



Date: December 7, 2000

Mr. Joe Dichoso and Mr. Kwok Chan
 Authorization & Evaluation Division
 Federal Communications Commission Laboratory
 7435 Oakland Mills Road
 Columbia, MD 21046

Re: Response to Correspondence 16926, EA98893, for Transceiver with FCC ID: AZ492FT3800

Dear Mr. Dichoso and Mr. Chan,

Motorola Inc herein submits its response to your request for information via correspondence number 16926.

Q1) What is the maximum input drive level for this REPEATER?
 What was the input drive level for the tests?

R1) The maximum RF drive level into the final Power Amplifier (PA) is 16dBm, with the value typically between 11 and 13dBm.

The specific RF drive level for the tests was not measured because the Repeater's output power control mechanism makes the exact drive level immaterial. The RF drive is generated by the Exciter module at an arbitrary, fixed level less than 16dBm, then the RF drive is amplified by the final PA module to the Repeater's tuned output power. The gain of the PA is continuously adjusted via a DC control voltage to maintain tuned output power as detected by a coupler located after the PA's final amplifying transistor. Please refer to Figure 1: Power Control Loop.

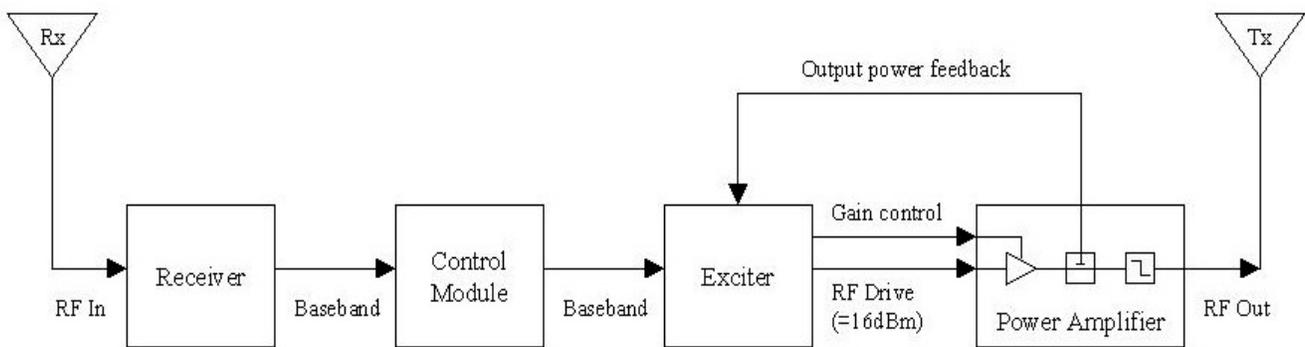


Figure 1: Power Control Loop

Q2) What is the gain of the Repeater?

Provide plots showing the input and output signals.

R2) The gain of the Repeater varies dependent upon the Repeater's tuned output power and the RF drive level from the particular Exciter module in the Repeater. The Exciter generates a fixed level of RF drive to the final PA module. The Exciter continuously adjusts the gain of the PA using a DC control voltage to maintain tuned output power, based on the detected power output from the final PA. Thus, the gain of the PA varies from approximately 21dB (16dBm RF drive, 5W station power) to approximately 35dB (10dBm RF drive, 30W station power).

Q3) Is the device a single channel repeater? If the device has multichannel capabilities, provide a conducted intermodulation test (three input frequencies at maximum drive levels).

R4) The device is effectively a single channel repeater. Although the repeater's flash memory can be programmed with up to 16 channels by a service technician, the user must select one of those to be the current channel. The repeater then receives and transmits on ONLY that channel until the user selects a different one. Multiple channels are stored in memory as a convenience.

Q4) Are you applying for Parts 22, 74, 90 for all emission designators? If so, Does the device comply with the efficiency standards in Section 90.203?

R4) We are applying for all of said parts for all emission designators. The station does meet the 90.203 efficiency standards. The station supports the transmission of analog and digital voice on channels of bandwidth 12.5kHz (for 11K0F3E and 8K10F1E) or 25kHz (for 16K0F3E and 20K0F1E), where 25kHz capability is provided for support of legacy systems. Digital data is transmitted at a rate of 9600bps over a 12.5kHz channel, so the requirement of 4800bps per 6.25kHz of channel bandwidth for data transmission is satisfied.

Q5) Please address the following RF safety issues:

a). The second photo in the external photos exhibit cannot be read (a blank page); please resubmit this page.

Response: Resubmitting Exhibit 3.

b). The submitted RF exposure statement indicates this transmitter will only be operated as a transportable base-station and will not be marketed for mobile use. If it is transportable, or its antenna is not fixed-mounted on permanently structures, it would generally be considered as a mobile transmitter. The RF exposure information and instructions included in the manual describe this transmitter would require a minimum separation distance of 61 cm operating with antennas that are either vehicle-mount or at fixed sites. Either a Motorola antenna or other unity gain monopole antennas may be used. Please clarify the operating configurations of this transmitter,

specify the antenna gain for the specific Motorola antenna supplied with this device and confirm that the proposed 61 cm separation distance is appropriate for all the intended operating configurations of this transmitter, with respect MPE limit requirements (0.2 mW/cm², assuming Controlled exposure environment is not applicable.

Response: This unit is transportable in the sense that it is easily moved from one location to another and then set up and operated as a temporary fixed site. The unit is not operated from a vehicle. The manual has been revised to include a new unique Safety Section (Section 2) that has eliminated reference to mobile antennas and deals strictly with fixed site antennas. See attached manual for details.

The operating configuration is with the unit operated at a fixed site with the antenna either on the roof of a building, or on a tower with at least 10 meter elevation above the ground.

The antenna supplied with the unit is a monopole unity gain antenna.

c). Based on item 2 above, when necessary, the manual should be revised accordingly, with respect to the intended operating configurations of this device, for users to satisfy MPE compliance.

Response: See the attached revised Users Manual.

d.) The manual describes an external duplexer may be used, page 4-2. Please clarify if this option would affect the test data and other compliance requirements for this filing.

Response: The Test data is measured without the duplexer in the antenna path. The addition of the duplexer to the antenna path will not effect the test data other than reducing the transmit power delivered to the antenna. The duplexer is a passive filter device that exhibits insertion loss. Typically, the insertion loss will range from 1 to 2 dB depending upon the duplexer selected by the customer. The internal duplexer supplied by Motorola has an insertion loss of approximately 1.2 dB. The insertion loss will vary slightly depending upon the frequencies used by the customer. When the repeater is supplied with internal duplexer the advertised power output to the antenna is 20 watts.

Contact me at (954) 723-5793 if you require any additional information.

Regards,

Mike Ramnath

FCC Liaison

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