# MRTA RF/IF/ADC

MITRE

## DESCRIPTION

The Modernization Receiver Test Asset (MRTA) RF/IF/ADC unit was developed as a test capability and is available to support signal verification at contractor facilities, Cape Canaveral, and on orbit.

The RF/IF/ADC unit is a stand-alone product capable of dual down conversion of input RF signals at $L_1$ and $L_2$ to a 26 MHz IF, followed by digitization using dual 12-bit ADCs sampling at 104 MHz. The RF/IF/ADC unit has a high sensitivity and dynamic range that can support AJ applications operating in J/S environments of over 80 dB. The output Low Voltage Differential Signaling (LVDS) digital signals are used by the MRTA Digital Receiver to perform signal verification of the legacy and modernized GPS signals.

This unit also allows developers to focus on custom digital processing back-ends without the need to produce an RF/ADC front-end. The developer only needs to interface with the unit using the selected COTS digital connector/cable system designed for LVDS applications.

The only requirements for operation of this unit are 110 VAC, 10.23 MHz sine reference clock with a 7 dBm output power, and the selected COTS digital cable.

## FEATURES

- Dual down conversion of $L_1$ and $L_2$ inputs to 26 MHz IF
- Dual 12-bit ADCs sampling at 104 MHz with LVDS outputs
- Supports AJ applications operating in J/S environments of over 80 dB
- Supports –40 dBm maximum input signal power
- Supports 24 MHz bandwidth
- Less than 4 dB noise figure
- 41 dB gain
- Supports future $L_5$ augmentation
- 10.23 MHz sine reference clock input
- 110 VAC 47 to 440 Hz input
- Size: 11.38" x 8.7" x 4.13" (LxWxH)

## APPLICATIONS

- Processing digitized GPS signals at $L_1$ and $L_2$

**FOR FURTHER INFORMATION CONTACT:**

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