

April 24, 2001

Federal Communications Commission
Equipment Authorization Division
7435 Oakland Mills Road
Columbia, MD 21046

FCC ID: KNY21161341911919

Dear Mr. Dichoso:

This letter is to respond to the Correspondence Reference Number 18731 regarding our spread spectrum radio transceiver DGR09RAS (FCC ID: KNY21161341911919, EA99651).

The DGR09RAS transceiver is a derivative of the DGR09 device, which was submitted to the FCC and approved as a module in November 2000 (FCC ID # KNY-1931852313419). FreeWave Technologies manufactures wireless data transceivers for applications such as gathering SCADA information from remote oil/gas pumping stations at a central site. Because of the specifics of the application, each wireless modem in such a system will be installed professionally. The customer's telemetry equipment, along with the radio, are typically installed in a NEMA weather tight enclosure. For this reason, a modular approval is appropriate for the radio.

RESPONSE TO QUESTION 4.

However, the use of a non standard RF connector along with the inability to disconnect antennas makes such use of a module impracticable. In consultation with Richard Fabina, we were told to seek a modular approval with a professional installation limitation. This will allow us to use standard connectors and antenna connections. Indeed, this has been approved by the FCC for other manufacturers (For example, "Microhard Systems" Inc., FCC ID # NS900P3 has such an approval).

Following advice from Mr. Richard Fabina, we have modified the DGR09 radio transceiver module with the straight SMA connector and to submitted this modified transceiver to the FCC for a new approval as a different device (DGR09RAS) with no changes in any documentation or submittal folder. The letters, which we received from you regarding this submittal (correspondence #18187 and #18731), indicate that you have concerns about the type of SMA connector, which somehow disagree with the suggestions of Mr. Fabina. Please, advise us on this issue.

RESPONSE TO QUESTION 1

Per correspondence #18731 the RF safety exhibit provided for the DGR09RAS radio transceiver does not comply with the FCC requirements in regard to the limits used for the maximum permissible exposure (MPE) distance calculations. The RF safety exhibit document is based on a draft provided by the FCC particularly for the DGR09 radio data transceiver submittal and was verified and approved by the FCC a few months ago. As mentioned above, the DGR09RAS data transceiver is not different from the DGR09 device from the RF safety standpoint. Therefore, we used the MPE distance limits suggested by the FCC and confirmed by you during our phone conversation regarding correspondence #18187. The same limit may be derived from the Part 1.1310 of the FCC Rules, Table 1, General Population/Uncontrolled Exposure section, 900 MHz frequency band. Please, advise us on this issue.

The rest of this letter will address issues regarding our submittal in the order they were addressed in the Correspondence Reference Number 18731.

1. Please, advise us on this issue as made above.

RESPONSE TO QUESTION 2.

2. The DGR09RAS transceiver (device) complies with the module requirements pursuant to the Public Notice DA00-147 on modular approval of Part 15 devices:
 - (a) The device is a complete RF transceiver and has its own RF shielding.
 - (b) The data input to the device is buffered.
 - (c) The device has its own input power regulation circuitry.
 - (d) The device is applied for a professional type of installation. The device complies with the antenna requirements of the Section 15.203 and 15.204(c). The device may be used in a combination with different antennas. During the initial part of the submittal process, the device was tested in a combination with some of possible antennas, which were chosen as a worst case scenario from the level of radiation standpoint.
 - (e) During the initial part of the submittal process the device was tested in a stand-alone configuration. The DC power lines and data input/output lines of the device do not contain ferrites. The device complies with the AC line conducted requirements found in Section 15.207. All of the accessories connected to the device during the testing are unmodified and commercially available.
 - (f) The device is labeled with its own FCC ID number and the FCC ID number label is easily visible.
 - (g) The special power output setting instructions depending on the antenna type and the cable loss to assure device's compliance with the FCC Rules provided in the Installation Manual.
 - (h) The device complies with the applicable RF exposure requirements.
3. The device has capability of supporting a few different types of network. But, in any case the radio transceivers in the network all hop to the same frequency on the same hop pattern at the same time and they change this frequency all together. So, a one given network will occupy just one frequency channel at a time, but not the whole frequency band or a significant portion of it.
4. Please, advise us on this issue. (SEE PARAGRAPH 1)

RESPONSE TO QUESTION 5.

5. The User Manual has a list of antennas with the total EIRP for each one of them (please, refer to pages 37-38). In addition to this table, the Installation Manual contains a table, which shows the required power output settings on the radio depending on the type of antenna used and cable loss along with the instruction of how the RF transmit power should be setup.

RESPONSE TO QUESTION 6.

6. The User Manual does not have instruction of how to adjust the output power on the transceiver.

Sincerely,



Aleksey Pozhidaev
Engineer

CC Mr. Richard Fabina