Two Band Imaging System

Track Code: CRANE-84509

Categories:
- Electrical Engineering
- NSWC Crane

Keywords:
- Crane
- Electrical Engineering
- Imaging

Naval Surface Warfare Center, Crane Division (NSWC Crane) has developed, patented, and deployed a "Two Band Imaging System" which uses a dual chrome component for radiometric measurement of objects. With the dual chrome, the end-user is able to see dim and bright objects in the same image, without distortion and in effectively real-time.

This technology offers an improvement over the existing single band imaging systems, by allowing the end-user the ability to see simultaneous imaging of both radiance level (brightness of an object) and temperature (how hot or cold an object is). Single band imagers only offer one or the other. In certain situations, like inspecting air panels separating components on a hot aircraft engine or identifying a target in a field of view, a dual band imaging system more accurately detects this problem or identifies the target.

This "Two Band Imaging System" will be especially beneficial to military systems equipped with thermal weapon sight or target acquisition, and it is a key technology for any imaging system offering real-time super-framing capabilities. By exchanging one or both of the imaging sensors, the imaging system can be used in a number of novel applications, such as inspecting a narrow band-width of light. This capability has the potential to revolutionize the current possible applications being served by single band imagers.

Advantages:
- Use any band, sensor, or focal plane
- Able to transform different images into a single image
- Able to effectively repress temperatures
- Distinct processor can carry out operations from super framing capability to image correlation

Potential Applications:
- Part or process defect detection
- Engine diagnostics
- Infrared or spectroscopic observations of stellar phenomena
- Meteorology
- Medial detection of early stage abnormal health conditions

People:
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Intellectual Property:

Application Date: (None)
Type: Utility Patent
Country of Filing: United States
Patent Number: 6,969,856
Issue Date: November 29, 2005

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