

## U.S. Office of Personnel Management

### Office of the Inspector General

#### Comparable Band Analysis

##### Overview

The majority of Federal law enforcement agencies procure equipment from the same manufacturers and the number of equipment manufacturers of this video surveillance equipment is limited. OPM/OIG will therefore provide information on its current inventory of systems operating in the 1755 – 1850 MHz band along with gross usage data for current systems. We will also attempt to provide gross costs estimates for relocation to other bands or services noting that the timing and costs are based on current operations and may not include future technological advances.

1. 1755-1850 MHz Bands Characteristics --For each type of 1755-1850 MHz operation as provided in the NTIA chart, each affected agency, will provide the following:
  - 1.1. Identify, by type, the systems they have in this band and the numbers of each system.

OPM/OIG utilizes this band for covert/body-worn audio and video surveillance for evidence collection during administrative and/or criminal investigations. OPM/OIG currently operates one transmitter in the 1800 MHz band (Palladium 1000mW). To restore full comparable capability, OPM-OIG will need one kit for replacement.
  - 1.2. Identify the number of assignments by system type.

OPM/OIG has one frequency assignment in the band.
  - 1.3. Identify the type of assignment by system (i.e., Local, regional, US/USA/US&P, etc).

The OPM/OIG frequency assignments for this type of system are authorized for use throughout the United States and Possessions (US&P).
  - 1.4. Provide a brief description of the type of operation.

OPM/OIG uses this band to conduct video and audio surveillance during administrative and criminal investigations. These systems are primarily installed covertly in offices and cubicles; or worn by undercover agents and/or cooperating witnesses.

OPM/OIG does not operate or maintain any fixed microwave links or utilize airborne video surveillance systems in this band.
  - 1.5. Describe why the operation cannot be accomplished by the use of commercial services or non-RF solutions  

Commercial services cannot currently provide the high-quality video and audio required for evidence during trial.
  - 1.6. Provide geographical area location of assignments, gross assessment of time of operation.

These systems may be employed at anytime, any location and are used for collecting potential evidence during criminal and administrative investigations. The system may be operational for a short meeting or may be used for several weeks or months.

1.7. Provide a gross characterization of the system's frequency of use.

The system is normally maintained by OPM/OIG in Washington, DC and can be used around the country at any time. The frequency of use varies.

## 2. Comparable Band Evaluation – Unknown.

### 2200 - 2300 MHz band

2.1. Technical Considerations: In considering any technology implications of relocating a "type of operation" or major system into a specific alternate spectrum band:

- 2.1.1. If any, what are the limitations on system performance anticipated in this band that would be attributable to technical or technology shortcomings (e.g., propagation loss, signal fading, path reliability, etc)? **This band has similar propagation characteristics to the 1800 MHz band, though increased signal loss is expected.**
- 2.1.2. What are the available technical solutions that would enable the system to overcome such limitations (e.g., high gain antennas, higher power transmitter, etc.). **The transmitter power is typically increased by up to 3 dB to compensate for the increased signal loss.**
- 2.1.3. What is the state of availability and maturity of the technology necessary to overcome the limitations? **Systems are currently available in this band to support Federal LE agencies.**
- 2.1.4. For the system under consideration, what mitigation options would be available to minimize or eliminate the limitations due to this band? **Unknown**
- 2.1.5. Which preferred technical solution has been identified to overcome any performance limitations related to technology and what are the reasons why this solution is preferred? **Unknown**

2.2. Operational Considerations

- 2.2.1. What are the alternate bands' EME (i.e., presence of incumbents, systems employed in band, # of assignments, location, time of operation, gross characterization of the system's frequency of use, etc.) that limit the ability of the system under consideration to fulfill its mission? **Unknown.**
- 2.2.2. If there are limitations, to what extent will they impact mission effectiveness? **There would probably be an increase in harmful interference from and to the Federal law enforcement operations.**
- 2.2.3. What are the possible mitigation options available to minimize or eliminate the limitations? **Increase transmitter power and receiver sensitivity**

- 2.2.4. What is the identified preferred solution for overcoming the limitations on performance brought on by the operational environment and what are the reasons this solution is preferred? **Unknown**
- 2.3. The extent to which other constraints impede relocation (e.g., necessary allocation changes) to a comparable band and proposed remedies. **None**
- 2.4. A gross estimate of the time required to transition out of the 1755-1850 MHz band to a comparable band...**One to two years**
- 2.5. A gross estimate of the cost to transition out of the 1755-1850 MHz band to a comparable band...**\$30,000 to \$75,000**
- 2.6. A ranking of each comparable spectrum in priority order, from the highest to lowest, for each type of operation and system type. **This band would be preferable to the other listed bands.**
- 2.7. For each comparable band(s) for each type of operation discuss and provide the rationale for selection or non-selection. **The other Federal LE agencies have reviewed the other comparable band and provided appropriate pros and cons for each band.**
- 2.8. Early Transition - Identify any operations that could transition from the 1755-1780 MHz portion of the 1755-1850 MHz band in less than 5 years? If yes, please answer question 2.5. **Yes, dependent on the timeliness and availability of funding for replacement of current systems.**