

MrIF / MrAIS

IF /AIS Receiver Mezzanines For MrDig



Key Features

MrIF Dual IF ESM Receiver:

- Two Channels of any of:
100MHz BW @160MHz or
600MHz BW @1GHz

MrAIS AIS Modem:

- Dual Band AIS Receiver
- Single Channel 100MHz or
600MHz BW IF receiver

Custom IF/RF Mezzanine Design Services



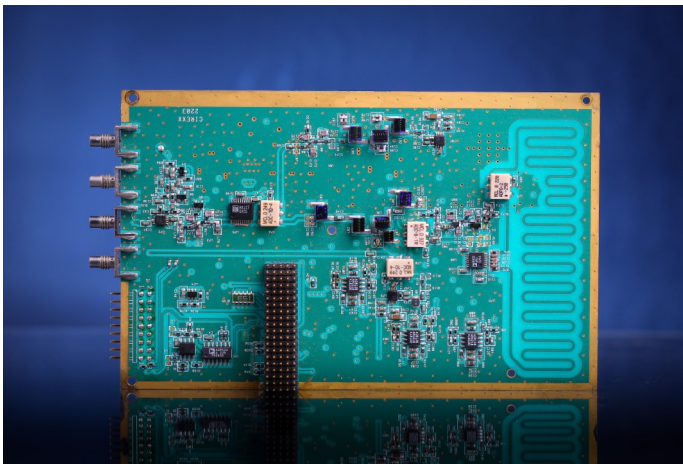
Overview:

MrIF and MrAIS are the IF/analog receiver portions of the Modular Integrated Receiver/Digitizer, or MIRDer for short.

These mezzanine modules combined with the MrDig baseboard are the core elements in the Cop-perfield 2 series of modular ESM receivers originally developed for the Naval Research Laboratory for

use in RADAR surveillance applications. Capabilities were further enhanced with the inclusion of an AIS receiver module.

These systems have been fielded on multiple platforms over the past several years, including Predator, Globalhawk, Firescout, and HarborWing, along with other ship and land based installations.



Mezzanine Architecture

Each MIRDer Mezzanine Card contains two receiver functions, one on each side of the card. There are 3 receiver functions currently available:

- ♦ 160 MHz cf IF Receiver with 100MHz BW
- ♦ 1GHz cf IF Receiver with 600MHz BW
- ♦ Dual Band AIS Receiver

Any combination of two of the above is easily accomplished - contact us for more details. Additional Mezzanine module functions are under development which can be paired with each other or with any of the existing functions above:

- ♦ DF ESM Modules
- ♦ 1-2GHz BW ESM RF Receivers
- ♦ Other specialized processing Modules

MrIF / MrAIS Specifications:

IF 160 Specifications:

| | |
|-------------------------------------|--|
| Frequency Resolution: | 25 KHz |
| Attenuation: | 0-60 dB |
| Instantaneous Dynamic Range: | > 55 dB |
| Sensitivity: | < -60dBm |
| Instantaneous Bandwidth: | 100 MHz at 160MHz cf |
| Video Outputs: | In Band & Out of Band Amplitude, Frequency |

IF 1G Specifications:

| | |
|-------------------------------------|----------------------------|
| Frequency Resolution: | 80 KHz |
| Attenuation: | 0-60 dB |
| Instantaneous Dynamic Range: | > 55 dB |
| Sensitivity: | ≤ -60dBm |
| Instantaneous Bandwidth: | 600 MHz at 1GHz cf |
| Video Outputs: | Amplitude, I & Q Frequency |

AIS Specifications:

| | |
|-------------------------------------|--|
| Attenuation: | 0-31 dB |
| Instantaneous Dynamic Range: | > 60 dB |
| Sensitivity: | < -110 dBm |
| Outputs/Bandwidth: | 13MHz at 160MHz RF, 6 @ 60MHz IF, 15MHz Aux Video |
| Timing (IF160/1G): | |
| TOA/PW: | TOA/PW Res: 5 nsec, Minimum Pulse Width > 50nsec |
| PRF: | > 1 MHz Inst., 10-20% Duty Cycle or more per channel |

Other Common Features:

| | |
|---------------------|---|
| BIT | Test sources at IF/RF and Digital |
| Test Outputs | On Front Panel |
| Connectors: | IF/RF: 4 x SMA or SMC ; 100 Pin Mezzanine Connector |
| Mechanical: | 3.7" W x 5.75" D x 1" H Mezzanine |
| Power: | < 6 Watts Operational, < .35 A @ 3.3V, < 0.35A @ 5V |

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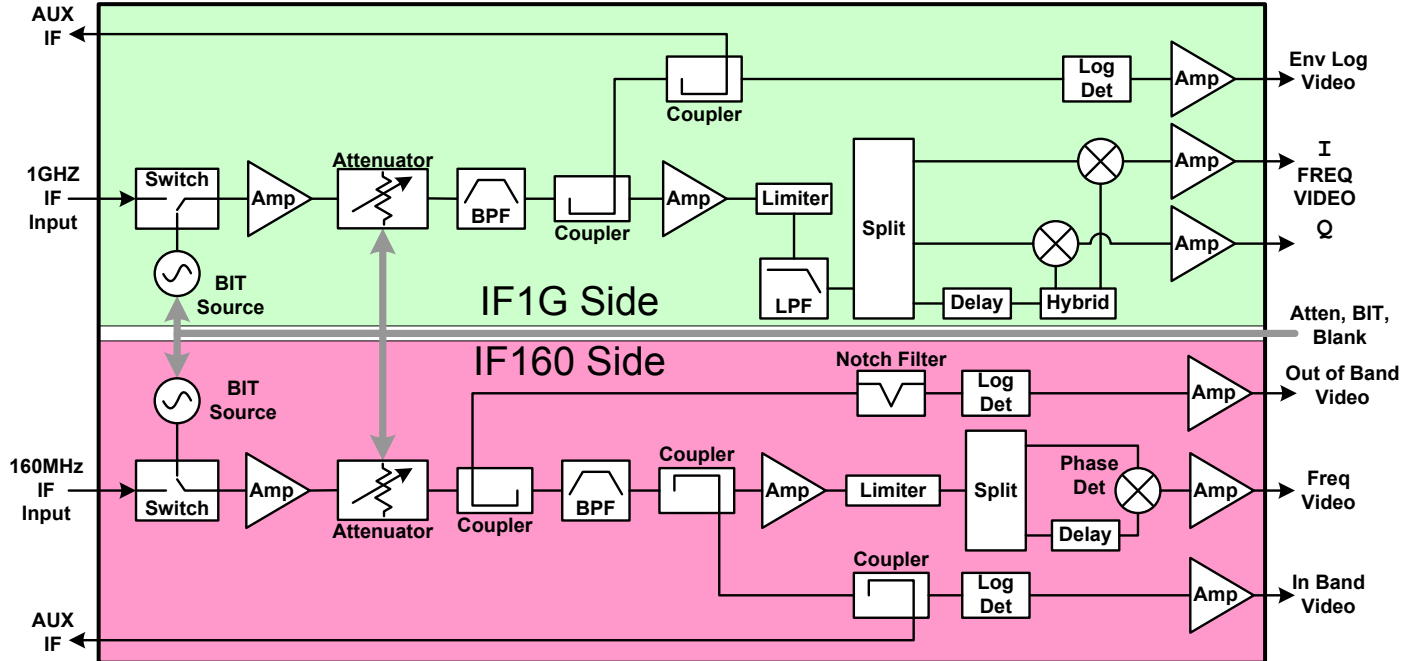
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MRIF Mezzanine



MRAIS Mezzanine

