



SHURE Incorporated
5800 Touhy Avenue
Niles, IL 60714 – 4608 • USA

July 12, 2004

Exhibit 1 – Purpose of Request for Experimental License
Reference: FCC Form 442, Item 9.

a). Description of the nature of the research project being conducted:

As the leading U.S. manufacturer of professional wireless microphones and wireless Personal Stereo Monitoring (PSM) systems, Shure is pursuing a study of the effects of interference from unlicensed devices on the operation of our Company's products. This work is being carried out in response to the Commission's Notice of Proposed Rule Making (NPRM), released May 25, 2004, in the matter of "Unlicensed Operation in the TV Broadcast Bands"; ET Docket No. 04-186, and "Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band"; ET Docket No. 02-380.

b). Why the Experimental License is essential to the success of the research project:

In the above-referenced NPRM, the Commission has stated¹ that *"we believe that the likelihood of interference from unlicensed device signals is therefore low such that unlicensed device use should generally be compatible with wireless microphones. Nonetheless, we seek comment on whether other measures are needed to protect wireless microphone operation..."* In order to ascertain whether or not harmful interference would occur, and under what conditions, Shure has determined that live on-air testing is necessary. This is due to the fact that wireless microphones are primarily portable/mobile devices, and as such are subject to dynamic fading caused by obstructions and multipath. In addition, they generally operate with lower power (e.g. 10 mW) than the Commission has proposed for new unlicensed devices (100 mW for Category 1 personal/portable devices, and 1 W for Category 2 fixed/access devices).

c). Why existing communications facilities are inadequate:

Unlicensed devices are not currently permitted to operate in the TV broadcast bands. Accordingly, no such devices are commercially available. However, in the above-referenced NPRM, the Commission has proposed allowing such operation in the future. Although the exact nature of these devices cannot be determined at this time, Shure believes that enough is known about their probable characteristics to enable useful experimental work to be done.

It is true that sources of man-made (e.g. analog and DTV signals) and natural interference already exist in the TV broadcast bands. However, these signals have emission characteristics that are fundamentally different from those of the proposed unlicensed devices. It is expected that these new devices will be primarily designed for wireless networking (WLAN) operation. As such, it is likely that they will utilize "bursty" transmission protocols that are quite different from existing TV band signals. During the study, Shure will simulate these WLAN transmissions through the use of commercially available 802.11b and 802.11g hardware in combination with other equipment, as outlined in a separate Exhibit (2).

In the proposed experimental implementation, Shure will attempt to simulate, as closely as possible, the emission type, power level, antenna structure, and use model of unlicensed devices that might operate in the TV bands in the future. This will entail the establishment of a wireless network using two or more of these simulated devices. For the purposes of the study, no

¹ See Paragraph 38; "Wireless Microphone Operations"; FCC 04-113; ET Docket 04-186, et al



SHURE Incorporated
5800 Touhy Avenue
Niles, IL 60714 – 4608 • USA

communications will be carried over the unlicensed device network beyond the transmission of test data necessary to ensure that the emission signatures are representative of what may be expected by the normal operation of such a device. These transmissions will serve only as interference sources for the wireless microphone tests. In addition, all operation will be confined to vacant TV channels, as proposed in the referenced NPRM.

Sincerely,

A handwritten signature in black ink, appearing to read "Edgar C. Reihl", is shown within a light gray rectangular box.

Edgar C. Reihl, P.E.
Principal Engineer

Writer's Phone: (847) 600-8557
FAX: (847) 600-8555