1. On a test site, the EUT shall be placed at 1.5m height on a wooden turntable, and in the position closest to normal use as declared by the applicant.
2. The test antenna shall be oriented initially for vertical polarisation located 3m from EUT to correspond to the frequency of the transmitter.
3. The output of the test antenna shall be connected to the measuring receiver and the peak detector is used for the measurement.
4. The transmitter shall be switched on, if possible, without modulation and the measuring receiver shall be tuned to the frequency of the transmitter under test.
5. The test antenna shall be raised and lowered through the specified range of height until a maximum signal level is detected by the measuring receiver.

## INTERTEK TESTING SERVICES

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6. The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
7. The test antenna shall be raised and lowered again through the specified range of height until a maximum signal level is detected by the measuring receiver.
8. The maximum signal level detected by the measuring receiver shall be noted.
9. The transmitter shall be replaced by a tuned dipole (substitution antenna).
10. The substitution antenna shall be orientated for vertical polarisation and the length of the substitution antenna shall be adjusted to correspond to the frequency of the transmitter.
11. The substitution antenna shall be connected to a calibrated signal generator.
12. If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
13. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
14. The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.
15. The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
16. The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarisation.
17. The measure of the effective radiated power is the larger of the two levels recorded, at the input to the substitution antenna, corrected for gain of the substitution antenna if necessary.

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## INTERTEK TESTING SERVICES

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**Table 1**

**Integrated Display Technology Ltd.  
TY-MAN TY380**

**Transmission Power**

Channel	Frequency (MHz)	Effective Radiated Power		FCC 95.639 Limit (W)	Margin (W)
		(dBm)	(W)		
1	462.5625	24.6	0.29	0.50	-0.21
2	462.5875	24.6	0.29	0.50	-0.21
3	462.6125	24.6	0.29	0.50	-0.21
4	462.6375	24.6	0.29	0.50	-0.21
5	462.6625	24.6	0.29	0.50	-0.21
6	462.6875	24.6	0.29	0.50	-0.21
7	462.7125	24.6	0.29	0.50	-0.21
8	467.5625	24.0	0.25	0.50	-0.25
9	467.5875	24.0	0.25	0.50	-0.25
10	467.6125	24.0	0.25	0.50	-0.25
11	467.6375	24.0	0.25	0.50	-0.25
12	467.6625	24.0	0.25	0.50	-0.25
13	467.6875	24.0	0.25	0.50	-0.25
14	467.7125	24.0	0.25	0.50	-0.25

Notes: Negative sign in the margin column shows the value below limits.

Verdict: Passed

For RF Safety, the information is saved with filename: RF exposure info.pdf

Test Engineer: Ken Sit

Date of Test: February 13-April 28, 2008

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## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 4**

### **MODULATION CHARACTERISTICS**



## INTERTEK TESTING SERVICES

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### 4.0 **Modulation Characteristics (Section 2.1047(a)(b), 95.637(a))**

In order to satisfy the 95.637(a) and 2.1047(b) requirements, Modulation Frequency Response and Modulation Limiting Characteristics are attached in Exhibit 4.1 & 4.2.

In order to satisfy the 2.1047(a) requirement, Audio Low Pass Filter Response is attached in Exhibit 4.3.

For electronic filing, the modulation frequency response curve and modulation limiting characteristic curve are saved with filename: mfr.pdf and mlc.pdf respectively.

For electronic filing, the audio low pass frequency response curve is saved with filename: lpf.pdf.

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## INTERTEK TESTING SERVICES

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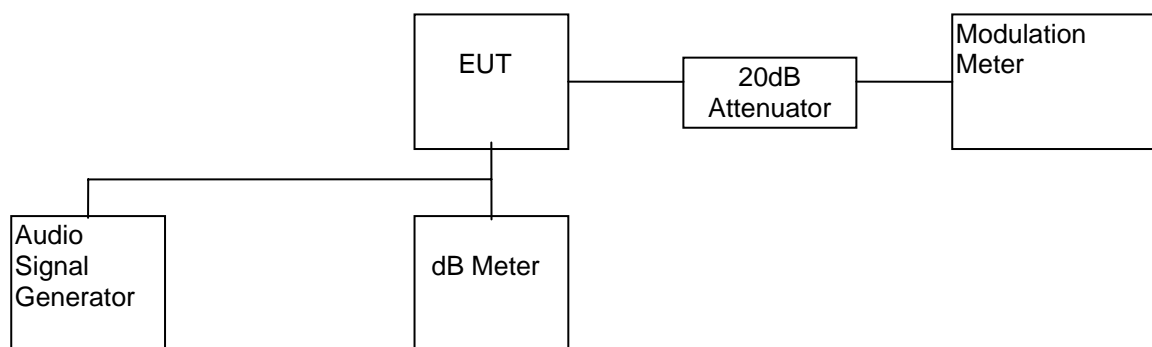
### 4.1 Modulation Frequency Response (Section 2.1047(a), 95.637(a))

#### A. Test Equipment

Equipment	Brand Name	Model No.
Audio Signal Generator	HP	HP8904A
AC Millivoltmeter	Leader	LMV-182A
20 dB RF Attenuator	Bird	8304-200-N
Radiocommunication Service Monitor	R&S	CMS54

#### B. Testing Procedure

- 1) Set-up the test equipment in the following configuration:



- 2) Set the audio signal generator frequency to the sound pressure level 117.0dB SPL at the microphone of the EUT.
- 3) The frequency of the audio signal generator is changed from 100Hz to 5kHz.
- 4) Record the frequency deviation.
- 5) The peak frequency deviation must not exceed:

FRS :  $\pm 2.5\text{kHz}$

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## INTERTEK TESTING SERVICES

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### C. Test Result

Table 2

Integrated Display Technology Ltd.  
TY-MAN TY380

### Modulation Frequency Response

Test Channel : 4  
Input level = 117.0dBSPL

Modulation Frequency (Hz)	Modulation index
100	0.37
200	0.33
300	0.65
400	1.73
500	1.91
600	2.26
700	2.52
800	2.38
900	2.26
1000	1.95
1250	1.62
1500	1.36
1750	1.16
2000	1.06
2250	0.94
2500	0.80
2750	0.68
3000	0.56
3125	0.50
3250	0.44
3500	0.35
4000	0.21
5000	0.10

Verdict: Passed

Test Engineer: Ken Sit

Date of Test: February 13-April 28, 2008

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## INTERTEK TESTING SERVICES

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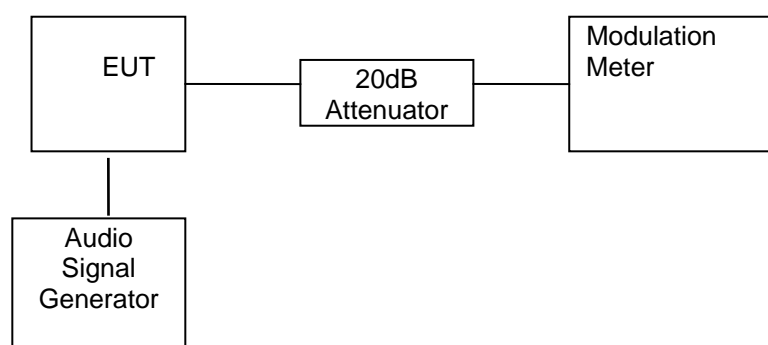
### 4.2 Modulation Limiting Characteristics (Section 2.1047(b), 95.637(a))

#### A. Test Equipment

Equipment	Brand Name	Model No.
Audio Signal Generator	HP	HP8904A
20 dB RF Attenuator	Bird	8304-200-N
Radiocommunication Service Monitor	R&S	CMS54

#### B. Testing Procedure

- 1) Set-up the test equipment in the following configuration:



- 2) Set the frequency of the audio signal generator to 500Hz and adjust the level from 47dBSPL to 137dBSPL.
- 3) Record the maximum value of plus or minus peak frequency deviation.
- 4) Repeat the above procedure with frequency 1000Hz, 2500Hz & 3125Hz.
- 5) The peak frequency deviation must not exceed:

FRS :  $\pm 2.5\text{kHz}$

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## INTERTEK TESTING SERVICES

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### C. Test Result

Table 3

Integrated Display Technology Ltd.  
TY-MAN TY380

#### Modulation Limiting Characteristics

Test Channel : 4

Modulation Input (dB SPL)	Peak Frequency Deviation (kHz) at 500Hz	Peak Frequency Deviation (kHz) at 1000Hz	Peak Frequency Deviation (kHz) at 2500Hz	Peak Frequency Deviation (kHz) at 3125Hz
47	0.037	0.035	0.036	0.040
57	0.038	0.036	0.036	0.043
67	0.039	0.038	0.040	0.068
77	0.040	0.047	0.075	0.178
87	0.042	0.090	0.395	0.858
97	0.070	0.483	1.072	1.502
107	0.190	1.333	1.946	1.522
117	0.954	1.949	1.992	1.522
127	2.002	1.946	2.035	1.529
137	2.058	1.949	2.002	1.532

Verdict: Passed

Test Engineer: Ken Sit

Date of Test: February 13-April 28, 2008

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## INTERTEK TESTING SERVICES

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### 4.3 Audio Low Pass Filter Response (Section 2.1047(a))

#### A. Test Equipment

Equipment	Brand Name	Model No.
Audio Signal Generator	HP	HP8904A
AC Millivoltmeter	Leader	LMV-182A

#### B. Testing Procedure

- 1) Connect the audio signal generator to the input of the post limiter low pass filter and the dB meter to the output of the post limiter low pass filter.
- 2) Apply a 1000 Hz tone from the audio signal generator and adjust the level per manufacturer's specifications. Record the dB level of the 1000 Hz tone as  $LEV_{REF}$ .
- 3) Set the audio signal generator to the desired test frequency between 3000 Hz and the upper low pass filter limit. Record the dB level at the test frequency as  $LEV_{FREQ}$ .
- 4) Calculate the audio frequency response at the test frequency as:

$$\text{low pass filter response} = LEV_{FREQ} - LEV_{REF}$$

- 5) Repeat the above procedure for all the desired test frequencies.

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## INTERTEK TESTING SERVICES

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### C. Test Result

Table 4

Integrated Display Technology Ltd.  
TY-MAN TY380

#### Low-Pass Filter Response

Test Channel : 4

Audio Input Strength = 22.4Vrms

Frequency (kHz)	dB relative to 1 kHz	TIA/EIA-603C
1	0.0	0.0
3	-2.5	0.0
4	-9.0	-7.5
5	-15.0	-13.3
6	-20.5	-18.1
8	-29.5	-25.6
10	-36.5	-31.4
15	-48.0	-41.9
20	-51.0	-50.0
30	-51.5	-50.0
40	-51.5	-50.0
50	-52.0	-50.0
60	-52.0	-50.0
70	-52.0	-50.0
80	-52.0	-50.0
90	-52.0	-50.0
100	-52.0	-50.0

Audio Output at 1kHz: -15.5dBV

Verdict: Passed

Test Engineer: Ken Sit

Date of Test: February 13-April 28, 2008

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## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 5**

### **OCCUPIED BANDWIDTH**



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## INTERTEK TESTING SERVICES

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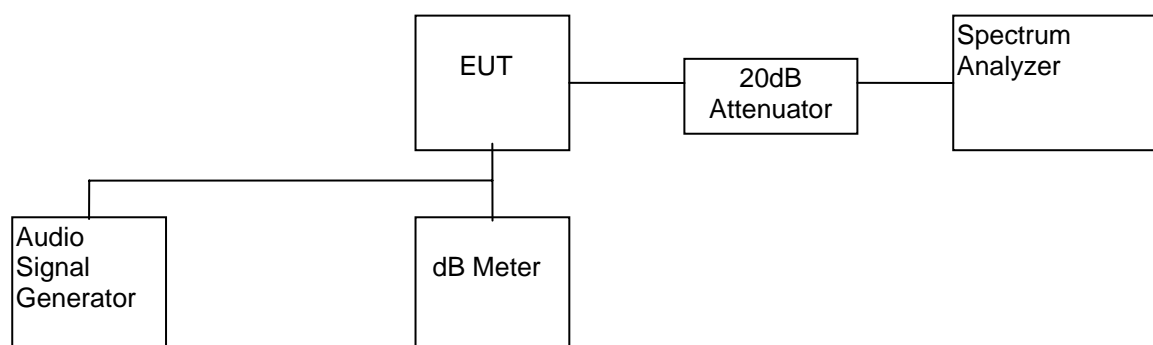
### 5.0 Occupied Bandwidth (Section 95.633(c))

#### A. Test Equipment

Equipment	Brand Name	Model No.
Audio Signal Generator	HP	HP8904A
AC Millivoltmeter	Leader	LMV-182A
20 dB RF Attenuator	Bird	8304-200-N
Spectrum Analyzer	HP	8951EM

#### B. Testing Procedure

- 1) Set-up the test equipment in the following configuration:



- 2) Set the level of audio signal generator to obtain 16 dB greater than required for 50% modulation.
- 3) The occupied bandwidth is measured with the spectrum analyzer set at 2kHz/div scan and 10dB/div.

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## INTERTEK TESTING SERVICES

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### C. Test Result

**Table 5**

**Integrated Display Technology Ltd.  
TY-MAN TY380**

<b>System</b>	<b>Channel</b>	<b>Measured Bandwidth (kHz)</b>	<b>Limit (kHz)</b>
FRS	4	5.80	$\leq 12.5$
FRS	11	5.80	$\leq 12.5$

Verdict: Passed

For the electronic filing, the bandwidth plot is saved with filename: bw.pdf

Test Engineer: Ken Sit

Date of Test: February 13-April 28, 2008

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## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 6**

### **SPURIOUS EMISSION**

## INTERTEK TESTING SERVICES

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### 6.0 **Spurious Emission (Section 2.1053, 95.635(b))**

In order to satisfy the 95.635(b) requirement, the spurious emission from the EUT are measured and shown in the Exhibit 6.1.

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## INTERTEK TESTING SERVICES

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### 6.1 **Field Strength of Spurious Radiation (Section 2.1053, 95.635(b))**

#### **A. Test Equipment**

<b>Equipment</b>	<b>Brand Name</b>	<b>Model No.</b>
Antenna	EMCO	A100, 3148, 3104C, 3115
Spectrum Analyzer	ADVANTEST	U3661
Test receiver	Rohde & Schwarz	ESVS30
RF Filter	Trilithic	3VF500/1000-5-50-CC
Signal Generator	IFR	2023B

#### **B. Testing Procedure**

Radiated emission measurements were performed according to the procedures in ANSI C63.4(2003). All measurements were performed in Open Area Test Sites located at Roof Top of Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong.

## **INTERTEK TESTING SERVICES**

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### **C. Radiated Emission Configuration Photograph**

#### **Worst Case Radiated Emission**

For electronic filing, the radiated emission configurations photograph is saved with filename: config photos.pdf

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## INTERTEK TESTING SERVICES

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### C. Test Result

#### Integrated Display Technology Ltd. TY-MAN TY380

**Table 6(a)**

1) Unwanted emission from CARRIER  $\pm 6.25\text{kHz}$  to CARRIER  $\pm 31.25\text{kHz}$

(Refer to the plots which is saved with filename: spurious.pdf)

Region	Unwanted emission	
	Channel 4	Channel 11
CARRIER $\pm 6.25\text{kHz}$ to $\pm 12.5\text{kHz}$	<25dB	<25dB
CARRIER $\pm 12.5\text{kHz}$ to $\pm 31.25\text{kHz}$	<35dB	<35dB

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## INTERTEK TESTING SERVICES

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**Table 6(b): Channel 4**

<b>Frequency (MHz)</b>	<b>Effective Radiated Power (dBm)</b>	<b>Transmission Power (dBm)</b>	<b>Attenuation (dBc)</b>	<b>Limit (dBc)</b>	<b>Margin (dB)</b>
925.274	-43.0	24.6	67.6	37.6	-30.0
1387.911	-43.1	24.6	67.7	37.6	-30.1
1850.548	-37.8	24.6	62.4	37.6	-24.8
2313.185	-25.1	24.6	49.7	37.6	-12.1
2775.822	-32.8	24.6	57.4	37.6	-19.8
3238.459	-34.0	24.6	58.6	37.6	-21.0
3701.096	-36.8	24.6	61.4	37.6	-23.8

Remark: 1. Transmission power is 24.6 dBm or -5.4 dB(W).

2. According to Section 95.635(b7), the unwanted emission should be attenuated below TP by at least  $43 + 10 \log_{10} (TP)$  dB or 37.6 dB.

3. The test is performed according to ANSI/TIA-603-C-2004.

Verdict: Passed

Test Engineer: Ken Sit

Date of Test: February 13-April 28, 2008



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## INTERTEK TESTING SERVICES

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Table 6(b): Channel 11

Frequency (MHz)	Effective Radiated Power (dBm)	Transmission Power (dBm)	Attenuation (dBc)	Limit (dBc)	Margin (dB)
935.274	-40.9	24.0	64.9	37.0	-27.9
1402.911	-42.8	24.0	66.8	37.0	-29.8
1870.548	-38.0	24.0	62.0	37.0	-25.0
2338.185	-32.0	24.0	56.0	37.0	-19.0
2805.822	-32.8	24.0	56.8	37.0	-19.8
3273.459	-37.2	24.0	61.2	37.0	-24.2
3741.096	-42.1	24.0	66.1	37.0	-29.1

- Remark: 1. Transmission power is 24 dBm or -6 dB(W).
2. According to Section 95.635(b7), the unwanted emission should be attenuated below TP by at least  $43 + 10 \log_{10} (TP)$  dB or 37 dB.
3. The test is performed according to ANSI/TIA-603-C-2004.

Verdict: Passed

Test Engineer: Ken Sit

Date of Test: February 13-April 28, 2008

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## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 7**

### **FREQUENCY STABILITY**

## INTERTEK TESTING SERVICES

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### 7.0 **Frequency Stability (Section 2.1055(a)(b)(d), 95.627(b))**

The frequency tolerance was tested in normal condition & over extreme ambient conditions with respect to voltage and temperature variation.

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## INTERTEK TESTING SERVICES

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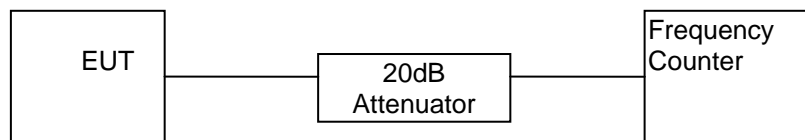
### 7.1 Frequency Tolerance (Section 95.627(b))

#### A. Test Equipment

Equipment	Brand Name	Model No.
20 dB RF Attenuator	Bird	8304-200-N
Frequency Counter	OPTOELECTRONICS	3000A

#### B. Testing Procedure

- 1) Set-up the test equipment in the following configuration:



- 2) Measure all transmit channel frequencies in MHz.

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## INTERTEK TESTING SERVICES

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### C. Test Result

**Table 7**

**Integrated Display Technology Ltd.  
TY-MAN TY380**

#### **Frequency Tolerance**

Channel	Frequency (MHz)	Measured Frequency (MHz)	Tolerance (%)
1	462.5625	462.56204	-0.000099
2	462.5875	462.58704	-0.000099
3	462.6125	462.61204	-0.000099
4	462.6375	462.63704	-0.000099
5	462.6625	462.66204	-0.000099
6	462.6875	462.68704	-0.000099
7	462.7125	462.71204	-0.000099
8	467.5625	467.56204	-0.000098
9	467.5875	467.58704	-0.000098
10	467.6125	467.61204	-0.000098
11	467.6375	467.63704	-0.000098
12	467.6625	467.66204	-0.000098
13	467.6875	467.68704	-0.000098
14	467.7125	467.71204	-0.000098

FCC Limit for FRS (95.627(b)):  $\leq \pm 0.00025\%$

Verdict: Passed

Test Engineer: Ken Sit

Date of Test: February 13-April 28, 2008

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## INTERTEK TESTING SERVICES

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### 7.2 Frequency Stability - Temperature (Section 2.1055(a)(b), 95.627(b))

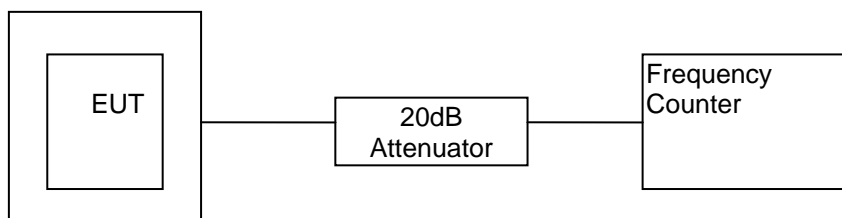
#### A. Test Equipment

Equipment	Brand Name	Model No.
20 dB RF Attenuator	Bird	8304-200-N
Frequency Counter	OPTOELECTRONICS	3000A

#### B. Testing Procedure

- 1) Set-up the test equipment in the following configuration:

Temperature Chamber



- 2) Set the Temperature Chamber to 20°C and stabilize the EUT temperature for one hour. Set transmitter ON for two minutes.
- 3) Measure the channel frequency of channel 4, 11 in MHz.
- 4) Turn the EUT OFF.
- 5) Repeat the above procedure from -20°C to 50°C with 10°C increment for FRS.

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## INTERTEK TESTING SERVICES

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### C. Test Result

**Table 8(a)**

**Integrated Display Technology Ltd.  
TY-MAN TY380**

#### **Frequency Deviation with Temperature Variation**

Channel : 4

Temperature (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Deviation (%)
-20	462.63750	462.63665	-0.000184
-10	462.63750	462.63728	-0.000048
0	462.63750	462.63746	-0.000009
10	462.63750	462.63737	-0.000028
20	462.63750	462.63704	-0.000099
30	462.63750	462.63667	-0.000179
40	462.63750	462.63639	-0.000240
50	462.63750	462.63643	-0.000231

Remark: 1) For FRS, frequency tolerance must be maintained within a frequency tolerance of 0.00025%.

Verdict: Passed

Test Engineer: Ken Sit

Date of Test: February 13-April 28, 2008

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## INTERTEK TESTING SERVICES

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### C. Test Result

**Table 8(b)**

**Integrated Display Technology Ltd.  
TY-MAN TY380**

### **Frequency Deviation with Temperature Variation**

Channel : 11

Temperature (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Deviation (%)
-20	467.63750	467.63670	-0.000171
-10	467.63750	467.63729	-0.000045
0	467.63750	467.63743	-0.000015
10	467.63750	467.63739	-0.000024
20	467.63750	467.63704	-0.000098
30	467.63750	467.63664	-0.000184
40	467.63750	467.63638	-0.000240
50	467.63750	467.63641	-0.000233

Remark: 1) For FRS, frequency tolerance must be maintained within a frequency tolerance of 0.00025%.

Verdict: Passed

Test Engineer: Ken Sit

Date of Test: February 13-April 28, 2008



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## INTERTEK TESTING SERVICES

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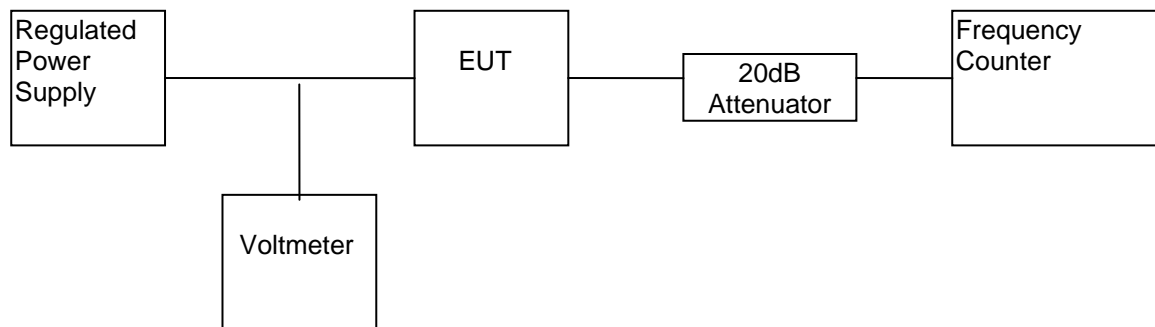
### 7.3 Frequency Stability - Voltage (Section 2.1055(d), 95.627(b))

#### A. Test Equipment

Equipment	Brand Name	Model No.
Regulated Power Supply	PAD	30-35L
20 dB RF Attenuator	Bird	8304-200-N
Voltage meter	Fluke	87
Frequency Counter	OPTOELECTRONICS	3000A

#### B. Testing Procedure

- 1) Set-up the test equipment in the following configuration:



- 2) Vary the level of regulated power supply to the manufacturer specified battery end point of the EUT.
- 3) Measure the channel frequency of channel 4 and 11 in MHz.

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## INTERTEK TESTING SERVICES

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### C. Test Result

**Table 9**

**Integrated Display Technology Ltd.  
TY-MAN TY380**

#### **Frequency Deviation with Voltage Variation**

The manufacturer specified battery end point 3.03V

Channel	Frequency (MHz)	Measured Frequency (MHz)	Tolerance (%)
4	462.63750	462.63670	-0.000173
11	467.63750	467.63673	-0.000165

Remark: 1) For FRS, frequency tolerance must be maintained within a frequency tolerance of 0.00025%.  
2) The test voltage is from the primary supply voltage to 3.03V.

Test Engineer: Ken Sit

Date of Test: February 13-April 28, 2008

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## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 8**

### **TECHNICAL SPECIFICATIONS**

## INTERTEK TESTING SERVICES

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### 8.0 **Technical Specifications**

#### 8.1 Block Diagram

For electronic filing, the block diagram of the transceiver is saved with filename: block.pdf

Figure 8.1 Block Diagram

## INTERTEK TESTING SERVICES

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### 8.2 Schematic Diagram

For electronic filing, the schematic diagram of the transceiver is saved with filename: circuit.pdf

Figure 8.2 Schematic Diagram

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## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 9**

### **PRODUCT LABELLING**

## INTERTEK TESTING SERVICES

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### 9.0 **Product Labelling**

#### 9.1 Label Artwork & Location

##### Figure 9.1 Label Artwork & Location

An engineering drawing of the label which will be permanently affixed to the unit.  
For electronic filing, the label artwork & location are saved with filename: label.pdf

The label location justification letter is saved as filename: justification.pdf

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## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 10**

### **PHOTOGRAPHS**



## INTERTEK TESTING SERVICES

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### 10.0 Equipment Photographs

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

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## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 11**

### **INSTRUCTION MANUAL**

## INTERTEK TESTING SERVICES

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### 11.0 Instruction Manual

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

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

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## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 12**

### **TUNE UP PROCEDURE**

## INTERTEK TESTING SERVICES

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### 12.0 Tune Up Procedure

For electronic filing, a preliminary copy of the Tune Up Procedure is saved with filename: tuneup.pdf

## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 13**

### **PART LIST**

## INTERTEK TESTING SERVICES

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### 13.0 Part List

For electronic filing, a preliminary copy of the Part List is saved with filename: partlist.pdf

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## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 14**

### **LETTER OF AGENCY**



## INTERTEK TESTING SERVICES

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### 14.0 Letter of Agency

For electronic filing, a letter of agency is saved with filename: letter of agency.pdf

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## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 15**

### **CONFIDENTIALITY REQUEST**

## INTERTEK TESTING SERVICES

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### 15.0 Confidentiality Request

For electronic filing, a confidentiality request is saved with filename: request.pdf