

Example Applications of Hyperband Systems

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Hyperband systems (band ratios ≥ 10) can be built in many forms such as reflector IRAs (Impulse Radiating Antennas), or TEM horns, and lens IRAs. Some examples of reflector IRAs will be presented. Many researchers have worked on such hyperband systems have useful applications such as:

- **Disrupter** (Disrupting Integrated System, Releasing Ultra-Power Transient Electromagnetic Radiation)
- Buried target detection such as demining
- Hostile target detection and identification
- Space debris detection
- Periscope detection
- Source for vulnerability studies via transfer functions
- High-power, hyper -wideband jammers
- Law-enforcement applications such as “seeing through walls”
- Electrical characterization of materials (e.g., wave propagation measurements in materials such as rock, concrete etc.,)
- Industrial applications (detection of leaky or defective pipes)
- Detection of human beings in earthquake rubble
- Searching for avalanche victims
- Artillery application

Etc.

In this presentation, we will describe some of the applications listed above, by citing available information from the open literature.