

Justification for Experimental License

This experimental license is a new application to replace Rockwell Collins' renewal experimental application for Call Sign KA2XFL, as requested by FCC examiner Tony Sarafini. Mr. Sarafini explained to Rockwell Collins that the renewal application was rejected/denied due to the fact that it was awaiting approval for over one year.

As a designer and manufacturer of radios and radio systems for the US Government, Rockwell Collins would like to continue utilizing KA2XFL. Rockwell Collins has a continuing need to conduct periodic on-the-air testing of its products operating in the tactical military band between 30 and 88 MHz. Such tests are conducted to establish proper operation of communication links and/or networks under actual terrain and co-channel interference conditions, similar to that expected in a real environment and which cannot be adequately simulated in the laboratory.

Standard military communication types in this band to be tested under this license are in compliance with the DoD 25 KHz channelization scheme, e.g., frequencies used are always integer multiples of 25 KHz. Standard bandwidth in this band is 10 KHz. Modulations to be used include FM analog voice (may be encrypted) and various experimental digital modulations of the FSK and PSK forms, using various symbol, data and error correction rates. Regardless of the type of modulation, they are CONSTRAINED/BANDLIMITED to fit within the 10 KHz passband.

Test operations may also include frequency hopping among a selected subset of the authorized channels. Rates may go as high as 500 hops/second. Wave-shaping is normally applied to minimize any risk of interference to both co-channel users as well as our own test systems.

The equipment to be used under this license is experimental and generally of Rockwell Collins design and manufacture. Transmitters are solid-state with controlled harmonics, software-generated waveforms, and baseband bandlimiting of spectral emissions. Receivers are similarly software-based. "

The tests will be carried out in the vicinity of the applicant's manufacturing facilities in Cedar Rapids, IA, within a 80 km radius.