

**FCC CERTIFICATION REPORT**

**FOR VHF-4000E**

**VHF COMMUNICATIONS TRANSCEIVER**

**EXTENDED RANGE**

**CPN 953-9908-450**

**ORIGINAL ON FILE IN**

**MELBOURNE DESIGN CENTER VAULT**

**NOVEMBER 2002**

**Rockwell Collins, Inc.**

**Cedar Rapids, Iowa 52904**

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----- Proprietary -----

This information Shall Only Be Disseminated Outside the Company When a Proprietary Information Exchange is Signed and Specifies This Information to be Exchanged.

**Signatures on Original Page On File in Melbourne Design Center Vault**

## TABLE OF CONTENTS

	<u>Page</u>
1. SCOPE.....	4
2. EQUIPMENT DESCRIPTION.....	4
3. CERTIFICATION BASED ON SIMILARITY.....	4
4. ATTACHMENTS .....	5
5. NAME OF APPLICANT .....	5

## 1. SCOPE

This report and its exhibits provide the information required by parts 2 and 87 of the FCC Rules and Regulations for Certification of the transmitter portion of the VHF-4000E VHF Communications Transceiver with Collins Part Number 822-1872-XXX. Collins Part Number for different status of the VHF-4000E is defined in Table #1.

0XX	25 kHz Channel Spacing AM Voice Radio
1XX	8.33 kHz & 25 kHz Channel Spacing AM Voice Radio
2XX	Mode 2, Mode A Data Radio & 25 kHz Channel Spacing AM Voice Radio
3XX	Mode 2, Mode A Data Radio, 8.33 kHz & 25 kHz Channel Spacing Voice Radio

NOTE: XX INDICATES MODIFICATION STATUS

TABLE #1

## 2. EQUIPMENT DESCRIPTION

The VHF-4000E VHF Transceiver is a solid state, AM transceiver designed to provide air-to-air or air-to-ground AM voice or analog data communications in the 118.000 to 151.975 MHz Aeronautical communications band. It operates in communications systems having 25 kHz or 8.33 kHz channel spacing. In the range of 137.000 to 151.975 MHz the VHF-4000 operates as an AM voice only transceiver with 25 kHz spacing. Transmissions on channels 137.000 through 138.000 MHz and 144.000 through 150.050 MHz are inhibited.

In addition to AM operation voice or analog data operation, the VHF-4000E will provide air-to-ground packet digital data communications (VDL Mode 2) in the 118.000 to 136.975 MHz band in communications systems having 25 kHz channel spacing.

The unit operates on 27.5 VDC and is packaged in an ARINC 600 standard 3 MCU configuration.

## 3. CERTIFICATION BASED ON SIMILARITY

The units tested were engineering units representative of production configurations of the VHF-4000, Collins part number 822-1468-0XX which was previously submitted and approved with FCC ID AJK8221468. The VHF-4000E differs from the VHF-4000 in that software allows operation on frequencies beyond 137.975 MHz to 151.975 MHz. Unless otherwise noted, all tests were conducted at the Rockwell Collins Melbourne Design Center in Melbourne, Florida.

#### **4. EXHIBITS**

This document contains the following attachments:

ID Label/ Location Information – Exhibit A

Attestation Statement – Exhibit B

External Photos – Exhibit C

Block Diagrams – Exhibit D

Schematics – Exhibit E

Test Report – Exhibit F

Test Setup Photos – Exhibit G

User's Manuals – Exhibit H

Internal Photos – Exhibit I

Parts List/Tune-Up Information – Exhibit J

RF Exposure Information – Exhibit K

Operational Description – Exhibit L

Cover Letters – Exhibit M

Production Test Requirements – Exhibit N

#### **5. ATTACHMENTS**

PTR – Production Test Requirements

828-8586-002 -A1 RF Assembly Card Schematic

828-8587-002 -A2 Signal Processor/Power Supply Card Schematic

828-8585-002 - A3 Rear Interconnect Schematic

828-3186-002A1 RF Card Assembly

828-3187-002A2 Signal Processor/Power Supply Card Assembly

828-3185-002A3 Rear Interconnect Card Assembly

#### **6. NAME OF APPLICANT**

Rockwell Collins, Inc

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Cedar Rapids, Iowa 52904

Applicant is manufacturer of the equipment