

Iowa Satellite Company
The Livery, Suite S4
806 7th Street
Boone, IA 50036

March 7, 1994

Federal Communications Commission
Room 7326
Washington, D.C. 205~~4~~⁵

Dear Sir,

On November 12, 1992 the Iowa Satellite Company sent an application for new radio station authorization under part 5 of FCC rules (File number: 3540-EX-PL-92). This application was for frequency allocation to be used in the operation of a small experimental satellite. This mission of this satellite is educational in nature.

Since the application was sent, the design of the communications system for this satellite has matured and several changes have been made. Enclosed is an addendum containing the changes to be made to the application. If you have any questions, please feel free to contact me at (515) 294-5760. Thank you.

Sincerely,

A handwritten signature in cursive script, appearing to read "L. K. Seversike".

Dr. Leverage Seversike
President

Addendum to Application-1A: for transmitter at ground control center

Part 4 should read:

(A)	(B)	(C)	(D)	(E)	(F)	(G)
137.010 MHz	3 W	2.5 W	Mean	F2D	9600 baud	20 KHz

(G) see Exhibit no. A1

Exhibit A1 should read:

Comm-1 Uplink Transmitter:

Frequency: 137.010 Mhz
Power: 2-3 watts
Maximum data rate: 9600 bits per second
Modulation technique: Continuous Phase Binary Frequency Shift Keying (CP-BFSK)
Necessary bandwidth: 20 KHz

How the necessary bandwidth was determined:

For CP-BFSK (with modulation index equal to 0.715), it was determined that 99% of the modulated signal energy will be concentrated in a bandwidth of less than 16 KHz. This was determined by integrating the modulated signal power spectral density with respect to frequency deviation from the center frequency. The power level in neighboring channels will be less than -30 dB. The 20 KHz bandwidth that is being asked for will meet our requirements with a 4 KHz margin.

Addendum to Application-1B: for one of two transmitters on-board the satellite

Part 4 should read:

(A)	(B)	(C)	(D)	(E)	(F)	(G)
411.030 MHz	3 W	2.5 W	Mean	F2D	9600 baud	20 KHz

(G) see Exhibit no. A2

Exhibit A2 should read:

Comm-1 Downlink Transmitter:

Frequency: 411.030 Mhz
Power: 2-3 watts
Maximum data rate: 9600 bits per second
Modulation technique: Continuous Phase Binary Frequency Shift Keying (CP-BFSK)
Necessary bandwidth: 20 KHz

How the necessary bandwidth was determined:

For CP-BFSK (with modulation index equal to 0.715), it was determined that 99% of the modulated signal energy will be concentrated in a bandwidth of less than 16 KHz. This was determined by integrating the modulated signal power spectral density with respect to frequency deviation from the center frequency. The power level in neighboring channels will be less than -30 dB. The 20 KHz bandwidth that is being asked for will meet our requirements with a 4 KHz margin.

Addendum to Application-2B: for one of two transmitters on-board the satellite

Part 4 should read:

(A)	(B)	(C)	(D)	(E)	(F)	(G)
444.030 MHz	3 W	2.5 W	Mean	F2D	9600 baud	20 KHz

(G) see Exhibit no. A4

Exhibit A4 should read:

Comm-2 Downlink Transmitter:

Frequency: 444.030 Mhz
Power: 2-3 watts
Maximum data rate: 9600 bits per second
Modulation technique: Continuous Phase Binary Frequency Shift Keying (CP-BFSK)
Necessary bandwidth: 20 KHz

How the necessary bandwidth was determined:

For CP-BFSK (with modulation index equal to 0.715), it was determined that 99% of the modulated signal energy will be concentrated in a bandwidth of less than 16 KHz. This was determined by integrating the modulated signal power spectral density with respect to frequency deviation from the center frequency. The power level in neighboring channels will be less than -30 dB. The 20 KHz bandwidth that is being asked for will meet our requirements with a 4 KHz margin.