ITS Intertek Testing Services

July 16, 1999

Federal Communications Commission
Laboratory Division, FCC Equipment Authorization Branch
7435 Oakland Mills Road
Columbia, MD 21046

Attention: Mr. George Tannahill

Reference: Ora Electronics, FCC ID: LTFIBR1, Confirmation #EA93975, Ref # 8554

Dear Mr. Tannahill:

This is in response to your letter dated July 1, 1999 regarding the above application.

1. The unit is bi-directional with uplink frequencies 806 – 821 MHz, output power 2W (ERP), and downlink frequencies 851 – 866 MHz, output power 30 mW.

   For uplink band, the antenna is mounted outdoor (on the roof). In real installation, it can be a wip antenna (6 dBi gain) or Yagi antenna (6 dBi gain). For downlink band, a small wip antenna (0 dBi gain) is used.

2. The MPE test was performed in worst case scenario for uplink band with 2W output power and 6 dBi wip antenna (Yagi antenna was not available).

3. The warning statement related to RF exposure is in the users manual section 4.

4. These are typos in the report, the corrected pages are attached.

I hope this satisfies the FCC requirements; and should you need more , please contact the undesigned.

Sincerely,

David Chernomordik

David Chernomordik
EMC Manager

DC/gcl
Enclosures

Intertek Testing Services NA Inc.
1365 Adams Court, Menlo Park, CA 94025
Telephone 650-463-2900 Fax 650-463-2910 Home Page www.worldlab.com

1.0 Introduction

This report is designed to show compliance with the FCC Part 2.1091 Radio Frequency Radiation Exposure Evaluation for mobile and unlicensed devices. The test procedures and limits, as described in American National Standards Institute C95.1-1992, were employed. A description of the product and operating configuration, the various provisions of the rules, the methods for determining compliance, and a detailed summary of the results are included within this test report.

2.0 Description of Equipment

The ORA Electronics Model IDR 3000 is a 2 watts RF IDEN amplifier used only with Motorola iDEN telephones with frequency Uplink range from 806 to 821 MHz(2 watts output) and Downlink range from 851-866 MHz(30mW output).

The amplifier is used with antenna with the following specification:

1. Antenna Type: Monopole Omni
2. Frequency Range: 800- 870 MHz
3. Gain: 6 dBi

3.0 Test Summary

The IDEN amplifier was tested by Intertek Testing Services as documented herein, and the energy emitted by the EUT was found to be below the recommended levels of Maximum Permissible Exposure for Uncontrolled Environments in FCC 1.1310 (ANSI C95.1:L 1992).

Therefore, in reference to the limits set forth in FCC 1.1310 use of the equipment is deemed to be safe with respect to human exposure to Radio Frequency Electromagnetic Fields, when used in a normal fashion.

Note:

The IDEN amplifier was tested with the antenna having 6 dBi gain and the emitted power density was found 10 dB below the limit (at 0.2m distance). Therefore, the amplifier can be used with any antenna having the gain less than 16 dBi.

2.0 **RF Power Output**, FCC §2.985(a)

2.1 Test Procedure

The amplifier's output was connected to a power meter and spectrum analyzer through calibrated coaxial attenuator and directional coupler. The FM test signal was applied to the amplifier's input from a signal generator, and the input level was adjusted to obtain maximum average output power.

2.2 Test Equipment

Hewlett Packard 8481A Power Sensor, 435B Power Meter
Hewlett Packard HP8566B Spectrum Analyzer, 100 Hz - 22 GHz
Tektronix 2782 Spectrum Analyzer, 100 Hz - 40 GHz

2.3 Test Results

Passes	See Exhibit 9.1 for the plots.

FEDERAL COMMUNICATIONS COMMISSION
Laboratory Division, FCC Equipment Authorization Branch
7435 Oakland Mills Road, Columbia, MD 21046
Telephone: (301) 362-3000, Facsimile: (301) 344-2050

Date: July 1, 1999 03:20 pm
From: George Tannahill Telephone: (301)-362-3026
To: C.K. Li
Organization: Intertek Testing Services
Telephone: (650) 463-2900 Facsimile: (650) 463-2910
This cover sheet is page 1 of 1. Please direct inquiries to the sender at the above extension.

Reference FCC ID: LJFIBR1

Applicant: Ora Electronics

The items indicated below must be submitted before processing can continue on the above referenced application. Failure to provide the requested information within 60 days may result in application dismissal pursuant to Section 2.917(a) and forfeiture of the filing fee pursuant to Section 1.1108.

The following questions are based on the review of the application with regard to the RF Exposure requirements of the device. Any questions about these questions should be directed to Kwok Chan but the complete response should be uploaded via the internet.

1. This unit is bi-directional and for RF exposures, both the uplink and down frequencies should be addressed for MPE compliance with respect to the worst case exposure conditions for the normal operating conditions and configurations of the indoor and outdoor antennas.

2. The uploaded MPE report indicated a 0 dBi gain monopole was tested at mid-band of the uplink frequency, outdoor antenna port with a 1.5 m long coax. The uploaded photo exhibit has two whip antennas, one connected directly to the unit and the other appears to be externally mounted. The users manual describes a 6-element YAGI and a monopole for outdoor and indoor use respectively. Based on the information provided in the test reports and users manual, the monopole is intended for indoor use, transmitting at downlink frequencies to iDEN phones, and has been tested for MPE at uplink frequencies which may use higher gain antennas. The 731 form is requesting outputs of 2 W for uplink (to basestation) and 30 mW for downlink. If this is correct, the downlink portion (to iDEN phones) is categorically excluded from routine RF exposure evaluation for MPE provided it has less than 1.5 W ERP output. Since the output is antenna gain dependent, it needs to be clarified in order for the down link portion to qualify for categorical exclusion for MPE evaluation.

3. For the uplink frequencies, MPE needs to be evaluated with respect to the installation configurations and gains of the outdoor antennas provided for this unit, for worst case exposure under normal use - YAGI and others etc. Based on the MPE results, appropriate installation and operating instructions or requirements should be incorporated in the users manual.

4. Section 2.1 of the EMC report, RF Output Power, indicated 55.4 dBm average output power. This is much higher than the 2 W (assuming conducted output) requested. Is this uplink or downlink? Section 3.3 has 38.4 dBm ERP, which antenna was this tested with and for uplink or downlink? These need to be clarified so that we know what maximum outputs to use for determining MPE requirements and compliance.

Replies to this letter MUST contain the Reference Number: 8554