14Bit 1GSPS Single Channel Orthogonal Digital Upconverter (QDUA)

1 Main features:

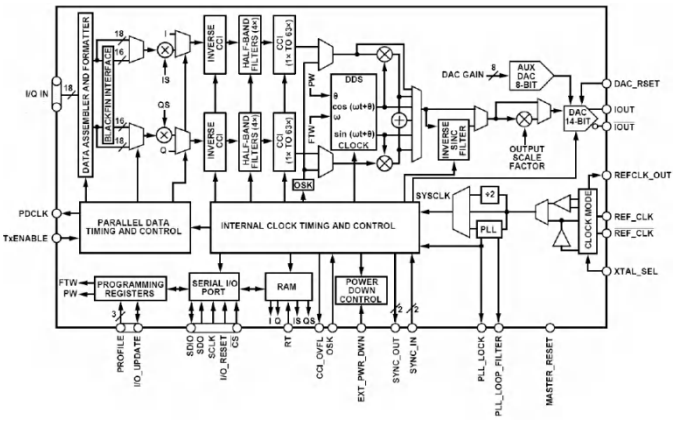
- Converted bits: 14 bits
- Clock frequency: 1 GSPS
- Output current: 8 ~ 32 mA
- Supply voltage: 1.8V, 3.3V
- Power consumption: 800 mW (single tone mode)
- Broadband SFDR: 67dBc@100MHz output
- The narrowband SFDR is greater than 80dBc
- IMD3:74dBc@100MHz Output
- 8 programmable mobile keying schemes
- Multi-chip synchronization
- Built-in anti-SINC filter
- Built-in phase-locked loop
- Built-in 1024x32bit RAM
- Support 4 to 256 times adjustable interpolation factor
- Encapsulation：LQFP100-EPAD

2. Typical applications

- Telephone and video modem
- Wireless base station transmission
- Broadband communication transmission
- voip
- Radar and aviation systems

3 Product Description

This chip is an orthogonal upconverter with built-in 14-bit 1GSPS DAC, high-speed direct digital frequency synthesizer (DDS), digital multiplier, digital filter, and other DSP functions. It can act as a universal I/Q modulator and agile up-converter in wired or wireless communication systems concerned with cost, size, power consumption and dynamic performance, providing baseband up-conversion for data transmission in communication systems. The chip supports 16-bit serial input I/Q baseband data. Not only that, the chip can also be used as a programmable monophonic sine wave signal source or interpolation DAC. The clock input of the chip consists of a crystal oscillator, a high-speed bisection frequency circuit and a low-noise phase-locked loop circuit. The function control of the chip is realized by writing the external Profile pins, and the user can realize the configuration of the phase, frequency, amplitude and other parameters of the signal through this set of pins. The output current of the chip can be 8mA to Adjust in the range of 32mA. The chip uses 1.8V and 3.3V dual power supply . The chip adopts LQFP100-EPAD package, which is compatible with foreign products AD9957 pin and can be replaced. The internal structure block diagr am of the chip is as follows:



4 Compared with similar foreign products

	precision	Clock frequency	DAC output current	SFDR	NSD	IMD	Encapsulation form
AD9957（ADI）	14Bit	1GHz	8.6 - 31.6mA	69dBc@100 MHz	-162dBm/Hz@100MHz	73dBc@100 MHz	TQFP100
HL9957	14Bit	1GHz	8 - 32mA	67dBc@100 MHz	-161dBm/Hz@100MHz	74dBc@100 MHz	LQFP100

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