

**M. Flom Associates, Inc. - Global Compliance Center**

3356 North San Marcos Place, Suite 107, Chandler, Arizona 85225-7176

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Date: September 19, 2002

TIMCO ENGINEERING  
via Electronic Filing

Attention: Authorization &amp; Evaluation Division

Applicant: E. F. Johnson Company

Equipment: 242-7240

FCC ID: ATH2427240

FCC Rules: 2.1043, 2.1093, 2.933, 90, 90.210  
CLASS II PERMISSIVE CHANGE

Gentlemen:

On behalf of the Applicant, enclosed pertinent documentation in support of a CLASS II PERMISSIVE CHANGE to the above referenced equipment:

- a) Application Form 731
- b) VISA Charge form
- c) Copy of Original Grant
- d) Test Report
- e) Expository Statement
- f) SAR Report by Celltech Research Inc.

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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T R A N S M I T T E R      C E R T I F I C A T I O N

of

FCC ID: ATH2427240  
MODEL: 242-7240

to

FEDERAL COMMUNICATIONS COMMISSION

Rule Part(s) 90, 90.210

DATE OF REPORT: September 19, 2002

ON THE BEHALF OF THE APPLICANT:

E. F. Johnson Company

AT THE REQUEST OF:

P.O. 161968

E. F. Johnson Company,  
299 Johnson Ave.  
Waseca, MN 56093-0514

Attention of: (507) 835-6579; FAX: -6666  
John Oblak, Director, Radio Products  
Development  
E-mail: joblak@efjohnson.com

SUPERVISED BY:



Morton Flom, P. Eng.

THE APPLICANT HAS BEEN CAUTIONED AS TO THE FOLLOWING:

15.21 INFORMATION TO USER.

The users manual or instruction manual for an intentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

15.27(a) SPECIAL ACCESSORIES.

Equipment marketed to a consumer must be capable of complying with the necessary regulations in the configuration in which the equipment is marketed. Where special accessories, such as shielded cables and/or special connectors are required to enable an unintentional or intentional radiator to comply with the emission limits in this part, the equipment must be marketed with, i.e. shipped and sold with, those special accessories. However, in lieu of shipping or packaging the special accessories with the unintentional or intentional radiator, the responsible party may employ other methods of ensuring that the special accessories are provided to the consumer, without additional charge.

Information detailing any alternative method used to supply the special accessories for a grant of equipment authorization or retained in the verification records, as appropriate. The party responsible for the equipment, as detailed in § 2.909 of this chapter, shall ensure that these special accessories are provided with the equipment. The instruction manual for such devices shall include appropriate instructions on the first page of text concerned with the installation of the device that these special accessories must be used with the device. It is the responsibility of the user to use the needed special accessories supplied with the equipment.

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

a) TEST REPORT

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: d0290049

d) Client: E. F. Johnson Company,  
299 Johnson Ave.  
Waseca, MN 56093-0514

e) Identification: 242-7240  
FCC ID: ATH2427240  
EUT Description: UHF FM Handheld Transceiver Held-to-face

f) EUT Condition: Not required unless specified in individual tests.

g) Report Date: September 19, 2002  
EUT Received: August 28, 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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EXPOSITORY STATEMENT  
PERMISSIVE CHANGE

APPLICANT: E. F. Johnson Company

FCC ID: ATH2427240

The applicant has made design changes/improvements to the originally FCC approved equipment.

1. The Applicant has received certification of the referenced unit by date of Grant 04/24/2001. A copy of the grant is attached.
2. The Applicant now wishes to offer purchasers the option of a speaker microphone. A SAR test was conducted for this purpose and is attached herewith.
3. In addition, the results of the new requirement i.e. EIA/TIA 603A Substitution Method has been included here since it was not a requirement in the original filing.
4. Data contained herein confirms that a Permissive Change to the unit has been affected and that the performance of the unit is at or better than the levels originally reported to the Commission.

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LIST OF GENERAL INFORMATION REQUIRED FOR CERTIFICATIONIN ACCORDANCE WITH FCC RULES AND REGULATIONS,  
VOLUME II, PART 2 AND TO

90, 90.210

Sub-part 2.1033

(c)(1): NAME AND ADDRESS OF APPLICANT:E. F. Johnson Company  
299 Johnson Ave.  
Waseca, MN 56093-0514MANUFACTURER:

Applicant

(c)(2): FCC ID: ATH2427240MODEL NO: 242-7240(c)(3): INSTRUCTION MANUAL(S):

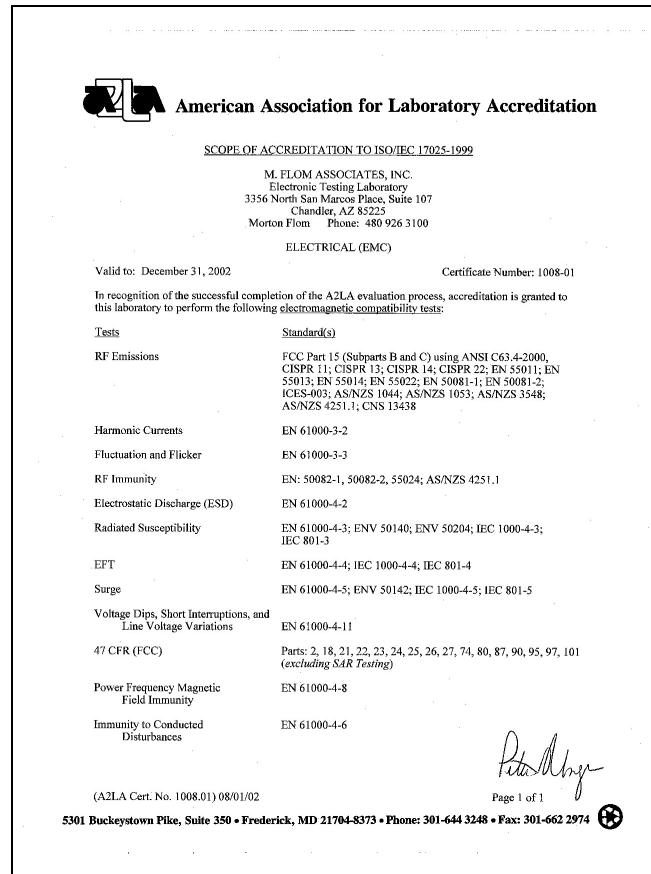
PLEASE SEE ATTACHED EXHIBITS

(c)(4): TYPE OF EMISSION: 16K0F3E, 11K0F3E(c)(5): FREQUENCY RANGE, MHz: 430 to 470(c)(6): POWER RATING, Watts: 1 to 4  
 Switchable     Variable     N/A(c)(7): MAXIMUM POWER RATING, Watts:DUT RESULTS: Passes  Fails

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



"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 be covered by this laboratory's

A2LA accreditation.

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Sub-part

2.1033(c)(14): TEST AND MEASUREMENT DATA

All tests and measurement data shown were performed in accordance with FCC Rules and Regulations, Volume II; Part 2, Sub-part J, Sections 2.947, 2.1033(c), 2.1041, 2.1046, 2.1047, 2.1079, 2.1051, 2.1053, 2.1055, 2.1057 and the following individual Parts:

- \_\_\_\_ 21 - Domestic Public Fixed Radio Services
- \_\_\_\_ 22 - Public Mobile Services
- \_\_\_\_ 22 Subpart H - Cellular Radiotelephone Service
- \_\_\_\_ 22.901(d) - Alternative technologies and auxiliary services
- \_\_\_\_ 23 - International Fixed Public Radiocommunication services
- \_\_\_\_ 24 - Personal Communications Services
- \_\_\_\_ 74 Subpart H - Low Power Auxiliary Stations
- \_\_\_\_ 80 - Stations in the Maritime Services
- \_\_\_\_ 80 Subpart E - General Technical Standards
- \_\_\_\_ 80 Subpart F - Equipment Authorization for Compulsory Ships
- \_\_\_\_ 80 Subpart K - Private Coast Stations and Marine Utility Stations
- \_\_\_\_ 80 Subpart S - Compulsory Radiotelephone Installations for Small Passenger Boats
- \_\_\_\_ 80 Subpart T - Radiotelephone Installation Required for Vessels on the Great Lakes
- \_\_\_\_ 80 Subpart U - Radiotelephone Installations Required by the Bridge-to-Bridge Act
- \_\_\_\_ 80 Subpart V - Emergency Position Indicating Radiobeacons (EPIRB'S)
- \_\_\_\_ 80 Subpart W - Global Maritime Distress and Safety System (GMDSS)
- \_\_\_\_ 80 Subpart X - Voluntary Radio Installations
- \_\_\_\_ 87 - Aviation Services
- \_\_\_\_ x 90 - Private Land Mobile Radio Services
- \_\_\_\_ 94 - Private Operational-Fixed Microwave Service
- \_\_\_\_ 95 Subpart A - General Mobile Radio Service (GMRS)
- \_\_\_\_ 95 Subpart C - Radio Control (R/C) Radio Service
- \_\_\_\_ 95 Subpart D - Citizens Band (CB) Radio Service
- \_\_\_\_ 95 Subpart E - Family Radio Service
- \_\_\_\_ 95 Subpart F - Interactive Video and Data Service (IVDS)
- \_\_\_\_ 97 - Amateur Radio Service
- \_\_\_\_ 101 - Fixed Microwave Services

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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 Draft, 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:

ERP Carrier Power (Radiated)

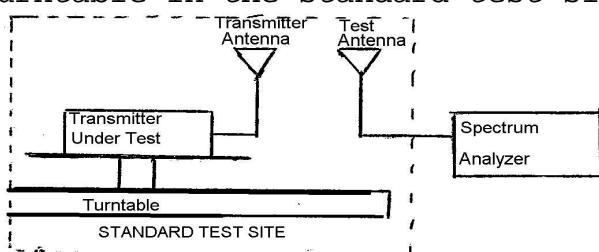
SPECIFICATION:

TIA/EIA 603A (Substitution Method)

2.2.17.1 Definition: The average radiated power of a licensed device is the equivalent power required, when delivered to a half-wave dipole or horn antenna, to produce at a distant point the same average received power as produced by the licensed device.

2.2.17.2 Method of Measurement:

a) Connect the equipment as illustrated. Place the transmitter to be tested on the turntable in the standard test site.



b) Raise and lower the test antenna from 1m to 6 m with the transmitter facing the antenna and record the highest received signal in dB as LVL.

c) Repeat step b) for seven additional readings at 45° interval positions of the turntable.

d) Replace the transmitter under test with a half-wave or horn vertically polarized antenna. The center of the antenna should be at the same location as the transmitter under test. Connect the antenna to a signal generator with a known output power and record the path loss in dB or LOSS.

e) Calculate the average radiated output power from the readings in step c) and d) by the following:

$$\text{average radiated power} = 10 \log_{10} \sum 10(\text{LVL} - \text{LOSS})/10 \text{ (dBm)}$$

	RESULTS					
	430.013 MHz		450.0 MHz		469.988 MHz	
	LVL, dbm	Path Loss, db	LVL, dbm	Path Loss, db	LVL, dbm	Path Loss, db
0°	38.0	-1.4	38.1	-1.2	36.9	-1.3
45°	37.2	-1.4	39.6	-1.2	36.1	-1.3
90°	38.9	-1.4	39.8	-1.2	35.8	-1.3
135°	39.6	-1.4	38.5	-1.2	37.3	-1.3
180°	38.0	-1.4	39.9	-1.2	36.4	-1.3
225°	37.4	-1.4	39.0	-1.2	36.8	-1.3
270°	39.7	-1.4	36.9	-1.2	37.5	-1.3
315°	39.0	-1.4	38.2	-1.2	35.6	-1.3

	430.013 MHz	450.0 MHz	469.988 MHz
Av. Radiated Power:	37.0 dbm	37.55 dbm	35.25 dbm
<u>END OF TEST REPORT</u>			

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:



Morton Flom, P. Eng.