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.
**HARDWARE SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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<tbody>
<tr>
<td>Digital Signal Processor</td>
<td>32-bit floating point Analog Devices SHARC ADSP21489 / 400 MHz</td>
</tr>
<tr>
<td>Control</td>
<td>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</td>
</tr>
</tbody>
</table>
| USB audio input       | XMOS Xcore200 asynchronous USB audio up to 192 kHz, USB Audio Class 2 compliant  
. ASIO drivers for Windows  
. Driverless for Mac OS X |
| USB 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.                                                                                     |
| Power supply          | USB port type Mini-B for audio streaming, real time control and firmware upgrade                                                              |
| 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**

<table>
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<tr>
<th>Header</th>
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<td>J5.2</td>
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</tr>
<tr>
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Features and specifications are subject to change without prior notice.