Winbond W681310
3V Single-Channel CODEC

Preliminary Product Bulletin

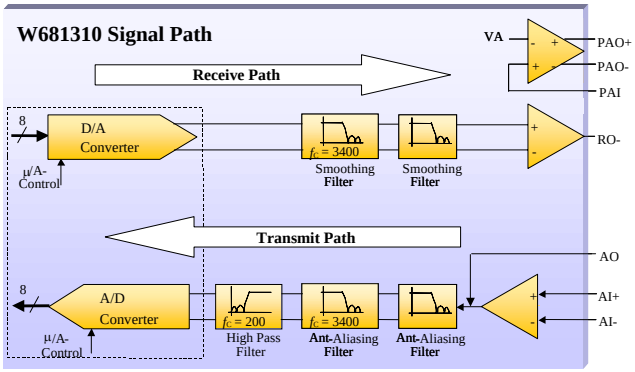
The W681310 single channel voice CODEC is an analog-to-digital and digital-to-analog converter that complies with the industry specifications of the ITU-T G.712. The CODEC includes complete μ-Law and A-Law companders (pin selectable) that are designed to comply with the specifications of ITU-T G.711.

In order to provide the cleanest signal possible, the W681310 CODEC complies with the ITU-T G.712 recommendation for the analog-to-digital pre filters (also known as anti-aliasing filters) and the digital-to-analog post filter (signal smoothing filter).

The W681310 CODEC contains an additional analog power amplifier to drive a higher current output. The power amplifier gain levels can be adjusted by a set of external resistors to drive an output level of up to 3.544V peak-to-peak across a 300-Ω load.

The W681310 PCM interface produces 8-bit digital data (μ-Law or A-Law) at a sampling rate of 8kHz. The chip can communicate in four different clock formats; short frame sync, long frame sync, IDL and CGI. The W681310 is available in two 20-pin packages; SOG (SOP) and SSOP.

For evaluation and prototyping purposes, a development kit, the W681310DK, is available to provide system designers with a flexible method for developing and testing an application on a single, standalone platform.



Features

- Single supply voltage: 2.7 – 3.6V
- Typical power dissipation of 10mW at 3V, power-down of 0.5μW
- Fully-differential analog circuit design
- On-chip precision reference voltage of 0.886V for a -5dBm TLP @ 600Ω
- Push-pull 300Ω power drivers with external gain adjust
- 8 kHz sampling rate
- Master clock rates: 256 kHz, 512 kHz, 1536 kHz, 1544 kHz, 2048 kHz, 2560 kHz and 4096 kHz
- Pin-selectable μ-Law and A-Law companding (full compliance with ITU-T G.711 industry specification)
- CODEC A/D and D/A filter compliance with the ITU-T G.712 specifications
- PCM interface with Short Frame Sync, Long Frame Sync, IDL and GCI timing environments
- Temperature range: Industrial grade (-40^{0}C to 85^{0}C)
- Package: 20-pin SOG and SSOP

Benefits

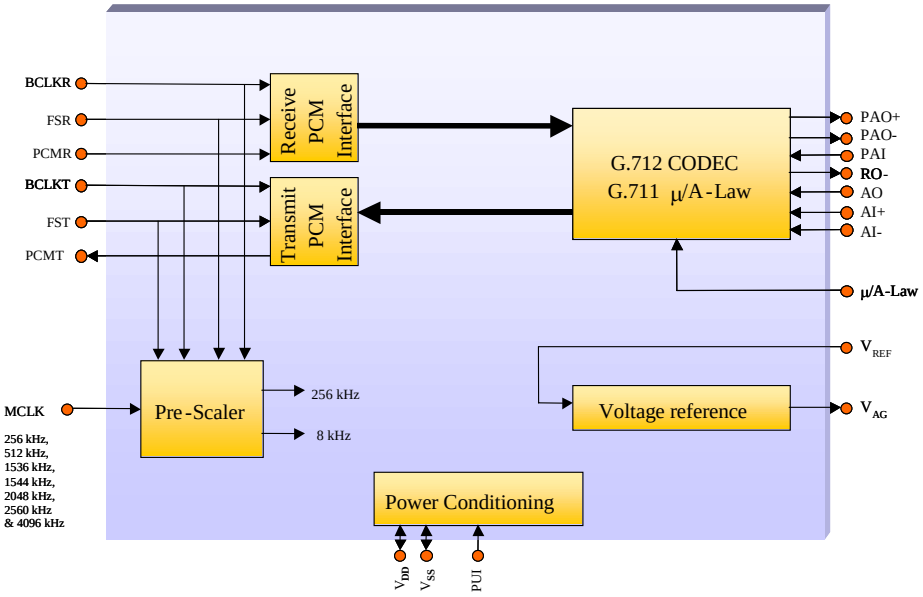
- Low power consumption ideal for mobile, battery-powered applications
- System-level customization enables ease of integration
- Standard compliance enables faster qualification cycle for telecom applications
- Competitive solution
- Compatible with the Motorola® MC145481

CODEC Applications

- VoIP, Voice over Networks
- Digital telephone and communication systems
- Wireless voice devices
- PABX/SOHO systems
- Local loop card
- SOHO routers
- Fiber-to-curb equipment
- Enterprise phones
- ISDN equipment
- Modems/PC cards

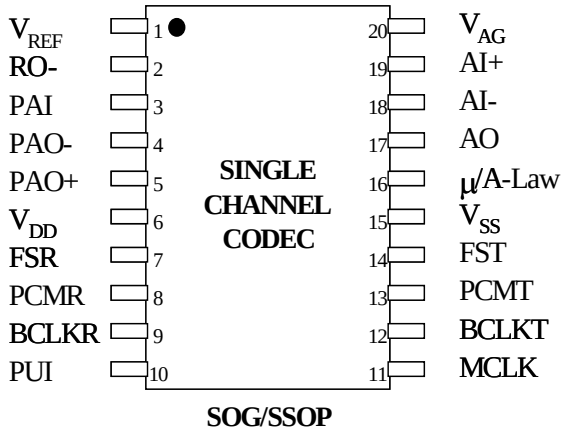
Development System

- The W681310DK is a development kit that can be configured in one of the following two modes:
    - **Stand alone;** capable of demo for a loop back and prototype design on a dedicated board space
    - **Back-to-Back: e**nables full system test between two platforms



W681310 Block Diagram

Pin No.	Pin Name	Functionality
1	V_{REF}	A bypass for the on-chip 2.5V voltage reference
2	RO-	Non-Inverting Receive output
3	PAI	Power amplifier inverted input
4	PAO-	Inverting Power Amplifier output
5	PAO+	Non-Inverting Power Amplifier output
6	V_{DD}	Positive power supply
7	FSR	Receive Frame Sync input
8	PCMR	PCM input data receive
9	BCLKR	Receive bit clock input
10	PUI	Power up indicator
11	MCLK	System master clock input
12	BCLKT	Transmit bit clock input
13	PCMT	PCM output data transmit pin
14	FST	Transmit Frame Sync input
15	V_{SS}	Ground power supply
16	μ/A-Law	μ-Law /A-Law companding select pin
17	AO	Transmit gain output
18	AI-	Inverting Transmit input
19	AI+	Non-Inverting Transmit input
20	V_{AG}	Analog signal reference ground output



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Note: For more details on Winbond's W681310 please refer to the product datasheet which can be viewed on Winbond America's web site at: http://www.winbond-usa.com

This document contains advance information and is subject to change at any time.