

Analog Front End for embedded Soft Modem applications



Description

The 73M1903 and 73M1903C are single-chip analog front end (AFE) devices used in embedded soft modem and voice applications including high speed data modems, satellite set-top-box, POS terminals, MFP and Fax terminals and IP phones. These devices offer multiple features designed to reduce the external component count and deliver robust performance with a low cost transformer DAA. The 73M1903C inherits all of the characteristics and functionality of the 73M1903, however, the 73M1903C has a pair of line transmit outputs that can be software enabled and configured via external components to have different transmit impedances. This allows the 73M1903C to be used in multi-regional applications with a single bill-of-materials. Additionally, the 73M1903C supports clock master and slave modes along with the ability to daisy chain several devices together. The 73M1903 is pin-compatible with Teridian's 73M2901CE modem chip which facilitates an implementer to transition from the 73M2901 to a soft modem solution with minimal risk and redesign of the line side DAA circuitry.

KEY FEATURES:

Highly integrated Analog Front End for soft modem applications

BENEFITS:

- AFE supports entire range of ITU-T V series modem modulation standards including V.92, V.90, V.34, V.32 bis, V.22 bis, V.23, V.21 and all Group 3 fax modulations.
- Devices use a single serial host interface for both data and control.
- Management of DAA functions including parallel pick-up, ring detection, caller ID, and hook control supported and eight programmable GPIO pins.
- Eliminates the need for a dedicated crystal oscillator with a flexible PLL.
- A 16-bit CODEC, differential hybrid circuitry provides accuracy low noise and wide dynamic range.

External DAA circuitry is optimized for best cost structure for single and multiple country PSTN access compliance

- Global DAA compliance with FCC, ETSI 203, JATE and other PTT standards with BOM optimized for country and application.
- The two transmit configurations capability of the 73M1903C facilitates multi-region support with a single BOM and without the need for extra analog switches.

Robust and reliable solution for embedded systems designed for normal and extreme environments

- 73M1903 available in 32-Pin QFN or 32-Pin TQFP packages
- 73M1903C available only in 32-Pin QFN package
- 3.0V – 3.6V operating voltage
- Industrial Temperature ranges

Easy path to a soft modem transition

- 73M1903 is pin for pin compatible with and can replace Teridian's 73M2901CE embedded low speed modem. This supports a transition path where hard modem can be replaced by a soft modem solution as an overall system cost reduction.

Both the 73M1903 and 73M1903C provide AFE solutions designed to meet many cost sensitive embedded applications. Use of these devices allows an implementer to offer an application specific solution that is optimized for the region of operation without the need for extra cost when compared to other silicon DAA solutions. A simple multi-regional capability can be supported with a single BOM by using the 73M1903C.

The 73M1903 and 73M1903C are ideal AFE solutions for cost sensitive embedded soft modem solutions.

Teridian Semiconductor Corporation is a modem and Silicon DAA technology pioneer and patent holder with a long history of development and innovation including the capacitive isolation barrier technology licensed to 3rd parties and has been globally deployed in low speed and high speed analog modems.



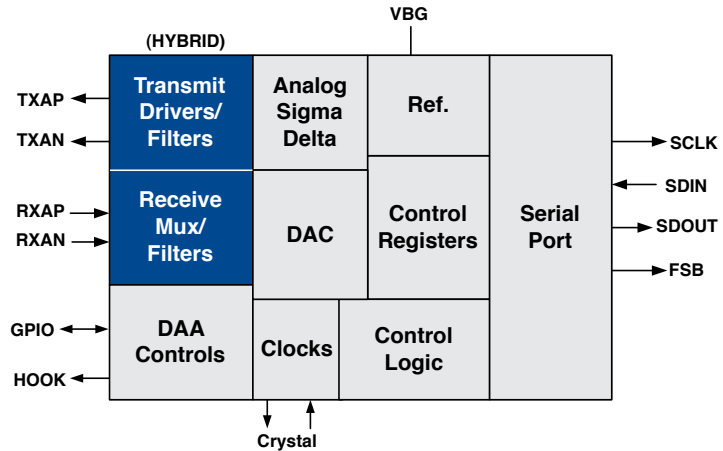
Applications

- Satellite Set Top Boxes
- Personal Video Recorders
- Point of Sale Terminals
- Multi-functional Printers (MFP)
- Stand alone FAX machines
- Embedded modem applications such as medical and industrial telemetry
- Utility Meters

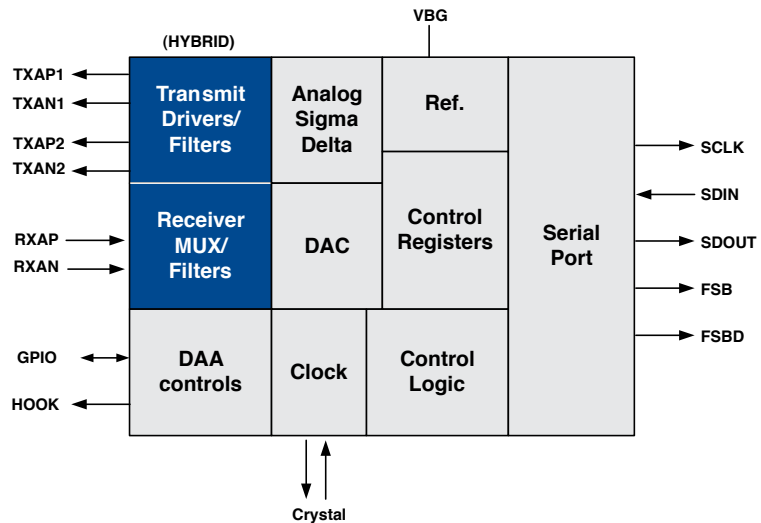
Additional Features

- > Multi-mode Modem Analog Front End (MAFE)
 - Supports modem data rates from 50bps to 56Kbps (V.92)
 - Includes drivers and modem hybrid circuit to simplify modem designs
- > Synchronous serial interface master mode operation
 - Supports optional timing modes
 - Supplies frame sync and serial timing clock to host
 - Master, Slave and Daisy Chain
- > Programmable Multi-regional DAA
 - Two independent line termination circuits may be selected by software.
 - One BOM meets world Telco requirements (73M1903C)
- > Programmable sample rates
 - From 7.1KHz to 16KHz
 - Flexible external reference clock
 - Crystal ranges from 4.9-27MHz
- > Fully differential receiver
 - Cancels common mode noise from environmental sources such as power lines
 - Excellent receiver dynamic range
- > Low power modes
 - Sleep mode
 - Power down mode
 - Wake-on-Ring
- > Eight GPIO for user programmable I/O ports Operating Environment
 - 3.3V supply voltage
 - Industrial/commercial temperature grades
 - 32-pin TQFP, RoHS package (73M1903 only)
 - 32-pin QFN, RoHS package (73M1903 and 73M1903C)
- > Certification Support
 - Programmable to support any country: US, ETSI 203, Japan, Australia, etc.

73M1903 Block Diagram



73M1903C Block Diagram



Ordering Information

PART DESCRIPTION	ORDERING NUMBER
73M1903 32-pin QFN, Lead Free	73M1903-IM/F
73M1903 32-pin QFN, Lead Free, Tape and Reel	73M1903-IMR/F
73M1903 32-pin Thin Quad Flat Pack, Lead Free	73M1903-IGV/F
73M1903 32-pin Thin Quad Flat Pack, Lead Free, Tape and Reel	73M1903-IGVR/F
73M1903C 32-pin QFN, Lead Free	73M1903C-IM/F
73M1903C 32-pin QFN, Lead Free, Tape and Reel	73M1903C-IMR/F