

MCP37Dx1-80

80 Msps, 16/14-bit High-Precision Pipelined ADC

General Information

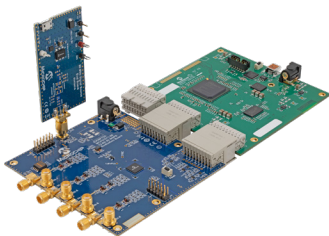
The MCP37D31-80 and MCP37D21-80 are 80 Msps, 16-bit and 14-bit high-precision analog-to-digital converter, respectively, with configurable input MUX. A built-in 8-input Multiplexer (MUX) is used to select the active analog input(s) depending on the user configuration. In single-channel operation, the MUX can be configured to select one of the 8-inputs. In multichannel operation, the selected inputs are sequentially sampled. The MCP37D21-80 includes many digital processing features that simplify system design, cost and power usage. These include an integrated digital down-converter with onboard NCO, decimation filters for improved SNR, individual phase, offset and gain adjustment and a fractional delay recovery for time-delay corrections in multi-channel modes. The device operates at very low power consumption and enables high-precision measurements of fast input signals.

Features

- 14-bit resolution
- 80 Msps maximum sampling rate
- Low power 320 mW operation at full sampling rate, including LVDS digital I/O
- Power saving modes of 79 mW during Standby and 22 mW during Shutdown
- 73.9 dB SNR at 80 Msps
- 93 dB SFDR at 80 Msps
- Integrated digital down-converter
- Decimation filters for improved SNR
- Noise-shaping requantizer
- Phase, offset and gain adjustment of individual channels
- Fractional delay recovery for time-delay corrections in multi-channel operations
- Input channel bandwidth of 500 MHz

MCP37xxx-80 Evaluation Tools

- MCP37x1x-80 Eval Board (EV55U36A)
- MCP37XXX Data Capture Card (ADM00506)
- PC GUI (Graphical User Interface)



- Output data format in serial DDR LVDS or parallel CMOS
- Configuration via Serial Peripheral Interface (SPI)
- Available in TFBGA-121 package
- AEC-Q100 qualified, Temperature Grade 1: -40°C to +125°C

Applications

- Communication instruments
- Microwave digital radio
- Lidar and radar
- High-speed test equipment
- Ultrasound and sonar imaging
- Scanners and low-power instruments

Benefits

- Integrated features reduces post processing demands on MCU/MPU and eliminates the need for external components
- Up to 8 configurable channels could address wide range of applications
- Built-in reference decoupling capacitors reduces cost and footprint



The Microchip name and logo and the Microchip logo are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries. All other trademarks mentioned herein are property of their respective companies.

© 2020, Microchip Technology Incorporated. All Rights Reserved. 7/20

DS20006392A