April 28th, 2011

RE: ATCB010302 – Original Equipment & New Family Certification Applications – (Models: GXM-T14, GXM-T24, GX-C, GX-T, GXM-MR-R, GXM-MR-T & GX-CP)

FCC ID: KNY-715712152112 & IC: 2329B-GXM-24 for Freewave Technologies, Inc.

1.) Reply to ATCB comment #1:

Reply, Freewave 04-11-11. The GX family of products starts with the GXM-T14 or GXM-T24 Radio. These devices are rated at 3.3-5VDC and are aimed at OEM markets. The difference only between these two radios is the interface connector. The GXM-T14 has a 14-pin interface connector, while the GXM-T24 has a 24-pin interface connector. The 14-pin connector provides Power and TTL data connections (in an RS-232 format) to the radio. The 24-pin and adds a diagnostic port and other control lines that are utilized by the GXCP.

The GX-C and GX-T are board level devices that utilize a 6-30VDC input and have (on the GX–C) an RS-232/ RS-422/RS-485 switchable interface, or (on the GX–T) a TTL interface. The two devices consist of the GXM-T24 and a "full size" interface board (136mm L x 62mmW). The footprint matches previous FreeWave radio footprints for customers wanting to replace legacy products with this new generation of products.

The GXM-MR-R and GXM-MR-T are very similar to the GX-C and GX-T in that they incorporate the use of an interface board. This interface is a ½ size board, however. (73mm L x 62mm W) The GXM-MR radios utilize a 6-30VDC input and allow a TTL data interface on the GX-MR-T. The GX-MR-R is limited to an RS-232 interface instead of the "combined" option of the GX-C.

The GXCP device consists of a GX-T mated to a FreeWave Cathodic Protection daughter board. The Cathodic Protection board is utilized by customers who need to monitor information dealing with pipe corrosion and other issues.

12.) Reply to ATCB comment # 12:

Reply, EMC Integrity, 04-21-11. Device was tested according to ANSI C63.10-2009 and FCC Public Notice DA 00-705, "Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems". Test reports have been amended to reflect this. Please see attached PDF file, ETRB10102_IC_RevA

13.) Reply to ATCB comment # 13:

Reply, Freewave, 04-11-11. The RF device is IDENTICAL in all models. The only thing different in most models is the interface board and whether it is RS-232 or TTL. The Data Rate at which the radio was tested is the fastest that the radio is capable. The hopping sequence's have no bearing on the output power, especially since the majority of the tests were done in single frequency mode.

14.) Reply to ATCB comment # 14:

Reply, Freewave, 04-11-11. This is correct. The way the manual is written shows the frequencies with the Frequency Offset of 0 set. If the chart showed the Frequency Offset as set

to 2, the low end would not match. I did make a change to reflect the correct frequencies but other than that, we are not changing the chart in the manual. Nor adding another chart.

17.) Reply to ATCB comment # 17:

Reply, EMC Integrity, 04-21-11. Yes, the losses in the attenuator and connecting cable were accounted for in the spectrum analyzer readings. The losses were entered as an amplitude offset in the analyzer, so the readings shown on the analyzer screen reflect the actual output power at the transmitter's antenna connector. The amended reports include a statement that this is the case. Please see attached PDF files, ETRB10102_IC_RevA and ETRB10102_FCC_RevA

20.) Reply to ATCB comment # 20:

Reply, EMC Integrity, 04-21-11, Please see attached PDF files, ETRB10102_IC_RevA and ETRB10102_FCC_RevA

(a) Reply, EMC Integrity, 04-21-11, There is one radiated emissions test result (graph & table) below 1 GHz. It was tested with the transceiver on (Tx + Rx, mid-band) and these are the same results listed in the Receiver Spurious Emissions section.

(b) Reply, EMC Integrity, 04-21-11, ≤ 1 GHz, d=10m, > 1 GHz, d=3m

(d) Reply, EMC Integrity, 04-21-11,
These are plots of the Prescan results, and Prescans are performed with the peak detector, using the following bandwidth settings:
≤ 1 GHz: RBW = 1 MHz, VBW = 3 MHz
> 1 GHz: RBW = 1 MHz, VBW = 3 MHz
As these bandwidths are wider than those used for the final QP (RBW=120kHz) or Avg (VBW=10Hz) readings, these Prescan graphs represent signals that are higher (or equal to) the levels that would be measured with an QP or Average detector. If these peak-detected Prescan results (using wider bandwidths) are compliant, then the QP and Avg results will be as well (and likely would exhibit even larger margins).

(f) Reply, EMC Integrity, 04-21-11, Yes. This would be evident if there were data tables associated with these graphs. Amended report has been modified to reflect this.