

Features

- Floating point SHARC DSP
- USB, I2S & digital inputs
- OEM friendly
- Low power & small form factor
- FIR & IIR filter banks
- Dirac Live support

Hardware

- ADI ADSP21489 @ 400MHz
- XMOS XCore200 @ 500MHz
- Asynchronous USB audio
- I2S in/out on headers + Toslink
- IR control with learning feature

Software Control

- Real time live control
- Win & Mac compatible
- Firmware upgradeable
- 4 preset memory

Power

- Single external 12VDC supply
- Low power (2.5W)

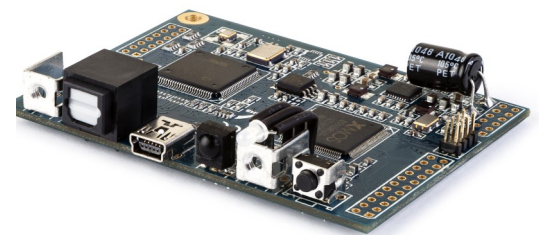
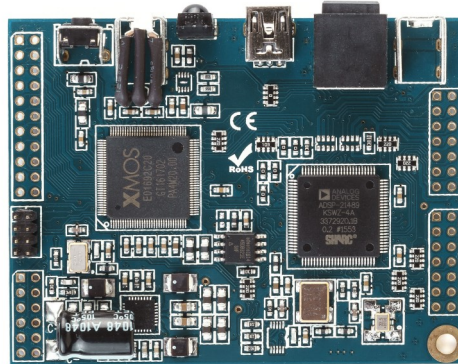
Applications

- Two-way active loudspeakers
- Sub-sat systems
- System equalization
- Subwoofer integration
- Multi-sub integration
- Room correction

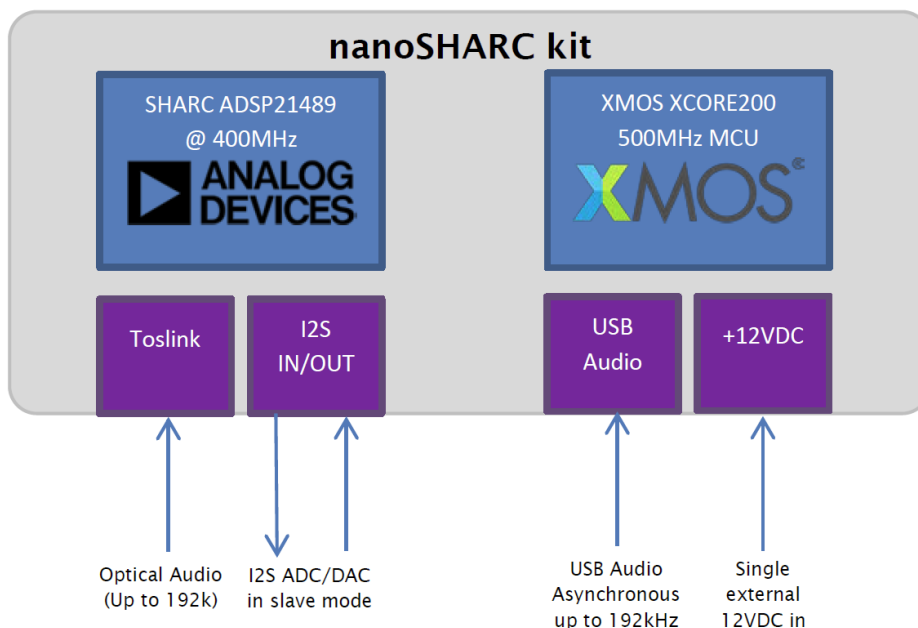
The nanoSHARC is a tiny yet powerful digital audio processing module targeting OEM/DIY applications. It includes an onboard optical digital input and asynchronous USB audio input. Audio output and additional audio inputs are to be provided by the system integrator via I2S interfaces.

The on-board 400MHz SHARC ADSP21489 processor combined with XMOS XCORE 200 CPU enables substantial processing power. High resolution audio, assignable FIR filter banks for sophisticated equalization, crossover, and room correction capabilities can be accessed and programmed with miniDSP's easy-to-use interface software.

With its connectivity on expansion headers, designers can easily integrate the nanoSHARC to provide USB audio + DSP processing to ADC/DAC designs and seriously expand the capabilities of a product.



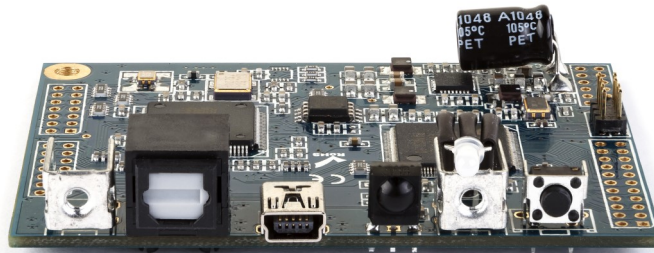
TYPICAL APPLICATION



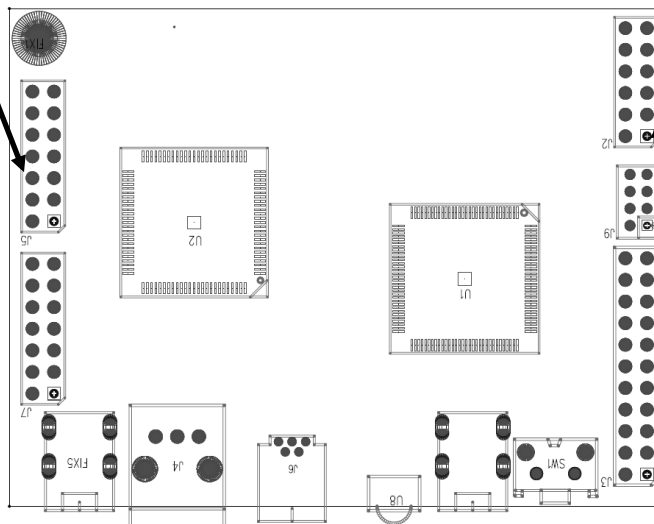
HARDWARE SPECIFICATIONS

Item	Description
Digital Signal Processor	32-bit Floating point Analog Devices SHARC ADSP21489 / 400 MHz
Control	Driverless USB 2.0 control interface for Windows/Mac OS X environments A computer is only required for the initial configuration and for USB audio streaming
USB audio input	XMOS Xcore200 asynchronous USB audio up to 192 kHz, USB Audio Class 2 compliant <ul style="list-style-type: none"> ASIO drivers for Windows Driverless for Mac OS X
Digital audio input	TOSLINK optical input. The input signal is processed by a high quality onboard Asynchronous Sample Rate Converter for compatibility with most common sample rates (20–216kHz)
I2S inputs	Up to 4 x I2S data line (8ch audio) / See plugin implementation for details
I2S outputs	Up to 4 x I2S data lines (8ch audio) / See plugin implementation for details
FIR capabilities	FIR filtering with number of taps assignable to each output channel. FIR filters are designed by third-party programs. FIR file format: IEEE 754 single-precision binary floating-point.
Filter storage	Four on-board presets, selectable by remote control
Infrared remote control	Learning remote feature for input selection, volume, mute, and preset recall
ADC/DAC Sample rate & Resolution	Resolution: 24 bit Sample rate: See plugin implementation for details.
USB port	USB port type Mini-B for audio streaming, real time control and firmware upgrade
Power supply	12 VDC single supply / Header input / 2.5W
Dimensions (H x W x D) mm	15 x 76 x 58 mm
Mounting	2 x M3 holders for front panel mounting / CAD drawings available on demand

MECHANICAL SPECIFICATIONS



Header	Description
J5.1	I2S_LRCLK
J5.2	I2S_BCLK
J5.3	GND
J5.4	MCLK
J5.5	I2S_OUT0
J5.6	I2S_OUT1
J5.7	I2S_OUT2
J5.8	I2S_OUT3
J5.9	GND
J5.10	GND
J5.11	I2S_IN0
J5.12	I2S_IN1
J5.13	I2S_IN2
J5.14	I2S_IN3



Header	Description
J2.1	I2S_LRCLK
J2.2	I2S_BCLK
J2.3	GND
J2.4	MCLK
J2.5	I2S_OUT0
J2.6	I2S_OUT1
J2.7	I2C_SCL
J2.8	I2C_SDA
J2.9	GND
J2.10	GND
J2.11	+12V
J2.12	+12V