

**ENGINEERING STATEMENT
OF CONSTANTIN PINTILEI**

The application consisting of the attached engineering exhibit and associated FCC form 731 has been prepared in support of a request for a Class II Permissive Change for EOTGPDB.

The certification EOTGPDB has been granted to Dataradio Inc for its Gemini/PD radio modem. Gemini/PD is comprised of the Dataradio COR Ltd. (DRL) Mobile Data Platform (MDP) 800 MHz Transceiver with the Dataradio Inc Gemini Modem. Dataradio Inc does the final assembly and markets the Gemini/PD unit. The EOTGPDB certificate has been granted for a 2-level FSK (DGMSK) and a 4-level FSK (xRC4FSK) types of modulation scheme together with associated maximum deviation levels at various rates. The deviation levels proposed for 19.2 and 25.6 kbps xRC4FSK are going to allow this speeds to be used in the more restrictive 821-824 MHz band (Mask 90.210H). This change involves the firmware only, with no change whatsoever occurring in the hardware.

EXISTING CERTIFICATE

The unit utilized for these occupied bandwidth and mask-compliance measurements was a prototype built from production EOTGPDB, which latest Class II permissive change was approved Dec 4, 2001 (EA239188). The deviation was changed to fit the new restriction. The transceiver operates on frequencies ranging from 806.000 MHz to 824.000 MHz. The frequency tolerance of the transceiver is .00015% or 1.5 parts per million as granted in EOTGPDB.

A misunderstanding about MPE categorical exclusion is present in the aforementioned current certificate. One note of certificate shows:

" Power output listed is at the antenna terminal of the transmitter. Device must operate with a maximum transmission duty factor not exceeding 25%, controlled by the protocol firmware, for satisfying MPE categorical exclusion requirements of 2.1091 The antenna must be vehicle-mounted to provide a separation distance of 20cm or more from all persons and the antenna gain, including cable loss, must not exceed 2.73dBd(4.477 dBi) for satisfying RF exposure requirements".

An earlier Class II permissive change filed on 03/09/2001 and granted on 04/25/2001 (EA100290) has the related note as follows:

"Power output listed is at the antenna terminal of the transmitter. Device must operate with a maximum transmission duty factor not exceeding 25%, controlled by the protocol firmware. The antenna must be vehicle-mounted to provide a separation distance of 50cm or more from all the persons and the antenna gain, including cable loss, must not exceed 2.85 dBd (5.0 dBi) for satisfying RF exposure requirements"

All the data included still apply, only the text of the note was lost in the succession of Class II permissive changes. This application provides the opportunity to have corrected the text of the note.

PERFORMANCE MEASUREMENTS

All measurements for Occupied Bandwidth and mask compliance as per 2.1043 (b)(2) were conducted in accordance with the Rules and Regulations Section 2.1041and 2.1049 of Rules Service Co rev.2-158, Mar 15,2001. Equipment performance measurements were made in the engineering laboratory located at 5500 Royalmount ave, Montreal, Canada. All measurements were made and recorded by myself or under my direction. The performance measurements were made between Mar 7, 2002 and Mar 8, 2002

CONCLUSION

Given the results of the measurements contained herein, the applicant requests to have appended two new emission designators 10K2F1D and 11K5F1D accepted to the list of the Certificate EOTGPDB following the Class II Permissive Change, as per FCC part 2.1043(b)(2), in order to market the 19.2 and 25.6kbps RC4FSK in 821-824MHz frequency band. The reference certification is the one granted on 12/04/2001 while the RF exposure note should be referenced to the certificate granted on 04/25/2001.



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