**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" x 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**
- Actual Amplitude (dB)
- Measured Amplitude (dB)
- Actual Phase (deg)
- Measured Phase (deg)

**Imaging**
- Sample schematic

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

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