

**MFA** **M. Flom Associates, Inc. - Global Compliance Center**  
3356 North San Marcos Place, Suite 107, Chandler, Arizona 85225-7176  
www.mflom.com general@mflom.com (480) 926-3100, FAX: 926-3598

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Date of Report: November 5, 2002  
Date of Submission: December 2, 2002

Federal Communications Commission  
Via: Electronic Filing

Attention: Authorization & Evaluation Division

Applicant: Honeywell Inc, Commercial Flight Systems Group  
Equipment: TR-865A  
FCC ID: GB8TR865A  
FCC Rules: Radiofrequency Radiation Exposure Limits  
47 CFR 1.1310  
MPE - Mobiles   x   Fixed Based Station       

Gentlemen:

On behalf of the Applicant, enclosed please find the Supplemental Test Data Report, the whole for Environmental Assessment (MPE) of the referenced equipment as shown.

We trust the same is in order. Should you need any further information, kindly contact the writer who is authorized to act as agent.

Sincerely yours,



Morton Flom, P. Eng.

enclosure(s)  
cc: Applicant  
MF/cva



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ENVIRONMENTAL ASSESSMENT

for

MOBILES/FIXED BASE STATION

for

FCC ID: FCC ID: GB8TR865A

Model:TR-865A

to

FEDERAL COMMUNICATIONS COMMISSION

47 CFR 1.1310 (MPE)

Radiofrequency Radiation Exposure Limits

DATE OF REPORT: November 5, 2002

ON THE BEHALF OF THE APPLICANT:

Honeywell International Inc.  
Commercial Electronic Systems - Phoenix

AT THE REQUEST OF:

P.O. Part of X305730L-06B

Mailing:

Honeywell Inc.  
Business, Regional & General Aviation  
5353 W. Bell Road, MS 2DD80  
Glendale, AZ 85308

Attention of:

Robert H. Fuller, Technical Mgr, EPIC Eng'g  
602 436 4714; FAX: -4040 M/S 2DD80  
bob.fuller@honeywell.com

A handwritten signature in black ink, reading 'M. Flom P. Eng.' with a stylized flourish at the end.

SUPERVISED BY:


Morton Flom, P. Eng.

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*Required information per ISO/IEC Guide 25-1990, paragraph 13.2:*

- a) TEST REPORT (SUPPLEMENTAL)
- b) Laboratory: M. Flom Associates, Inc.  
(FCC: 31040/SIT) 3356 N. San Marcos Place, Suite 107  
(Canada: IC 2044) Chandler, AZ 85225
- c) Report Number: d02b0013
- d) Client: Honeywell Inc.  
Business, Regional & General Aviation  
5353 W. Bell Road, MS 2DD80  
Glendale, AZ 85308
- e) Identification: TR-865A  
FCC ID: GB8TR865A  
Description: Aviation, VHF Transceiver
- f) EUT Condition: Not required unless specified in individual tests.
- g) Report Date: November 5, 2002  
EUT Received: October 23, 2002
- h, j, k): As indicated in individual tests.
- i) Sampling method: No sampling procedure used.
- l) Uncertainty: In accordance with MFA internal quality manual.
- m) Supervised by:   
Morton Flom, P. Eng.
- n) Results: The results presented in this report relate only to the item tested.
- o) Reproduction: This report must not be reproduced, except in full, without written permission from this laboratory.

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IDENTIFICATION OF THE EQUIPMENT UNDER TEST (EUT)NAME AND ADDRESS OF APPLICANT:

Honeywell International Inc.  
Commercial Electronic Systems - Phoenix  
21111 N. 19<sup>th</sup> Avenue  
Phoenix, AZ 85027

MANUFACTURER:

Honeywell Inc.  
Business, Regional & General Aviation  
5353 W. Bell Road, MS 2DD80  
Glendale, AZ 85308

FCC ID:

GB8TR865A

MODEL NO:

TR-865A

DESCRIPTION:

Aviation, VHF Transceiver

TYPE OF EMISSION:

6K00A3E

FREQUENCY RANGE, MHz:

118 to 135.975

POWER RATING, Watts:

18

     Switchable      Variable   x   N/AMODULATION:

     AMPS  
     TDMA  
     CDMA  
  x   OTHER

ANTENNA:


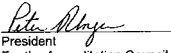

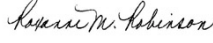
     HELICAL  
     MONOPOLE  
     WHIP  
  x   OTHER

**NOTE: For RF Safety test antenna gain taken at the upper range of expected gain (i.e. 0 dBd) and RF Power set to highest nominal power across all channels.**

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M. Flom Associates, Inc. is accredited by the American Association for Laboratory Accreditation (A2LA) as shown in the scope below.

 <p><b>THE AMERICAN ASSOCIATION FOR LABORATORY ACCREDITATION</b></p> <p><b>ACCREDITED LABORATORY</b></p> <p>A2LA has accredited</p> <p><b>M. FLOM ASSOCIATES, INC.</b> Chandler, AZ</p> <p>for technical competence in the field of</p> <p><b>Electrical (EMC) Testing</b></p> <p>The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO/IEC 17025 - 1999 "General Requirements for the Competence of Testing and Calibration Laboratories" and any additional program requirements in the identified field of testing. Testing and calibration laboratories that comply with this International Standard also operate in accordance with ISO 9001 or ISO 9002.</p> <p>Presented this 2<sup>nd</sup> day of March, 2001.</p>  <p>Peter Rhyne President For the Accreditation Council Certificate Number 1008.01 Valid to December 31, 2002</p> <p>For tests or types of tests to which this accreditation applies, please refer to the laboratory's Electrical (EMC) Scope of Accreditation</p>	 <p><b>American Association for Laboratory Accreditation</b></p> <p><u>SCOPE OF ACCREDITATION TO ISO/IEC 17025-1999</u></p> <p>M. FLOM ASSOCIATES, INC. Electronic Testing Laboratory 3356 North San Marcos Place, Suite 107 Chandler, AZ 85225 Morton Flom Phone: 480 926 3100</p> <p><b>ELECTRICAL (EMC)</b></p> <p>Valid to: December 31, 2002 Certificate Number: 1008-01</p> <p>In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following <u>electromagnetic compatibility tests</u>:</p> <table border="0"> <thead> <tr> <th>Tests</th> <th>Standard(s)</th> </tr> </thead> <tbody> <tr> <td>RF Emissions</td> <td>FCC Part 15 (Subparts B and C) using ANSI C63.4-1992, CISPR 11; CISPR 13; CISPR 14; CISPR 22; EN 55011; EN 55013; EN 55014; EN 55022; EN 50081-1; EN 50081-2; ICES-003; AS/NZS 1044; AS/NZS 1053; AS/NZS 3548; AS/NZS 4251.1; CNS 13438</td> </tr> <tr> <td>Harmonic Currents</td> <td>EN 61000-3-2</td> </tr> <tr> <td>Fluctuation and Flicker</td> <td>EN 61000-3-3</td> </tr> <tr> <td>RF Immunity</td> <td>EN: 50082-1, 50082-2 (both excluding "Power Frequency Magnetic Field Immunity"), 55024 (excluding Power Frequency Magnetic Field and Conducted Immunity); AS/NZS 4251.1</td> </tr> <tr> <td>Electrostatic Discharge (ESD)</td> <td>EN 61000-4-2</td> </tr> <tr> <td>Radiated Susceptibility</td> <td>EN 61000-4-3; ENV 50140; ENV 50204; IEC 1000-4-3; IEC 801-3</td> </tr> <tr> <td>EFT</td> <td>EN 61000-4-4; IEC 1000-4-4; IEC 801-4</td> </tr> <tr> <td>Surge</td> <td>EN 61000-4-5; ENV 50142; IEC 1000-4-5; IEC 801-5</td> </tr> <tr> <td>Voltage Dips, Short Interruptions, and Line Voltage Variations</td> <td>EN 61000-4-11</td> </tr> <tr> <td>47 CFR (FCC)</td> <td>Part: 2, 18, 21, 22, 23, 24, 25, 26, 27, 74, 80, 87, 90, 95, 97, 101 (excluding SAR Testing)</td> </tr> </tbody> </table> <p>(A2LA Cert. No. 1008.01) 05/10/02</p> <p>5301 Buckeystown Pike, Suite 350 • Frederick, MD 21704-8373 • Phone: 301-644 3248 • Fax: 301-662 2974</p> <p>Page 1 of 1</p> 	Tests	Standard(s)	RF Emissions	FCC Part 15 (Subparts B and C) using ANSI C63.4-1992, CISPR 11; CISPR 13; CISPR 14; CISPR 22; EN 55011; EN 55013; EN 55014; EN 55022; EN 50081-1; EN 50081-2; ICES-003; AS/NZS 1044; AS/NZS 1053; AS/NZS 3548; AS/NZS 4251.1; CNS 13438	Harmonic Currents	EN 61000-3-2	Fluctuation and Flicker	EN 61000-3-3	RF Immunity	EN: 50082-1, 50082-2 (both excluding "Power Frequency Magnetic Field Immunity"), 55024 (excluding Power Frequency Magnetic Field and Conducted Immunity); AS/NZS 4251.1	Electrostatic Discharge (ESD)	EN 61000-4-2	Radiated Susceptibility	EN 61000-4-3; ENV 50140; ENV 50204; IEC 1000-4-3; IEC 801-3	EFT	EN 61000-4-4; IEC 1000-4-4; IEC 801-4	Surge	EN 61000-4-5; ENV 50142; IEC 1000-4-5; IEC 801-5	Voltage Dips, Short Interruptions, and Line Voltage Variations	EN 61000-4-11	47 CFR (FCC)	Part: 2, 18, 21, 22, 23, 24, 25, 26, 27, 74, 80, 87, 90, 95, 97, 101 (excluding SAR Testing)
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"This laboratory is accredited by the American Association for Laboratory Accreditation (A2LA) and the results shown in this report have been determined in accordance with the laboratory's terms of accreditation unless stated otherwise in the report."

Should this report contain any data for tests for which we are not accredited, or which have been undertaken by a subcontractor that is not A2LA accredited, such data would not covered by this laboratory's A2LA accreditation.

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STANDARD TEST CONDITIONS  
and  
ENGINEERING PRACTICES

Except as noted herein, the following conditions and procedures were observed during the testing:

In accordance with ANSI C63.4-1992/2000, section 6.1.9, and unless otherwise indicated in the specific measurement results, the ambient temperature of the actual EUT was maintained within the range of 10° to 40°C (50° to 104 °F) unless the particular equipment requirements specify testing over a different temperature range. Also, unless otherwise indicated, the humidity levels were in the range of 10% to 90% relative humidity.

Prior to testing, the EUT was tuned up in accordance with the manufacturer's alignment procedures. All external gain controls were maintained at the position of maximum and/or optimum gain throughout the testing.

Measurement results, unless otherwise noted, are worst case measurements.

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Name of test: Environmental Assessment  
Specification: FCC: 47 CFR 1.1310, 2.1091

## CALCULATION OF M.P.E.

R.F. Power Output = (16 W Spec) 18.3 W Measured

Limit = 10 Watts/cm<sup>2</sup>

Minimum Safe Distance, R =  $[18.3 / (12.56 \times 10)]^{1/2}$

= 0.381 m

= 38 cm

SUPERVISED BY:

END OF TEST REPORT



Morton Flom, P. Eng.



**(The following will be placed in the Instruction Manual)**

MANDATORY SAFETY INSTRUCTIONS TO INSTALLERS & USERS

Use only manufacturer or dealer supplied antenna.

Antenna Minimum Safe Distance: 38 cm @ 100% Duty Cycle.

Antenna Gain: zero dBd referenced to a dipole.

The Federal Communications Commission has adopted a safety standard for human exposure to RF (Radio Frequency) energy which is below the OSHA (Occupational Safety and Health Act) limits.

Antenna Mounting: The antenna supplied by the manufacturer or radio dealer must not be mounted at a location such that during radio transmission, any person or persons can come closer than the above indicated minimum safe distance to the antenna i.e. 38 cm @ 100% Duty Cycle .

To comply with current FCC RF Exposure limits, the antenna must be installed at or exceeding the minimum safe distance shown above, and in accordance with the requirements of the antenna manufacturer or supplier.

Base Station Installation: The antenna should be fixed-mounted on an outdoor permanent structure. RF Exposure compliance must be addressed at the time of installation.

Antenna Substitution: Do not substitute any antenna for the one supplied or recommended by the manufacturer or radio dealer. You may be exposing person or persons to excess radio frequency radiation. You may contact your radio dealer or the manufacturer for further instructions.

WARNING: Maintain a separation distance from the antenna to a person(s) of at least 38 cm @100% Duty Cycle .

You, as the qualified end-user of this radio device must control the exposure conditions of bystanders to ensure the minimum separation distance (above) is maintained between the antenna and nearby persons for satisfying RF Exposure compliance. The operation of this transmitter must satisfy the requirements of Occupational/Controlled Exposure Environment, for work-related use. Transmit only when person(s) are at least the minimum distance from the properly installed, externally mounted antenna.

TESTIMONIAL  
AND  
STATEMENT OF CERTIFICATION

THIS IS TO CERTIFY THAT:

1. THAT the application was prepared either by, or under the direct supervision of, the undersigned.
2. THAT the technical data supplied with the application was taken under my direction and supervision.
3. THAT the data was obtained on representative units, randomly selected.
4. THAT, to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct.

CERTIFYING ENGINEER:

A handwritten signature in black ink, reading "M. Flom P. Eng." with a horizontal line drawn underneath the signature.

Morton Flom, P. Eng.