



MOTOROLA

FCC ID: ABZ99FT4052

Date: October 6, 1999

Authorization and Evaluation Division
Federal Communication Laboratory
7435 Oakland Mills Road
Columbia. MD 21046

Att: Linda Elliott or Joe Dichoso

Subject: Class II Permissive Change request for Type Accepted Transmitter
with FCC ID: ABZ99FT4052

Gentlemen,

We are requesting a Class II Permissive Change to the above referenced transmitter. The final stage (Q104) of the transmitter RF power amplifier has been replaced with a new active device.

The changes include:

- Q104 device replacement from bipolar transistor to an LDMOS FET transistor
- Input and output matching changes to accommodate the different impedences
- Heat sinking modifications to allow heat transfer from new transistor
- PC board modifications for device and matching differences

All other parameters of the radio are unchanged. There are no added options, changes in rated power, or customer perceived changes. The radio after the change will be subject to all the same specifications and regulation of the radios prior to the change.

Reason for Change:

There are multiple reasons for the final stage change to the LDMOS FET transistor. Listed below are the reasons for the change:

- Cost; the current bipolar part costs \$9.5 per part, the LDMOS FET costs \$3.55 per part
- Increased efficiency; a 10% increase in efficiency is expected from the design change
- Increased power margin; a 7 % increase in power margin is expected reducing the possible marginal power failures during production of the radios
- The LDMOS transistor was designed specifically for UHF hand-held radio applications
- The bipolar was designed for 800-900 MHz mobile radio applications.

General Information:

Bipolar Transistor specifications:
- 15 Watt transistor



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- 12.5 Vdc Source
- 870 MHz
- 7 dB Gain
- 60 % efficiency

LDMOS FET Transistor specifications:

- 8.0 Watt transistor
- 7.5 Vdc Source
- 520 MHz
- 10 dB Gain
- 65 % efficiency

Supplied Data:

The data supplied with this permissive change request consist of data that was affected by the change to the LDMOS FET from the bipolar transistor. Please refer to the enclosed Exhibit 1.

Contact Bill Hiner at (319) 385-9271 if you require any additional information.

Sincerely,

Donna Tokarz.
FCC Liaison
Fax (847)576-7245