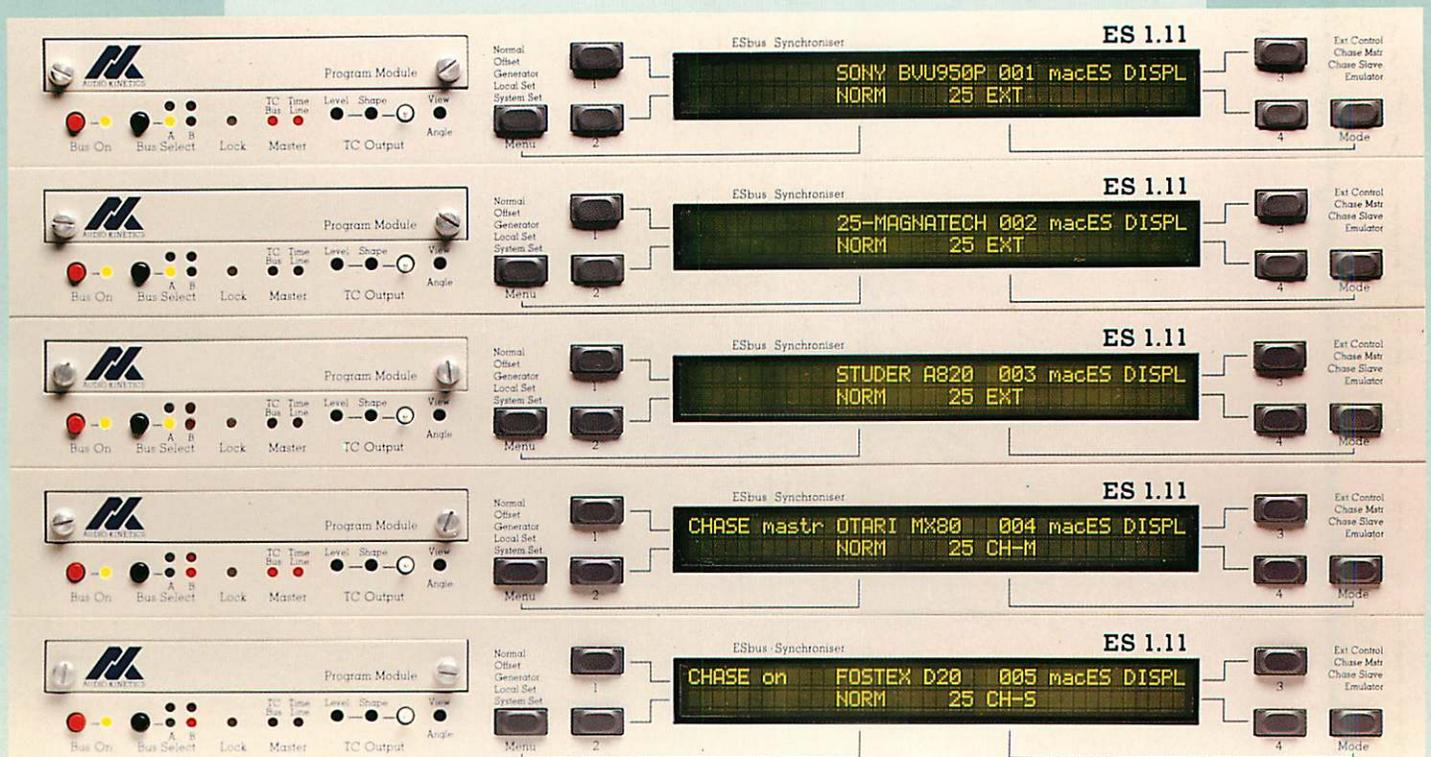


AUDIO KINETICS ES.LOCK



Power to Control



Imagine a studio under fingertip control. A studio in which every audio tape machine, video recorder, film machine and cartridge player, even the CD player, is available for use from your seat at the console. Machines in the suite at the other end of the building locking-up, playing, looping, dropping in and dropping out as if just behind you.

Such studios exist. The Canadian Broadcasting Corporation has a three studio complex in which thirteen audio and video machines are fully available to an engineer working in any one studio. At EMI's Abbey Road, a new machine control system, installed in three studios and the video post-production suite, has the potential to link these facilities and enable synchronous operation or machine resource sharing. And in Finland, the national broadcasting corporation operates a system controlling over fifty audio and video machines.

The power of communication behind all these and many more examples of studio integration is Audio Kinetics ES.Lock control and synchronisation products. And, whether it be a multi-room music recording facility, a broadcast studio or a simple voice-over suite, these products could do the same for your studio.

With the launch of Q.Lock in 1978, Audio Kinetics introduced to the professional audio and broadcast industry the practical technology of tape machine synchronisation. Since then, many manufacturers have produced similar products, but Audio Kinetics has always remained ahead of the field. Now, with the introduction and establishment of the ES.Lock range, designed around the EBU/SMPTE (ESbus) remote communications standard, Audio Kinetics has again moved forward - to the benefit of the recording, post-production and broadcast industries.

In the following pages of this brochure, Audio Kinetics ES.Lock is described in the form that will be of greatest use to audio engineers - with realistic examples and clear diagrams. However, when you require further information, or perhaps want to challenge ES.Lock to handle the idiosyncrasies of your studio, we will be happy to respond.

ES.Lock 1.11

The industry standard EBus synchroniser/generator/emulator and the building block of any ES.Lock network. Designed in response to demand for an open architecture synchroniser, the ES.Lock 1.11 provides the fastest lock up performance and a complete range of networking facilities.

ES.Lock Penta

A five machine synchroniser, generator and event controller orientated towards medium sized applications in both audio post-production environments and music recording studios. ES.Lock Penta is a powerful, flexible controller offering many advanced facilities.

ES.Lock Eclipse

An 8 or 16 machine controller designed for advanced audio post-production applications. Based on the original Audio Kinetics Eclipse, but now reflecting contemporary requirements for studio integration and the latest developments in tape machine control technology.

ES.Lock SSU

A self contained Systems Services Unit designed to add flexibility to an ES.Lock system. The SSU provides auxiliary facilities such as 16 event relays, system service relays and an optional system time-code source.

Wiper

A video wipe, time-code and count-down inserter designed to provide a range of video cues for artists, producers and engineers.



Audio Kinetics ES.Lock fundamentally offers the ability to interface, control and synchronise any one tape recorder to a number of other machines. But the real power of ES.Lock is to extend control and synchronisation to complex networks of audio, video and film machines and peripheral studio systems - with swift, silent efficiency and complete dependability.

ES.Lock is the first commercially available product range to implement ESBUS, the EBU/SMPTE standard for remote control of studio equipment. However, rather than simply implement a standard, Audio Kinetics has incorporated four optional enhancements into ES.Lock products which greatly increase their power and widen considerably their range of applications.

i) The Time Line Bus

A continuous system-wide pulse train to which all machines lock when in play, so reducing lock times to typically less than two seconds. The reference for the Time Line Bus can be selected from time-code, video-syncs, frame rate pulses, tach or film pulses, or generated from a precision internal source, enabling Time Line control by a non-slavable machine or by a varispeed master.

ii) The Frame Bus

A sync distribution bus of either video-syncs or frame rate pulses. The Time Line and/or generator can tap into this bus to obtain references, removing the need for extra sync cabling.

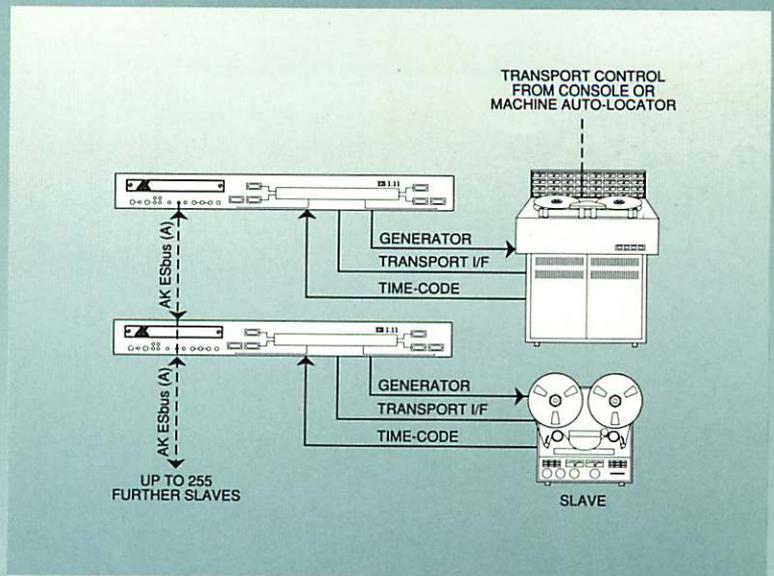
iii) The Time Code Bus

A time-code distribution bus. Its source is selectable from any other ESBUS synchroniser's generator or machine time-code. Any ES.Lock 1.11 can tap into this bus and use it as a local generator jam-sync source. It also allows system-wide distribution of time-code for peripherals such as console automation systems and time-code inserters.

iv) The Crash Record Bus

Enables direct parallel activation of RECORD IN/OUT, so avoiding any serial delays. Allows rhythmical on the fly record commands, particularly common in music studios, to be used. Pre-programmed record commands are however sub-frame accurate.

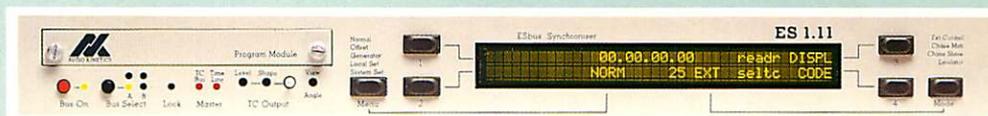
Note: While Audio Kinetics ES.Lock products will integrate fully with alternative ESBUS systems, in such cases the four AK enhancements will be unavailable.



Entry Level ES.Lock - The Chase System

The basic chase system is the simplest installation of ES.Lock. In this system, ES.Lock 1.11s are used to synchronise two multi-track audio recorders. One of the recorders is designated master and controlled from its own auto-locator or perhaps the recording console, while the second recorder behaves simply as a slave, chasing the master.

However, while the basic chase application is simple, through the use of the ES.Lock 1.11, it still possesses the generic ES.Lock characteristics; very fast lock-up; high performance time-code generation and reading; a comprehensive range of flexible machine interfaces; but perhaps most importantly, the ability to grow in both size and range of capabilities.



The ES.Lock 1.11

At the centre of any ES.Lock system is the ES.Lock 1.11 Open Architecture synchroniser - Open Architecture, because the internal format can be freely configured for any number of alternative machines and system arrangements. One ES.Lock 1.11 is required for each synchronous machine in a network.

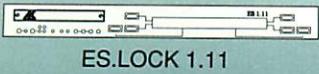
ES.Lock 1.11 Highlights.

- 24-bit servo control gives probably the fastest, tightest lock-up available.
- Networks of up to 256 machines.
- Two ESBUS ports (A and B) means easy alternative set ups or control sites.
- Custom DAK010 time-code reader chip highly tolerant of sub-standard code.
- Integral multi-standard time-code generator.
- Mixed time-code standard capability.

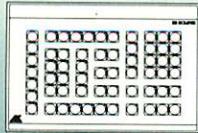
- Integrated Chase, Control, Film and Emulation software.
- Dedicated SONY or AMPEX port enabling direct control by a video editor.
- Optional VITC reader.

Machine control parameters are held in ES.Lock 1.11 on EPROM modules accessed through the front panel, and parameters for the majority of professional audio, video and film machines are available without delay. Unusually, the control parameters can be fine tuned to accommodate machines not performing quite to their specified standards. Selection of a specific machine control interface file is made automatically when the machine cable is connected, as is identification of the time-code standard in use.

KEY



ES.Lock 1.11



ES.Lock ECLIPSE



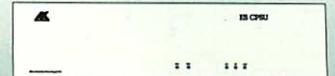
ES.Lock PENTA



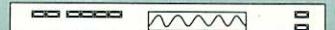
WIPER



ES.Lock SSU



ES.Lock POWER SUPPLY



SYNC PULSE GENERATOR

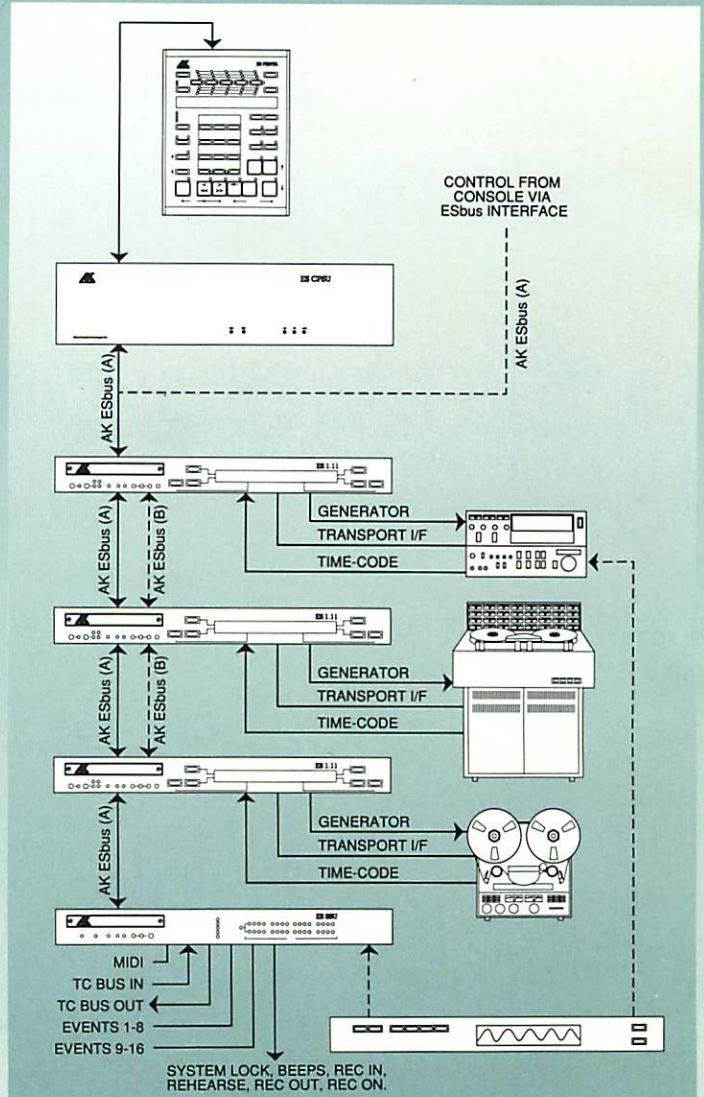
Medium Level ES.Lock - The Post-Production System

An ES.Lock controller adds operational flexibility to a synchroniser system and new possibilities to a studio. It replaces the machine auto-locator or console based transport control to become the centre of transport control for all the machines in the studio.

Take a music studio that finds an increasing number of clients requiring to work with video. The choice is either to turn them away or to offer new services. All that is required to transform an ES.Lock basic chase system into one appropriate to video post-production is an ES.Lock Penta controller, a further ES.Lock 1.11, a video recorder, and a sync pulse generator. No wholesale exchange of synchroniser system is needed and no disruptive shut-down is necessary.

However, extending the ES.Lock network with a controller and operating a video post-production system does not mean that the basic chase capability is lost. Each ES.Lock 1.11 offers two ES.Lock ports, the A bus and the B bus, and while one might be configured to work with the controller and video recorder for post-production, the other would remain to operate a basic chase system for multi-track recording.

Of course an ES.Lock Penta based system makes a perfect first choice for new installations too - either music or audio post-production.



The ES.Lock Penta

The ES.Lock Penta is a five machine controller that suits perfectly small to medium size video post studios or music studios requiring more than a basic chase system.

ES.Lock Penta Highlights.

- A Crash Record facility with automatic capture of record command and optional repeat.
- Event and offset accuracy to 1/100th of a frame.
- Ten LOOP and GO-TO memories.
- Crawl facilities for video machines and a lay-back facility.
- Fit capability to enable time compression and expansion.

- Layback and Remote Master reader allows console or single machine control with ES.Lock Penta monitoring.
- Real Master facility enables vari-speed control of the Time Line and therefore a whole system. Film projectors or non-slavable tape machines may also drive the system.
- Free selection of master machine.

ES.Lock Penta, however, provides more than simply increased facilities. It is designed to aid the mental gymnastics of operating five machines at once and brings to a compact panel on the console, control of tape machines that may be some distance away. And it brings the confidence that comes from knowing exactly the operational state of any machine at any time.

Advanced Level ES.Lock - The Multi-Media System

The real power of ES.Lock is to bring comprehensive machine control and synchronisation to large multi-room studios and broadcast organisations. The flexibility of ES.Lock - its ability to integrate so many machines and control sites, and to enable such close control of all machine transport functions, means that almost any studio requirement can be met. Once a studio has ES.Lock installed, imagination is the only limit to the possibilities in machine control.

A multi-room complex might contain two studios and control rooms. One perhaps dedicated to audio post-production for video and film, while the other looks after music recording. Of course there will be occasions when those roles have to be reversed to some extent, and occasions when both control rooms work on the same project. If all the tape machines were to be on an ES.Lock network, and an ES.Lock controller were installed in each control room, then all the machines become available to both control rooms.

Such flexibility would immediately come into its own if, for example, music is being recorded in the ES.Lock Penta equipped control room for a video undergoing post-production in the ES.Lock Eclipse control room.

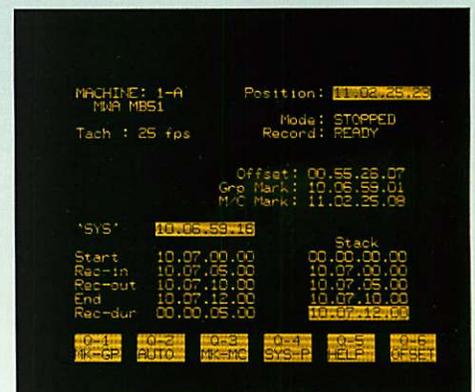
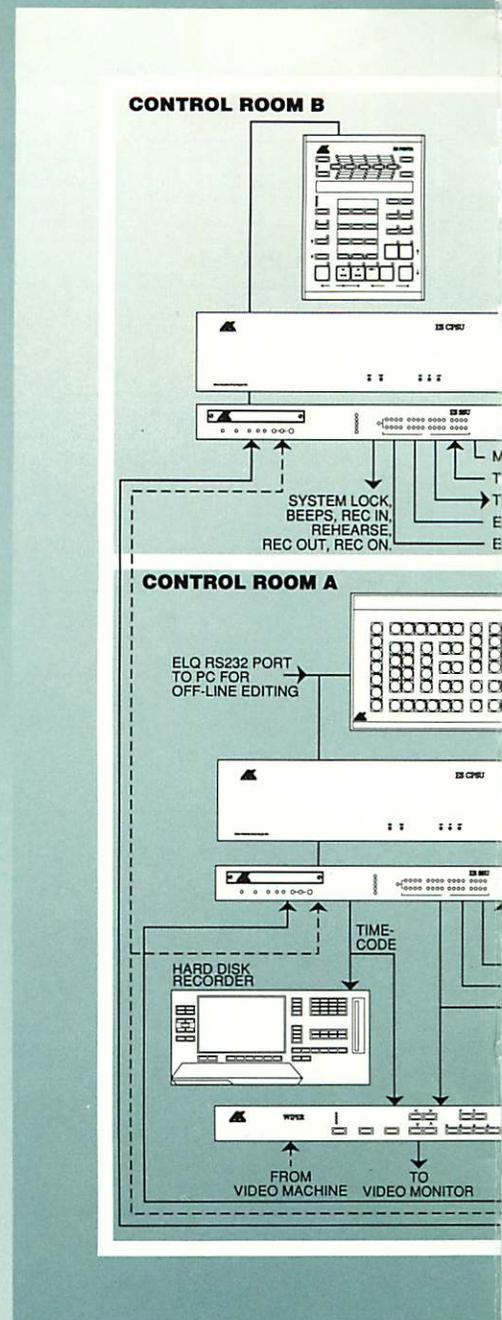


The ES.Lock Eclipse

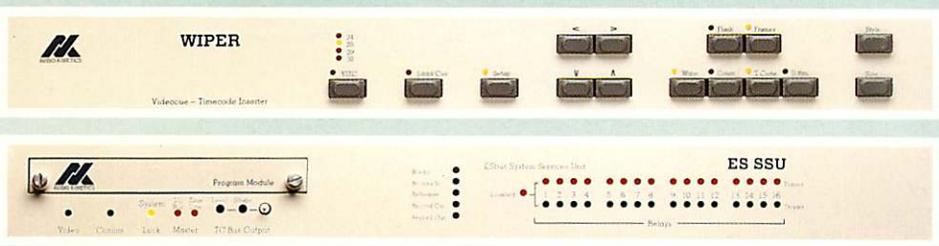
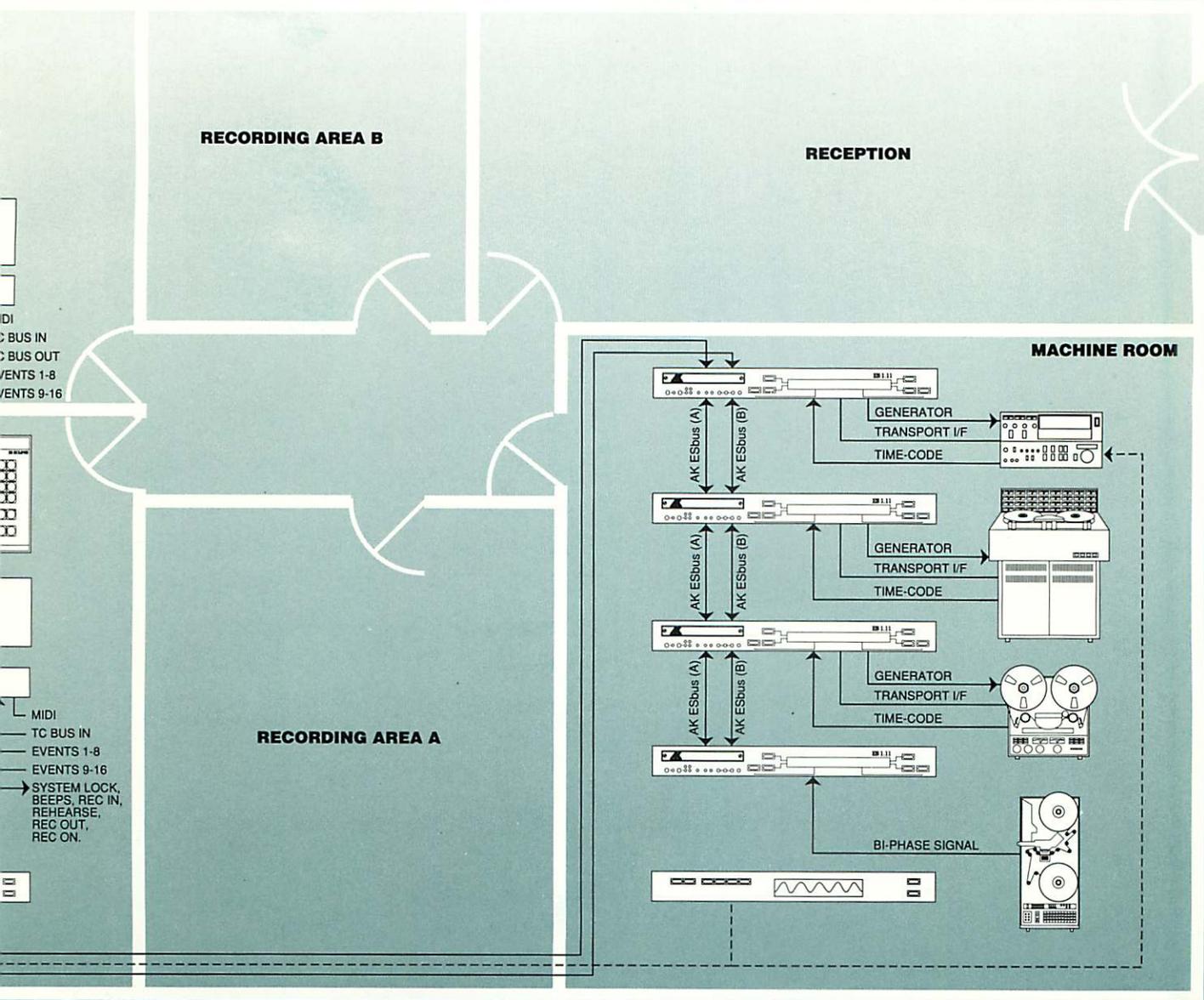
The ES.Lock Eclipse controller offers comprehensive control of 8 or 16 machines - and the ultimate in remote machine operation. It provides dual tasking, enabling the manipulation of an off-line machine during synchronous group operations, and A and B groups, which instantly re-set the system as two independent on-line machine configurations. An outstanding feature of ES.Lock Eclipse is the provision of 12 Q-Keys enabling the programming of command sequences for specific control routines. With Q-Keys, common routines can be stored for quick recall and execution, programmed either off-line or live.

More ES.Lock Eclipse Highlights.

- A 40 character by 20 line display providing monitoring of individual transport functions, and all status information.
- Variable crawl and JOG.
- 100 loop specification memories of start, end, record in, record out, and offset. Each Loop can be named and "NEXT" and "LAST" keys provide rapid EDL (Edit Decision List) sequencing.
- 80 sequential, sub-frame accurate event memories. Each event can trigger ES.Lock SSU relays individually or as groups.
- Programmable head and tail stop limits for individual machines and groups, with visual warning of approaching limits.
- Support of all time-code standards - including feet and frames for film work.



The ES.Lock Eclipse also supports an ELQ software package with which all loop, offset, event and Q-Key information can be stored on MS.DOS format floppy disk. ELQ can also be used for off-line entry, editing and labelling of loops in order to assemble an EDL compatible with CMX video editing.



The ES.Lock SSU

With the addition of an ES.Lock SSU to the post-production system, many further facilities become available. The ES.Lock SSU (Systems Services Unit) provides the interface and switching capabilities necessary to control peripheral studio equipment from the ES.Lock network. Via the Time-Code Bus, peripherals could include equipment that requires a synchronous time-code feed. While through time-code to MIDI conversion, keyboard instruments, signal processors and sequencers can be brought onto the network.

ES.Lock SSU Highlights.

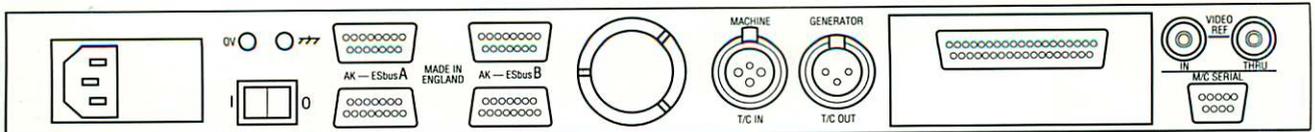
- Sixteen event relays programmable to sub-frame accuracy.
- *Beeps* relay and audio output for ADR cueing.
- Record IN/OUT/ON and REHEARSE relays.
- System Lock relay.
- Automatic Time Line mastership if not selected on ES.Lock 1.11.

Wiper.

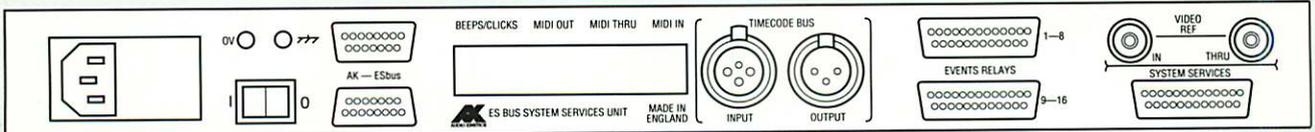
Although Wiper is not an ESBUS product, it can be integrated into ES.Lock systems. Wiper provides video time-code insertion, wipe or count-down and cue facilities appropriate to audio for video post-production environments.

Wiper Highlights.

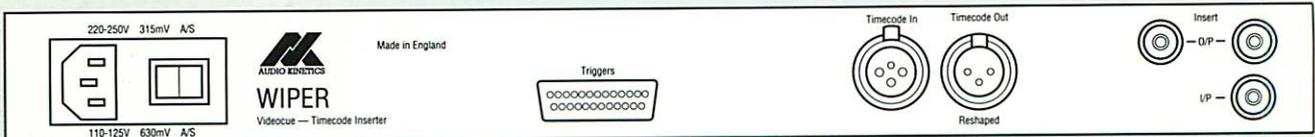
- Six styles of wipe and 3 2 1 + countdown.
- Countdown from any number up to 16.
- Programmable duration of wipe.
- Blank screen trigger facility to avoid distracting images.
- Positional control over wipe, count and time-code insertion.
- Local trimmable cue point memory for stand alone use.
- Audio trigger from pre-listen heads.



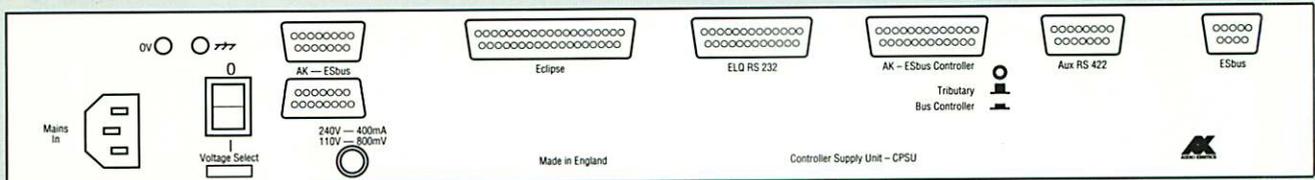
ES.Lock 1.11



ES.Lock SSU



Wiper



ES.Lock CPSU

| | ES.Lock 1.11 | ES.Lock Penta | ES.Lock Eclipse | ES.Lock SSU | Wiper | ES.Lock CPSU |
|--------------------|-----------------------|----------------------|------------------------|-----------------------|-----------------------|---------------------|
| Height: | 1U-45mm | 35mm | 217mm | 1U-45mm | 1U-45mm | 2U-90mm |
| Width: | 483mm | 169mm | 320mm | 483mm | 483mm | 483mm |
| Depth: | 280mm | 223mm | 249mm | 280mm | 310mm | 130mm |
| Weight: (unpacked) | 5.6Kg | 1.6Kg | 3.0Kg | 5.1Kg | 4.0Kg | 4.7Kg |
| ESbus: | A or B | 1 | 1 | 1 | - | 1 |
| MIDI: | - | - | - | YES | - | - |
| Power: | AC | ES.Lock CPSU | ES.Lock CPSU | AC | AC | AC |
| ELQ RS232: | - | - | - | YES | - | - |
| Time-code Input: | 10KΩ Bal | - | - | 10KΩ Bal | 10KΩ Bal | - |
| Time-code Output: | 100Ω Bal -30+10dBm | - | - | 100Ω Bal -30+10dBm | 100Ω Bal -30+10dBm | - |
| Options: | VITC pcb | - | - | - | - | - |

General: The ESbus uses RS422 at 38.4 Kbaud - maximum cable run 1Km. Interface and Controller cables are 8 Meters standard.

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AUDIO KINETICS UK LIMITED

Kinetic Centre, Theobald Street, Borehamwood, Hertfordshire, England WD6 4PJ
Tel: 081-953 8118 Fax: 081-953 1118

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