Request for Change of SD4 Emission Designators

To be clear, <u>we are not changing any characteristic of the modulation in conjunction with this request</u>. The modulation has already been proven to be in compliance with applicable masks for this frequency and channel spacing. We are simply requesting a <u>documentation change</u> to the stated emission designators to correct an error.

When Emission Designators were initially specified for SD4, the engineering development team employed an understanding of the necessary bandwidth formulas provided in FCC Section 2.202 to calculate a value for our compliance lab (Elliot Laboratories). The values calculated passed a sanity test of seeming to be "about right", and therefore were not questioned.

As GE MDS prepared to file the permissive change to add a new modem type for 6.25KHz operation, we employed the same calculation used in the previous filling and came up with results that didn't make much sense. So we researched the application history of one of our previously approved radios that uses identical modulation, in order to identify the error.

In essence, the standard necessary bandwidth formula is incorrect for our partial response modem. The description of the *CPFSK Modulation Process* described in the previous submission "*Rational for Emission Designators*", clarifies the issue and establishes the logical basis for requesting the target value.

The change for the 25.0KHz designator is essential since it is clearly wrong and exceeds the maximum necessary bandwidth permitted. The change to the 12.5KHz designator is included only for consistency. The original declared value of 11.0KHz is acceptable, though not consistent with the justification used for 6.25KHz and 25.0KHz.

Therefore we request:

6.25KHz channel spacing,	6K0F1D/ 6K0F2D/ 6K0F3D	-- currently Approved and OK
12.5KHz channel spacing,	11K2F1D/ 11K2F2D /11K2F3D	-- currently 11K0F1D/ 11K0F2D /11K0F3D
25.0KHz channel spacing,	20K0F1D/ 20K0F2D/ 20K0F3D	-- currently 23K4F1D/ 23K4F2D /23K4F3D