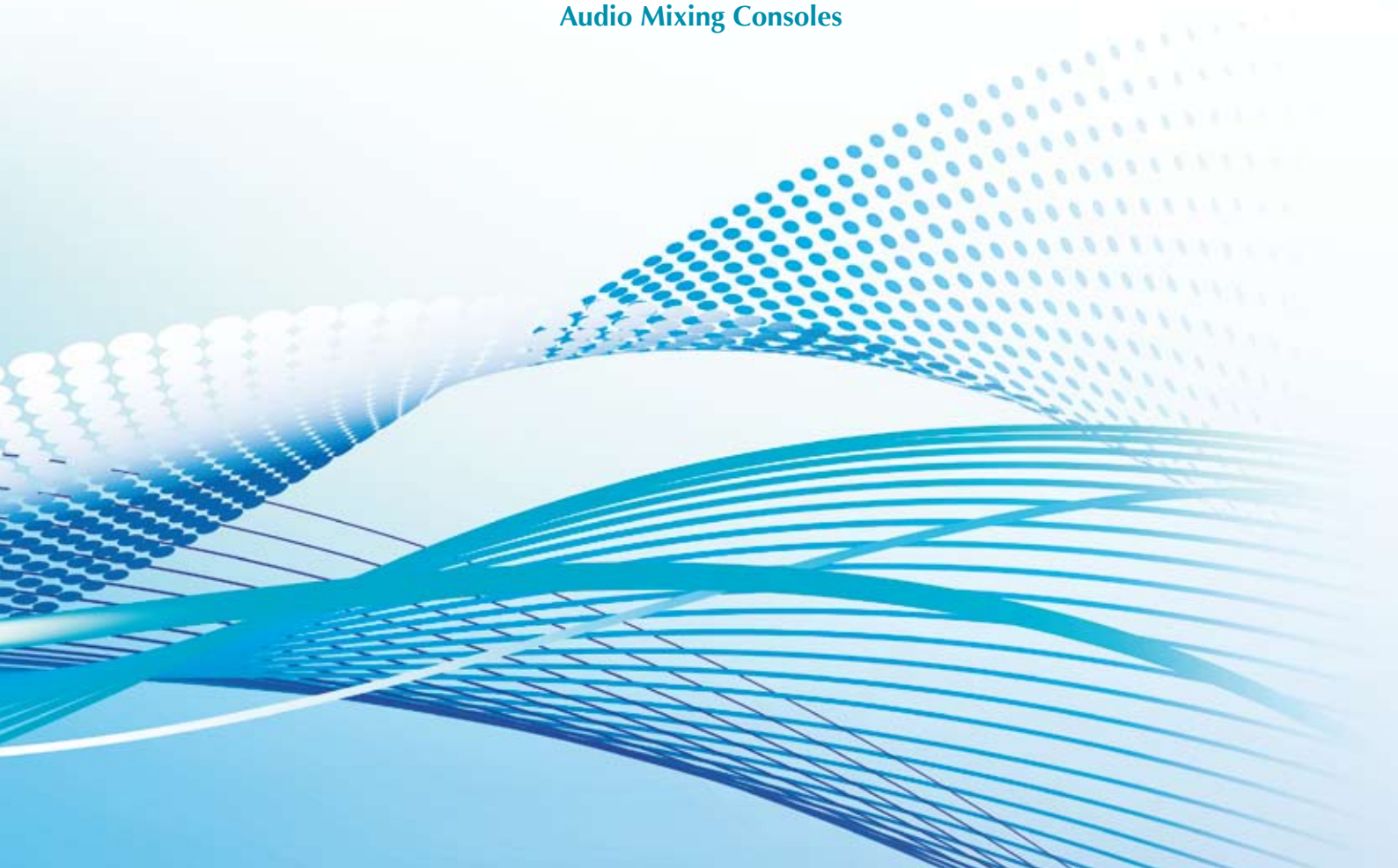


FAIRLIGHT

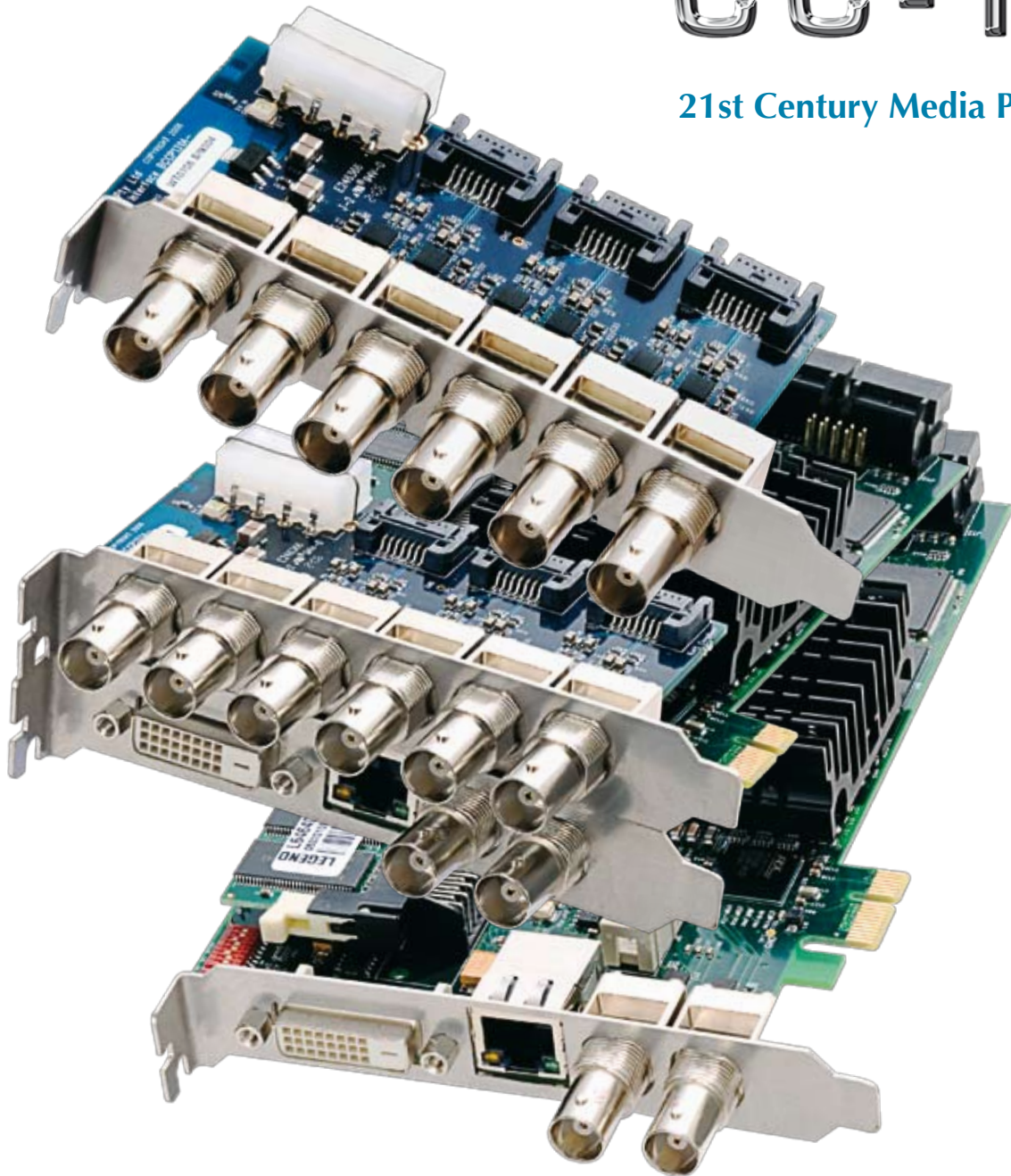
World's first truly convergent Audio / Video HD production system

Crystal Core Technology
Xynergi Tactile Controllers
&
Audio Mixing Consoles



CC-1

21st Century Media Platform



Crystal Core technology platform

Groundbreaking application of FPGA technology

Fairlight has delivered a breakthrough – a new stream of audio and video products built around its CC-1 (Crystal Core Technology). This fresh paradigm processes data in a massive Field Programmable Gate Array (FPGA), architected into a purpose-built media processing chip with staggering power and unrivalled performance. The result is a system with fast and precise tactile response, immense processing power, and sparkling audio quality when compared to any other system. It delivers an immediate step change in performance, and becomes the engine for an entire suite of new and futuristic creative applications.

Digital Recording Editing and Mixing Fairlight has introduced the CC-1 card with a PC host as the revolutionary new processing engine behind its audio mixers and workstations which include the popular Xynergi and Constellation products. With the SX-20 and SX-48 remote I/O boxes, Fairlight offers a wide choice of affordable high quality audio convertors to compliment each system.

Guaranteed Performance

Remember your last analog system? and how ALL the controls actually worked? Manufacturers of digital systems have for years been struggling to replicate true analog performance. Instead they have tried to create a false virtue out of “flexibility” and “assignability”. The frustration really begins when you suddenly run out of resources, and then “flexibility” changes to “agonising choices over what to leave out”. Time to shell out a few thousand more on yet another DSP card.

Fairlight has a new approach – guaranteed performance. Every channel ALWAYS has a complete set of available processing parameters, just like analog systems. Better yet, with 36-bit floating point mixing and EQ processing, it actually sounds better than any other available technology.

Why even consider buying yet another expensive DSP card to squeeze more out of your old system when you can get guaranteed power with lower latency and full processing on every channel from Fairlight's new breakthrough platform. Take away the guess work. Relax in the knowledge that you will never again have to calculate your system's resources. Let the system work for you instead of the other way round.

What can be achieved with just ONE CC-1 card ?

- 230 Super Hi Resolution Audio Channels
- 6 fully parametric bands of EQ on EVERY channel
- 3 Stages of Dynamics on EVERY channel
- 72 User definable mix busses from Mono to 7.1
- 96 channel audio bridge for 3rd Party PlugIns
- Integrated Video track in SD or HD format
- Up to 250 physical I/Os - Analog, Digital or MADI



Xynergi



Delivering a fusion of three essential elements

Technology - Applications - Human interface.

Introducing the Xynergi Media Production Centre; the most powerful, versatile and scalable media production system in the world today. Xynergi organises and delivers all the media processing tools needed for high-end audio production in a completely integrated system.

Media Production Centre

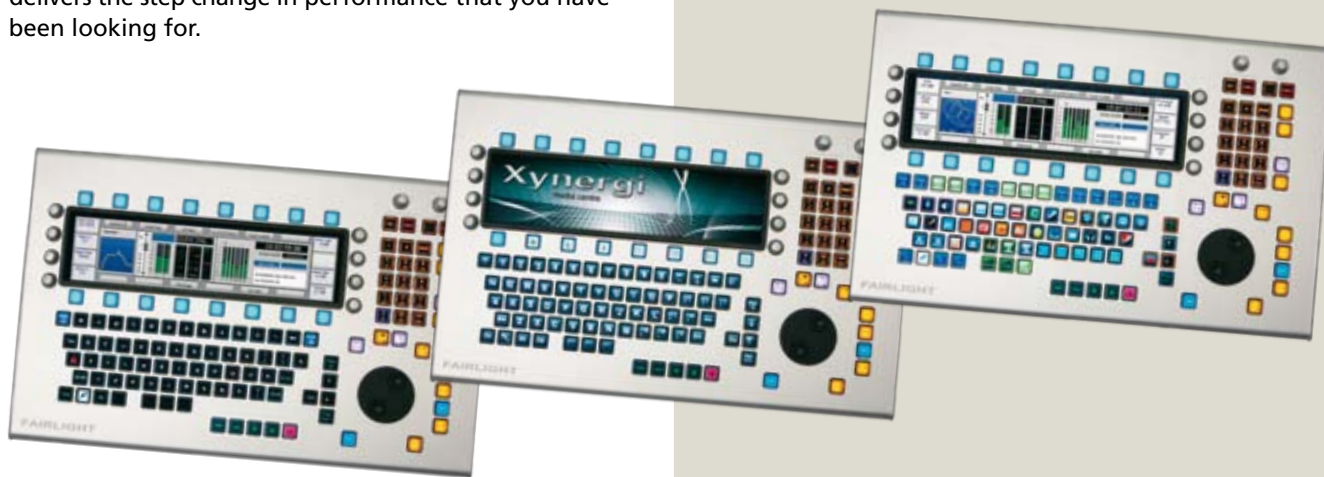
Xynergi delivers a combination of processor technology, software tools and a revolutionary tactile control interface. It is ideally suited to audio businesses engaged in a variety of post production disciplines such as advertising, broadcasting, film production and music project recording.

The Xynergi desktop controller offers a new control paradigm in terms of ergonomic flexibility. Fairlight's commitment to tactile control surfaces for controlling audio continues in its latest incarnation, featuring new self-labelling key switch technology; the system literally reinvents itself for each task you undertake, presenting the commands you need at the right time. Encouraging muscle-memory, the work surface allows you to build incredible speed on basic editing and mixing tasks, almost removing the need for mouse-clicks.

Powered by Fairlight's groundbreaking CC-1 technology, Xynergi puts the power back in your hands by delivering freedom from the limitations imposed by other less inspiring systems. With more channels, lower latency and Fairlight's legendary sound quality, Xynergi delivers the step change in performance that you have been looking for.

Features at a glance

- Self-labelling multi-function switches
- Crystal Powered
- Xplain Help: On Demand Interactive Help
- On demand QWERTY keyboard
- Colour parameter pad
- Hi Resolution jog with smart transport
- Integrated talk back and monitoring system
- Multiple speaker set selection
- Digital Patchbay
- Comprehensive file exchange system
- Tri-level sync support
- Comprehensive mix automation system
- Touch sensitive rotary encoders
- Built-in multi-track recorder
- Integrated ADR package
- Advanced editing modes
- Advanced channel and track management system
- 3rd party PlugIn support
- SX-20 sync and I/O Toolkit
- Integrated video player/recorder



Xynergi Control

Harnessing massive power under fast and responsive tactile control is an essential ingredient of the Xynergi experience. Xynergi's revolutionary new control interface literally puts multidimensional tactile control at the fingertips of the creative community. Not just another QWERTY keyboard in disguise, Xynergi's control surface has been purpose built for today's media creators.

Unique to the system is Fairlight's self-labelling key switches and the world's first 'on demand' QWERTY keyboard. The essence of Xynergi workflow lies in the controller's knowledge of what functions are required to support the operator's current working mode. ONLY the functions relevant to the active mode are presented whilst those that aren't are hidden. The result is fewer keystrokes, more control and greater productivity.

Xynergi Software

Xynergi's software suite is optimised to harness the power of the CC-1 hardware acceleration engine. By integrating all elements of the media creation process within one operating environment, Xynergi fuels user creativity and delivers unparalleled productivity. Xynergi manages digital audio recording and video capture direct to disk and includes a vast array of integrated editing and processing tools. It also builds an audio bridge to the vast community of 3rd party PlugIns by connecting to sound design applications through the VST and ReWire protocols. Xynergi is able to deliver sophisticated automated mixing and mastering in all widely used surround formats. When a project is complete, Xynergi manages its delivery to a wide variety of digital formats and electronic destinations. In short, by providing solutions at every stage of the media production process, the Xynergi software toolkit can build and deliver media projects from start to finish within a totally tapeless workflow.

Optional Fader Sidecar

Each Xynergi system can be specified with one or two sidecars, each with twelve faders. Sidecars feature touch sensitive motorised faders, encoders and switches, fader bank switches, channel status LEDs, OLED displays and joystick surround panner.



Xynergi Technology

Xynergi's FPGA-based media engine delivers massive processing power with virtually zero latency. The technology is so powerful that 230 Hi Resolution audio channels can be processed concurrently, each with six bands of EQ and three stages of dynamics, by a single CC-1 card hosted in a Windows PC.

In addition, the engine provides enough processing power to support a large format mixing system with access to 72 mix busses, 220 physical I/Os, a comprehensive monitoring system, a fully integrated 192 track DAW, on board HD/SD video and access to most popular 3rd party PlugIns. An investment in Xynergi's FPGA technology is also an investment in future proof hardware design as many new features and capabilities can be delivered in software form without the need for an expensive hardware refit.



The Xynergi Software Toolkit

Xynergi's Software Toolkit makes easy work of your daily tasks. With a built-in multi-media disk recorder/editor and with the world's most modern and powerful media processing platform under dedicated tactile control, Xynergi integrates all aspects of the media production process into one unified system.

Edit – Xynergi's award winning editing software is organised in a unique object-based architecture that makes it intuitive to use, fast to operate, powerful and flexible. With Xynergi's AudioBase3, multiple users can share sound libraries, music libraries and other sound files.

Record – All Xynergi systems include a built-in multi-track disk recorder, with seamless punch in and out, and integrated video capture.

PlugIns – Xynergi delivers an open PlugIn platform with an integrated audio bridge to a wide variety of VST compliant PlugIns and ReWire sound design tools. Xynergi's Pad provides the perfect playground for plug-ins by bringing the parameters under hardware control, and the graphics into the Pad display.

Automate – Xynergi's automation system brings large format mixing tools to any scale of project and controls over 60,000 parameters including PlugIns.

Video Integration – PyxisTrack is Xynergi's integrated video player/recorder. It supports multiple video file formats as well as video capture directly to the project timeline, delivering true multi media capabilities.

Ingest, Import and Convert – With pro-audio's ultimate file conversion utility built-in, Xynergi allows users to open, import, play and export audio files, video files and projects in today's leading professional formats.

Process – Every channel can access four bands of 36-bit parametric EQ, hi and lo filters, and three stages of dynamics. This is all processed in FPGA hardware, guaranteeing availability.

Deliver – Xynergi's integrated Virtual Studio Runner (VSR) is a powerful trafficking and ingest solution that maximises productivity and cuts costs. VSR can convert and send files directly to clients via email, FTP or via an internal mailbox for quality assurance.

Xynergi Configurations

Xynergi is available in four configurations. Each configuration has been tailored to suit a specific operational need and budget. All four configurations include the basics: Xynergi Tactile Controller, CC-1 acceleration card and the SX-20 sync/I-O box. Also included is the complete media software toolkit with integrated SD video track, automation system, plug-in manager, speaker management system, audio disk recorder and editor. Configurations expand by increasing channel capacity, and/or by addition of one or two 12-fader Sidecars. Choose your starting configuration today, with a complement of processing channels, mix busses and tracks to suit the type of work you are doing now. Later you can easily upgrade your channel capacity or your tactile interface.

Xynergi with Fader Sidecar

For those requiring extra power and speed for demanding projects, the MPC-144F and MPC-230F deliver more channels and are specified with one or two 12-fader Sidecars respectively. Each sidecar is a block of 12 motorised touch-sensitive faders. Also included are a Joystick, automation switches, status LEDs, OLED Displays and panning controls. Fader set switches provide an easy method to map any type of signal path to any of the available faders. For large scale and multi format mixing productions this extends the physical control of channels to mammoth proportions.

To support this scale of operation, Xynergi options include up to 4 MADI in and 4 MADI out connections. These can be converted to other industry standard analog and digital I/Os using the SX-48 Signal Exchange units. In total your studio can be equipped with up to 264 physical audio inputs and 284 outputs.



System Specifications

Xynergi MPC-96

- Xynergi Tactile Controller
- Xynergi Software Toolkit
- CC-1 Crystal Core PCIe Card
- SX-20 Sync and Audio I/O unit
- 96 Full Processing Channels
- 32 User Definable Busses
- 96 Available Project Tracks
- 64 Concurrent Record Tracks
- 96 Concurrent Playback Tracks
- PyxisTrack SD Integrated Video.

Xynergi MPC-144

- As above, but with:
- 144 Full Processing Channels
- 56 User Definable Busses
- 192 Available Project Tracks
- 64 concurrent Record Tracks
- 144 concurrent Playback Tracks
- Xynergi MPC-144F
- As above, but with:
- Xynergi 12-Fader Sidecar

Xynergi MPC-230F

- As above, but with:
- Two 12-Fader Sidecars
- 230 Full Processing Channels
- 72 User Definable Busses
- 192 Available Project Tracks
- 96 concurrent Record Tracks
- 192 concurrent Playback Tracks

Constellation XCS

- As above, but replace Xynergi Tactile Controller with any combination of Constellation chassis and panels, as detailed starting from Page 11.

Standard Audio Inputs (CC-1 and SX-20)

- 64 MADI Inputs
- 2 x XLR/TRS combo, switchable mic/line, balanced with level control pots
- 2 x TRS balanced line in, fixed level
- 2 pairs S/PDIF, RCA connectors

Standard Audio Outputs (CC-1 and SX-20)

- 64 MADI Outputs
- 12 x TRS balanced line out, fixed level
- 8 pairs S/PDIF, RCA connectors

Standard Sync Connections (SX-20)

- Video Sync In, BNC, bi- and tri-level, all frame rates
- WCLK In, BNC
- Timecode In, RCA, unbalanced
- Timecode Out, RCA, unbalanced
- RS-422 Master, 9-pin
- RS-422 Slave, 9-pin, OR WCLK Out with adaptor

MIDI Connection (SX-20)

- MIDI In, 5-pin DIN
- MIDI Out, 5-pin DIN

Available Options

Hardware

- SX-48 MADI Signal Exchange
- Crystal MADI Extender Card
- UP4 4-Channel Mic Preamplifier

Software

- CC-1 Licence Upgrade (adds channels, busses and tracks)
- PyxisTrack Upgrade to support HD Video formats
- AudioBase 3 Xtreme Sound FX Library Management
- Virtual Studio Runner Xtreme File Delivery

Note: The Xynergi Media Production Centre runs under Windows XP on any suitable host platform. Please check prevailing workstation specifications with your local Fairlight dealer.



Constellation^{XCS}

Mixers from Medium to Massive

The Constellation family of mixing consoles covers a huge range of physical size, starting with 2 bays and 12 faders, going up to 8 bays with optional wraparound, and up to 72 faders. Even larger two and three-person versions are available, combining independent mixing positions with integrated monitoring.

Flexibility continues:

- a choice of user interface panels for different working styles
- centralised and/or per-channel parameter control
- hardware and/or screen-based metering

For specifications of channels, I/O, sync and software options, please see Page 9.

Mixer at Heart

All Constellation systems use Fairlight's Crystal Core engine, which implements a traditional large mixer architecture on a single FPGA chip. Then it adds much more, using the amazing flexibility that only digital systems can offer.

Crystal Core is capable of mixing 230 channels into 72 destinations. This pool of 72 individual mixes, or "bus elements", is distributed as required amongst Main bus, 8 sub busses and 12 aux busses, each of which can be configured from zero to 7.1 format. Newer 3D formats such as 22.2 are also supported, and by arrangement any new format can be built into the software. There are also 24 mono multi track busses, used mainly as recording groups.

Each of the 230 channels includes a four-band parametric equaliser, hi and lo-pass filtering, and a three-stage dynamics processor. These are not plug-ins – they are Fairlight's native suite of 36-bit floating point algorithms, implemented in Crystal Core's FPGA hardware. So they are always available on every

channel, and put no load on the host PC, freeing it for extra 3rd party VST plug-ins supplied by the industry's best software companies.

Busses are equipped with two-stage dynamics processing (compressor and limiter) plus EQ and filtering if required. Crystal Core implements a 2000 x 2000 on-chip router that allows any interconnection of inputs, outputs, inserts and busses between internal and external destinations. The single-chip solution produces very small latencies – less than 0.5 milliseconds end-to-end at 48 kHz. VST Plug-in latencies up to 2 seconds are compensated automatically by advancing track playback.

All mix parameters can be automated dynamically or using snapshots, including 3rd party plug-ins, with the flexibility to automate only those channels and parameters required. All professional automation modes are supported, including trim, touch write, isolate and preview. Automation graph curves can be superimposed over the audio waveforms on corresponding tracks, and can be edited point by point, in regions, or by redrawing.

The extensive monitoring system supports up to nine speaker sets, each configurable from mono to 7.1. Listening source can be selected amongst any system bus, or any of 16 external sources, in any surround format. Up and down-mixing across different formats is automatically engaged when source and destination are different, or when you impose an alternative format on the given source. Solo, mute and phase reverse is accessible for any speaker. You can even control the exact level of each source going to each destination in every cross-format exchange.

A fully featured macro programming system with GPIO capability allows extensive customisation of key facilities, ensuring that Constellation can be integrated into any special workflow or configuration requirements.

Dubber Built In

Every Constellation includes a multi-track recorder, with a dedicated hardware work surface for editing and tracklay. Capacity per Crystal Engine runs to 192 tracks, with up to 96 in record simultaneously. Engines can be combined to form massive systems with up to 1200 tracks in sample lock for large film systems.

Editing features and software are identical to those of Xynergi systems, described earlier in this document. While the emphasis in Constellation is on mixing, the recording and editing capabilities are world class, and tightly integrated with the mixer on the same engine.

Video Deck Built In

Every Constellation also includes a Pyxis Track video system, capable of working up to uncompressed HD format (4:2:2). The video system runs on the same PC as the mixer and audio recorder, guaranteeing excellent synchronisation and ease of use.

Pyxis Track records video directly to the timeline, simultaneously with audio if required. It is also a great file player, handling all popular formats (see details in the Pyxis MT section of this brochure). Simple video editing with dissolves can be done along with audio, or separately if desired.

Control Surface Options

Constellation offers a suite of control surface options to drive the Crystal Core mixing and recording engine. Consoles are available in several different chassis sizes, starting with single-bay Producer Desks and running up to 5 bays in one line. Wedge sections can then be used to wrap one or both ends around, add more bays as required. Note that a maximum of 72 faders may be inserted in one control surface. Larger systems can be created by combining multiple surfaces, each with its own engine.

Within the chassis, a variety of control panels can be fitted, according to the working style required.

- Fader panels with motorised faders and panpots, each supporting 12 channels
- Xynergi Centre Section controller providing centralised control of all system activity
- Edit Panel offering Binnacle style editing and dedicated macro switches
- Selection Panel providing faster access to channels and monitor features
- Central Assign Panel for centralised access to mix parameters
- In-Line Panel for per-fader control of mix parameters
- Anthem Panel for music-specific work styles

Each of these panels is described in detail below.

Metering can be handled in three ways.

- Main hardware meters for assignable bus metering
- Channel meters for in-line metering per fader
- Screen meters

Metering is described in more detail later.



Mixing in Detail

Equaliser

Each channel is provided with a six band equaliser. The Console provides a dedicated control for each function. Bands one and six can be switched between shelving and low/high-pass. The other four bands are fully parametric. The EQ section has its own level compensation control and each band can be independently switched in and out and enabled for automation.



Dynamics

Three independent dynamics sections are provided. The first is a fully featured compressor with control over threshold, level, compression ratio, attack time, release time, hold time and gain make-up. The second section can be configured as an expander or a gate, with controls for threshold level, expansion ratio,

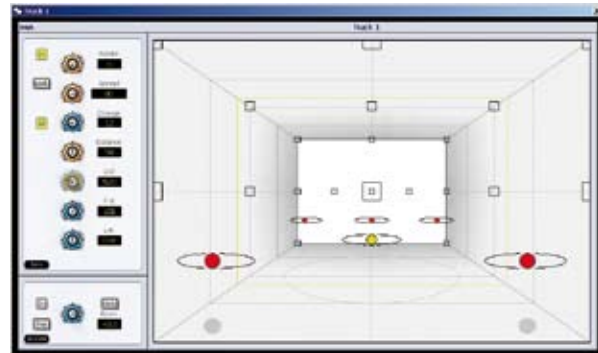


reduction depth (range), attack, release and hold times. The third section is a limiter, offering control over the threshold level, attack, release and hold times.

Panning

Panning may be applied to individual mono channels or to stereo and surround-formatted Link Groups. Standard Left-Right and Front-Back panning controls are provided. These can be combined into a joystick control, or even moved in a graphical field with the mouse.

An additional Up-Down panning control is specified, and can be accessed if desired. This is intended for use in 3D panning situations, where its behavior depends on the type of destination bus specified. Fairlight's 3D panning graphic shows clearly the position of a single channel or Group in this space.



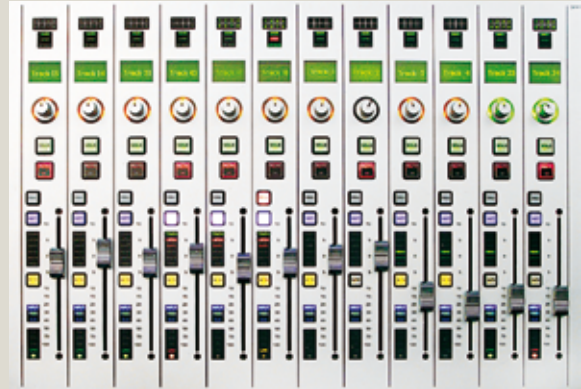
A Divergence control affects the amount of energy shared from a single element to the available outputs. With Link Groups, two extra controls become available. The "Spread" control affects the group concentration from a single point in the Pan field to the widest spread possible. The "Rotate" control literally rotates the entire sound field as if the listener was turning around on the spot. The sub-bass or boom channel is provided with an individual level and pre/post control within the panner.

PlugIns and ReWire

Fairlight Consoles support open connectivity to VST PlugIns and ReWire applications through Fairlight's Audio Bridge. Up to 96 channels of PlugIns and ReWire sources can feed into Constellation concurrently, and Fairlight's Crystal Core engine leaves the host PC free from audio processing tasks, allowing Fairlight users to run more Plug-Ins and ReWire applications simultaneously than competing systems. Plug-Ins can be driven from their onscreen graphical interfaces with a mouse if desired.

In addition Constellation offers two tactile methods of Plug-in control. The first, called Fleximaps, places Plug-In parameters on faders, knobs and switches on the console surface. This assignment is automatic in the first instance, but the system allows you to customise the placement to make it easiest for you.

The second method is called Plug-Ins in the Pad. This is available when the Constellation is fitted with a Xynergi Centre Section panel (XCS). The plug-in graphics appear in Xynergi's Pad screen, while its parameters are mapped to the touch-sensitive rotary encoders. Again, you can refine the placement to suit your working method, and you can also create several views of the plug-in graphic as it appears in the Pad, to concentrate on particular aspects of its control.



Fader Panel

Each fader panel provides support for twelve motorised touch sensitive faders and controls for panning. Solo and mute buttons are positioned above the fader.

The OLED display above the fader displays the name of the signal. Level and Pan position are also displayed. The Call button will send the channel to the central assign panel.

The Soft button provides insertion of automation.

The Auto button is used to punch in automation for the channel.

LED indicators above the fader show channel bus assignment to Main, Subs and Multitrack busses. If the fader is used for a track feed an LED is also provided to indicate ARM status of the track. To the left of the fader, LEDs are provided to indicate automation modes such as Touch, Latch, Safe, Read, Write and Trim. Other LEDs indicate if the channel is a Track, Feed or Bus as well as Signal present. Insert, EQ and Dynamics, if in use, are also indicated.



Channel ASSIGN Panel (CAP)

The CAP is used for centralised control of channel parameters. The current channel is “Called” to the CAP when selected.

Functions are divided into five sections. The input controls provide access to signal flow parameters such as level, phase, insert, I/O patch, Plug-Ins and bus assignment. The Dynamics section controls the channel’s Compressor, Expander/Gate and Limiter.

The six Band equaliser controls are central to the panel. Each band is provided with switchable filter types and dedicated level and frequency adjustment.

The Auxiliary Send panel provides level send adjustment controls to all 12 Auxiliaries. Auxes 1-4 have dedicated controls and 5-12 are switchable across two sections. Auxiliaries may be configured to feed any bus type from mono to 7.1. If in use, the pan button will enable the rotary to vary the levels sent to each bus element by variation of the Left Right or Front Back. Automated In/Out and Pre/Post fader switches are also provided.

The Surround Panner module provides joystick control as well as rotary control functions for Spread, Diverge, Rotate and the Boom channel.



In line Panel (ILP)

An In Line Panel (ILP) provides both dedicated and assignable controls of the channel’s input settings, EQ, dynamics, filters, auxiliary sends, surround panner and PlugIns.

Normally positioned above a set of faders, the ILP enables dedicated knob-per-function access to frequently required signal path parameters on a channel by channel basis. They can also be freely specified in any available surface panel space to create a mixing surface of choice.

The ILP is fitted with 72 Organic Light Emitting Diode displays (OLEDs) allowing Fairlight to display at super high-resolution, detailed information on any selected parameter value. Unlike traditional LCDs, OLED displays are crystal clear in all light environments and from practically any viewing angle.

Auxiliary Sends

The 12 Auxiliary Sends on Fairlight Consoles are accessed in two banks of rotary controls from the Channel Panel or In-Line Panel. Dedicated buttons at the bottom of the panel access Aux sends 1-6 and 7-12 as required on a per channel basis. Each of the 12 available auxiliary busses may be defined in any multi-channel format from stereo up to 7.1. The rotary control for each send can control the send level or panning.

Channel Processing Order

The order of processing blocks in each channel can be changed. The EQ, Dynamics and Insert point can be re-ordered with respect to each other on a per-channel basis, and in real time.

The Meter Point can also be set on a per-channel basis so that level is monitored at any point in the path. Aux sends can be taken before or after the fader, panpot and mute switch, on a per-channel, per-aux basis.

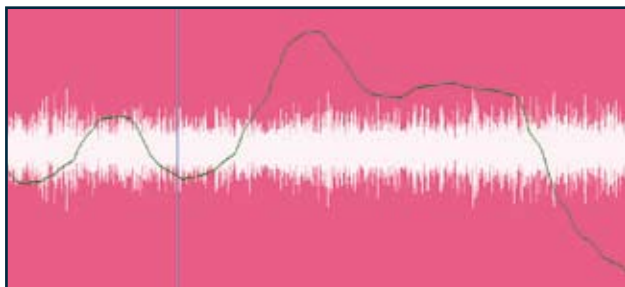


Automation

Fairlight's comprehensive automation system covers every parameter of every mixer function, including processing, routing and 3rd-party Plug-Ins. Motorised touch sensitive faders and knobs clearly show the current values of all parameters and allow direct access to control and modify them on the fly. Selecting which parameters to automate is easy - a single parameter on one channel may be selected to write or update by pressing the dedicated automation enable buttons positioned above the transport. Similarly, a number of channels may be made with the selection keys and the required parameters enabled for that set. This approach makes complex control selections simple, guarding mix data and simplifying automated mix modifications.

Fairlight's automation has several methods of writing or updating automation data. The operator can punch in and out of automation and record manually, or set IN and OUT points for automated drop-ins. Touch mode allows automation to be enabled on faders, knobs and buttons only as they are touched. All modes support adjustable Glide Out to smooth transitions between old and new automation data. New automation data may be written as absolute values or trimmed from current levels by applying an offset.

Automation curves may be displayed over the audio source waveform, and edited by dragging and dropping the data, or by redrawing the curve.



XCS Panel

The XCS panel equips Constellation with a Xynergi Centre Section providing tactile control over all editing and mixing functions via Fairlight's unique Self Labelling Keyswitch (SLICK) technology. There are also dedicated knobs and switches for Control Room and Studio monitoring, Talkback and Numeric entry.

The SLICK keys automatically become a standard QWERTY keyboard whenever you are entering text, even when you switch to other applications such as email or word processing.

The XCS panel also features eight rotary touch controls, used to drive EQ, Panning, Dynamics, Aux Sends and 3rd party Plug-ins, as well as touch sensing for automation.





Patching and Assignment

Electronic remote patching and routing tasks are achieved using the intuitive screen interface. I/O patching is entirely flexible, with all physical inputs, channel inputs, insert points, direct outputs, bus outputs, VST Instruments etc. available to be interconnected. The physical studio configuration can thus be completely transformed by simple user initiation or by recalling a mixer state. Patching may be accomplished on either single inputs and channels or on multiple channels simultaneously.

Bus Reduction

Simultaneous multi-format production is made easy by the advanced surround mixing architecture. A sub-bus may be defined as a Reduction Bus in a different surround format than the main bus. The system then performs automatic up or down-mixing to that bus based on the panner positions in the Main bus. These reduced bus mixes follow fader levels sending to the Main bus, but can also be trimmed independently, and these trims can be written to the automation. This flexibility allows the surround mix to be rapidly optimised for each delivery format within the same mix project.

Constellation Editor Panel

The Editor panel houses Fairlight's Binnacle, a purpose-built edit controller encapsulating all basic edit and transport functions in a hand-friendly area.

The panel also provides dedicated controls for Macros, Auto-locate, numerical input, File handling, Talk back, Monitor Speaker selection, and the Master fader. In the centre of the panel an LCD screen provides access to edit modes, Virtual Studio Runner, Track Bank switching, Project navigation and system setup and settings. The panel provides all essential audio and video editing functionality and in addition, centralises the essential mix functions. The Talkback Section provides single button press access to two talk back destinations which can be easily switched across any bus type, including subs and auxes. A dedicated macro pad provides access to three banks of nine user programmable macros.



Bus Assignment

Assignment of channels to mix busses can be achieved centrally on the screen by selecting the destination bus then viewing and selecting the source feeds.

"Stem Assignment" is a refinement allowing channels to be sent to a subset of the elements in a destination bus. For example, a music element may be panned from Left to Right without putting any signal into the Centre channel.

Channel Switch Panel

The channel switch panel provides easy access to all available signals: Live Feeds, Tracks, Busses and Speaker Sets. In addition it provides access to the central automation system including the automation enables, matrix, and the speaker mute buttons. Each switch features static or flashing tri colour LEDs to provide a clear indication of current status and selected mode. The monitor switches provide easy access to any of the nine available speaker sets. Set-up switches for Bus assignment, Bus format, Link groups, I/O patching, Stem assignment and External channels are also provided. The fader set switches allow the user to map up to 10 signal combinations to the available faders on the surface. Dedicated automation mode switches allow the user to easily create mixes and enable the Constellation's powerful automation system. A dedicated switch enables the automation to be edited along with the audio using the Fairlight Binnacle.



Metering

Optional Master Meters provide a set of eight assignable LED ladders, used for detailed metering of busses. A pair of VU meters is also included. Optional Channel meters are available for in-line metering of every fader channel.

On screen meters can be used for any selection of channels or busses. Meter sets can be created, allowing instant recall of specific sets of signal sources.

Pyxis



Pyxis is a family of non-linear video player/recorders designed for use in audio post production, film dubbing, telecine capture, screening rooms, ADR list preparation and control functions in ADR recording studios. Pyxis is easily installed on any suitable PC platform running the Windows XP™ operating system. Pyxis can operate as a standalone system, under

SONY™ 9 pin control, or as part of a multi-system. Pyxis can utilise most available off the shelf PC based network hardware. This includes gigabit ethernet and fibre installations if available. Direct streaming of video files from central video servers and other available networked systems is possible.



Screenshot Pyxis NLV HD

A family approach

Pyxis comes as two distinct products: Pyxis NLV and Pyxis MT.

Pyxis NLV is a native PC product supporting non-linear video plus up to eight audio tracks. Its applications centre around replacement of standard VTRs, at an astoundingly low price.

Pyxis MT includes Fairlight's CC-1 processing card, and is thus able to support up to 192 tracks. It is especially useful in applications requiring large numbers of audio tracks with tightly synchronised video, up to uncompressed HD format. The user interface is pure

PC, but uses a paradigm familiar to users of Fairlight editing products.

Pyxis family products are flexibly configured to user requirements. You can choose SD or HD capability, genlock, file playing or real-time recording, plus number of tracks, from 4 to 192. All versions support either uncompressed or compressed video formats in NTSC or PAL and at any frame rate including 24 and 23.98 in the HD versions for film productions. In addition all HD versions can reference Tri-Level sync as the master timing reference. LTC can be generated at any required rate so Pyxis can easily be used as a master in dubbing rooms.



Ready for Post

Pyxis can directly import and stream OMF and AES-31 Compositions. Its software can perform cuts and moves within the video timeline with locator points. Whilst Pyxis is not intended to be a complete video editing system, there are many occasions when the ability to move a scene, change a scene, or delete a scene will allow the audio post-production process to continue when otherwise it would have to wait for these changes.

DAW support and Audio Post Production

Using SONY™ 9 pin control, Pyxis makes an ideal companion for DAWs. In addition Pyxis can capture locators at scene changes or key frames that can be used as sync reference points for the editing process. When connected to a Fairlight workstation a unique Bi-directional control feature enables the Pyxis to be operated from either the DAW's transport controls or from the Pyxis transport controls. Pyxis can open an OMF file and playback directly without conversion. Other file types supported include Quicktime, AVI, DV-25, MJPEG and Uncompressed video. In addition Pyxis supports NTSC and PAL frame rates, and plays Hi-Definition video formats at all commonly used frame rates.

Dubbing Theatres & Screening Rooms

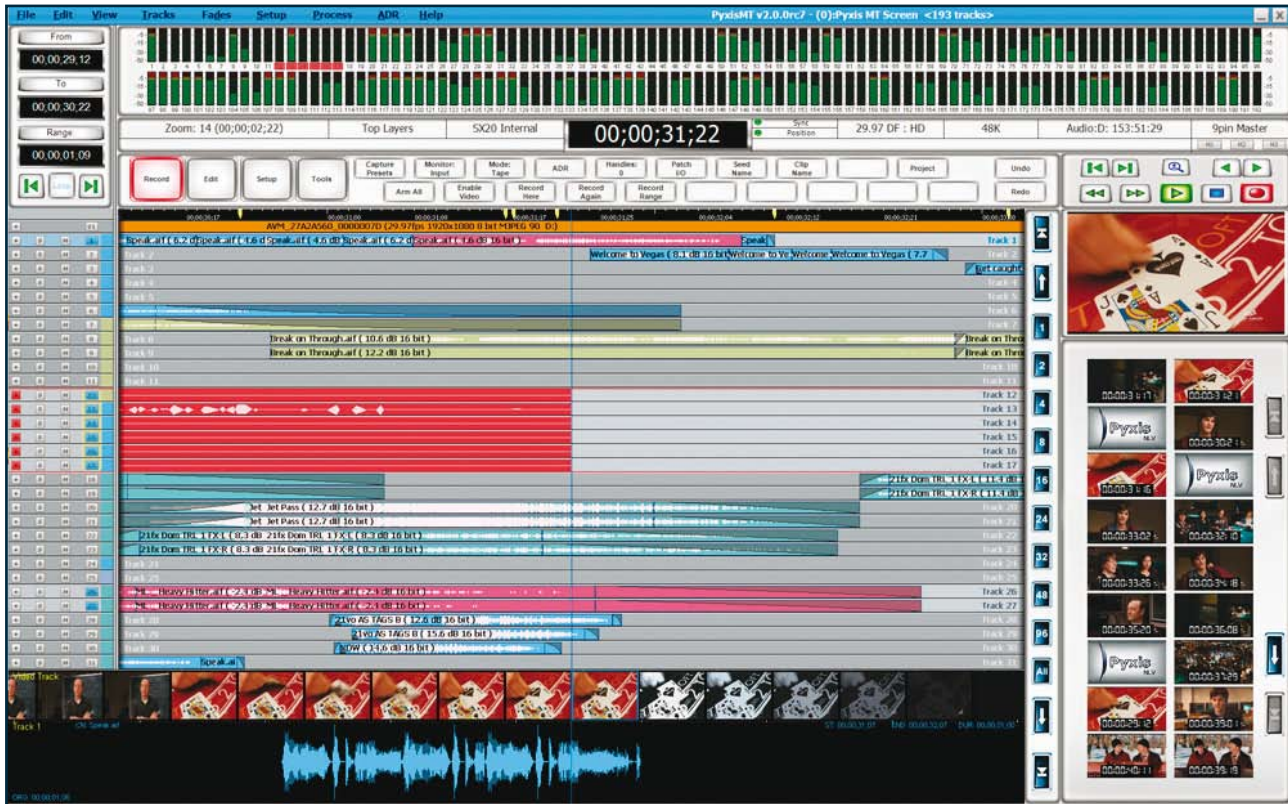
Pyxis makes an ideal picture source for dubbing theatres and screening rooms engaged in feature film and television production. Pyxis is capable of supporting stunning picture resolution with SDI output in HD or SD 4:2:2 video formats. In addition Pyxis can directly playback OMF files if required, meaning picture changes can be easily accommodated. Files can be presented either via removable storage or from centrally located video servers, if connected. In addition, Pyxis can output LTC at any required rate so it is easily interfaced to motion control and console automation systems, DAWs, DAT or other multi-track transports. For added security Pyxis provides the option of adding watermarks to the video. These are introduced as standard bitmap files which may then be embedded with the picture and randomly moved within the picture with a user defined level of opacity.

ADR Control

Using the Pyxis ADR option, automatic recording cues can be created or imported into the Pyxis system. If keyed in externally, dialogue text and auto record In/Out points can be entered into the Cue list. Dialogue text can be automatically displayed with the picture during the ADR recording session along with cueing displays (streamers) and beeps for the actors. If connected via 9 Pin, external machines such as multi-track recorders and DAWs can be set to automatically arm and drop in and out of record at the pre-defined In/Out points.

Telecine Capture

Using Pyxis as a Sony™ 9 Pin slave and recording uncompressed HD or SD video makes Pyxis an ideal Capture system if connected to a Telecine transfer bay. Recorded video files can easily be transferred to edit bays via network connection.



Screenshot Pyxis MT

Music studios

With Pyxis MT you can record unlimited takes on each track, including video of the artist performing. All the audio is sample-locked and phase coherent, every time you press Play. Audio files are immediately available in BWA V format for use in downstream processing.

Film Mixing Stages

Use Pyxis MT to play back up to 192 tracks, plus your picture source. Record stems back into Pyxis in perfect sync. Work with Native 24P pictures at 23.98 while recording at 48 kHz.

Machine Room and Transfer Bay

Ingest, encode, transcode amongst a huge range of file formats. EDL conform without using studio time. Balance reels prior to studio edit and recording sessions.

Live Television

Use Pyxis MT to record all audio feeds during rehearsals, and use them to refine mixer settings before the show. Capture video, mixes and multitrack audio feeds during the show for use in promos.

Green Computing Technology

Compare the Crystal Core to the DSP rack it replaces:

- Size – reduced from the size of a dishwasher to a module that fits in your pocket
- Power (and Heat) – reduced from 600 watts to 12 watts
- 98% – reduction in heat
- Performance – more features, more channels, less latency, higher resolution
- Cost – slashed
- Reliability – component count reduced by >99%, combined with reduced heat, results in dramatically improved reliability.



Truly Open Platform

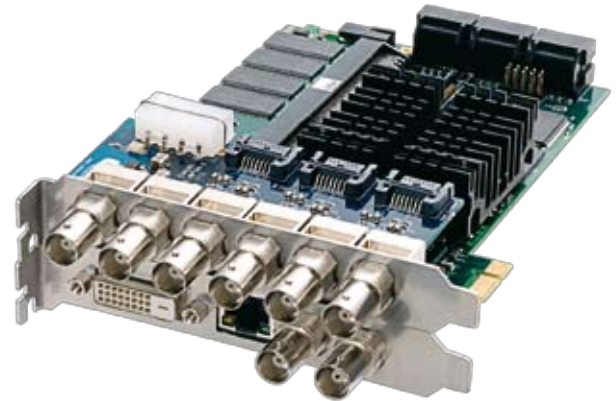
CC-1 goes even further with an integrated 192 track disk recorder and an SD/HD Video track integrated seamlessly into the recording and editing process. All tracks are on-line simultaneously for comprehensive waveform editing using Fairlight's powerful tactile interfaces.

Supported file formats include:

OMF, BWAV, WAV, MP2, MP3, MP4, Mpeg2 Long Gop, SD2, MXF, AIFF, AVI, dv25, XML, WMV, Fairlight MT and Quicktime.

With a fully integrated file transfer utility for AAF, MXF (D10/IMX, dv25, dv50, DVCpro HD, etc.), Wiretap, Vegas Video, Open TL, AES31, PT5.0, DAR, DSP Media, Bitmaps, Cineon and DPX Image Sequences, CC-1 is truly an open platform.

Crystal Core engine components



FPGA Processing Engine

Fairlight's Revolutionary Crystal Core Engine is a PCIe card that is installed in any compliant host PC operating Windows XP. The CC-1 Engine forms the basis of a variety of powerful systems, from simple low-cost recording/editing platforms to massive large format consoles with integrated Hi Definition video. Since CC-1 runs on a standard Windows PC, the system plugs seamlessly into virtually any existing IT infrastructure.

However, no other PC hosted system provides the power and dedicated performance of the CC-1 engine. CC-1's architecture allows multiple engines to be linked to form massive systems, providing a level of scalability that far exceeds any competing system.



SX-20 Sync and I/O Toolkit


Fairlight's SX-20 is a versatile "Sync I/O Toolbox", and is a required component of every CC-1 system. It provides all basic sync connections to other devices in your studio, as well as dual machine control ports.

On the I/O side SX-20 includes a useful set of analog and digital inputs and outputs, sufficient for surround monitoring, a pair of mic inputs, and a number of other ports. For details, please see page 9.

Modular High Density Remote I/O

Fairlight's SX-48 Signal Exchange extends the CC-1 platform with flexible and cost-effective I/O. Up to FOUR SX-48 units can be connected to a single CC-1 system via MADi providing up to 192 channels of discrete I/O per engine. SX-48 is designed to accommodate all standard sampling frequencies from 44.1kHz to 192 kHz.

Fairlight's I/O can be installed in 8-channel modular blocks, allowing combinations of up to six cards of analog and/or digital I/O to be mixed together in each SX-48 unit, or added later if required. SX-48 locks to external Sync at any frame rate and accepts HD Trilevel sync, Video Sync, Wordclock or AES as references.



A single CC-1 card delivers all the processing power required to deliver a complete family of fully featured large format mixing products. With 230 fully featured channels a multi format sub bus system with fold up and fold down, comprehensive monitor matrix and total automation of over 60,000 parameters, CC-1 is the power source for a complete new family of audio products.

Dynamic Resolution Optimisation (DRO)

As always, new technologies present new opportunities. Fairlight has used the programming flexibility of CC-1's FPGA chip to run different processes at different bit depths. This is called Dynamic Resolution Optimisation (DRO).

Older DSP-based systems perform all processes end to end at a single resolution even if some processes will sound better with more resolution, whilst others require less. In Fairlight's Crystal Core system, each process is tailored exactly to its needs. With DRO, some aspects of EQ processing are performed at 72-bit floating point precision, creating the headroom needed for digital sound to finally achieve the quality missed from analogue days. Mixing is performed with 36-bit floating point precision, delivering a better audio quality than any other system currently in the market. At the same time, metering functions warrant only 16-bit fixed point resolution, leaving more processing power available for other channels to use.

Dynamic Resolution Optimisation (DRO) allows Fairlight engineers to choose the best processing for each system task. This not only ensures unsurpassed audio quality, but exponentially increases efficiency, providing greater performance at a lower cost.

The breakthrough you've been waiting for

If you are fed up with continuously upgrading your system to achieve the results you need, then move over to Fairlight because we have invented and delivered the alternative. CC-1 delivers the step change in audio performance that you have been waiting for. With more channels, lower latency and guaranteed processing on every channel, CC-1 supersedes and outperforms an entire stack of DSP cards.

By utilising 21st Century FPGA technology, CC-1 puts the power back in your hands freeing you from the limiting factors of those ubiquitous DSP and uninspired host based systems. Be better, and be more than ready for emerging standards including three dimensional audio, DXD audio formats and more.

In short, CC-1 has arrived in the world of multi-media creation delivering more power and more performance – and there's no turning back! So, if you are let down by your current system, move up to FPGA technology and discover how Fairlight's new CC-1 gives you the ocean – in a drop.

Introducing the world's first FPGA-based audio acceleration platform

- Over 200 channels, each with Mastering-Quality EQ and Dynamics
- Automation of over 60,000 parameters including PlugIns
- Less than 0.5mS latency with full processing
- Lightning fast tactile response
- Integrated 192 track disk recorder/editor
- HD and SD video track with editing capabilities
- Wide choice of I/Os in analogue, digital and MADI
- Integrated VST and Rewire support
- Comprehensive Multi-format mixing capabilities
- Comprehensive integrated monitoring matrix
- Full support for collaborative workflow tools
- Wide choice of tactile controllers

Key Features

- Up to 230 Channel mix engine
- Up to 72 User definable busses Mono-7.1
- Open File Interchange for tapeless workflow
- 8 Multi format Sub Busses
- 24 Multitrack Busses
- Sub to Main Bus Mixing
- Bus reduction system for simultaneous mixing of multiple surround formats
- 12 Auxiliary sends User definable Mono-7.1
- Comprehensive Solo system AFL, PFL and SIP
- High end Automation featuring comprehensive matrix enables
- Intuitive touch aware automation modes
- Automation of all Console parameters including filters
- 3 Stage Dynamics Processing
- 6 Bands EQ Full range
- 4 Bands Clip based EQ full range
- Integrated 192 Track Disk recorder
- Automation follows editing of audio for Clip, Track and Range based edits
- Powerful Undo Redo structure
- Touch sensitive motorised faders and rotary controls
- Comprehensive multi format surround panning
- Illuminated Status of Automation parameters
- Comprehensive monitoring options
- User programmable Macro Language for custom configurations
- Integrated VST and ReWire support
- Plug and play networking within existing IT infrastructures
- Optional server based SFX library management – AudioBase3
- Optional automated file ingest and delivery – Virtual Studio Runner
- Environmentally friendly

Options

- Integrated Pyxis HD Non-linear Video Track with recording and tactile editing
- 96, 144 or 230 Channel CC-1 engine
- ADR Option

- Virtual Studio Runner for automatic electronic file import and delivery
- AudioBase3 Xtreme networked sound library system
- AV Transfer File Interchange Software
-

SX-20 Specifications

- Sample Rate: 44.1, 48, 96 kHz (+4.1667%, +0.1%, -0.1%, -4%)
- Max Input, inputs 1-2 (Mic): +0 dBu
- Max Input, inputs 1-2 (Inst): +24 dBu
- Max Input, inputs 3-4: +24 dBu
- Gain Range, inputs 1-2 (Mic): 50 dB (0dBu to -50dBu max input)
- Gain Range, inputs 1-2 (Inst): 50 dB (+24dBu to -26dBu max input)
- Mic EIN (unweighted): 125dBu @ max gain, 150 ohm source, 20Hz - 20kHz
- Input Dynamic Range, inputs 1-2: 101dB at max gain (unweighted)
- Input Dynamic Range, inputs 3-4: 109 dB (unweighted)
- THD+N Mic Inputs: 0.001% @ 1kHz, -1dBFS after 0 dB gain
- THD+N Mic Inputs: 0.002% @ 1kHz, -1 dBFS after 25 dB gain
- THD+N Line Inputs: 0.001% @ 1kHz, -1 dBFS
- Input Frequency Response: +0.05 / -0.15 dB, 20 Hz - 20 kHz
- Input Impedance, inputs 1-2 (Mic): 2k Ohm
- Input Impedance, inputs 1-2 (Inst): >1M
- Input Impedance, inputs 3-4 : 15k Ohm
- Max Output, outputs 1-12: +24 dBu
- Output Dynamic Range, outputs 1-12: 109 dB (unweighted)
- THD+N, outputs 1-10: 0.0010% @ 1kHz, -1dBFS
- THD+N, outputs 11-12: 0.0013% @ 1kHz, -1dBFS
- Output Frequency Response: +0.05 / -0.5 dB, 20 Hz - 20 kHz
- Output Impedance, outputs 1-12: < 150 Ohm
- 2 SPDIF inputs, 4 SPDIF outputs (all stereo)
- Wordclock Input and Output
- SD/HD BiLevel and TriLevel Video Sync Input
- Dual 9 Pin master/slave machine control ports, available concurrently
- SMPTE Time Code In and Out

Specifications subject to change without notice.

About Fairlight

Fairlight has been at the forefront of digital audio development since its inception in 1975. Indeed, Fairlight pioneered digital sampling and music sequencing, leading the world in cutting edge digital music synthesis.

Today, Fairlight continues that rich history of pushing technology boundaries to deliver customer solutions that transcend the ordinary. A dedication to innovation, quality and customer service has seen the CC-1 engine and Xynergi interface become two of the company's fastest selling products and make Fairlight one of the most respected companies in its field. Now more than ever, an investment in Fairlight products is an investment in the future success of your business.

www.fairlightau.com