# MS-110  for special mission aircraft



## The next generation of airborne reconnaissance

- Long-range, wide-area, passive target detection and identification.

- Capable of detecting targets in clutter and camouflage.

- Real-time data link for actionable intelligence.

- Maritime and littoral surveillance.

- Supports Combat SAR and counter narcotics operations.

- Enables humanitarian assistance planning and activities.

- SCI-Edge automatic target classification/machine learning feature enables rapid analysis and decision-making.

## Improve your intelligence advantage

The Raytheon MS-110 represents the next generation of the widely deployed DB-110 dual-band airborne reconnaissance system, providing wide-area, long-range imagery coverage – day or night.

The MS-110 system provides improved intelligence advantages over legacy systems by offering:

- Multispectral imaging (MSI) in multiple visual and IR bands.

- Common ground coverage of all bands.

- Improved area coverage at long standoff ranges.

- Improved image quality (NIIRS).

- Imagery exploitation software designed to rapidly leverage the unique features of MS-110 imagery.

- Shortened sensor-to-shooter timelines through rapid exploitation of multispectral imagery via high-speed, near-real-time data link capability.

For existing DB-110 users, the MS-110 integrates seamlessly into the existing system CONOPS and architecture, employing common ground support equipment.

For special mission aircraft applications, such as ISR Business Jet and Maritime Patrol Aircraft, the MS-110 dramatically increases the imagery intelligence component of an aircraft's sensor suite by offering significantly more area coverage than traditional turreted systems, enabling improved cueing to other sensors, and through improved, on-board target classification and analysis.
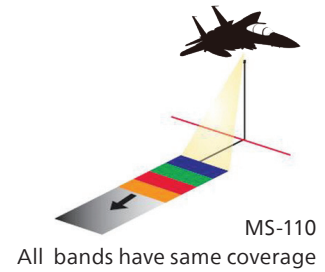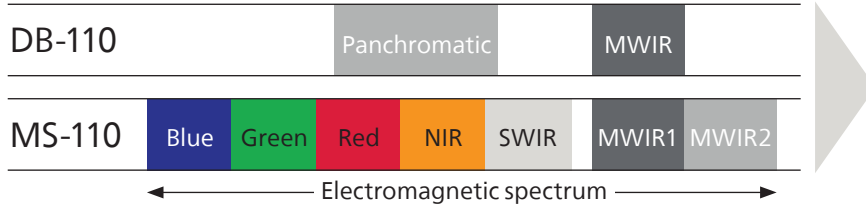
## The multispectral advantage

The MS-110 airborne reconnaissance system is capable of capturing high-resolution, MSI at standoff ranges of 100+ nmi and across very wide areas at 10,000s nmi$^2$/hour.

The MS-110 provides reconnaissance capabilities that are unmatched by smaller targeting pods and full-motion video (FMV) turrets, which are typically optimized for shorter-range surveillance and targeting support missions – generally consistent with the range capabilities of their laser designator systems.

Most important, the system offers a powerful complement to other sensors on a multi-intelligence platform. Raytheon sensors have been integrated on several deployed special mission aircraft, where they have enhanced mission effectiveness by providing positive target identification and wide-area optical coverage not available through other onboard sensors.

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Spectral comparison between DB-110 and MS-110



| DB-110 | | | | Panchromatic | | MWIR | |
|---|---|---|---|---|---|---|---|

| MS-110 | Blue | Green | Red | NIR | SWIR | MWIR1 | MWIR2 |
|---|---|---|---|---|---|---|---|

← Electromagnetic spectrum →

MS-110
All bands have same coverage



The MS-110 offers a range of imaging modes that can be selected in flight on a task-by-task basis. The modes allow increased ground coverage to be traded for enhanced image quality and/or additional multi-look information, such as increased temporal update rate for motion signature extraction and 3D stereo content for enhanced target background separation.
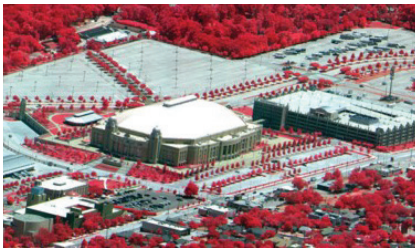
The baseline multiband MS-110 provides a powerful multispectral ISR capability, while also providing internal hooks to enable future capabilities, such as expansion to incorporate additional spectral bands, a high-rate fast-framing FMV capability and increased edge processing to support the transition to more autonomous operations in the future.
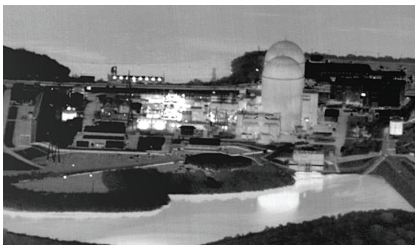
**MS-110 sensor head characteristics**

| | |
|---|---|
| **Sensor type** | Line-scanning TDI; seven channels |
| **Collection mode** | Spot, wide-area, persistent imaging |
| **Field of regard** | Roll ±90°/Pitch ±20° maximum |
| **Power** | 340 W |
| **Length** | 51.25" (±20° pitch) |
| **Diameter** | 26.2" (±20° pitch) |
| **Sensor head weight** | 346 lbs |

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