DRS
DEFENSE SOLUTIONS

Meeting Today's Challenges to Provide a Secure Future

SI-9136B FAMILY OF DUAL-CHANNEL 6U VME VHF/UHF TUNERS

The SI-9136B is a dual-channel wideband VHF/UHF tuner that provides independent and/or phase-coherent conversion of RF signals between 20 and 3000 in a 6U VME single-slot module. The SI-9136B's two tuner channels each produce two analog IF outputs – a wideband IF output and a baseband IF output.

The SI-9136B provides ten configuration options that offer independent and phase-coherent/non-phase coherent operations, baseband IF output choices, and digitized IF output choices. For external digitizer applications, the tuner's analog outputs are optimized to interface with the Analog Devices AD664X series of wideband A/D converters. See configuration options.

Phase-coherent configurations of the SI-9136B feature an internal Local Oscillator (LO) Distribution assembly that allows it to accept or to provide first and second LOs to or from other tuners. This enables system configurations of up to eight phase-coherent channels when used in conjunction with an LO distribution module such as the SI-7100 or SI-7101. The low phase noise and channel-to-channel phase tracking make the tuner an ideal solution for direction finding or beam forming applications.

Phase-coherent configurations of the SI-9136B support five operational modes providing users with a high degree of operational flexibility:

- Independent/Independent
- Slave/Independent
- Master/Slave
- Slave/Slave
- Master/Independent

Two SI-9136B configurations feature a dual-digitizer module that converts the analog outputs from the tuner channels to two serial 14-bit low-voltage differential signaling (LVDS) data outputs that are routed to a front panel multi-pin connector.

The SI-9136B-1 and SI-9136B-2 provide acrylic (AR) type conformal coating to all exposed electrical components.

HIGHLIGHTS

- Two Wideband VHF/UHF Tuners in a Single-slot 6U VME Card
- Phase-coherent or Independent Modes (Software-selectable)
- 20 to 3000 MHz Frequency Coverage
- Fast Tuning Speed
- Optional 14-bit Dual Digitizer
- Choice of Ejector Handles

SPECIFICATIONS

General Architecture	Two independent channels in a single-slot 6U VME, software configurable for phase-coherent or independent operation in /CF1, /CF2, and /CF5 configurations
Frequency Range	20 – 3000 MHz (tunable to 0 Hz)
Preselector Filters	Voltage-tuned 30 – 1199 (~15% 3 dB Bandwidth) Fixed Sub-octave 1200 – 3000 Bypass ≤ 200 MHz

POWER

Power Consumption	30 watts
Power Consumption (with digitizer installed)	37 watts

TUNING

Tuning Step Size	100 kHz (normal tuning minimum)
	1 MHz (minimum for fast-tuning/scan mode)
Tuning Speed	≤ 300 microseconds for worst case first LO step
Tuning Speed (with digitizer installed)	≤ 800 microseconds for worst case first LO step

ENVIRONMENT

Altitude	Operational at 10,000 ft (maximum ambient +40ºC)
Storage Temperature	-40 to +70ºC
Transportation (non-operational)	Basic Transportation per MIL-STD-810E method 514.4, Category I, figure 514.4-1
Shock (non-operational)	Bench handling per MIL-STD-810E method 516.4 procedure VI
Temperature-compliant Range	25°C ±5°C ambient with 12 CFM airflow minimum
Operational temperature Range	0° to +50°C ambient with 12 CFM airflow minimum

SI-9136B CONFIGURATION OPTIONS

9136B/CF1	Phase-coherent 30 MHz IF BW, 20 MHz IF CF, analog IF output.
9136B/CF2	Phase-coherent 25 MHz IF BW, 16.35 MHz IF CF, analog IF output
9136B/CF3	Nonphase-coherent 30 MHz IF BW, 20 MHz IF CF, analog IF output
9136B/CF4	Nonphase-coherent 25 MHz IF BW, 16.25 MHz IF CF, 65 MSPS LVDS Dual Digitizer
9136B/CF5	Phase-coherent 30 MHz IF BW, 20 MHz IF CF, 80 MSPS LVDS Dual Digitizer
9136B/CF6	Nonphase-coherent 40 MHz IF BW, 70 MHz IF CF
9136B/CF7	Phase-coherent 40 MHz IF BW, 70 MHz IF CF
9136B/CF8	Phase-coherent 6 MHz IF BW, 70 MHz and 20 MHz IF CF
9136B/CF9	Phase-coherent 30 MHz IF BW, 70 MHz and 20 MHz IF CF
9136B/CF10	Nonphase-coherent 30 MHz IF BW, 20 MHz IF CF, analog IF outputs

SI-9136B CONFORMAL COATED CONFIGURATION OPTIONS

9136B-1	Phase-coherent, ≤800 microseconds Tune Speed, 30 MHz IF BW, 20 MHz IF CF, analog IF outputs
9136B-2	Nonphase-coherent, ≤800 microseconds Tune Speed, 30 MHz IF BW, 20 MHz IF CF, analog IF outputs

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