

Wireless Solutions Division Omnipoint Technologies, Inc.

RedhawkTM Users Guide



GSM Wireless Terminal

Section 5 – Compliance Information

1 INSTRUCTIONS TO THE OEM

This section summarizes the regulatory responsibilities and actions required of manufacturers and integrators who incorporate OEM versions of the Redhawk™ family of PCS-1900 GSM transceivers (i.e., the Eagle, FCC ID: OIIRM1900-1) into their products. For all such products and in all applications, appropriate instructions, documentation and labels are required to ensure compliance with current FCC guidelines for limiting human exposure to radiofrequency radiation; additionally, in certain situations and applications these products will require additional FCC approvals prior to their sale or operation. For further details on the information presented in this section, please contact Omnipoint Technologies, Inc.

1.1 Introduction

The Federal Communications Commission (FCC) is the agency of the Federal Government which oversees all non-governmental radiofrequency transmitters within the United States. Products incorporating the Eagle PCS-1900 GSM transceiver operate as Personal Communications Services (PCS) devices under the authority of Part 24, Subpart E—Broadband PCS, of the FCC Rules and Regulations. All such transmitters must be authorized by the FCC through its Certification process, as detailed in Part 2, Subpart J—Equipment Authorization Procedures. Through the Certification process, the FCC verifies that the product complies with all applicable regulatory and technical requirements, including those which address human exposure to radiofrequency radiation. In general, radiofrequency transmitters cannot be sold or operated in the US prior to FCC approval.

To comply with the requirements of the National Environmental Policy Act (NEPA) of 1969, operation of an FCC-regulated transmitter may not result in human exposure to radiofrequency radiation in excess of the applicable health and safety guidelines established by the FCC. Further information on RF exposure issues may be found in the FCC's Office of Engineering and Technology (OET) Bulletin Number 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields" and Supplement C, "Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions." Both of these documents are available via the internet at the OET website (<http://www.fcc.gov/oet>).

The Eagle has been approved by the FCC for use in OEM products contingent upon the following conditions which form an integral part of the grant of equipment authorization:

This modular transmitter is for OEM integration into final products with antenna gain not exceeding 3 dBi, installed and operated with a separation distance of 20 cm or more between the antenna and all persons for satisfying RF exposure requirements of 2.1091. Final products must provide operating instructions to the end users for satisfying RF exposure compliance. A warning label visible to all persons exposed to the antenna and identical to that described in the filing must be displayed on or next to the antenna. The total system output must not exceed 2.0 W EIRP. Separate approval for RF exposure compliance is required for this module to operate in products that do not satisfy the conditions of this grant.

Depending upon the application and type of product into which the Eagle is to be incorporated, specific OEM actions and responsibilities required to meet these conditions vary, as is detailed in Section 28.3. However, in all cases the primary concern is to ensure

compliance with current FCC guidelines and regulations which limit human exposure to radiofrequency radiation.

1.2 Definitions

For the purpose of determining compliance with current FCC regulations addressing human exposure to radiofrequency radiation, the FCC has established the following three categories of transmitting devices:

- **Portable Devices** – devices where the antenna is located within 20 cm (7.78 inches) of any person, including the user, if applicable. Portable devices operating under the authority of Part 24 (Broadband PCS) are limited to a maximum of 2 W equivalent isotropically radiated power (EIRP).
- **Mobile Devices** – devices designed to be used in other than fixed locations and generally such that the antenna is located a minimum of 20 cm (7.78 inches) from any person, including the user, if applicable. Mobile devices operating under the authority of Part 24 (broadband PCS) are limited to a maximum of 2 W equivalent isotropically radiated power (EIRP).
- **Fixed devices** – devices in which the antenna, either integral to the product or remotely located, is physically secured at one location and is not able to be easily moved to another location.

1.3 OEM Responsibilities for All Products Containing the RM1900-1

In addition to any other regulatory requirements, OEMs and integrators must include or provide the following information, instructions, warnings and labels with any device or product into which the Eagle PCS-1900 GSM transceiver has been incorporated:

1. Detailed Operating Instructions for Ensuring Compliance with Current FCC Guidelines Which Limit Human Exposure to Radiofrequency Radiation

The OEM must provide an operating/installation manual with the final product which clearly indicates that the following operating conditions and restrictions must be observed at all times to ensure compliance with current FCC guidelines which limit human exposure to radiofrequency radiation:

- a 20 cm (7.78 inch) separation distance between the antenna and all persons must be maintained at all times for all fixed and mobile products and applications
- portable devices and applications are prohibited unless separate and specific authorization is obtained from the FCC
- maximum antenna gain is limited to 3 dBi* in mobile products and applications
- maximum antenna gain is limited to 3 dBi* in fixed products and applications unless separate and specific authorization is obtained from the FCC
- modifications and/or additions to the Eagle PCS-1900 GSM transceiver, including use of antennas with higher gain than those authorized by the FCC, are prohibited

*dBi = antenna gain in dB relative to an isotropic radiator

2. Antenna Avoidance Label

The following warning label must be attached directly to or displayed next to the antenna. Furthermore, this label must be visible to and easily readable by all persons in the immediate vicinity of the antenna.

WARNING
TO COMPLY WITH FCC RF EXPOSURE
REQUIREMENTS, A SEPARATION
DISTANCE OF 20 CM (7.8") OR MORE
MUST BE MAINTAINED BETWEEN THIS
ANTENNA AND ALL PERSONS

3. Transmitter Identification Label

The following label must be affixed to the final product or device. Alternatively, the text of this label can be included within the body of any other labeling necessary to meet FCC regulatory requirements. Such labels must follow the general labeling guidance provided in Section 2.925 of the FCC Rules and Regulations.

CONTAINS TRANSMITTER
FCC ID: OIIRM1900-1

1.4 Specific OEM Responsibilities for Portable Products and Applications

Each device or product into which the Eagle PCS-1900 GSM transceiver has been incorporated and which is intended to be used in an application that meets the definition of "portable" as defined in Section 28.2 must be separately authorized by the FCC for the purposes of determining compliance with current FCC guidelines limiting human exposure to radiofrequency radiation.

Current FCC regulations limit the equivalent isotropically radiated power (EIRP) of portable devices to 2 W (33 dBm). Because the nominal RF output power of the Eagle PCS-1900 GSM transceiver is 1.0 W (30 dBm), antenna gain for portable products and applications cannot exceed 3 dBi.

Portable devices must be evaluated for RF exposure based on specific absorption rate (SAR) limits; further information on such evaluations are available from the FCC via the internet as described in Section 28.1.

1.5 Specific OEM Responsibilities for Mobile Products and Applications

Separate or additional FCC approvals are not required for a device or product into which the Eagle PCS-1900 GSM transceiver has been incorporated and that is used in an application which meets the definition of "mobile" as defined in Section 28.2.

Current FCC regulations limit the equivalent isotropically radiated power (EIRP) of mobile devices to 2 W (33 dBm). Because the nominal RF output power of the Eagle PCS-1900 GSM transceiver is 1.0 W (30 dBm), antenna gain for mobile products and applications cannot exceed 3 dBi.

The OEM or integrator must provide the instructions, warnings and labels described in Section 28.3.1 to ensure that all products, applications and installations comply with current

FCC guidelines limiting human exposure to radiofrequency radiation, and that those who install and/or use the product are aware of these requirements.

1.6 Specific OEM Responsibilities for Fixed Products and Applications

Separate or additional FCC approvals are not required for a device or product into which the Eagle PCS-1900 GSM transceiver has been incorporated and that is used in an application which meets the definition of "fixed" as defined in Section 28.2, provided however, that antenna gain does not exceed 3 dBi. Separate or additional FCC approvals are required for a device or product used in a fixed application where an antenna with gain in excess of 3 dBi is to be used.

Regardless of antenna gain, the OEM or integrator must provide the instructions, warnings and labels described in Section 28.3.1 to ensure that all products, applications and installations comply with current FCC guidelines limiting human exposure to radiofrequency radiation, and that those who install and/or use the product are aware of these requirements.