REV 1.3

TCD3020 SINGLE CHIP AUDIO RECORDING SOLUTION

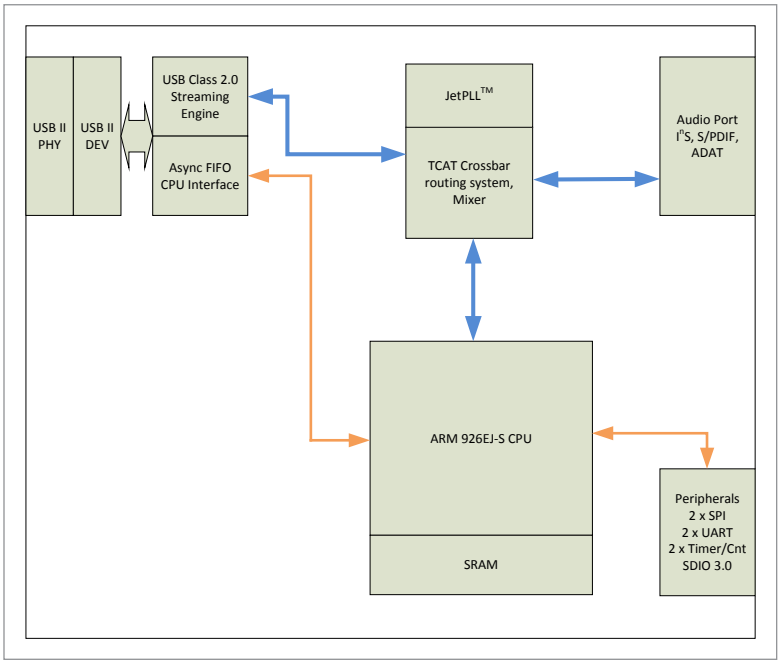
TCD3020 is a CMOS based, Class 2.0 Compliant Audio Streaming USB Controller with an on-board **ARM™** processor, and is the larger of the two dedicated USB parts in TC Applied Technologies' **DICE III™ series** of integrated circuits. **TCD3020** is designed for everything from simple two channel I/O boxes to complex interfaces.

TCD3020 is designed to support up to 18 channels of USB audio in both directions (18x18) in a typical configuration. USB audio can be routed to and from standard digital interface formats using **TCD3020**'s on-board ADAT and AES/SPDIF transceivers, and to and from A/D, D/A and DSP using its fully configurable **I²S/TDM** interface. Both asynchronous and synchronous USB audio streaming is supported.

With its high level of integration, patented **JetPLL™** technology for virtually jitter-free performance, and internal memory, **TCD3020** is a true single chip solution for USB audio of the highest performance and quality.

The **DICE™** Broadband Streaming Engine handles all aspects of moving data in hardware, minimizing realtime load on the host processor.

A complete **SDK** supports Hardware Abstraction Layer (**HAL**) libraries and protocol stacks for USB, and we provide **vendor specific Windows drivers at no additional cost (no drivers required for OS X).**



Target Applications:

- Computer Recording
- Active computer speakers and headsets
- AV Receivers / Consumer audio (USB audio and HDMI clock recovery)

- **I²S/TDM** Audio Interface - 32x32 Channels *
  - Up to 2 clock ports, configurable to all common modes.
- Dual **ADAT** Transceivers - 16x16 Channels
- **AES/SPDIF** Transceiver - 2 Channels
- **USB 2.0 Audio Streaming**
  - 18x18 Channels *
  - Class 2.0 compliant
  - Asynchronous and synchronous modes
- **Onboard Mixer**
  - In hardware - zero processor overhead
  - Up to 32x32 Channels
- **JetPLL™ Clock Technology**
  - Virtually removes incoming jitter
  - Achieves dual-VCXO performance without external components
  - Integrated synchronization in both synchronous and asynchronous USB audio modes
- **ARM926™ 32-bit RISC processor with cache**
  - Up to 200MHz clock speed
  - SPI interface (2 Master, 1 Slave)
  - 2 x UART interface
  - 4 x timer/counter
  - Up to 19 GPIOs *
  - SDIO 3.0
  - 320kB internal SRAM
  - Simple boot from SPI flash
- **Other Features**
  - Integrated 3-Channel, 10-bit ADC for easy reading of pots, etc.
- **Package Types:**
  TCD3020-CG: 148-Pin Dual Row QFN

* Certain signals share pins, so actual maximum no. will vary depending on product specifications.

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