A REAL-TIME MICROWAVE CAMERA at 24 GHz (K-Band)

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Objective
- Design and build a real-time microwave imaging system (i.e., camera)

Overview
- Microwave imaging offers tremendous potential in many applications:
  - Inspection of low-loss composites, radomes, etc.
  - Detection and evaluation of corrosion under paint
  - Medical imaging
  - Security, contraband detection
- Raster scanning is slow and requires bulky mechanical systems
- A real-time and portable imaging system can be extremely useful for rapid nondestructive testing of large structures

Specification
- Aperture Size: 6" × 6"
- Spatial Resolution: ~0.25"
- Coherent E-Field measurement
- Frequency: 24 GHz
- Dynamic range: 70 dB
- Frame rate: 30 fps
- Real-time focusing

Electric Field Mapping

Imaging

Demonstration
See the operation of this imaging system being demonstrated in conjunction with this poster presentation.

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