

# APEX DAC



## SPECIFICATIONS

<b>Finish</b>	Silver or Black Anodised Aluminium	<b>Worldclock I/O</b>	<ul style="list-style-type: none"> <li>• 3x Word Clock Inputs on BNC connectors, accept standard Word Clock at 32, 44.1, 48, 88.2, 96, 176.4 or 192kHz. The data rate can be the same as the clock rate or an exact multiple of the clock rate. Sensitive to TTL levels</li> <li>• 1x Word Clock Output on 1x BNC connector. With Sync Mode set to Master, a TTL-compatible 44.1kHz Word Clock is output. In Universal Master Mode, a 38.4kHz Word Clock is output for use with the Vivaldi Upsampler</li> </ul>
<b>Type</b>	Digital-to-Analogue Converter	<b>Residual Noise</b>	Better than -113dB0 @ 20Hz-20kHz unweighted (6V setting)
<b>Dimensions</b>	444mm x 435mm x 151mm high 17.5" x 17.2" x 6.0" high Allow extra depth for cable connectors Allow space for air flow around the unit	<b>L R Crosstalk</b>	Better than -115dB0, 20-20kHz
<b>Weight</b>	16.2kg/35.65lbs	<b>Spurious Responses</b>	Better than -105dB0 @ 20-20kHz
<b>Converter Type</b>	dCS proprietary Ring DAC™ topology, with a choice of 3MHz or 6MHz operation	<b>Filters</b>	<p>PCM mode: 4 filters give different trade-offs between the Nyquist image rejection and the phase response. 2 extra filters are available at 44.1, 176.4, 192, 352.8 and 384kS/s.</p> <p>DSD mode: 4 filters progressively reduce out-of-audio band noise level (inherent in the 1 bit nature of DSD), plus Filter 5 which has an improved transient response</p>
<b>Analogue Outputs</b>	<ul style="list-style-type: none"> <li>• 1x pair balanced outputs on 2x XLR connectors. Output levels: 0.2V, 0.6V, 2V, 6V rms for a full-scale input, set in the menu. Output impedance: 3Ω. Maximum load: 600Ω (10k-100kΩ is recommended)</li> <li>• 1x pair unbalanced outputs on 2x RCA connectors. Output levels: 0.2V, 0.6V, 2V, 6V rms for a full-scale input, set in the menu. Output impedance: 52Ω. Maximum load: 600Ω (10k-100kΩ is recommended)</li> </ul>	<b>Software Updates</b>	Loaded from CD-R via PCM inputs or PC via USB interface
<b>Digital Inputs</b>	<ul style="list-style-type: none"> <li>• USB 2.0 interface on B-type connector, accepts 24-bit 44.1 – 384kS/s PCM, DSD/64 &amp; DSD128 in DoP format</li> <li>• 4x AES/EBU inputs on 3-pin female XLR connectors, accepts 24-bit 32 – 192kS/s PCM &amp; DSD/64 in DoP format</li> <li>• 2x Dual AES pairs, accepts 24-bit 88.2 – 384kS/s PCM, DSD/64 &amp; DSD/128 in DoP format</li> <li>• 2x SPDIF on RCA Phono connectors, accepts 24-bit 32-192kS/s PCM &amp; DSD/64 in DoP format</li> <li>• 1x SPDIF on BNC connector, accepts 24-bit 32-192kS/s PCM &amp; DSD/64 in DoP format</li> <li>• 1x SPDIF on TOSLINK connector, accepts 24-bit 32 – 96kS/s PCM</li> <li>• 1x SDIF-2 interface on 2x BNC connectors, accepts 24-bit 32 – 96kS/s PCM or SDIF-2 DSD (auto selected). This interface requires a compatible Word Clock input, locked to the correct data rate</li> </ul>	<b>Local Control</b>	dCS Universal Remote is supplied as standard. RS232 (controlled by the Vivaldi Upsampler / app or a third party device)
		<b>Power Supply</b>	Factory set for 100, 115, 220 or 230V AC, 50-60Hz
		<b>Power Consumption</b>	23 Watts typical/50 Watts maximum

# MASTER CLOCK



## SPECIFICATIONS

<b>Finish</b>	Silver or Black Anodised Aluminium
<b>Type</b>	Class 1 Master Clock
<b>Clock Frequencies</b>	44.1, 48, 88.2, 96, 176.4 or 192kHz.
<b>Dimensions</b>	444mm x 435mm x 126mm 17.5" x 17.2" x 5.0" Allow extra depth for cable connectors
<b>Weight</b>	13.6kg / 29.9lbs
<b>Clock Accuracy</b>	Better than +/-1ppm when shipped. Typically +/-0.1ppm when shipped and stabilised
<b>Worldclock I/O</b>	Two groups of 4 independently buffered outputs on 75Ω BNC connectors. Each group may be set to a different clock frequency
<b>Digital Inputs</b>	External Reference Input on 1x 75Ω BNC connector. Accepts either Word Clock or AC coupled signals at 1MHz, 5MHz & 10MHz. Lock range is +/-300ppm.
<b>Startup Time</b>	Typically 1 minute to rated accuracy
<b>Software Updates</b>	Loaded from CD-R or PC / Upsampler via Reference Input
<b>Local Control</b>	dCS Universal Remote handset is supplied with Vivaldi DAC. RS232 (controlled by a third party device).
<b>Power Supply</b>	Factory set for 100, 115, 220 or 230V AC, 50-60Hz
<b>Power Consumption</b>	10 Watts typical/12 Watts maximum

# UPSAMPLER



## SPECIFICATIONS

<b>Finish</b>	Silver or Black Anodised Aluminium	<b>Upsampling Rates</b>	Data from any input may be converted to 24 bit PCM at 32, 44.1, 48, 88.2, 96, 176.4, 192, 352.8 or 384kS/s or DSD/64 or DSD/128. The output sample rate must be equal to or greater than the input sample rate
<b>Type</b>	Digital-to-Digital Converter	<b>Worldclock I/O</b>	<ul style="list-style-type: none"> <li>• 2x Word Clock Inputs on 2x BNC connectors, accept standard Word Clock at 44.1, 48, 88.2, 96, 176.4 or 192kHz. The data rate can be the same as the clock rate or an exact multiple of the clock rate. Sensitive to TTL levels</li> <li>• 1x Word Clock Output on 1x BNC connector. Outputs standard Word Clock at a frequency equal to the (single wire) output data rate, or 44.1kHz when set to output DSD</li> </ul>
<b>Dimensions</b>	444mm x 435mm x 125mm 17.5" x 17.2" x 5.0" Allow extra depth for cable connectors Allow space for air flow around the unit	<b>Spurious Responses</b>	Better than -100dB0 @ 20Hz-20kHz for Fs> 32kS/s, 20Hz-14kHz for 32kS/s
<b>Weight</b>	14.2 kg/31.3lbs	<b>Filters</b>	A choice of anti-alias filters is available for 12 popular conversions
<b>Digital Inputs</b>	<ul style="list-style-type: none"> <li>• Ethernet network port on RJ45 connector, accepts 24-bit 44.1 – 384kS/s PCM, DSD/64 &amp; DSD128 in DFF/DSF format</li> <li>• USB 2.0 interface on B-type connector, accepts 24-bit 44.1 – 384kS/s PCM, DSD/64 &amp; DSD128 in DoP format</li> <li>• USB On-The-Go interface on A-type connector, accepts 24-bit 44.1 – 384kS/s PCM, DSD/64 &amp; DSD128 in DFF/DSF format</li> <li>• 1x AES/EBU input on 3-pin female XLR connectors, accepts 24-bit 44.1 – 192kS/s PCM, DSD/64 &amp; DSD/128 in DoP format</li> <li>• 2x SPDIF on RCA Phono connector, accepts 24-bit 44.1 – 192kS/s PCM &amp; DSD/64 in DoP format</li> <li>• 1x SPDIF on BNC connector, accepts 24-bit 44.1 – 192kS/s PCM &amp; DSD/64 in DoP format</li> <li>• 1x SPDIF optical on TOSLINK connector, accepts 24-bit 44.1 – 96kS/s PCM</li> </ul>	<b>Software Updates</b>	Downloaded and installed from the internet via Mosaic App
<b>Digital Outputs</b>	<ul style="list-style-type: none"> <li>• 2x AES interface on 3-pin male XLR connectors, each outputs 24-bit 32 – 192kS/s PCM, DSD/64 in DoP format</li> <li>• 1x Dual AES Pair on 2x 3-pin male XLR connectors, outputs 88.2 – 384kS/s &amp; DSD/64 &amp; DSD/128 in DoP format</li> <li>• 2x SPDIF interface on RCA Phono and BNC connectors, outputs 24-bit 32 – 192kS/s PCM, DSD/64 in DoP format</li> </ul>	<b>Local Control</b>	dCS Mosaic App for Unit Configuration and Music Playback. dCS Universal Remote handset is supplied with Vivaldi DAC. RS232 (controlled by a third party device)
		<b>Power Supply</b>	Factory set for 100, 115, 220 or 230V AC, 50-60Hz
		<b>Power Consumption</b>	15 Watts typical/18 Watts maximum

# CD/SACD TRANSPORT II



## SPECIFICATIONS

<b>Finish</b>	Silver or Black Anodised Aluminium
<b>Type</b>	Upsampling CD/SACD Transport
<b>Mechanism</b>	Sound United D8M SACD mechanism
<b>Dimensions</b>	444mm long x 435mm deep x 178mm high 17.5" long x 17.2" deep x 7.0" high Allow extra depth for cable connectors / Allow space for air flow around the unit
<b>Weight</b>	23.0kg/50.7lbs
<b>Digital Outputs</b>	<ul style="list-style-type: none"> <li>• 1x Dual AES Pair on 2x 3-pin male XLR connectors (AES1+2). While a SACD is playing, the interface outputs encrypted DSD data. While a CD is playing, the Settings &gt; Upsample Mode menu page sets the interface to output either encrypted DSD data (1 bit at 2.822MS/s) or DXD data (24 bits at 352.8kS/s) or DSDx2 data (1 bit at 5.644MS/s)</li> <li>• 1x AES interface on 3-pin male XLR connector (AES3). Outputs 16/44.1 data, whether a CD or SACD is playing. 2x SPDIF interface on 1x RCA Phono and 1x BNC connectors. Each outputs 16/44.1 data, whether a CD or SACD is playing</li> </ul>
<b>Wordclock I/O</b>	1x Word Clock Input on BNC connector, accepts standard Word Clock at 44.1, 88.2 or 176.4kHz. Sensitive to TTL levels. Lock range is +/-300ppm. 1x Word Clock Output on 1x BNC connector. With the Transport in Master mode, a TTL-compatible Word Clock is output
<b>Clock Accuracy</b>	The calibration accuracy when shipped is +/-10ppm, (not temperature compensated)
<b>Software Updates</b>	Updates are loaded directly from CD-R
<b>Local Control</b>	dCS Universal Remote (supplied with Vivaldi DAC as standard) via the Mosaic app, RS232 app or a third party device
<b>Power Supply</b>	Factory set to either 100, 115/120, 220 or 230/240V AC, 50/60Hz
<b>Power Consumption</b>	16W typical / 50W maximum. Consumes less than 0.5W when powered down from the front panel