E.F. Johnson Company

Waseca, Minnesota 56093

Amendment

FCC Identifier	ATH2422008-1
Trade Name:	2008 Repeater/Base Station
Model Number:	242-2008-134
Manufacturer:	E.F. Johnson Co.
FCC Rules:	FCC Part 90
Emission Designator:	8K10F1E
Date:	February 1, 2002
Report Prepared and Approved:	John Oblak, Chief Engineer, E.F. Johnson Co.
	Babar Baig, Electrical Engineer III, E.F. Johnson Co.

Qualifications of Engineering Personnel

Name:	John S. Oblak
Title:	Chief Engineer
Technical Education:	BS, Electrical Engineering, University of Pittsburgh, April, 1973. MS, Electrical Engineering, University of Pittsburgh, April, 1978.
Technical Experience:	Eleven years in the development and technical management of land mobile radio products, RCA Land Mobile Radio, Meadow Lands, PA. Seventeen years in the development and technical management of land mobile radio products, E.F. Johnson Co., Waseca, MN.

Name:	Babar Baig
Title:	Electrical Engineer III
Technical Education:	BS, Electrical Engineering, Bradley University, May, 1996.
Technical Experience:	Two years in RF development engineering, Glenayre, Quincy, IL. Three years in RF development engineering, E.F. Johnson Co. Waseca, MN.

General Information

Transmitter:

This report is an amendment to certification report ATH2422008-1, originally granted September 13, 1994, and re-issued October 23, 1996 by Class II permissive change. The original report showed compliance with FCC regulations for emission designators 16K0F3E, 16K0F3D, 16K0F1D, 14K0F3E, 14K0F3D and 14K0F1D.

The intent of this report is to show compliance for emission designator 8K10F1E. This modulation is generated by a DSP and applied to the input of the FM modulator. No changes have been made to the transmitter frequency determining and stabilization circuitry, the modulator stage, or transmitter RF circuitry. In addition, power and field strength ratings remain unchanged. Since the modulation involves bypassing the audio filtering, test results are submitted to demonstrate performance of the unit using this modulation source under the provisions of rule 90.210(d). The test data shows compliance with the requirements for occupied bandwidth as stated in section 90.210(d).

The data rate for the digital modulation is 9600 bits per second. The data efficiency is 9600 bps per 12.5 kHz channels.

This report gives additional data to show that the requested change in within the guidelines for Part 90 services. All other information, test data, and test procedures of the original report remain in effect, unless amended by this report. Please refer to the original report for schematics, photographs, and FCC label details.

Name of Test: Occupied Bandwidth

Rule part No.: 47 CFR 2.1049(h)

Minimum Standard: 90.210(d):

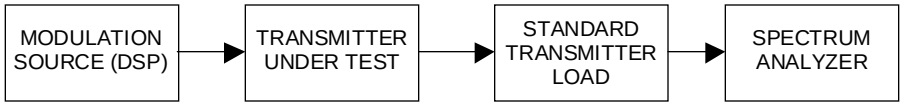
f_0 to f_0 ±5.625 kHz	0 dB
f_0 ± 5.625 to f_0 ± 12.5 kHz	7.27(f_d-2.88 kHz) dB
f_0 ± 12.5 to test bandwidth	50+10 log (P) or 70 dB

Test Results: Meets minimum standards of 90.210(d). See test results on following pages.

Test Equipment: Spectrum Analyzer, Hewlett Packard 8560E
Attenuator, Bird 8322

Test Procedure: per TIA/EIA-102.CAAA

Test Setup:



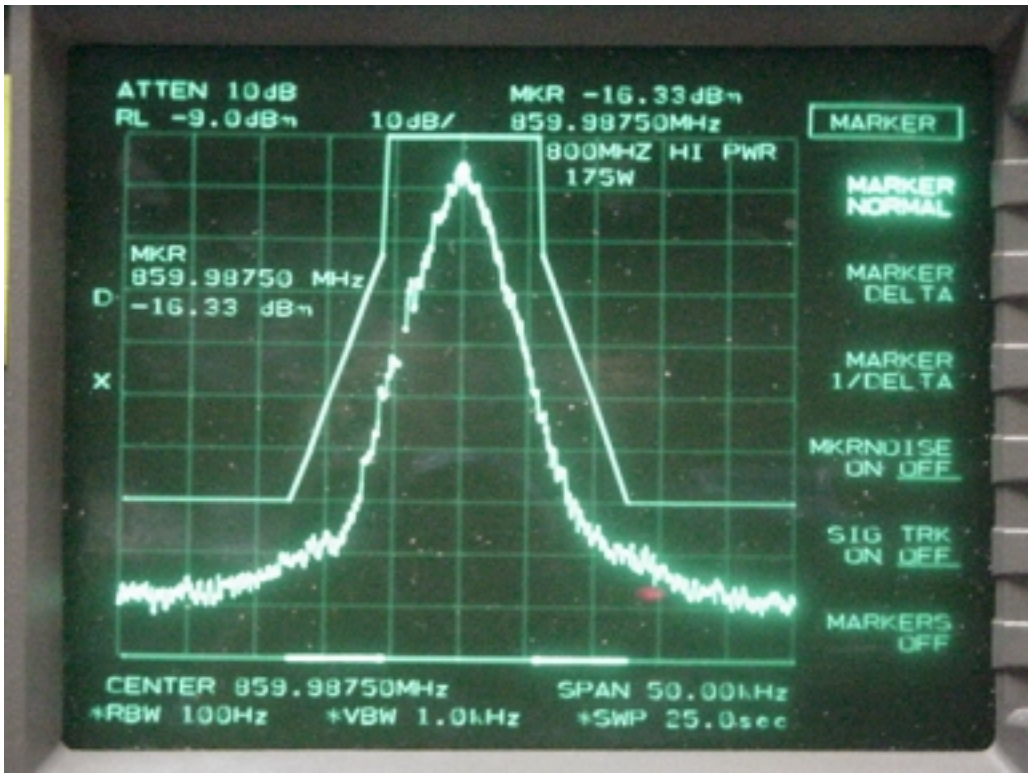
Test Results:

Power: 175 Watts

Frequency: 859.9875 MHz

Modulation: 9.6 kbps, Pseudorandom pattern

Emission Designator: 8K10F1E



Test Results:

Power: 75 Watts

Frequency: 859.9875 MHz

Modulation: 9.6 kbps, Pseudorandom pattern

Emission Designator: 8K10F1E