# DREAM

DIGITAL RECORDING EDITING AND MIXING

# Product Family Overview

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# DREAM FAMILY

DREAM by Fairlight - **D**igital **R**ecording, **E**diting **A**nd **M**ixing - is a family of modular digital production and post production systems that are bound together by common operational principles, data compatibility and a common networking core - MediaLink. Each DREAM Family product has been designed to offer best-in-class performance and investment return in its own right, but also to form part of an entire workflow concept.

For the smaller facility, the DREAM Family offers a natural upgrade and growth path from straightforward editing and track laying right up to fully fledged multi-format mixing – and all stages in between - with minimal equipment redundancy and reinvestment. The DREAM family has been designed to grow with your needs.

Larger multi-room facilities will find that deploying DREAM Family products across the breadth of their operations provides highly cost effective and efficient self-contained work rooms that can be effortlessly combined when required to deliver the most sophisticated multi-room capabilities for larger projects.

Compatible with Fairlight's existing audio platforms and featuring the QDC Technology engine at its core, the DREAM family delivers higher performance, greater system integration and lower cost of ownership.

The DREAM suite of products includes the DREAM Satellite stand alone editing workstation, the DREAM Station$^{plus}$, an integrated editor/mixer expandable with optional fader modules, and the DREAM Constellation, a fully automated integrated mixer/ editor presented as a large format mixing console. All DREAM systems are able to work as a team or independently, delivering 24-bit, 96kHz- performance in multiple multi-channel, multi-format configurations, and all are based on a common hardware core that can be expanded as and when required.

Offering outstanding flexibility and a seamless upgrade path from Fairlight's already well-established platforms, DREAM offers a window to the future of digital audio production and post production. Yet the DREAM family is also designed with the realities of the media industry in mind having been designed to be more cost-effective, easier to use and more flexible than any other comparable post production system available today.

# USER INTERFACES

The DREAM family offers significant advances in user interface design. Each system comprises a combination of dedicated hardware interface console and graphics display. Each of the console interfaces are optimised to reduced keystrokes, which increase the efficiency and speed of almost every mixing and editing operation. A real-time waveform display of the current project provides all the information necessary to complete sophisticated clip based editing on projects of any scale. The DREAM Station$^{plus}$ and Constellation add a second graphics display that provides information on the currently selected multi-format signal path, a complete overview of all mixer channels and buses, and display of real-time automation playback.

## Custom Panel Hardware

The DREAM control surfaces features custom manufactured key switches with tri-colour LEDs that clearly indicate the currently selected operating mode. The custom key switches were designed exclusively for smooth, precise operation with maximum reliability in the professional environment. Key switch illumination provides interactive visual display and interrogation of parameter status and availability.

All rotary and linear controls are motorised and touch sensitive for instant update and display of automated parameter data.

# The Products

## DREAM Satellite

A fully featured Editing system of up to 96 track capacity.

## DREAM Station$^{plus}$

Editing and Automated Mixing (Mono to 7.1 formats) of up to 96 tracks with up to 64fully featured Channels, up to 64 Return Channels, 72 buses, configured as one Main, 4 Multiformat busses, 4 Stereo Auxes, 16 Multi Track busses. Integrated monitoring system and talkback facilities.

## DREAM Station$^{plus}$ Master Side Car

Expands the Station$^{plus}$ by 12 faders

## DREAM Constellation

Automated Mixing (Mono to 7.1 formats) with up to 64fully featured Channels, up to 64 Return Channels, up to 96 Disk tracks. Up to 72 busses, user definable as one Main, 8 Multi-format busses, 12 Multi-format Auxes, 16 Multi Track busses. Integrated monitoring system and talkback facilities.

# COMMON FEATURES

The DREAM family presents a natural growth in feature sets from Satellite up through Station$^{plus}$ all the way to the DREAM Constellation. Each product inherits all of the capabilities of its smaller sibling (s). Thus a Station$^{plus}$ contains a complete Satellite Editor, and adds mixing capability and studio control functions. A Constellation incorporates all of the functionality of a Station$^{plus}$, and adds yet more capacity, functionality and hardware control. Operational methodology is similarly mapped from one product to another, allowing a Satellite user to be able to immediately access the Editing functions in all products, and a Constellation or Station$^{plus}$ operator to be able to quickly move from one system to another with the minimum of additional familiarisation and training time. The DREAM family naturally offers total project compatibility between systems, allowing production resources to be allocated and shared effectively between differently equipped facilities.

## QDC Technology

The DREAM suite is based on Fairlight's powerful QDC Technology platform. QDC provides enhanced functionality, connectivity and processing power, and a highly efficient internal architecture for digital audio processing. This powerful core technology utilizes a dual-processor control system with embedded Fast Wide SCSI and Sync System, coupled with an array of independent 40-bit floating point DSP processor cards, each of which contains four pairs (8) of Analog Devices SHARC DSPs, delivering real-time 40-bit floating point mathematics on every processing function in the system.

The kind of performance that QDC provides for the DREAM suite is reflected by very measurable performance criteria. QDC-powered systems offer gapless/seamless punch-in/punch-out capability across multiple discrete tracks of digital audio simultaneously at 48kHz 24-bit resolution, all on a single hard drive. QDC Technology also delivers unlimited simultaneous real-time cross-fades across a minimum of 48 tracks - set the crossfade parameters and it's done: playback is instantaneous, with no waiting, no rendering and no caching delays. QDC also allows waveforms to be displayed instantly, and always in perfect sync with the playback across all tracks at a time. QDC Technology works better on 96 tracks than other systems manage with only eight tracks. All QDC-based systems can record at 16-, 20- or 24-bit resolutions, freely mixed in any project at any time. Choose the resolution you need without fear of project, library or clip compatibility problems. Furthermore, this performance is effortlessly extended to operation at 96kHz - simply select the sample rate and start working.

All DREAM systems share the same hardware and software platforms and thus maintenance training and expenditure is minimised and cross compatibility of systems is assured.

# DREAM SATELLITE

A DREAM Satellite is effectively included in DREAM Constellation and DREAM Station$^{plus}$ as well as being available as a stand-alone editing system. Satellite features thus apply equally to all three products.

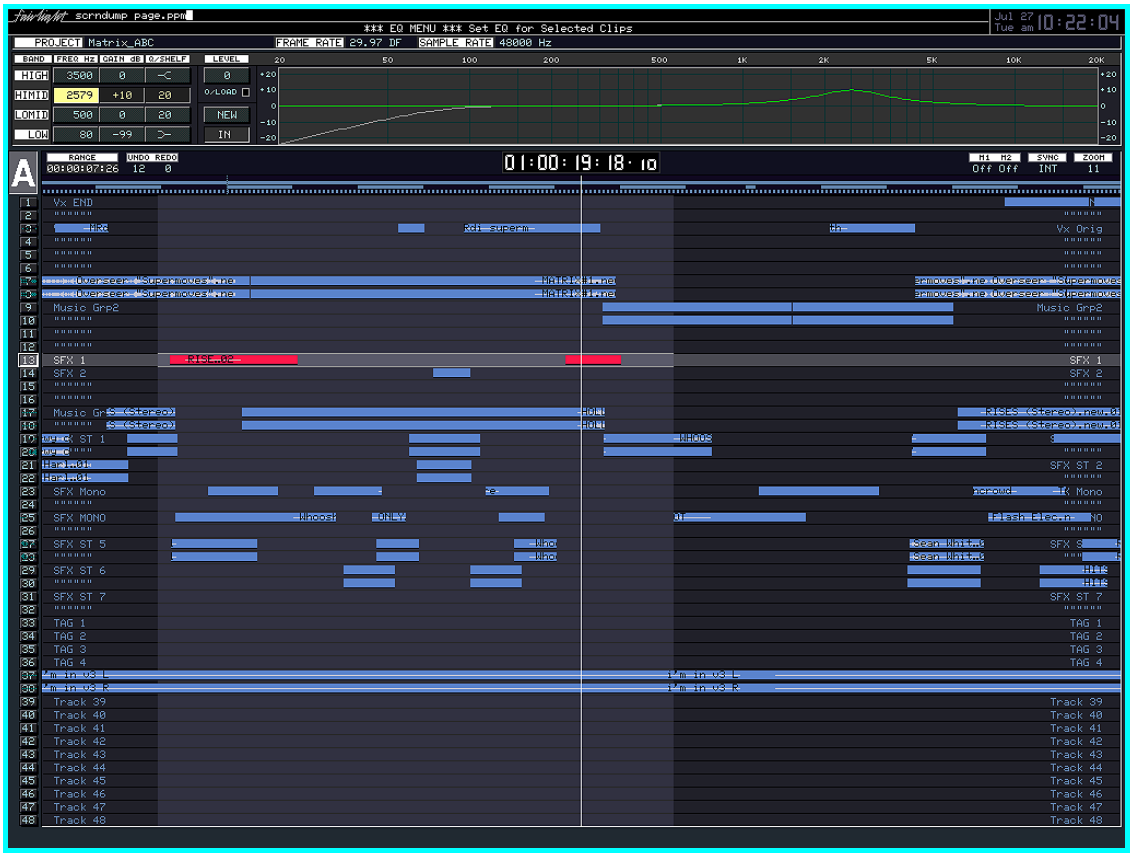
## High Performance Workstation

DREAM Satellite has been designed to streamline and simplify the processes of audio acquisition, editing and track laying. Expanding on the intuitive operation and ease of use of Fairlight's MFX, DREAM Satellite features Binnacle™ editing integrated with the power and performance of QDC Technology, delivering up to 96 tracks of pristine 24-bit, 96kHz digital audio quality. Designed for use with a studio's existing analog or digital mixer, DREAM Satellite can be supplied in 24/32/48/64/80/96 track configurations with a choice of analog and/or digital inputs and outputs. Satellite is also compatible with both legacy MFX3.48 and MFX3plus-based project formats.

# Disk Recorder Display

The Satellite graphics display provides all the information required to work with audio projects of any nature. Information is presented smoothly and rapidly, and only as required, ensuring the display remains uncluttered and easy to read. Considered essential by professional editors, high resolution, smoothly scrolling waveforms are displayed in all transport modes, providing the most detailed view possible of all the audio in a project. Finding edit points and matching audio from different sources becomes trivial. The zoom function can instantly expand and contract the time scale of displayed audio from 12 hours down to 200 ms (6 frames). Tracks may be displayed in greater or less details in any group of 1 to 48 tracks the members of which can be defined by the user Alternatively preset groups of 1,2,4,8,16,24,32 or 48 tracks are available at the push of a button Tracks are arranged in Banks A and B. Bank A represents Tracks 1-48 and Bank B represents Tracks 49-96

The upper section of the disk recorder display features context sensitive graphics for track arming and metering, project management and path tree navigation, EQ, crossfades, clip data, SFX library and database searching, autolocation, and patching.




# Recording

## Inputs

The QDC engine may be fitted with up to 96 digital AES/EBU inputs and outputs in its standard configuration. Up to 96 analog inputs and outputs may also be fitted, and a 48 channel MADI option is also available. Up to 128 inputs in any combination of Analog, AES or MADI may be installed in a standard QDC engine with four or more QDC cards fitted and up to 160 inputs may be fitted to a QDC-XT rack with five or more QDC-XT cards fitted. The QDC analog inputs and outputs employ state of the art 24-bit A/D and D/A converters, and achieve a performance which is quite simply unmatched in the digital recording world.

## 24-bit Wide Word Audio

The DREAM family supports audio in 16-,20- and 24-bit depths. A project may contain audio clips of any or all these bit depths, allowing re-use of existing 16-bit library material alongside new higher-quality recordings. The disk storage space of recorded audio is allocated as required, with only the required number of bits being used on disk for every sample, offering the user a choice between audio quality and file size. All audio processing, including EQ, time compression and crossfades, may be performed with and between audio of any bit depth.

## Track Arming

DREAM recording offers the look and feel of a conventional tape recorder, with dedicated track selection keys. Arming tracks is achieved using the track keys from within the Arm menu. Inputs can be patched to any tracks via the intuitive Patch Inputs screen display or by using the interactive console interface.

A DREAM application that does not require simultaneous recording of 96 tracks can install fewer hardware inputs to save cost, using the internal routing function to allocate input channels to recorder tracks as desired.

## Punch In / Out

As with a multi-track tape machine, the DREAM system will switch from tape to source when entering Record mode from Play, allowing it to be used in the conventional manner to punch-in and -out on any track. While recording, all tracks not armed for Record are in playback mode, allowing overdubs while replaying existing tracks.

While recording, the DREAM system continues to load the contents of the tracks that are in Record, so it is ready for instant playback when recording is terminated. This is dependent on the data rate of the disk drives, and the QDC typically delivers over 96 tracks of bandwidth at 48kHz, 24-bits using a single, standard Ultra/Wide drive. Thus gapless drop in/out on 48 tracks is easily possible at 48 kHz sample rate and bit width to a single hard disk.

## Non-destructive Recording and ADR Takes Management

DREAM systems normally record by creating a new clip (piece of audio) every time Record is enabled. Recording over a section of track where previously recorded audio exists places the new clip on top of the existing ones. At playback, it sounds as though you have recorded over the original track, but in fact the audio underneath has not been erased, and can easily be recovered later. It is of course also possible to replace existing audio if desired.

## Multi-layer Recording

Using the ability just described to place new recordings on top of existing ones, a new recording environment has been created that makes much better use of tracks than conventional workstations. Whenever multiple takes are required, DREAM allows the recording of different versions on the same track, in layers on top of other takes. This makes multiple-take recording very simple as it removes the need to keep moving the recording from track to track, changing reverb and headphone sends or muting the tracks already recorded.

All the clips are automatically numbered and may be labelled as they are recorded, and it's simple to bring any clip or section of a clip to the top of the stack where it can be auditioned and edited in place to form a completed composite take.

## Tape Mode

Tape Mode is an overwrite recording mode that provides destructive multi-channel recording (for up to 96 tracks), with completely seamless drop-in/drop-out capability across differing bit-width material, making DREAM ideal for music recording and post production mixing applications.

Tape Mode provides DREAM with conventional tape-based recording and drop-in/drop-out features, making the entire process simple and transparent to the operator. Tape Mode detects the presence of existing material during the drop-in process and automatically performs the appropriate function to ensure a smooth, seamless recording.

### Gated Recording

Gated Recording solves the problem of dead air during recordings, and is ideal for loading source dialogue tracks from video tape, or recording long takes through a piece of music. During recording, DREAM calculates the points where the audio drops below threshold and stores them for later use. This means that immediately after the recording, or at any time during the same work session, issuing the Gate command will result in the silent audio being discarded. Even at this late stage, it is still possible to check that nothing important has been removed before issuing the final command that removes audio from the disk. The Gate command can also be used to process audio that was recorded in a previous session. In this case DREAM scans the audio levels and calculates the gate transition points.

### Automatic Dialogue Replacement

The ADR menu provides automated punch in and out, with Rehearse, Record and Play modes. During rehearsal the transport loops from preroll to the end of postroll, switching to input as it passes through the record region. Record mode may be selected at any time. Then, on the next cycle, the transport drops into Record, and immediately afterwards plays back the new take.

To record a new take, the operator simply toggles back to Record mode during the preroll. Special commands, entered on the fly, allow Record to be entered early, or to play beyond the postroll point.

Eight General Purpose Outputs (GPOs) are provided for indicator lights and other switching functions. Audible warning beeps can be output from any channel, with user selectable duration, spacing and advance/retard. The cue track can also be automatically muted during the preroll, record region or postroll, as required.

## Playback

### Channel Capacity

DREAM displays banks of  up to 48 tracks scrolling in sync across the screen, and the user is free to place or record audio clips on to any of them.

QDC engines are available in configurations consisting of 32,48,64,80 and 96 tracks, depending on the number of QDC or QDC-XT cards installed.

### Scrubbing Options

To establish the position of edit points, two audio scrubbing options are available. The first, called Linear Jog, is identical to wiping a tape backwards and forwards across the playback heads. It will play from very low speed up to double playback speed, and uses digital filtering to prevent aliasing that would normally be caused at low sample rates.

The second type, called Loop Jog, is original to Fairlight workstations. In this mode the audio is played in a loop, normally one frame wide. The end of the loop is at the current play position, and the loop is effectively moved along the audio clips with the Jogger Wheel. This provides jogging with constant pitch, a significant aid in finding edit points where modulation is difficult to determine.

### Transport Smarts

The Play commands have their own smarts, located on a special menu called the Play menu. Included in this menu are: Play Again, which locates exactly to the last point where playback commenced and repeats; Play Edit, which pre-rolls the transport location where an edit was last performed; and Play Head, which pre-rolls the head or beginning of the active clip. Any online video such as the Pyxis NLV uses the same Locate and Play commands, allowing the audio clips to be used as locate points for the video.

## Jumping and Auto-location

Jumping is a way of conveniently moving the transport from one clip to the next, from one time-code mark to the next, or to other points of interest in a project.

The Jump keys are located on the inner ring of Binnacle keys, and they are primed at any moment to locate to a certain type of feature. For example, if Jump to Points is selected, pressing the Jump keys will locate to the next or previous start or end of a clip on the currently selected track(s). If Jump to Marks is selected, the DREAM system will locate to the next or previous time-code mark (to a maximum of 1,000 per project, created on the fly).

It is also possible to Jump to clip names, for example locating to the Head of the next clip whose name starts with the string 'gu' or contains the word 'shot'. The comprehensive auto-location system can jump to any time-code or user mark.

# BINNACLE™ EDITING


## Introduction

The DREAM editing software is organized in a unique object-based architecture that makes it intuitive to use, fast to operate, powerful and flexible. Fairlight's MFX series has gained the reputation of being the fastest audio editor available and the DREAM family makes significant advances on this platform. As can be seen in the following sections, there are many edits designed to fit different situations, and there is usually a single command to accomplish any desired change in the editing environment.

Fairlight's unique multi-layered approach to editing speeds up many processes and allows simpler management of audio when editing becomes complex. For example, multiple-take recording and editing is a simple task because the management of all takes is performed automatically by the system.

The system allows the replacement of audio by pasting another piece of audio on top. The original versions can be recovered just by removing the top layer and, in the same way, to build up alternatives and quickly cycle through them. The screen always displays the current state of layering, and the names of all clips at the current transport location are also displayed.

All DREAM products offer clip based signal processing edit options for level, fades and EQ, whilst Station$^{plus}$ and Constellation also offer additional automated processing.

The Binnacle™ (named after the housing of a ship's compass) centralizes all editing and transport functions around the jogger wheel and offers the operator a choice of one-handed or two-handed editing. One-handed editing is based on the existing Fairlight MFX3 model, and presents a simple, structured approach to the editing process. This approach is extremely easy to master. Two-handed editing becomes second nature, even after only a short while and increases the efficiency of the majority of editing operations by up to 50% compared to a Fairlight MFX editor, which until now has been widely regarded as the fastest editor available.

Binnacle™ has dedicated keys for Transport & Range, Play/Jog, Jump, From/To, Copy, Cut, Erase, Trim/Slip and Fade. There is also a BLUE function that offers single key short-cuts to key operations. Undo and Redo keys provide instantaneous access to 64 layers of edit decisions for ultimate flexibility.

With Binnacle™, editing functions are always available on dedicated keys regardless of where the user navigates in the system. The Binnacle™ presents a natural evolution of Fairlight's workstation experience from the MFX Series consoles and includes commands like Range, Zoom, Jump and Jog. It also defines some important new fundamentals. Edits are 'constructed' on the basis of three components:

The edit mode – Cut, Copy, Erase, Trim, Slip or Fade

The target of the edit – Clip/Range, Head or Tail

The options associated with it – Range On/Off, All Layers or Razor

To perform a Binnacle™ edit, the user first selects the appropriate mode. The Binnacle is always in one mode or another, so when performing multiple edits of the same type the mode does not need to be re-selected between edits. Next, the user selects any required modifiers. “Range” mode causes all edits to affect an area bounded by points defined using the FROM and TO keys. “All Layers” automatically invokes Range Mode and causes edits to affect all audio within the range – not just the top layer. ”Razor” mode allows the user to cut and paste time as well as audio. Having selected any appropriate modifier (usually none), the user presses the appropriate target key and holds it whilst moving the transport with the jog wheel or any other appropriate method and/or changing tracks using the “Track Sel” key. When ready, simply releasing the target key causes the edit to be completed, with, for example, audio selected in “Cut” mode being pasted in sync at the new location. A typical cut and paste edit requires a single keystroke – the target key.

New editing operations made available in Binnacle compared with MFX editing include Track to Track Razor Mode and Multi-layer Cut and Paste with Sync Point. Insert Space, Split Clip/Layer, Fill and Backward/Forward Fill are all available at all times. Using Finger Memory, users can now literally “play” keystrokes like a musical instrument, allowing full use of both hands for phenomenal editing speed.

## Cut and Paste

This is the most common type of editing; clips are cut from one position and pasted at a different time-code position and/or track. DREAM systems offer the added advantage that the position of the transport relative to the clips at the moment of cutting is stored as a temporary sync point, or hook, in the audio. This point is placed at the cursor when the audio is pasted back into the project.

In Cut mode, the operator jogs up to the relevant position in the audio (using scrubbing and visual waveforms to aid identification), presses the Clip target key, locates to the destination, selects the desired track and lets go of the target key. The audio is pasted in at the new position

The Fill command automatically fills a defined range with whatever is currently on the clipboard , and it is possible to select an overlap with crossfade to smooth the transition. The system also allows each successive fill segment to be automatically reversed, guaranteeing a continuous, glitch free fill. In addition to the above Automation  may be copied and moved with the clips if using Station or Constellation.

## Multi-track Editing

Most edits can be performed on multiple tracks simultaneously. Audio can be moved or copied from one time-code location and/or one group of tracks to any other at will.

Time can be inserted into or deleted from tracks, allowing easy re-conform of audio if the pictures are re-cut after the audio tracks have been laid. Tracks can be trimmed so that all clips end at the same time-code, and fade points can be entered into multiple tracks at the same time. Level changes can also be made simultaneously on any number of clips on any number of tracks.

## Multi-layer Editing

When recording multiple takes at the same time-code, the system will create a stack of clips with the most recently recorded clip on the top.

The Takes display at the top of the display screen shows the names of all of the clip layers that are under the cursor at the present location. The Takes Menu permits scrolling down the list to lift any clip to the top of the stack, allowing its playback.

In the same way, multiple takes can be edited together. Clips that contain useful phrases are placed on top of the stack successively, then the non-useful pieces are cut away. The remaining clips may be slipped into place and crossfaded where necessary. The “All Layers” modifier allows edits to affect all layers simultaneously.

## Fades and Crossfades

The Fade mode offers single-keystroke options for adding fades to the head or tail of clips. These occur instantly, and are displayed on the clip. If the head of one clip is placed over the tail of an earlier clip, a simple Head target key press will automatically create a crossfade from the head of the second clip to the current Play cursor line. There is no time lost computing fades or crossfades, which are performed in real-time with no degradation of quality, and can be modified instantly. The characteristics for each fade, including linearity and crossfade level, can be individually tailored. Automatic fades can be instantly placed on all clips within a range if desired, to allow for application of smoothing fades to a large number of clips simultaneously. Existing fades can be recalled for adjustment or application to a subsequent clip or part of a clip.

## Slipping and Nudging

Clips can be slipped in time relative to each other and in relation to other clips on the same track, even if overlapping. It is also possible to slip sync within a clip - particularly useful when the clip's position in time is correct but the audio is out of sync.

The Nudge menu offers the ability to move a clip in frames or sub-frames with a single keystroke. This is useful for quickly correcting the position of a sound effect or music track. Nudging can be performed while the transport is in play, so it is possible to nudge one track into sync with another by using phasing techniques. In addition Automation may be Nudged and slipped with the clips if using Station or Constellation.

## Trim

Trimming the head and tail of clips is extremely fast. During Trim, the entire content of the original waveform may be "opened out" to allow full audition of the trim, and easy assessment of the contents of hidden portions of clips. This is accomplished in-place on the desired track, so it is easy to measure the required length against other clips or against the picture or to the audio itself. DREAM systems never require edits to be performed in a separate window.

## Naming and Autonaming

Using pre-assigned seed names, clips are automatically named as they are recorded, with incremental numbering on subsequent takes. Seed names can be assigned globally (over all tracks) or alternatively, there can be a different seed name on each track to provide a simple division of recordings by characters, takes or sound effect types. The name of any clip can be overwritten at any time, even whilst recording, and names can be copied from one clip to another.

## 64-Level Undo

DREAM offers instant access to previous versions of edits providing total peace of mind. Pressing the Undo key will step back through the last 64 edits sequentially. The Redo key simply reinstates the undone edit once the Undo key has been pressed.

## Search by Name

The name of clips created during a project can be displayed on the screen. Other information about individual clips includes their duration, stereo/mono format, level, whether the clip was borrowed from another project and the time-code location of its head. This list can be filtered by typing a name, or part of a name such as a string of characters common to a group of sounds; then only clips whose names match the string of letters entered will be shown. For example, search for "shot" would reveal gun shot, rifle shot, shot 1, shot 2, and so on. These can be quickly located and auditioned.

## Alternative Edit Lists

Copies of the current project can be easily created. This can be very useful when the operator wishes to continue recording or editing a project but retain an unaltered version of the original.

## Clip based Equalization

Powerful 4-band parametric equalization can be applied to each clip in a project and set using an interactive screen. EQ settings can be A/B auditioned and copied band-selectively between clips. Crossfades and fades may be applied to any clips at any time, with a variety of user-defined laws, and all clips have independent real-time level adjustment. All of these DSP functions are performed in real time, with no rendering required.

## Time Compression/Expansion

### Timefx™

Timefx software provides frequency domain time compression/expansion, varispeed and varipitch, allowing audio to be manipulated to fit any required time frame. Timefx includes six algorithms to better match the processing format to the type of audio content. Timefx allows changes to be specified as a percentage of the original, by calculating the amount of shift required to fill a certain range, or by stretching the audio to a known target length. For varispeed and varipitch, musical intervals can also be used to set the amount of shift.

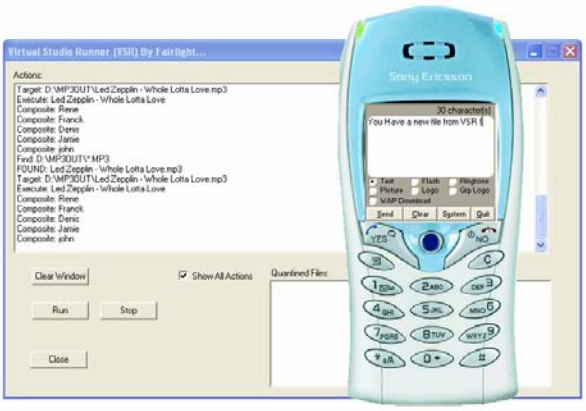
### Serato™ Time Sculptor

For those requiring the best possible results, optional Serato™ Time Sculptor compression/expansion and pitch shift software offers state-of-the-art signal processing algorithms to create totally transparent and artefact-free expansion and compression effects at full mastering quality, even over extreme settings and with highly demanding material.

## File compatibility

All DREAM systems can import and export mono and stereo audio in BROADCAST WAVE file format for easy transfer to other digital audio systems, and optional AVTransfer file exchange software provides a comprehensive file format conversion and "Fix-up" toolkit. AVTransfer can add or extract components to or from Fairlight, AES 31, OMF version 1 and 2, AIFF, WAV, BWAV, Open TL, discreet edit and DSP Media projects. It is also possible to cross convert OMF versions, fix drop frame errors and change audio sample rates and bit depths. AVTransfer imports and exports between Fairlight systems and the industry's most popular professional workstations including Lightworks, Avid, Pro Tools, AMS Neve Audiofile, Final Cut Pro, Sadie, Wave Frame, Tascam, Nuendo, Akai, discreet edit and many others.

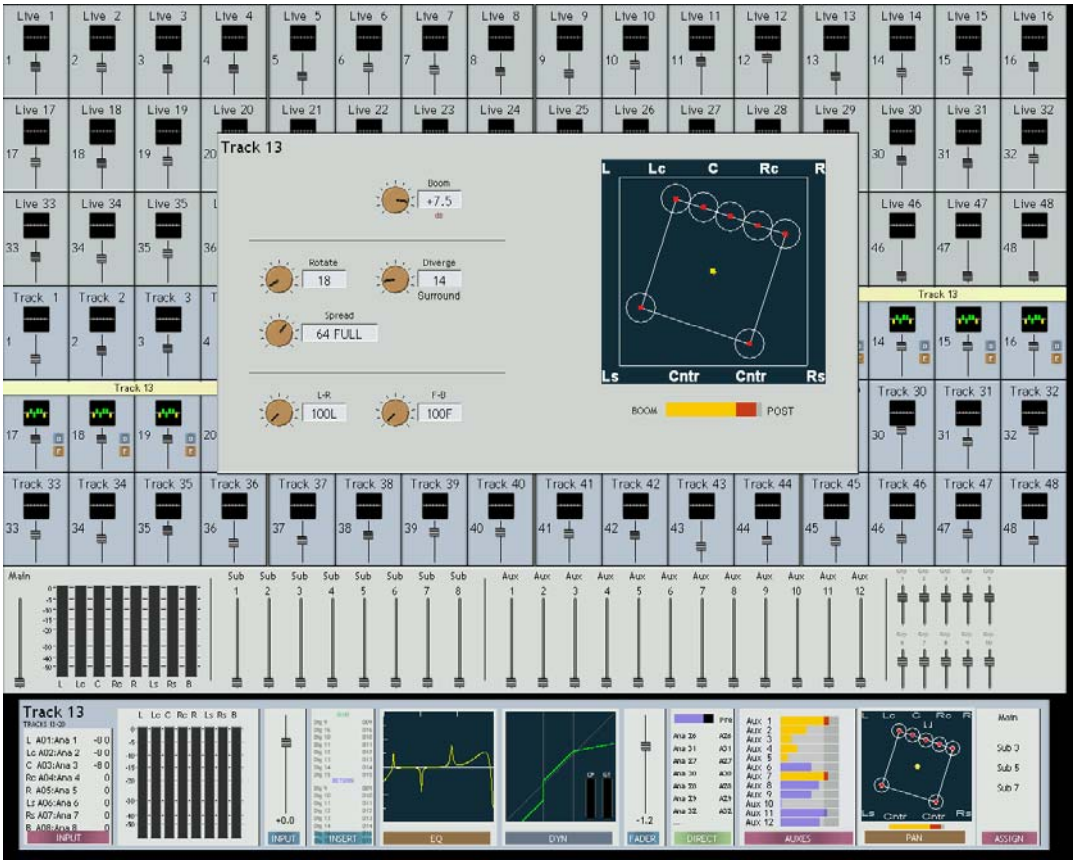
## Virtual Studio Runner




Virtual Studio Runner provides Virtual In/Out box capability to the DREAM family in the Studio environment. Using Fairlight's MediaLink server technology as a host, the system automatically manages in coming files and makes them available for insertion in sessions through a simple in studio interface. The software detects in coming files in AIFF, WAV, MP3, OMF or AES-31 and using a sophisticated decode/encode engine makes them automatically available for use in the DREAM equipped studio environment. In addition the operator can send files to registered contacts via the Studio Runner Out-going mail system. In this case the operator points at the required audio and "Sends" the audio in a number of preset formats. These formats can include Email as encoded MP3 files, automatically post it to the studio FTP site or burn to any available CD or DVD drive that is registered on the system. If that's not enough, the Studio Runner can notify the contact (client) that a file is available for him via an SMS text message. A send for Preview can also allow the operator to QA the file prior to it being automatically forwarded to the client.

## DREAM CONSTELLATION/ STATION

DREAM Station$^{plus}$ and Constellation, and Satellite (via SoftMix), all add sophisticated, fully automated multi-format mixing and studio control capabilities to the editing horsepower of the Satellite. Station$^{plus}$ and Constellation are therefore equipped with a mixer display featuring a complete mixer overview and a comprehensive display of the currently selected signal path. Fader levels, signal meters, names and parameter status for live and track feeds, and buses are updated in real-time. Mono or multi-format bus and link-group signal paths are displayed in the lower section complete with graphic display of EQ, dynamics and surround panner parameters, send and fader levels, patch names and real-time metering. The display shown is from a DREAM Constellation.




# DREAM MIXING OVERVIEW

## Architecture

### Terminology

#### Physical Input/Output

A balanced analog or AES/EBU/MADI digital audio input or output.

#### Track Feed

A signal path which includes a disk recorder track, that can be recorded, edited and routed to mix buses. Each track feed includes input gain, phase, and delay, a 6-band EQ, compressor, limiter/expander/gate, aux sends, direct out, insert, fader, and a multi-format surround panner.

### Live Feed

A signal path fed from a real-time signal attached to a physical input that can be processed fully and routed to mix buses. Each live feed includes input gain, phase, and delay, a 6-band EQ, compressor, limiter/expander/gate, aux sends, direct out, insert, fader, and a multi-format surround panner.

### Return

Up to 64 return channels may be brought into a mix. A return is real time signal that has been brought from a physical input and can be routed to mix buses. Returns may be brought from other playback devices as finished 8 track stems that can be organized as a Constellation (see below). Return channels may be controlled in groups of up to eight with one fader per group. Each return includes a 2-band EQ, level and pan controls one dynamics stage and auxiliary sends.

### External Channel

An external channel represents a control channel for an external workstation such as a Pro-Tools or a Steinberg DAW. Using an external feed allows the operator to control and automate Levels using a fader as well as to automate Mutes and Pans. Up to 64 External feeds can be set up and used on the system. All settings and automation is stored within the project file. This feature is available on DREAM Constellation and DREAM Station Plus systems.

### Bus

Destination of a mixing operation. Buses may be configured with multiple signals (bus elements) such as stereo, LCRS, 5.1 or 7.1. Bus types are the Main bus, Sub-Buses, Multi-track Buses and Auxiliary Buses. Sub-Buses may be mixed into the Main Bus, for example, as separate dialogue, music and effects stems, or for music sub mixing. Multi-track buses provide bus paths for summing feeds to be recorded to disk or other I/O.

### Bus Element

One component signal of a bus. Each bus element includes a compressor, a limiter/expander/gate, an insert, and a fader. The pool of bus elements is allocated to buses as the buses are created by the user. This is achieved in real time, without pre-configuration, and the user can define and destroy buses at will, allowing maximum flexibility in resource allocation at all times. DREAM Constellation and Station$^{plus}$ have 24 buss elements or up to 62 buss elements if fitted with four QDCs.

### Fader Group

Any number of channels may be grouped under a single master control which allows signal processing parameters such as fader level, EQ, compression and send levels to be controlled simultaneously across all group members. Master control movements are applied as an offset to each member's own settings.

### Constellation Channel

DREAM Station$^{plus}$ and Constellation operation is inherently multi-format. Feeds may be linked to form an audio Constellation for control as a single surround format stem. When a Constellation Channel is formed its elements are automatically panned to assume the role of each bus element. A Constellation Channel is similar to a conventional stereo channel, except it may be up to 8 elements wide (7.1), and each individual element may be temporarily unfolded to access its controls independently.

# DREAM Satellite, Constellation and Station$^{plus}$ Configurations

| QDC Engine | | Tracks | Softmix / Tracks | Live Feeds | Returns | Mix Busses | Maximum I/O | Maximum I/O |
|---|---|---|---|---|---|---|---|---|
| **Satellite** | | | | | | | Without MADI | With 56 MADI |
| Mini 1x QDC | | 32/24* | 24 | 8 | | 16 | 32 | 56 |
| Mini 2x QDC | | 48 | 48 | 8 | | 24 | 64 | 88 |
| QDC Rack 1x QDC | | 32/24* | 24 | 8 | | 16 | 32 | 56 |
| QDC Rack 2x QDC | | 48 | 48 | 8 | | 24 | 64 | 88 |
| QDC Rack 3x QDC | | 64 | 48 | 32 | | 32 | 96 | 120 |
| QDC Rack 4x QDC | | 96 | 48 | 32 | | 32 | 128 | 152 |

* Provides playback of 32 Tracks and seamless Punch In/Out of 24

| QDC Engine | | Option | Tracks | Live Feeds | Returns | Mix Busses | Maximum I/O | Maximum I/O |
|---|---|---|---|---|---|---|---|---|
| **Constellation/Station** | | | | | | | Without MADI | With 56 MADI |
| Mini 1x QDC | | A | 24 | 8 | 0 | 16 | 32 | 56 |
| Mini Rack 2x QDC | | A | 48 | 8 | 0 | 24 | 64 | 88 |
| QDC Rack 1x QDC | | A | 24 | 8 | 0 | 16 | 32 | 56 |
| QDC Rack 2x QDC | | A | 48 | 8 | 0 | 24 | 64 | 88 |
| QDC Rack 3x QDC | | A | 48 | 32 | 0 | 32 | 96 | 120 |
| QDC Rack 3x QDC | | B | 64 | 8 | 16 | 32 | 96 | 120 |
| QDC Rack 4x QDC | | A | 48 | 48 | 48 | 48 | 128 | 144 |
| QDC Rack 4x QDC | | B | 80 | 16 | 24 | 40 | 128 | 144 |
| QDC Rack 5x QDC | | A | 48 | 48 | 64 | 62 | 112 | 104 |
| QDC Rack 5x QDC | | B | 96 | 16 | 24 | 48 | 112 | 104 |

| QDC Engine - XT | | Option | Tracks | Live Feeds | Returns | Mix Busses | Maximum I/O | Maximum I/O |
|---|---|---|---|---|---|---|---|---|
| **Constellation/Station** | | | | | | | Without MADI | With 56 MADI |
| QDC Rack 4x QDC | | A | 48 | 48 | 48 | 48 | 128 | 152 |
| QDC Rack 4x QDC | | B | 80 | 16 | 24 | 40 | 128 | 152 |
| QDC Rack 5x QDC | | A | 48 | 48 | 64 | 62 | 160 | 184 |
| QDC Rack 5x QDC | | B | 96 | 16 | 24 | 48 | 160 | 184 |
| QDC Rack 6x QDC | | A | 48 | 64 | 64 | 72 | 192 | 192 |
| QDC Rack 6x QDC | | B | 96 | 48 | 48 | 48 | 192 | 192 |

**NOTE:** Maximum I/Os of ANY one type (Analog, AES or MADI) is 96

## Patching and Assignment

Patching and routing tasks are achieved easily with an intuitive control surface interface. I/O patching is totally flexible - DREAM systems effectively incorporate both an analog and digital cross-point switching system. The physical studio configuration can thus be completely transformed by simply recalling a mixer state. Dedicated selection keys are used to complete patching operations and patching may be accomplished on either single inputs and channels or on multiple channels simultaneously.

## Patching Inputs to Feeds

Input patching operations are performed by first selecting the destination feed and then selecting the input source. Station$^{plus}$ provides soft key menu options for selecting digital or analog inputs while the DREAM Constellation allocates separate selection keys for digital inputs and analog inputs. The intuitive button illumination scheme provides instant interrogation of the current patch configuration:

Input splits may be achieved simply - DREAM allows physical inputs to be simultaneously connected to multiple destinations.

## Patching Bus Elements to Feeds

Bus elements may be internally patched to either Tracks or Live Feeds. Once again the destination feed or feeds are selected first, then a bus is selected.

## Patching Outputs

Bus outputs may be patched to physical outputs in the same efficient manner as input patching. The familiar illumination scheme is adopted, prompting the user to select from the available I/Os. Multi-channel buses may be patched to a group of outputs in a pre-defined order with a simple two button multiple selection procedure. Buses may be patched to any number of physical outputs of any type for sending to multiple destinations.

## Bus Format Selection

Bus format selection is achieved by simply selecting from one of the pre-defined standards: Mono, Stereo, LCR, Dolby Surround (LCRS), 5.0, 5.1, 6.1, or 7.1.

## Automatic Bus Reduction

Automated multi-format production is made easy by the advanced surround mixing architecture. When a Sub-bus is defined in a lower surround format to the main bus (e.g. Main bus-7.1, Sub-bus-Dolby Surround), the system performs automatic downmixing to that bus based on the panner position in the Main bus. These reduced bus mixes are based on the parameter data for the Main bus in both Station$^{plus}$ and Constellation, but can also be trimmed independently for each mix. All parameters can be written to automation for all mixes. This flexibility allows the surround mix to be rapidly optimised for each delivery format within the same project.

## Assignments

Assignments are achieved simply by selecting the destination bus then selecting the source feeds or sub-buses. Once again the familiar button illumination guides the user to select from available feeds or modify the existing routing. Source feeds may be toggled in or out of the current selection by pressing their dedicated keys. Multiple selections are easily achieved by simply holding the first in the group and pressing the last.

“Stem Assignment” allows the user to determine whether a given feed sends to all elements of the destination bus or to only a subset. Specific feeds may therefore be excluded from sending to particular bus destinations (e.g. the Centre element of a 5.1 mix bus) where appropriate.

### Operation of Faders

The single fader on a Station$^{plus}$ and the multiple faders on the DREAM Constellation and Station$^{plus}$ Sidecar behave in a manner familiar to any experienced audio operator. The touch-sensitive, motorised Fader, pan control, mute and solo buttons all perform as expected. To call a signal path to the fader on Station$^{plus}$, simply press the Call button and select the feed or bus using the selection keys. On DREAM Constellation press the Call button on any fader strip to call the signal path parameters to the centrally assigned panel. “Follow” mode causes any feed or bus that is selected to be automatically assigned to the central fader channel controls. During editing this means that the most recently edited track is always available for automated level or EQ adjustment.

The LCD display on every DREAM Constellation is fully graphical, and is used to display signal path name, user name, fader or pan level, and parameter value when the fader is used to control a parameter as described below.

Groups of faders may be controlled by a single fader by setting up fader groups. Fader groups may include control of the fader alone or any parameter in a signal path.

Faders may also be members of a link group. Signal paths within a link group behave as the members of a surround format bus. Link groups may include up to 8 members. Panning within the link group is set automatically so that members are automatically panned to appropriate Bus Elements.

#### Mapping Fader Sets

DREAM Constellation and Station$^{plus}$ Sidecar allow flexible mapping of signal paths to the available physical faders. Fader Sets may be stored and recalled instantly by pressing the dedicated fader set buttons. A signal path may appear in any number of fader sets and fader sets can be defined in any order desired. Fader sets can include a mixture of feeds and buses, and may be duplicated for easy setup.

## PARAMETER CONTROL

DREAM Station$^{plus}$ implements control of signal path parameters via the “Parameter Pad”. Ten touch-sensitive motorised knobs and eight soft keys provide comprehensive control of all parameters. Parameter names and values are displayed in real-time beside each control on the Parameter Pad LCD. Signal processing blocks are called to the parameter pad by pressing dedicated Parameter Pad function buttons for EQ, Pan, Dynamics, Aux Sends, and Plug-ins.

DREAM Constellation provides a fully featured DREAM Channel Panel (DCP) for control of signal path parameters. The DCP provides a dedicated, touch sensitive, motorised control for every common function.

### Panning

Station$^{plus}$ provides left-right and front-back rotary pan controls on the Parameter Pad and sidecar. In addition the track ball can be used as two-dimensional pan control. The DREAM Constellation panning section includes a joystick panner for complex two-dimensional surround panning moves, as well as a track ball panner.

Panning may be applied to individual mono feeds or to multi-format link groups. A Divergence control affects the amount of energy shared from a single element to the available outputs. Increasing the divergence spreads the image across adjacent outputs.

In the case of a link group two extra controls become available – “Spread” and “Rotate”. The Spread control determines the effective width of the signal feeding the Pan control. At maximum spread individual group elements are fed only to their associated outputs and the pan control behaves like a balance control, increasing the amount of energy in the output it favours. When the Spread control is reduced, the Pan control moves the entire group around the sound field. The Rotate control literally rotates the entire sound field as if the listener was turning around on the spot. This effect mimics the visual effect of a camera pan.

The sub-bass or boom channel is provided with an individual level control within the panner.

## Equaliser

EQ parameters are presented on the Station$^{plus}$ in the Parameter Pad. DREAM Constellation provides a dedicated control for each function. Each feed is provided with a fully featured six band equaliser. The classic Fairlight equalisation has gained a reputation for transparent, detailed and accurate frequency response control. Bands one and six can be switched between shelving and low/high-pass. The other four bands are fully parametric including shelving response. The EQ section has its own level compensation control and each band can be independently switched in and out and enabled for automation.

## Dynamics

Once again, the Station$^{plus}$ provides control of the dynamics parameters on the flexible Parameter Pad. DREAM Constellation offers dedicated knob-per-function parameter control. Two independent dynamics sections are provided. The first is a fully featured compressor, with control over threshold level, gain reduction ratio, attack time, release time, hold time and gain make-up.

The second dynamics section can be configured as either a limiter, an expander, or a gate. The limiter offers control over the threshold level, attack time, release time, hold time, and gain make-up. The expander and gate have controls for threshold level, gain reduction ratio, reduction depth (range), attack time, release time, and hold time.

The two dynamics sections may be independently switched in and out and enabled for automation.

## Auxiliary Sends

DREAM Station$^{plus}$ provides four auxiliary sends which may be configured as mono or stereo. Auxiliary send levels are controlled from the parameter pad. Each send may be switched pre-or post fader. If the bus is defined as stereo a pan control is also available.

The Auxiliary Sends section on the Channel Panel of the DREAM Constellation has four discrete sets of controls for the first four auxiliary buses and two additional sets for the eight remaining available buses. Each of the twelve available auxiliary buses may be defined in any multi-channel format up to 7.1. The rotary control for each send can control the send level or, panning.

## GROUPING

Sophisticated parameter grouping options are core to DREAM's ease and speed of use. Buses, Return Groups, Fader Groups and Link Groups all share similar operational features and procedures. All bus and group elements may be controlled independently in a process known as unfolding. When a Group is unfolded, each individual member may be adjusted independently. When refolded, they all once again come under the control of their master fader, with master control movements now being recorded as offsets to the underlying member's settings. This applies to all control parameters – Faders, Pans, EQ and Dynamics.

Where a Group has stem structure, as in the case of a bus or a link group, it means that, nominally, each member of the Group is assigned to one of the Bus Elements of the Main Bus. This assignment is really created by panning, not by limited assignment to destination Bus Elements. To achieve this, each member is panned hard to one Bus Element position, Spread is at maximum, Divergence is at minimum and Rotation is at zero.

At the moment a Group with stem structure is created, the pan settings are forced to these extreme settings regardless of their previous values. Later the Group can be unfolded and the members panned differently.

## MONITORING

The DREAM family offers convenient and powerful monitoring facilities on-board, eliminating the need for any external surround monitoring control system. Multiple loudspeaker sets and surround formats can be accommodated easily and consistently.

Both DREAM Station$^{plus}$ and Dream Constellation offer nine separate sets of control room monitor speaker outputs. The user can quickly switch between the main monitors and any alternative speakers. The monitoring system will perform automatic downmixing when there are less loudspeakers in the alternative monitor set than the requested monitor format. Monitor sources can be selected from any of the buses or from a set of 16 preset external sources for monitoring tape returns or other external devices. The monitor control section includes Mute and Dim controls and individual speaker mutes.

DREAM Constellation offers Studio Loudspeaker outputs in addition to the Control Room Monitor Outputs, and the user may store up to 16 Control room and 8 Studio monitoring configurations on dedicated buttons. These configurations include both source and speaker selections.

### Calibrated Reference Level

DREAM Constellation supports calibrated monitoring level for film or mastering work.

## METERING

All DREAM Systems have integrated track metering on record and playback. Signal levels are displayed for each track within the track arming video display.

Station$^{plus}$ and Constellation also provide metering within the mixer display for the currently selected signal path and the Main bus outputs, together with tri-state signal presence meters on all channels. Optional external high resolution meters may also be fitted which automatically display the signal levels of the currently selected signal paths in any multi-channel format. External metering points are provided to drive the user's own choice of meter systems.

### Station$^{plus}$ External Meter Options

Two external factory metering options are available for the Station$^{plus}$ - the Main Metering Unit and the Side Metering Unit. The Main Metering Unit attaches to the Station$^{plus}$ and provides eight high resolution bus meters. The Side Metering Unit attaches to the optional Station$^{plus}$ Side Car and provides twelve high resolution channel meters.

### DREAM Constellation Metering

DREAM Constellation's level metering facilities include a modular Constellation meter bridge with an individual LED bargraph meter for each fader strip. An additional master metering unit provides eight high resolution meters for the bus elements of the currently selected Meter Set. An area within the main Metering unit is reserved for fitting of various types of analogue meters such as VU meters.

### Meter Ballistics

Meters can display peak levels with peak hold. The numeric display also shows the highest signal level since the last reset.

### Main Meter Display

The user can map up-to 8 signals to the main meters if these are installed with either DREAM Station or Constellation. Signals can be chosen from any bus or bus element currently in use by the system. These include the Main Bus, Sub busses, Auxiliary sends or Multitrack busses.

# AUTOMATION

The DREAM Station$^{plus}$ and Constellation provide total dynamic automation of all mix parameters. DREAM automation is as simple to operate as it is comprehensive. Motorised touch sensitive faders and knobs clearly show the current values of all parameters and allow instant direct access to control and modify on the fly.

### Parameter Enable Matrix

Selecting which parameters to automate is made easy through a simple interactive selection process. A single parameter on a single feed may be selected to write or update by pressing the dedicated automation enable buttons on the Constellation surface. Similarly, a selection of feeds or buses may be made with the selection keys and particular parameters enabled for that set. This approach makes complex control selections simple, guarding your valuable mix data and making automated mix modifications a breeze.

### Robust, Repeatable, Integrated

Automation data is written into the disk recorder project file simplifying project management tasks and ensuring the robustness, repeatability and perfect synchronisation of all mix automation.

### Easily Edited with Trim and Touch Enable Modes

DREAM automation includes several methods of writing or updating automation data. The operator can punch in and out of automation record manually using the IN and OUT keys, which can also be used to 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 In and Glide Out to smooth transitions between old and new automation data.

New automation data may be written in absolute values or trimmed from the current levels by applying a relative trim offset.

### Automation follows Audio Editing

DREAM Station$^{plus}$ and Constellation's sophisticated audio editing tools can be applied to editing automation data as well. Data can be cut, copied and pasted between tracks and clips either with the audio or independently of the audio.

### TALKBACK

DREAM Station$^{plus}$ and Constellation both include comprehensive talkback facilities. Station$^{plus}$ offers a single configurable Talkback group while Constellation offers two independent Talkback groups. (Microphone is not included)

# DREAM STATION$^{PLUS}$ SUMMARY

## Fully Integrated System

DREAM Station$^{plus}$ is a full-featured digital audio recording, editing and automated mixing system, capable of delivering final mixes in any format up to 7.1.

## Expanded Functionality

Station$^{plus}$ incorporates all the functionality of a Satellite integrated into a full specification fully automated mixing system capable of supporting up to 192 channels and up to 72 Busses.

Every Live feed and track in Station$^{plus}$ is equipped with 6 bands of EQ and a 2 stage Dynamics section with fully automated, high performance compressor plus selectable limiter/ expander/gate. The channel equalizer section offers 4 fully parametric bands, each of which can operate simultaneously in any range between 10 Hz - 22 kHz , plus 2 bands of shelving/filters, which can be switched between Shelf, 6 and 12dB/Octave filters.

Station$^{plus}$'s bussing structure provides a main mix bus and 4 sub buses, each of which can be up to 7.1 wide. Four mono or stereo auxiliaries are provided, and all buses are equipped with bus-optimised dynamics processing. Buses can be configured from a pool of up to 72 automatically allocated bus elements. Station$^{plus}$ performs Sub-bus to Main bus summing with individual pre or post-fader Sub-bus direct outputs for stem-based mixing and international versioning.

Multi-Format Friendly Station$^{plus}$ has been designed from the outset for multi-format work, and incorporates sophisticated panning facilities such as Diverge, Spread and Rotate, which allow exceptionally effective control of Surround mixes. Sophisticated grouping functions allow the creation of linked multi-format audio sources as a simple extension to concept of the stereo channel.

Station$^{plus}$ also incorporates a comprehensive monitor system featuring multiple speaker set selection plus integrated monitor path downmixing for multi-format compatibility monitoring. The integrated talkback system includes multi-destination talkback routing and an automatic slate function with oscillator.

Station$^{plus}$ is fully automated across all parameters. The Station$^{plus}$ surface utilizes custom designed touch sensitive moving knobs and faders and precision engineered switches with multi-colour LEDs to ensure clarity and ease of operation. The Station$^{plus}$ Sidecar allows expansion of the surface in blocks of 12 faders to a maximum of 24 faders, and external metering options are available to enhance the high precision on-screen meters.

# DREAM CONSTELLATION SUMMARY

## Full Featured System

The DREAM Constellation delivers up to192 channels delivered to up-to72 mix bus elements. This pool of 48 bus elements are divided up as required between a main bus, up to 8 sub buses and 12 auxiliary sends, all of which can be up to 7.1 in format. 6-band EQ and filtering and two-stage dynamics processing is available on up to 144 channels simultaneously. The bussing system allows simultaneous generation of multiple surround formats plus bus-to-bus mixing for multi-stem work. A unique grouping and panning system allows smooth and simple manipulation of the mix matrix to stunning effect, ensuring that the most complex surround sound mixes can be accomplished with ease.

As part of the Fairlight DREAM suite of complementary digital audio systems, the DREAM Constellation will function as the routing and processing hub for complex post production projects, reducing time and cost and increasing creativity and boosting profitability. Physical I/Os are available in analog, AES and MADI formats and a sophisticated internal patching system allows totally free routing of Inputs, Outputs, and Buses to external or internal destinations.

The DREAM Constellation is ready for any cinema playback format currently in widespread use, up to 7.1 channels. The monitoring bus system is completely configurable with programmable fold-down and fold-up modes allowing instantaneous switching to multiple alternative speaker sets, audio sources (both internal and external) and formats.

### Extensive Facilities

The DREAM Constellation comprises a suite of control surface elements driving the QDC engine fitted with a variable complement of channel cards. The Constellation is available in various chassis sizes, each of which may be configured with a choice of fader numbers, Channel Panels and meter bridges. The architecture of the system allows configuration options for most functions, including fader assignment, panel orientation, bus configurations, dynamics operation, panning, auxiliaries and most other major features. Central to the unique design of the DREAM Constellation is the ability to access channel control and configuration facilities either locally, from a channel perspective, or globally from the central controller. DREAM Constellation's extended control surface features moving touch sensitive rotary controls and faders throughout, allowing maximum accessibility and visibility of all facilities including the sophisticated automation system. Multi-trim mode provides intuitive control of multiple channels from a single control, substantially speeding up most setup and mix processes.

The DREAM Constellation's comprehensive automation system encompasses every parameter of every on-board function, including processing, routing and third-party plug-ins.

A fully featured macro programming system with GPIO capability allows extensive customisation of key facilities, ensuring that DREAM Constellation can be swiftly and easily integrated into any special workflow or configuration requirements. This capability is particularly powerful when you consider that the DREAM Constellation is not only a powerful mixing system but also a complete recording and editing environment.

## MACHINE CONTROL

### Serial 9-pin Control

DREAM systems offer transport control of industry standard Sony 9-pin serial controlled machines, providing control over external video (or audio) machines, directly from the console. Disk-based video or tape machines may be selected on- and off-line by pressing one button, with the audio following the video in all modes including Play, Fast Forward and Rewind.

Lockup time is ultra fast - it is possible to hear the audio and video playing together typically within one second of pressing the Play button. Over an entire day's work synchronizing sound to picture, this adds up to a great saving in time. DREAM provides two machine control outputs, plus a 9-pin input that allows it to slave to other 9-pin controllers.

### Synchronization

DREAM systems can synchronize to longitudinal time-code at all standard frame rates, AES/EBU sync, digital word clock, video colour-black, any digital input to the system, or internal crystal. The lockup time of the system is exceptionally fast.

### Pyxis Integration

DREAM systems incorporate pre-defined integration between QDC and Pyxis NLV. If connected the QDC engine will automatically detect the Pyxis system and optimise its control settings to enable bi-directional transport control functions and optimum transport ballistics. In addition the QDC and Pyxis systems will tag video and audio projects so that they can be recalled and opened in one operation.

# SOUND LIBRARY MANAGEMENT

### Importing Clips

Importing sound effects from libraries is simple using Import mode. A sound created earlier in one project can also be brought into the current project with very little effort. There is never any duplication of disk space unless the required clips are intended to become a permanent (and portable) part of the new project. Clips are borrowed from other projects and instantly placed on the appropriate track in the current project. It is easy to audition a clip locked to video, offering the opportunity to audition sounds in sync with picture before actually transferring the sound into the current project.

The DREAM Import function operates across multiple tracks, allowing a complex effect composed of many elements to be imported with one command.

Sounds can be borrowed or copied from any disk drive connected to the system. Clips within the import source project can be located using the search by name function described previously. It is also possible to import any part of a clip from the library, or a whole range of clips, saving editing time later.

### AudioBase

AudioBase is a database of audio clips within the DREAM environment. Records in the database are created from clips in DREAM audio projects or external WAV files, and carry all the information needed to search, audition and place the audio at any point in the currently open project. Two versions of AudioBase are available - AudioBase and AudioBase2. Both versions have identical user interfaces, but AudioBase is designed for use only on a stand alone workstation, whereas AudioBase2 is a server-based implementation designed to allow multiple workstations to share the same server-based Sound Effects Library.

With AudioBase2, a dedicated SQLServer database provides access to a central SFX Library via Fairlight's MediaLink networking. This delivers the power and speed needed to offer multiple workstations simultaneous access to very large central libraries, together with the management tools to maintain those libraries. Fairlight can supply the vast majority of commercial SFX Libraries pre-digitised in WAV format on a MediaLink server, with category, description and other data fields pre-filled and ready for use. An upgrade to AudioBase2 allows PC and Mac workstations to share the AudioBase2 SFX WAV Library, accessing it either over a local area network or the Internet. A dedicated "Spotting" application allows remote PC and Mac users to audition and prepare selections of SFX for use in programs. Prepared "Spot Lists" can be loaded directly into Fairlight workstations, making these pre-selections immediately available during the actual session. The remote users can be anywhere in the world, assuming that Internet access has been granted together with appropriate security permissions. When the final list is opened on a workstation, the selected sounds are actually played directly from their original locations on the server. Transfer times are negligible because no audio data is actually transferred. This radical new workflow dramatically speeds up the process of pre-selecting sounds from a library, with contributors able to work on a project from literally anywhere on the planet.

# STORAGE OPTIONS AND DISK MANAGEMENT

### Hard Disk

The QDC engine features exceptionally fast disk transfer rates via SCSI. As a result the system can play  tracks of continuous audio from a single hard disk, with real-time crossfades on all tracks. Actual transfer rates are typically well over 96 tracks of audio at 48kHz using conventional SCSI drives. Up to 4 storage devices may be housed within the chassis, and a further 14 using the external SCSI option. QDC has full support for hot-swap removable media, allowing insertion and extraction of disks in suitable carriers without the need for a restart. New drives are recognised and brought on line automatically when ready. A single 72 GByte hard disk offers over 200 hours of mono track time (@44.1kHz sample rate).

### Backup

Backups may be performed to any connected SCSI device, typically to tape, and are performed in the background.

DREAM supports Exabyte's Mammoth series of fast data cartridge tape backup units, which back up and restore at up to 40 times real-time mono audio. One tape cartridge can store multiple projects containing up to 30 hours of audio, and selectively restore them to hard disk.

# SOFTWARE OPTIONS AND SYSTEM UPGRADES

## Satellite Options

### Additional QDC Cards

Upgrading either the number of I/Os or the number of Editing and Recording Tracks in a system MAY require the purchase of additional QDC cards. Refer to the table on page 20 to determine the exact number of QDC's required.

### MFX3.48 Upgrade to Satellite

MFX3.48 systems that use the QDC engine may be upgraded to Satellite systems by simply purchasing the Satellite console and a special upgrade software license.

### Softmix

Fairlight's Satellite and Merlin systems provide the most powerful stand-alone recording and editing systems available on the market today. SoftMix unleashes the power of the QDC engine to transform these machines into fully fledged surround-capable mixing systems with powerful track-based Dynamics and Equalisation and support for Fairlight's Plug-ins Manager 6 - all with total Dynamic Automation. In most cases SoftMix removes the need for a separate mixer altogether, but even where a separate mixer is already installed, SoftMix delivers plug-ins, routing and sub mixing capability to massively increase the speed and flexibility of your work environment.

Whether you're mixing stems or finished projects, SoftMix delivers all the power you need in an easy to use PC-based package, with optional hardware faders and metering to complete the picture.

The SoftMix system consists of three separate modules – SoftMix, SoftMix PI and SoftMix Auto.

SoftMix is the core package, and runs on a standard PC with Windows 2000 or XP. SoftMix provides either 24 track or 48 track configurations of Merlin or Satellite:

24 Track SoftMix: 32 channels (24 tracks plus 8 x fully featured "Live Feeds") into 16 mix busses

48 Track SoftMix: 56 mixing channels (48 tracks plus 8 x fully featured "Live Feeds") into 24 mix busses.

48 Track SoftMix: 80 mixing channels (48 tracks plus 32 x fully featured "Live Feeds") into 32 mix busses.

SoftMix PI adds onboard Dynamics and EQ to every channel, together with support for Fairlight's Plug-ins Manager 5 system, bringing third party plug-ins on-line.

SoftMix Auto allows Dynamic Automation of parameters.

SoftMix PI and SoftMix Auto can be independently added to SoftMix at any time.

All mixing and onboard plug-ins are performed within the QDC's 40-bit floating point DSP architecture, using the same algorithms as the DREAM Console and Station systems. The result is simply superb sound. As you would expect, all data, including plug-ins data, is compatible with all other DREAM products. SoftMix systems are the perfect partners to the rest of the DREAM range.

# Station$^{plus}$ Options

### Track Upgrades

Station$^{plus}$ can be upgraded from any base configuration to increase tracks or mixing capabilities simply by adding QDC cards, no software is necessary.

### Station$^{plus}$ Sidecar

Station$^{plus}$ Sidecars add 12 motorised faders, a joystick, configuration controls, to a Station$^{plus}$ surface. Maximum configuration is two.

### Station$^{plus}$ Metering

Two types of meters are available for Station$^{plus}$: The Main Metering Unit attaches to the Station$^{plus}$ itself, and provides 8 x high resolution main bus meters. The Side Metering Unit adds a further 12 x high resolution meters for channel metering. The Side Metering Units are controlled by the Master Sidecar, and a Master Sidecar must be fitted before purchase of Side Metering Units. A Side Metering Unit may be fitted to every Sidecar.

# DREAM Constellation Options

Options may be added either at time of first purchase or at any time thereafter.

### Constellation Channel Panel

Occupies a single panel frame, and provides a full set of assignable channel controls plus a joystick. Up to 4 x Channel Control Panels may be fitted to a single frame, assuming that sufficient space is available.

### Constellation Fader Panel (12 faders)

Occupies a single panel frame. There is no limit to the number of Fader Panels that may be fitted to a frame, subject to available space.

### Constellation Main Metering Unit

Provides 8 channels of high precision Main Meters plus stereo VU meters and digital phase meter. The DREAM Main Meter Unit also offers switchable external digital and analog inputs for integration of external meter sources into the Main Meter system.

### Constellation Side Meter Unit

Provides 12 channels of high precision Channel Meters.

# Storage Upgrades

DREAM systems are supplied as standard with one 9 GB hard drive, providing 18 hours of 24-bit audio storage at 48kHz sampling rate. This can be augmented with drives of 16 and 72 GB capacity.

There are three internal storage slots. The boot drive takes one of these. The other two may be filled with a variety of approved peripheral devices: hard drives, Exabyte tape backup systems, or removable hard drive bays. The internal drive bays may only be fitted with devices supplied and fitted by Fairlight authorised distributors or Offices, otherwise system warranty will be void.

External drives may be added by fitting up to two Fairlight-supplied PCI SCSI cards. Up to seven drives of any approved type may be connected to each card, provided strict cabling and installation rules are followed. Users may purchase their own drives and place them on the external SCSI buses. This equipment will not be warranted by Fairlight.

# I/O Upgrades

Upgrading either the number of I/Os or the number of Editing and Recording Tracks in a system MAY require the purchase of additional QDC cards. Refer to the table on page 20 to determine the exact number of QDC's required.

### AES2 SRC Digital I/O Card

Adds 8 sample rate converting Digital Inputs and Outputs to DREAM Constellation or Station$^{plus}$. Used as well as or in place of AES1 cards.

### AES1 Digital I/O Card

Adds 8 Digital Inputs and Outputs to any system (max 4 cards per QDC inc. AO1s).

### AI1 Analog Input Card

Adds 8 Analog Inputs to any system (max 2 AI cards per QDC card).

### AO1 Analog Output Card

Adds 8 channels of high quality Analog outputs to any system.

### AO1M Analog Monitor Card

The AO1M has low impedance (600 Ohm) driving capability, plus software controlled muting relays for direct connection to monitor amplifiers. Available and applicable to Constellation and Station$^{plus}$ only.

### USIO MADI card

Adds 48 MADI I/O channels to Satellite or Station$^{plus}$, or 56 to Constellation.

# Software Options

### Medialink Networking Client License

The DREAM QDC engine has networking capability built-in via a 100BaseT network adapter and in-built TCP/IP support. All DREAM systems are equipped as standard with FTP server software that allows connected PCs to transfer files to and from the QDC's hard drives using an approved FTP client package on the PC. MediaLink client software is required for the QDC to act as a full client to MediaLink server systems for real-time access to audio projects and SFX libraries, and ultra high speed network data transfers.

### MediaLink Server

Fairlight's MediaLink networking solution delivers a scalable integrated solution for the audio post production and broadcast industries, providing workstation connectivity for all multi-room environments. Designed expressly for the demanding applications of audio post production, broadcast production, feature film and television post production, MediaLink significantly improves work-flow and productivity in all aspects of the audio process, from the small workgroup to the large broadcaster and television or feature film facility. MediaLink networking provides seamless real-time sharing, backup and distribution of audio data across multiple DREAM workstations utilizing cost-effective 100Mbit technology and standard fast Ethernet Category 5 UTP twisted pair copper cabling.

Fairlight's MediaLink server is an independent multiprocessor Audio Server operating under the Microsoft WindowsTM 2000 Server environment. The MediaLink server sustains multiple MediaLink networks, with each network supporting multiple DREAM or other Fairlight systems. Storage options include single or multiple RAID arrays with very high speed transfer rates and data redundancy allowing individual hard disk failure to be tolerated and the data automatically recovered.

Macintosh and PC-based workstations can also share this network using industry standard TCP/IP protocol software and a 100BaseT Fast Ethernet connection. Edit lists, interchange files (e.g. OMFI), and audio data in standard 16, 20 or 24-bit formats can be exchanged between any of the connected systems.

# Plug-Ins Manager 6


Fairlight Plug-Ins Manager 6 brings the power and flexibility of third-party Creamware or VST plug-ins to the DREAM family of mixing and editing systems.

Plug-Ins Manager 6 offers support for a wide range of high performance real-time plug-ins running on a dedicated 40-bit floating-point DSP card. Additional approved third-party Creamware or VST plug-ins may be purchased and downloaded from the internet.

Plug-Ins Manager is seamlessly integrated into the DREAM mixer environment and SoftMix. Plug-ins may be selected and patched into feeds to be added to the mix in real-time or recorded to disk. Plug-ins parameters may be mapped to and controlled from the switches, pots and faders on DREAM Station or Console control surfaces providing maximum precision and ease of use. Alternatively, each plug-in provides an intuitive on-screen graphical user interface, which may be controlled via trackball or Mouse.

Two versions of plug-ins hardware are available, featuring either 6 or a massive 15 SHARC DSP processors. These state of the art processors deliver awesome sound quality, whilst being capable of running multiple Plug-Ins simultaneously in Real Time. The cards have identical functionality, but with different capacities. Thus a 6 DSP card can readily handle an average combination of compressors, expanders and reverbs, whereas the 15 DSP card can handle as many as 8 simultaneous high end Master-Verb Pro processors as well as a selection of less demanding effects.

Plug-Ins Manager 6 comes complete with a family of 80 exceptional quality effects plug-ins covering a wide range of signal processing tasks from music production, sound design and effects, to room simulation and anywhere else your imagination can take you.

- **Reverb** – three powerful, great-sounding reverbs including the MasterVerb Pro , one of the most advanced reverb units available..
- **Delay** – mono, stereo, LCR, multi-tap, tempo matching, and pattern delays.
- **Dynamic Range Control** – compressors, limiters, expanders, de-essers, and gates.
- **Flanging, Phasing and Chorusing** – a range of mono and stereo effects including sophisticated multi-path chorus effects.
- **Modulation** – tremolo, ring-modulation, SSB modulation.
- **Filtering** – low and hi-cut, 4-pole, resonant, and DC filters
- **Panning** – auto-pan, stereo pan and stereo expander.
- **Distortion** – several dirty flavours of distortion and overdrive.

# KEY FEATURES

## DREAM Satellite

Full function Digital Audio Workstation

32, 48, 64 or 96 tracks

Built-in machine control

Up to 96 Analog Inputs

Up to 96 Digital Inputs

Optional MADI Card

MediaLink Networking ready

Binnacle™ powered

Project compatible with existing Fairlight QDC systems

32 or 56 channel mixing engine with optional SoftMix.

## DREAM Station$^{plus}$

24, 48, 64, 80 or 96 Tracks

Up-to 144 channel mixing engine

4 Auxiliaries - mono or stereo

4 Sub buses - each up to 7.1

Bus to Bus mixing

Main bus up to 7.1

Up-to 16 Multitrack busses

Real time 6-band EQ on all tracks and live feeds.

Real time 2-stage Dynamics on all channels

Total Dynamic Automation

Moving touch sensitive rotary controls and faders

Enhanced surround panning system

Optional Sidecar fader extension bays (maximum 2)

Optional 3rd Party Plug-ins

## DREAM Constellation

24, 48, 64, 80 or 96 tracks

Up-to 192 Inputs to the mix

12 Auxiliaries - each up to 7.1

Multi-format Main bus up to 7.1

8 multi-format sub buses up to 7.1 each

Up to 16 Multi-track Buses

Enhanced surround panning system

Real time 6-band EQ on all full channels

Real time 2-stage Dynamics on all full channels

Total Dynamic Automation

Moving touch sensitive rotary controls and faders

Bus to bus mixing

Bus reduction mixing with reduction level control

Up to 48 faders

Modular, customisable control surface

Optional 3rd Party Plugins

## SYSTEM SPECIFICATIONS

### Analog Inputs & Outputs

| | |
|---|---|
| Input impedance | >10k Ohms |
| Output impedance | <55 Ohms |
| Maximum input level | +24dBu |
| Maximum output level | +24dBu |
| Standard operating level | adjustable from +14 dBu to +24 dBu |
| Input signal to noise | >113 dB A-weighted (A/D conversion) |
| Output signal to noise | >113 dB A-weighted (D/A conversion) |
| Through system signal to noise | >110 dB A-weighted |
| Through system THD | <0.0008% |
| Bandwidth (.25dB) | 20Hz to 20kHz |
| Sample rate | 32kHz to 48kHz, 96kHz (locked to sync source) |
| Internal sync crystals | 32, 44.056, 44.100, 44.044, 47.952, 48, 48.048 kHz, 96kHz |

## AES/EBU Inputs

| | |
|---|---|
| Minimum differential | 200mV |
| Input impedance | 110 Ohms transformer isolated |
| Channel status | QDC Technology systems are insensitive to channel status |

## AES/EBU Outputs

| | |
|---|---|
| Output level | 4V |
| Output impedance | 110 Ohms transformer isolated |
| Channel status | professional, normal audio, source locked,<br>sample frequency set to project sample rate,<br>stereophonic, 24-bit word length |

## Synchronisation

| | |
|---|---|
| System Sample Rates | 32, 44.056, 44.1, 48, and 96kHz (user selectable) |
| Run-up/Run-down Sample Rates | 44.044, 44.056, 47.952, 48.048, 95.904, 96.096kHz |

SRC Range (with optional sample rate converter I/O module)

Input: 0.33 to 3.0 x system sample rate with range limits of 8kHz to 108kHz

Output: Current system sample rate converted to any other possible system sample rate.

Clock References Internal, AES reference, WCLK, any digital input, video reference, LTC Clocks may be derived from an external WCLK or AES sync that is running at either the system sample rate (FS), 0.5 x FS, or 2 x FS. Thus the system may be run at 96kHz locked to a 48kHz reference, or at 48kHz locked to a 96kHz reference, for example. SRC O/P sample clocks may be independently locked to any of the available references except digital inputs. Where O/P sample rates are exactly 0.5 x FS, or 2 x FS, the output rate is automatically locked to the system rate.

# DIMENSIONS AND POWER REQUIREMENTS

## DREAM Satellite

| | |
|---|---|
| Width | 419 mm / 16.5” |
| Depth | 451 mm / 17.75” |
| Height at Front | 40 mm / 1.6” |
| Height at Rear | 98 mm / 3.85” |
| Weight | 10.5 kg |
| Supply Voltage | 85-264 VAC 50-60 Hz |
| Power Consumption | 60 Watts |

## DREAM Station$^{plus}$

| | |
|---|---|
| Width | 669 mm / 26” |
| Depth | 525 mm / 20.7” |
| | (+135 mm / 5.3” Keyboard Draw Extension) |
| Height at Front | 40 mm / 1.6” |
| Height at Rear | 131 mm / 5.2” |
| Weight | 31 kg |
| Supply Voltage | 85-132 / 170-264 VAC 50-60Hz (auto-ranging) |
| Power Consumption | 130 Watts |

## DREAM Constellation

| | |
|---|---|
| Width | 3 Bay - 1622 mm / 63.86” |
| | 5 Bay - 2603 mm / 102.5” |
| Depth | 1012 mm / 39.8” |
| Height at Meter Bridge | 947 mm / 37.3” |
| Height at Meter Faders | 720 mm / 28.3” |
| Weight | 512 kg (5 Bay) |
| Supply Voltage | 85-132 or 170-264 VAC (switch selectable) |
| Power Consumption | 3 Bay - 1000 Watts; 5 Bay - 1500 Watts |

## DREAM QDC Engine

| | |
|---|---|
| Width | 485 mm (19” Rack Mounting) |
| Depth | 460 mm / 18.1” |
| Height | 360 mm / 14.2” (8 RU) |
| Supply Voltage | 85-275 VAC 49-63Hz |
| Weight | 31 kg |
| Power Consumption | 300 Watts |

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