February 3, 2000

RESPONSE TO SAR QUESTIONS

(Reference 2/2/00 Frank Coperich e-mail

Federal Communications Commission
Authorization and Evaluation Division
7435 Oakland Mills Road
Columbia, Maryland 21046

Re: Application for Cellular/PCS Transceiver Certification (EA95622)

Kwok Chan & Frank Coperich:

Purpose:

This document responds to a 2/2/00 e-mail from Kwok Chan to Frank Coperich. The e-mail addressed additional rf exposure issues on EA95622, the IHDT5ZY1 application. Previous rf exposure issues were enclosed in Correspondence Reference Number 11299.

Description:

To facilitate the response to SAR questions, the following includes the original text and the highlighted response.

Frank:

Motorola, EA 95622 -

1. Reply received on 1/24/00 has a zero byte file uploaded to exhibit 6 - conducted and spurious etc.

RESPONSE: This file was resent on 2/2/00. It was submitted into the Exhibit 6, test report folder. I can provide confirmation details if George Tannahill requests them.

2.RF exposure responses indicated the antenna installation for this device has line losses of 6.8-9.1 dB, typically using 1.5 dBi gain antennas. The device has 3.1 W (34.9 dBm) maximum conducted output (requesting 3.0 W). Since no MPE data has been submitted, operations for this transmitter must satisfy the 1.5 W ERP (2.46 W EIRP) categorical exclusion requirements of 2.1091. This implies cable loss and antenna gain must not exceed -1.0 dB (34.9 dBm-1.0 dB = 33.9 dBm = 2.46 W EIRP). The proposed minimum separation distance plot for antenna installation includes data for much higher output which do not apply to this transmitter and could cause confusion to the installer. Please revise the proposed antenna installation statement accordingly; suggestion - IMPORTANT: Antennas for this transmitter should be mounted externally on a vehicle, with the minimum separation distance indicated in the graph below from users and nearby persons, to comply with FCC RF exposure limits and satisfying categorical exclusion requirements for mobile transmitters. The combined cable loss and antenna gain must not exceeding -1.0 dB to maintain a total system output of 1.5 W ERP (2.46 W or 33.9 dBm EIRP) to satisfy RF exposure requirements for this transmitter.

RESPONSE: Motorola agrees that the least confusing approach is to evaluate the rf exposure and provide clear and concise instructions to the installer to maintain the categorical exclusion requirements of 2.1091. The following information is incorporated into the Installers Guide:

IMPORTANT

To comply with the FCC RF exposure limits and satisfy the categorical exclusion requirements for mobile transmitters, all of the following requirements must be met:

1. The transmit antenna is mounted externally on the vehicle.
2. A minimum separation distance of 20 cm is maintained between the antenna and the users and nearby persons.
3. The transmitter conducted power (3.1 Watts or 34.9 dBm) is **reduced** to a maximum of 1.5 Watts ERP (2.46 Watts or 33.9 dBm EIRP). This requires the combination of antenna gain and feed line loss to **attenuate** the transmit signal by a minimum of 1.0 dB.

3. Please confirm that this is not a user installed transmitter. Response #3 indicted "user (installer)" and elsewhere indicated it is intended for OEM automobile manufacturers. If it is user installable, detail installation instructions and requirements should be provide for the typical non-skilled users to satisfy RF exposure requirements.

RESPONSE: Confirmed, this equipment is installed by a trained OEM technician.

Note: Output is 3.0 W at the antenna terminal of the device.

Proposed Grant Conditions: This OEM transmitter operates with external vehicle-mounted antennas. The antenna installation must provide the minimum separation distance, determined in this filing, from users and nearby persons to satisfy RF exposure requirements. The combined cable loss and antenna gain must not exceed -1.0 dB and total system output must not exceed 1.5 W ERP (2.46 W EIRP) to qualify for categorical exclusion requirements of 2.1091. OEM installers must be given appropriate installation requirements to satisfy RF exposure compliance.

Contact Information:

Thank you for this special consideration. Please contact me by telephone at (847) 523-6167, by facsimile at (847) 523-2350, or by e-mail (A.Bachler@motorola.com), if there are questions or additional information needed concerning this filing.

Regards,

Andrew J. Bachler
FCC Liaison
Cellular Subscriber Sector
600 N. U.S. Highway 45
Libertyville, IL 60048-5343