

**Exhibit 1: Description of KTS Wireless
Program of Research and Experimentation**

KTS Wireless respectfully requests the issuance of an experimental license using the equipment and operating parameters set forth in its application for an experimental license (FCC File No. 0078-EX-PL-2011) (the "Application"). Grant of this license will enable **KTS Wireless** to conduct research and experimentation using vacant spectrum in the television broadcast bands (the "TV white spaces") for the testing of fixed white spaces devices.¹

KTS Wireless is working to investigate the usefulness and utility of broadband applications that utilize available white space (UHF) spectrum. Spectrum Bridge, Inc. will serve as a white space data base provider and assist in insuring compliance with the FCCs proposed white space rules.

As noted in the Application, KTS Wireless seeks experimental authorization to operate in rural Hendry County Florida, in a commercial Orange Grove located approximately 25-miles South-West of Clewiston, Florida. Other fixed power client devices will be located within the area of operation specified in the Application. KTS Wireless will provide the necessary hardware and software to conduct these experiments. The intent is to utilize and apply TV White Spaces to the problem of enabling automation for sustainable specialty crop farming.

The proposed field study will operate fixed stations from the licensed center point using an outdoor antenna structure and the following parameters:

Lower and upper frequencies and frequency units	470 MHz-698 MHz (channel size 6 MHz)
Power and power units	2 watts
ERP and ERP units	2 watts
Mean/peak	2 watts
Frequency tolerance	< 1 ppm
Station class (i.e., fixed or mobile).	fixed

¹ See *Unlicensed Operations in the TV Broadcast Bands; Additional Spectrum for Unlicensed Devices, Below 900 MHz and the 3 GHz Band*, Second Report and Order and Memorandum Opinion and Order, 23 FCC Rcd 16807 (2008).



The radio equipment to be used for these experiments is manufactured by KTS Wireless. The solution incorporates a fixed “base station” connected to the internet via an internet connection. The base station provides broadband connections to a number of fixed power client devices to provide telemetry and video data links to each remote device. One goal is to show how the UHF frequency operation, combined with 6 MHz channels of TV white space provides a practical single radio solution to connect the remote devices. The current implementation requires a multi radio solution in several bands with multiple repeaters which is problematic in an industrial environment. The client devices are all located in fixed geographic region (the farm) and monitored/managed remotely. It is the intention of KTS Wireless to upgrade the radios to commercial FCC-certified white space radios, when the rules and certification process is complete, to maintain the service. The experimental white space radios will be removed or disabled following the experimental license period.

The KTS Wireless experiments will use White Space radios controlled by a white spaces database managed by Spectrum Bridge. These experiments are expected to facilitate fixed operations in the white spaces without causing harmful interference to incumbent television stations. The experimental authorization will allow KTS Wireless to conduct research to demonstrate the potential of white spaces-based fixed networks to enable new automated wireless applications and services. KTS Wireless will not transmit on any channel or in a manner that impacts an incumbent television licensee entitled to interference protection.

KTS Wireless experiments will have a reasonable promise of contribution to the development of the radio art. The Commission has indicated that it expects the availability of white space spectrum will promote the development and deployment of

innovative new services. KTS Wireless believes that this research effort will further these goals by facilitating techniques to test the extent of over-the-air television contours and to promote interference-free operations in white spaces.

KTS Wireless fully anticipates that its experiments will further the development of innovative white spaces applications, and respectfully requests expedited processing of the Application.