

USB AUDIO POWER

USB PAL Extreme USB Audio Solution

- 18 x 18 channel 24b @ 44.1, 48KHz
- 18 x 18 channel 24b @ 88.2, 96KHz
- 8 x 8 channel 24b @ 176.4, 192KHz
- 4 x 4 channel 24b @ 352.8, 384KHz
- Low constant latency < 3ms one way
- “no” jitter clock design, out standing audio performance (> 130dB THD+N)
- Full channel mixer
- I2S, S/PDIF, DSD *Win ASIO only
- MS WDM, ASIO, OS X

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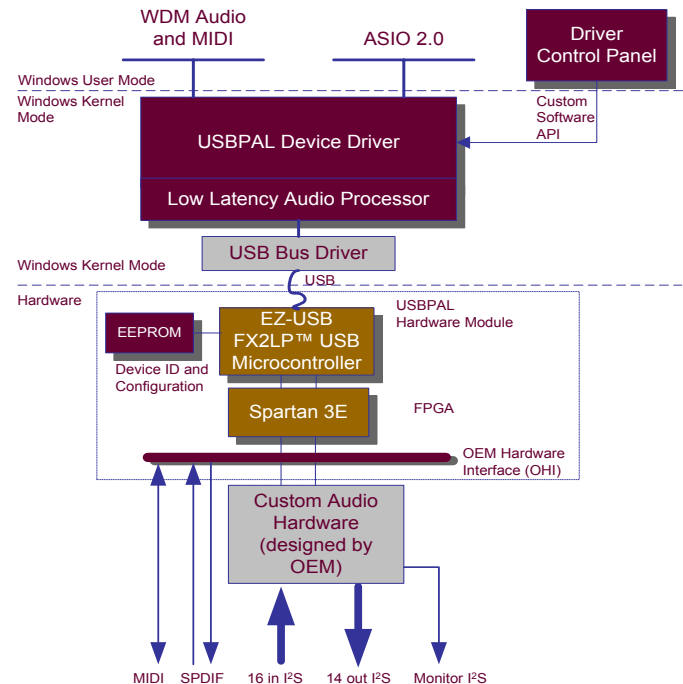
USBPAL is the solution for your multi-channel audio product with high speed USB 2.0 connectivity. The core of the solution is our fast, field proven and highly reliable driver stack.

Based on just two off-the-shelf silicon components up to 36 channels of high quality 24bit 96kHz audio are supported. Production ready hardware reference platforms are available for evaluation, performance assessment and rapid design in.

The RDK consists of all documentation (schematics, BOM, SDK) and tools necessary to integrate on your own board. High speed, low latency drivers for Windows support XP to Windows 7, with concurrent Steinberg ASIO and WDM interface on Windows. Mac OS X Core Audio drivers support popular Apple applications such as GarageBand and Logic-Pro.

The driver has a private software API for your custom application or control panel and source code for customization is provided. No embedded software or hardware development is required. Replacing logos and channel configuration is easy and can be done by customer.

To augment your existing device with USB 2.0 high speed audio, you can easily piggy-back our reference hardware with your current PCB.



USBPAL

- ASIO and WDM Drivers for Microsoft Windows XP, Vista and Windows 7
- Core Audio driver for Apple OS X
- Firmware, FPGA image
- Customization Software SDK
- Production and test tool, for automatic EEPROM programming and system verification
- HW reference design board
- Source code for control service and control panel
- Schematics, Layout and BOM
- USB Reference board with signals on header
- In-kernel processing*

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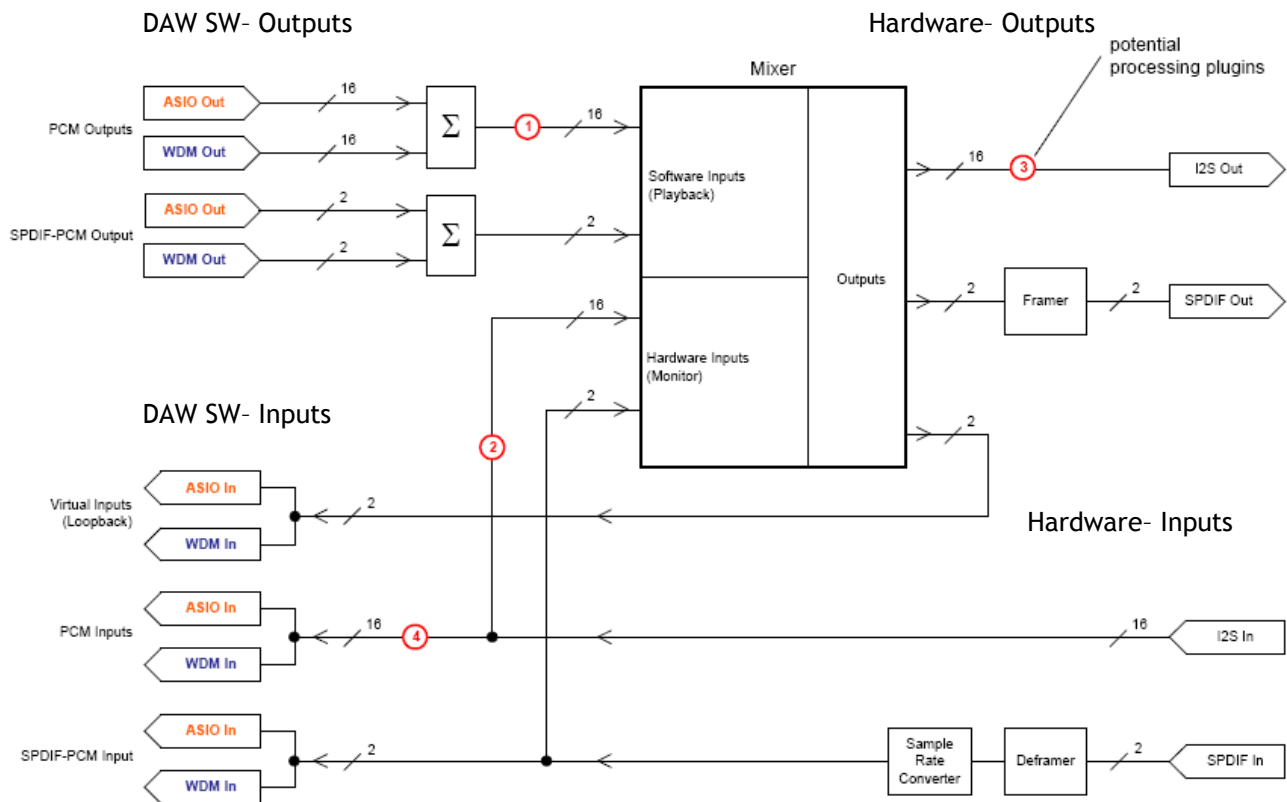
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U S B P A L Extreme USB Audio Solution

USBSIMD

- **USBSIMD** option makes your audio processing requirements to harness the power of multi-core processors
- Very Low latency in-kernel processing
- Multi data path from DAW Software, to and from USB
- Use modern SIMD instruction
- Floating point processing
- IP protection by in-kernel processing
- Simple application type programming and execution in kernel

- Very low latency in-kernel digital audio processing
- Flexible processing options in the data path
- Digital signal processing with SIMD (MMX) instructions can be used
- DSP processing with fast floating point
- Utilize existing mixer or fully replace
- Works with every DAW software as it is part of driver and thus independent
- Expose custom functionality transparently with no additional hardware cost.



Flexible and power full audio path with built-in mixer and optional in-kernel audio processing.

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U S B P A L Extreme USB Audio Solution

Product Features

- Supported audio sampling rates: 32KHz - 384KHz
- External audio clock input
- High quality local clock generator
- Separate clock domain for digital input S/PDIF
- S/PDIF optical/electrical, automatic signal and frequency detection
- USB 2.0 high speed 480mbps
- 24b audio
- 16 x 16 channel audio @ 96KHz
- 2 x 2 channels digital S/PDIF audio @ 96KHz
- 8 x 8 channels audio @ 192KHz
- Transparent 32bit S/PDIF out
- DSD Format support **USBDSO**
- ASIO round-trip latency over USB less than 6.0ms (depends on PC)
- Microsoft Windows 7, Vista, XP support
- Apple OS X support
- ASIO 2.1 and WDM support
- Windows and OS X control panel
- Included full channel mixer
- OEM able Windows Installer
- More audio channels with multi device USB links
- **USBMLINK**
- USB bus powered device support (staged power-up for components and analog sections)

USBDSO

- **USBDSO** option is the only 8x8 channel DSD solution on the market
- Allows for combination of I2S, DSD, S/PDIF (2x2 max) .
- 64fs (2.8MHz) and 128fs (5.6MHz) support

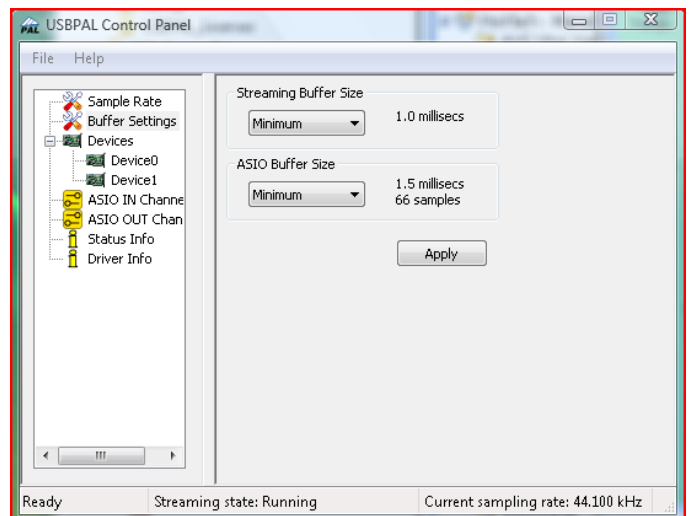
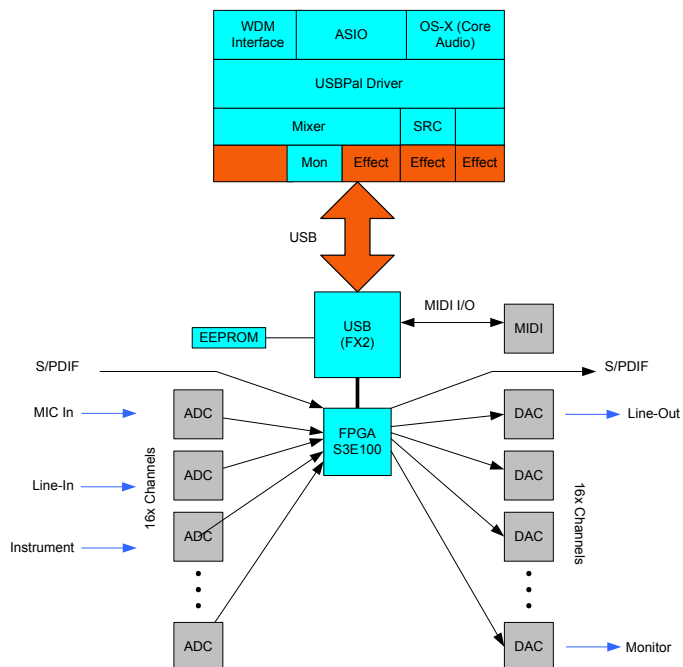
USBMLINK

- Connect multiple USB I/O devices and have them perfectly synchronized as one single ASIO device
- Link capacity is reserved on the bus (isochronous)
- Allows to combine e.g. I/O interface with effects processing.

USBDXD

- Digital extreme DXD support
- Sample rates 352.8, 384KHz

USBPAL

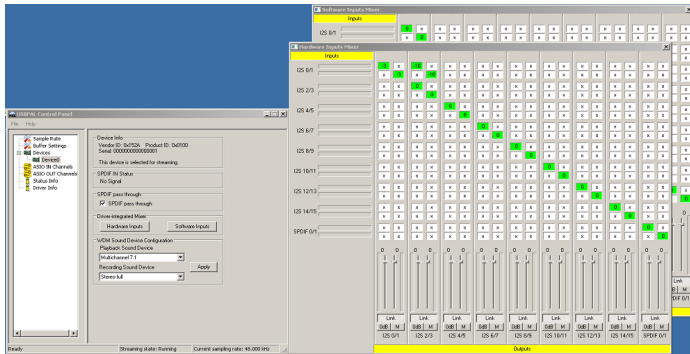


Sample control panel from RDK. Fully customizable for OEM solution. Source code provided in SDK.

USB AUDIO POWER

U S B P A L Extreme USB Audio Solution

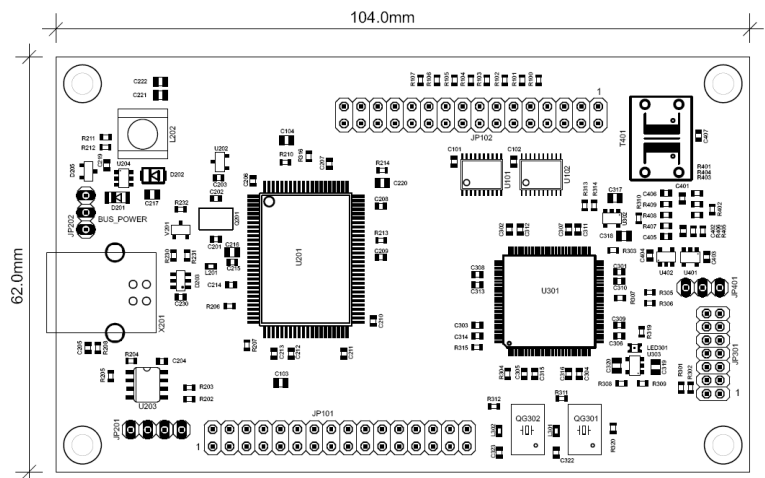
PALRDK



Sample control panel view for built-in playback and monitor mixer from RDK. Fully customizable.

- ASIO and WDM Drivers for Microsoft Windows XP, Vista and Windows7
- Core Audio driver for Apple OS X
- Firmware, FPGA image
- Customization Software SDK
- Production and test tool, for automatic EEPROM programming and system verification
- HW reference design board
- Source code for control service and control panel
- Schematics, Layout and BOM
- USB Reference board with signals on header
- In-kernel processing*

- USBPAL Reference board
- 104 x 62mm
- 8 input I2S (left justified, I2S),
- 8 outputs I2S (left justified, I2S),
- 1 input S/PDIF, S/PDIF TTL for TOS
- 1 output S/PDIF, S/PDIF TTL for TOS
- MIDI I/O
- Bus and local power jumper
- I2C, SPI, GPIO
- BCLK and WCLK input
- MCLK, BCLK, WCLK output
- Very low jitter clock generator



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ORDER YOUR USBPAL

An easy to use evaluation kit is available. It includes reference board and evaluation drivers and sample source code.

- | | |
|---|----------------|
| • Base evaluation kit, driver, board: | US\$ 254 |
| • Base kit + add-on board with 2x2 ADC/DAC + MIDI | US\$ 330 |
| • USBPDK Full RDK/SDK and production volume licenses | please contact |
| • Small volume RDK/SDK and 200 units production license | please contact |
| • Reference boards production including license (m.o.q. 10u) per unit | US\$ 204 |

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