

Form 442 Question 6: Description of Research Project

The research project consists of transmitting and receiving signals from multiple co-located antennas in order to detect the unique responses of objects of interest in the surrounding environment. This unique response contains information unavailable by any other currently available technology.

At any moment in time, transmitted signals are either a CW tone, or a carrier that is frequency modulated (FM). The peak frequency deviation is 300 kHz or less and the modulation rate is 300 kHz or less. The signal does not transmit or communicate variable information such as audio or binary data.

The carrier frequencies are changed frequently (less than 10 ms dwell time) as the system hops through a sequence of approximately 100 discrete frequencies, which collectively span a frequency range from 407 to 600 MHz. Up to two simultaneous transmitted signals are separated by 100 kHz to 10 Mhz. Channel frequencies and separations can be uniquely defined/configured in a frequency list.

The list of frequencies can be programmed to not include (not transmit in) any frequency band. i.e. the operational frequency band does not have to be contiguous. Therefore, if the entire frequency band requested is not available, this request could be modified to exclude or "lock out" any particular channels or sub-bands in conflict. The system includes dynamic collision avoidance to automatically avoid local frequencies already in use.

Operation of the system will be intermittent lasting between one and six hours, typically not for more than 6 hours per day, and typically only during normal working hours.