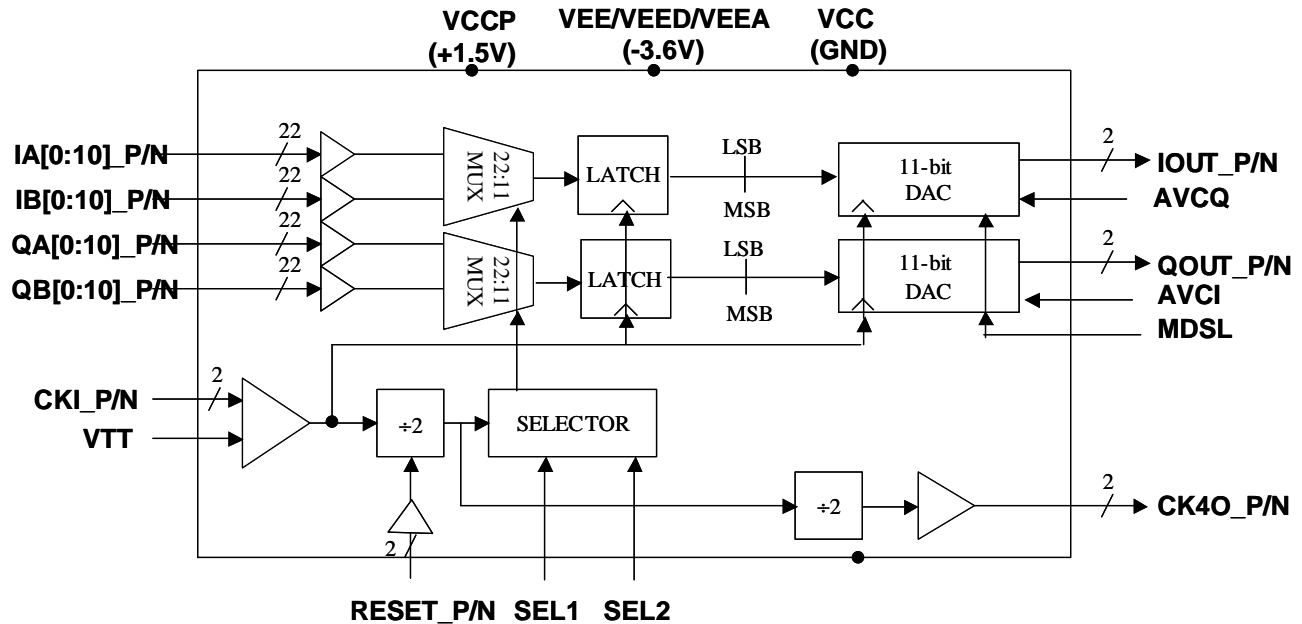


MD223D : High-Speed 3.2 GHz Dual Channel Broadband MUXDAC with Analog Output Mode Selections



KEY FEATURES

- Dual 11-bit resolution DACs up to 3.2-Gsps rate
- Each bit of both DACs has 2:1 input multiplexer
- DAC analog output format can be selected between Normal-Hold (NH) mode or Return-to-Zero (RZ) mode
- Each DAC has complementary outputs with 50-Ω back terminations
- Complementary divide-by-4 LVDS clock outputs are provided for data synchronization
- 2.75 W power consumption
- Variable 400~800 mV_{pp} single-ended output swing
- On-chip 100 ohm termination between each differential input data and RESET pair
- Ultra Low Latency: 3 clock cycles or less counted from data sampling point
- Ultra Low Phase Noise
- EAR99: No export license required

Description

MD223D integrates two high-speed 11-bit Digital to Analog Converters (DACs) on the same chip. Each DAC integrates its own 22:11 (11 channels of 2:1) input multiplexer. Both DACs can be operated at a sampling rate up to at least 3.2 Gsps. The analog outputs of DAC can be selected between Normal-Hold mode (for the 1st Nyquist band) or Return-to-Zero mode (for the 1st, 2nd and 3rd Nyquist band) operation. Combining with selectable filters, effectively ultra-broadband signals from DC to the 3rd Nyquist band can be generated. The differential digital data input interfaces are LVDS, LVPECL and CML compatible.

After the 22 pairs of differential data inputs for each DAC are multiplexed up to 2 times of speed, the 11 high speed data bits for each DAC are latched and encoded to drive the DAC output stage. Complementary outputs are available for each DAC with 50-Ω output back terminations. Divide-by-4 clock LVDS outputs and sampling phase selection (SEL1 and SEL2) are provided to ease the alignment of sampling phase relative to the input data. For system applications which need multiple synchronized MD223Ds, a RESET function is provided to start all MD223Ds at the same sampling phase.

Representative Measured RF Spectrum

$$f_{clk} = 3.0 \text{ GHz}$$

