



2139 MIX2 WIDEBAND ANALOG SIGNAL MIXER

FEATURES

- Wideband signal mixer for data link testing
- Main and auxiliary high current, high slew outputs
- Baseline input for offset of baseline wander compensation
- Onboard programmable test source
- Flexible configuration allowing many uses
- Single width AL63xx module



OVERVIEW

The MIX2 module is primarily intended for use as the summing junction in a data link test system. It allows a PCM data signal to be corrupted by a noise signal, producing an output with a known signal-to-noise or E_b/N_0 ratio. The flexible configuration options of the MIX2 allow it to be used for applications other than data link testing.

FUNCTIONAL DIAGRAM

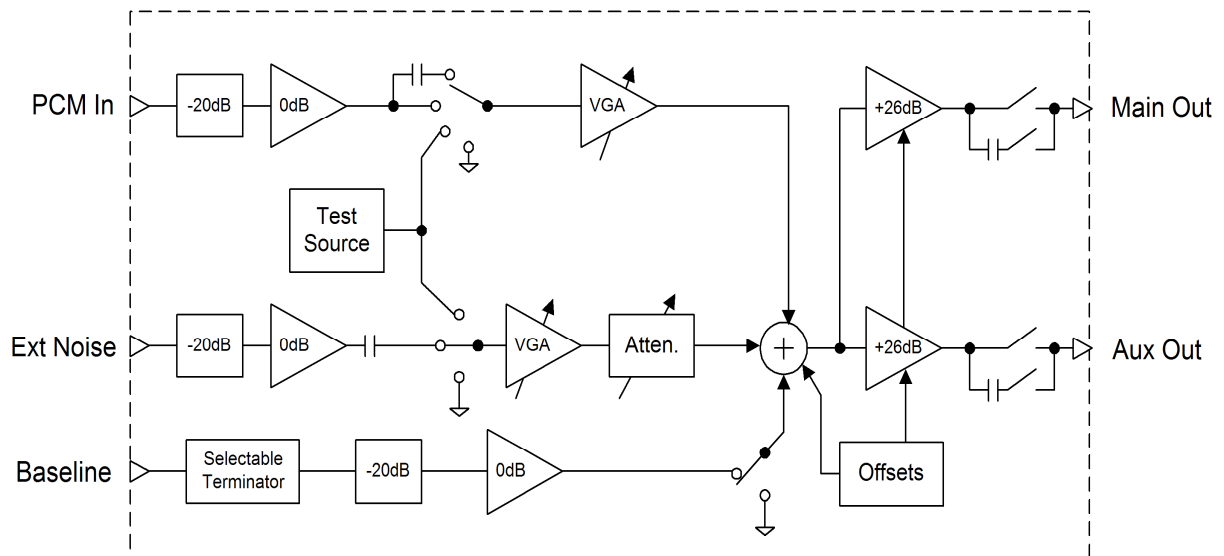


Figure 1: Model 2139 MIX2 Block Diagram

SPECIFICATIONS

PCM / PRN INPUT

- Selectable AC / DC coupling
- Input impedance: 50Ω
- Low frequency AC Cutoff: 16 Hz
- Bit rate range: 1 Kbps to 20 Mbps
- Input disable feature
- Wideband VGA
 - Gain range: -14 dB to +40 dB
 - Bandwidth: > 50 MHz
 - Gain flatness: +/- 0.5 dB 1 KHz to 10 MHz
- Maximum continuous input without damage: 5 Vrms
- Maximum operational input range +/- 5.0V

BASELINE INPUT

- DC coupled
- Input impedance: selectable 50Ω or 10KΩ
- Fixed gain: 0 dB
- Bandwidth
 - > 50 MHz in 50Ω mode
 - > 1 MHz in 10KΩ mode
- Maximum operational input range: +/- 5.0 Vp-p
- Disable feature

EXTERNAL NOISE INPUT

- AC coupled
- Input impedance: 50Ω
- Low frequency AC cutoff: 16 Hz
- Maximum operational input: 3 Vrms (+22 dBm)
- Crest factor: 15 dB
- Wideband VGA
 - Gain range: 0dB to +30 dB in 3 dB steps
 - Bandwidth: > 50 MHz
 - Gain flatness: +/- 0.5dB range in -0.125 dB steps
- Step attenuator: 0 dB to 31.875 dB range in 0.125 dB steps
 - Attenuator accuracy: 2% absolute
- Disable feature

MAIN & AUXILIARY OUTPUTS

- Selectable AC or DC coupling
- Output impedance: 50Ω
- Low frequency AC cutoff: 72 Hz
- Slew rate: > 500 V/us
- Max output (signal+noise+offset): +/-6V into 50Ω
- Short circuit protection
- Thermal protection
- Output disable

CALIBRATION TEST SOURCE

- Selectable sinusoidal test source
- Amplitude discrete settings: 50 mVrms, 0.1 Vrms, 0.2 Vrms, 0.5 Vrms
- Amplitude accuracy: +/- 0.15dB @ 25° C
- Frequency
 - 7 discrete settings from 1 KHz to 100 KHz
 - Frequency accuracy: 1% @ 25° C

GENERAL

- Power consumption: 15W
- Operating temperature: 0° C to 50° C
- Relative humidity: 0 to 95%; non-condensing
- Requires one chassis slot