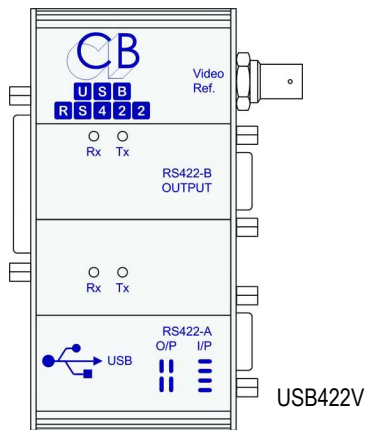# CB Electronics

Specialists in
Timecode, Bi-Phase & Serial Control

DUAL RS-422 USB INTERFACE

USB422V

USB422
Dual RS-422 USB Interface
USB422V
Dual RS-422 USB Interface with Tri/Bi Level Video Sync

Two RS422 ports, Connections to Standard Sony RS-422 pin-out
Port A may be configured as a Controller (O/P) or Device (I/P) using internal links
Port B is configured as a Controller (O/P)
Drivers for Windows 98, ME, 2000, XP, MAC OS-X, and Linux
Tx and Rx LED's on both ports
Rugged extruded aluminum box
WEEE/RoHS Compliant
Optional Tri/Bi Level Video Sync Reference input and Parallel I/O port

RS422 Interface:
Slew Rate Limited RS422 drivers to minimize EMI and reduce reflections on incorrectly terminated connections. Pin-out and termination as per standard Sony connection. Port A may be configured as a Device (I/P) or as a Controller (O/P). Port B is configured as a Controller (O/P), to use as a Device a Tx/Rx invert lead must be used.

USB Interface:
CB Electronics have for a number of years used USB-RS232 interfaces both with and without RS232-RS422 converters. In designing the USB422 we used our experiences with many different manufactures to choose the best combination of hardware and drivers.

Drivers for Windows 98, ME, 2000 and XP with MAC OS-X and Linux are all available from our web site.
(www.colinbroad.com/cbsoft/usbdriver.html).
The USB422 windows drivers are optimized for minimum latency. When installed on Windows the port numbers are set to the last two free port numbers, this may be changed using the driver parameters.

Video Input:
The Optional Tri/Bi Level video sync input is converted to a frame rate square wave and is connected to the Port A and B CTS Interrupt inputs.
The CTS input level after change indicates the video field.

Test Program:
A test programme that provides both machine control and a virtual machine is available from our web site. The program locks both the virtual machine (Port-A) and machine control (Port-B) to video syncs. This program is written in Delphi (Object Pascal).

Performance:
Checked on XP at 1.4GHz using the Delphi test program, a delay of 0.5-2.0 Milliseconds between the frame edge and GPO output. The delay is dependant on screen update and disc access.

Size: 4.4 x 2.1 x 1.2 (112 x 55 x 31) excluding connectors

# SA-2 SONY P2 PROTOCOL ANALYSER

The SA-2 consists a USB hardware interface and software to run on any IBM compatible computer running on windows 95, 98, 2000, XP. The interface box has two Sony 9 pin female RS422 connectors and one USB connector.

Designed to provide a real live overview of communications the software includes two trace modes. 'Trace All' saves all communications to a disk file and 'Trace Cmd' which save commands and status changes only to a disc file.
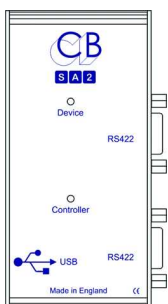
SA-2
SA-2 Sony P2 Protocol Analyser
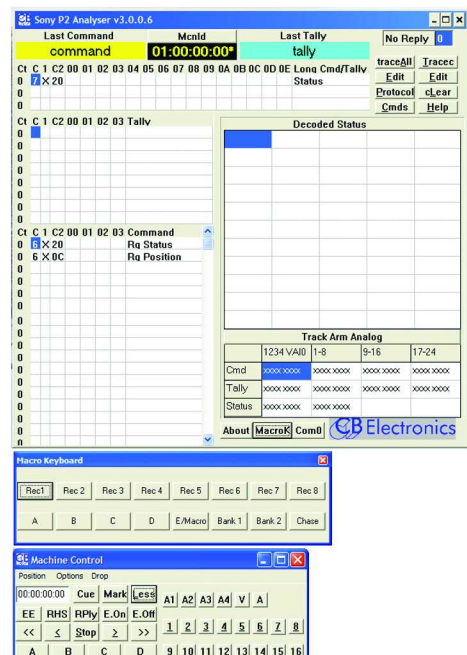
UNIVERSAL RS422 REMOTE

UR422
Universal RS422 Remote
UR422R
Universal RS422 Remote, rack 19" 2U

Sony P2 and MMC protocols
Two RS422 ports Two Outputs or One Input and One Output
Plug & Play, Automatic Machines Recognition and Configure
Large Display 2 line by 40 character display
22 User Definable keys with LED's All keys are user definable via PC Program
Field software update Software may be updated by user using PC with serial port
Key functions include Track Arm, Monitor, Edit, Locates, Loop's, Macro's
Special CB Macro functions Instant Replay, Instant Forward, Again
Two packages Low Profile Desktop or 2U Rack Mount with tilting panel
Jog Wheel Precision weighted Low Profile Jog Wheel
Rosendahl Bonsai Support Clip select, Menu and Power
Small footprint, Low profile design
32 cue points

UR422

UR422 remote is designed as a low cost remote control for general-purpose use. The keyboard is user definable and may be configured to suit specific applications.
When configured with input and output the controller may be connected to a DAW to provide track arming and a Jog/shuttle machine control interface.
When configured with two outputs, one may be used to control the video and the other to control track arming and master record on/off on a multi-track hard disk or tape.

User Keyboard Definition
All keys are may be user defined using a windows program, using a drawing of the keyboard click on a key, and delect the function. Once the keyboard is defined download the key definitions to the keyboard.

RS422 Ports
The two ports can be defined as one input and one output or as two outputs.

Display
Select single machine with track arming or two machine display/
Commands
Transport commands may be sent to individual machines or to both machines
Track Selection
The tracks selection switches may be assigned individually or used in combination with a 'Bank' key to select all tracks on on or both machines

Dimensions: 206 X 130 X 48 mm

DAW REMOTE MONITOR CONTROL PANEL

PD-1

PD-1
DAW Remote Monitor Control Panel

All audio switching performed within the DAW
Solo both Output Groups and 'Solo in Place'
Track and Stem names, read from the DAW are displayed
Automatic Stem/Track assignment from track names
Eight Global set-ups, 16 Stems, 64 tracks
Multiple PD-1 panels may be daisy chained for multi-user operation
Custom low depth, light action paddle switches
Stand alone, self contained system
Integrates with CB machine control for multi-user and/or-multi machine systems
Interfaced with ProTools version 7.2, Pyramix version 5.XX.XSP2 (via Sony 9 pin)
Interfacing to other DAW's (Nuendo, Sequoia, Sadie….) under discussion.
Fingertip record/monitor control of Track, Stem (Sub Group) or all tracks


PYRAMIX

USB422

VIDEO

PD-1
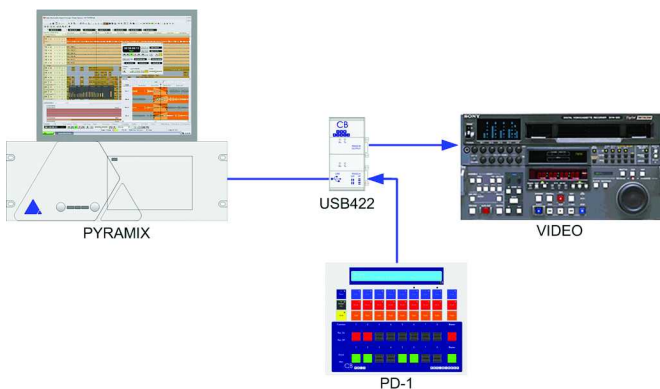
The PD-1 is a new concept in DAW monitoring based on the film mixing concept of the "PEC/Direct" panel that allows you to mix with separate Dialog, Music and Effects Stems (sub-mixes). You can monitor any combination whilst preserving the ability to 'Solo in Place' any source track. The solo, mute and source/playback switching are implemented within the DAW. The audio is mixed within the workstation to generate the individual monitor feeds (LCRS...). This eliminates inputs, outputs and interconnections. A 48 tracks monitor mixer would normally require 96 inputs and!

Track Names
The tracks may be identified by number (Tk00..Tk64) or their names can be read directly from the DAW. The first four Characters of the track name or the track number is displayed above each channel in the bottom line of the LCD Display.

Stems
The stems may be identified by number (St00..St16) or their names can be read directly from the DAW. The Stem names is displayed in the top line of the display, sixteen stems, each with up to eight tracks may be defined within the PD-1. When using Protools the Stem Names are defined as the first part of the Track name for instance to define the Effects Stem the following track names could be used Fx L, Fx R, Fx C, Fx Sub, Fx Sl and Fx Sr.
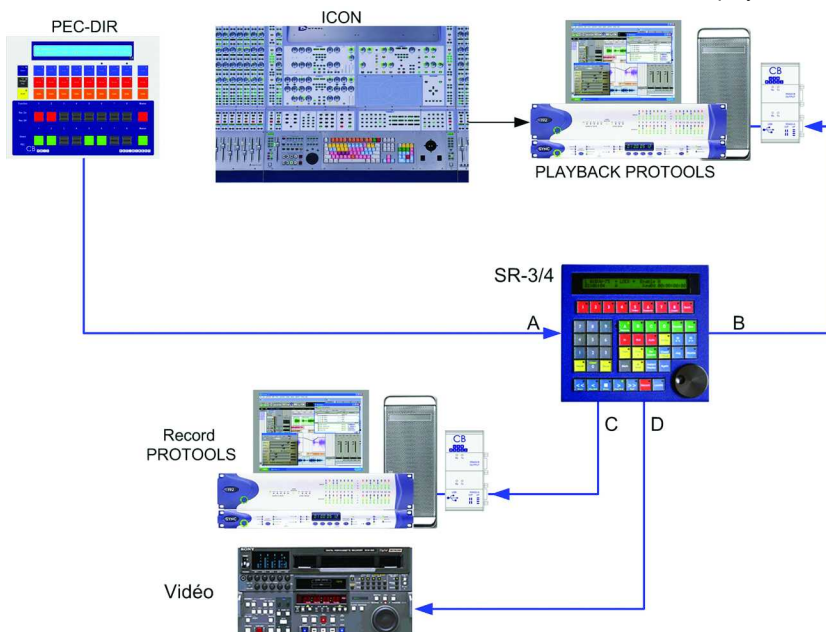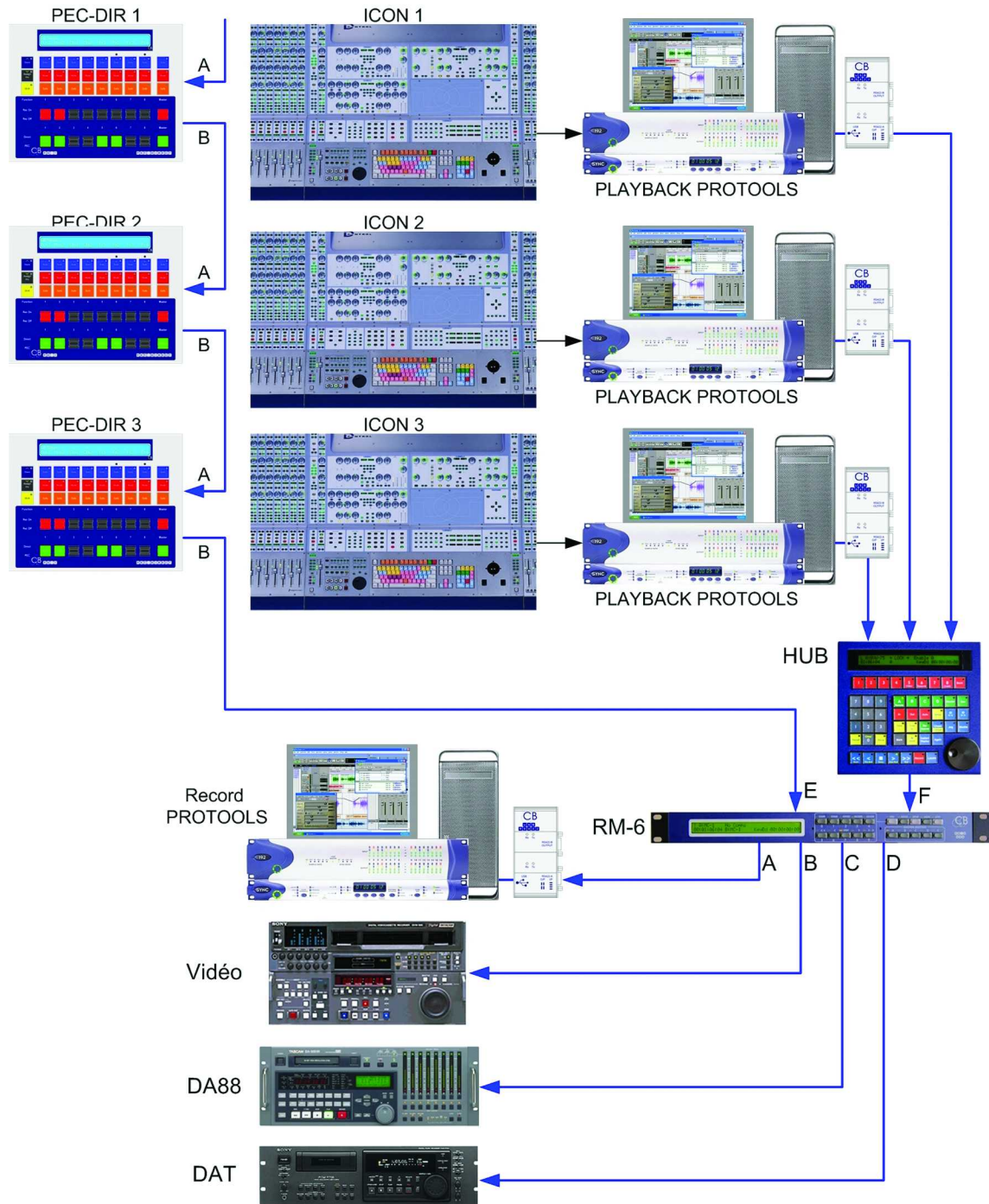
Auto-Setup
Using project stem and track names from the DAW the PD-1 can be auto setup.

RS422
One input and one output, PD-1's may be daisy chained for multiple operators. The input may also be used to control the DAW from a remote control for example the UR-422. The PD-1 is currently supported by Pro-Tools 7.2 and later, Merging Technology Pyramix.

Dimensions: 190 x 220 mm.

PEC-DIR

ICON

PLAYBACK PROTOOLS

SR-3/4

A   B

C   D

Record
PROTOOLS

Vidéo

PEC-DIR 1

ICON 1

PLAYBACK PROTOOLS

PEC-DIR 2

ICON 2

PLAYBACK PROTOOLS

PEC-DIR 3

ICON 3

PLAYBACK PROTOOLS

HUB

Record
PROTOOLS

RM-6

E

F

A B C D

Vidéo

DA88

DAT

REMOTE CONTROL/RS-422 SYNCHRONIZERS

CB Electronics

SR-4

SR-32

SR-3
Remote Control/RS422 Synchronizer, 1 Input, 3 Outputs

SR-4
Remote Control/RS422 Synchronizer, 4 Outputs

SR-424
Remote Control/RS422 Synchronizer, 4 Outputs, 24 tracks arming
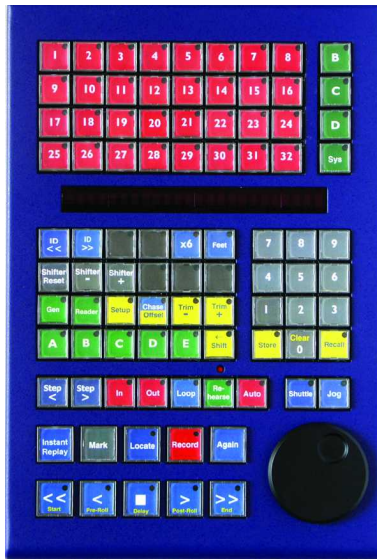
SR-24
Remote Control/RS422 Synchronizer, 4 Outputs, with Hub, 24 tracks

SR-24A
Remote Control/RS422 Synchronizer, 6 Outputs, with Hub, 24 tracks

SR-32
Remote Control/RS422 Synchronizer, 6 Outputs, with Hub, 32 tracks

SR-3 and SR-4
LCD display : Two by forty, 5mm characters
Sony P2 protocol, VTR's, ATR';s, DAW's ..
Automatic machine recognition and port configuration with Sony P2 protocol
Optional Protocols: Timeline, ES-BUS, Ampex, Studer
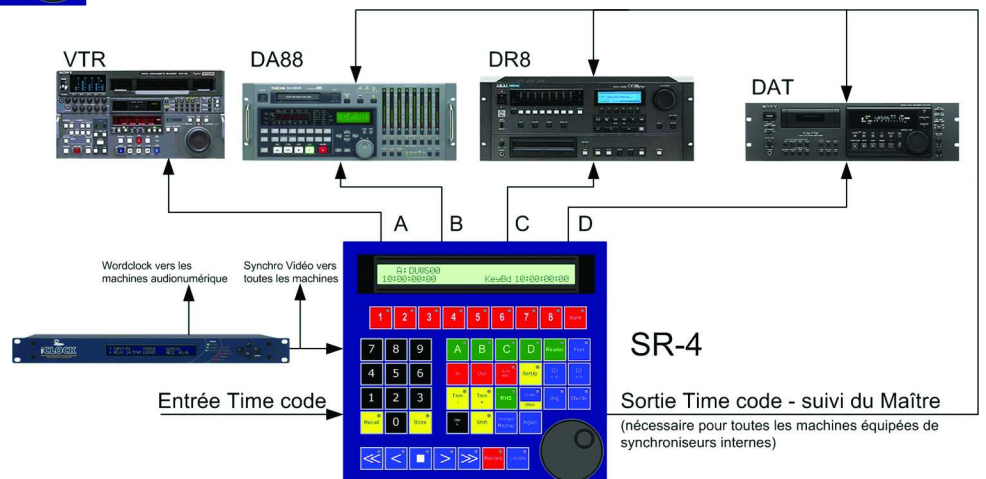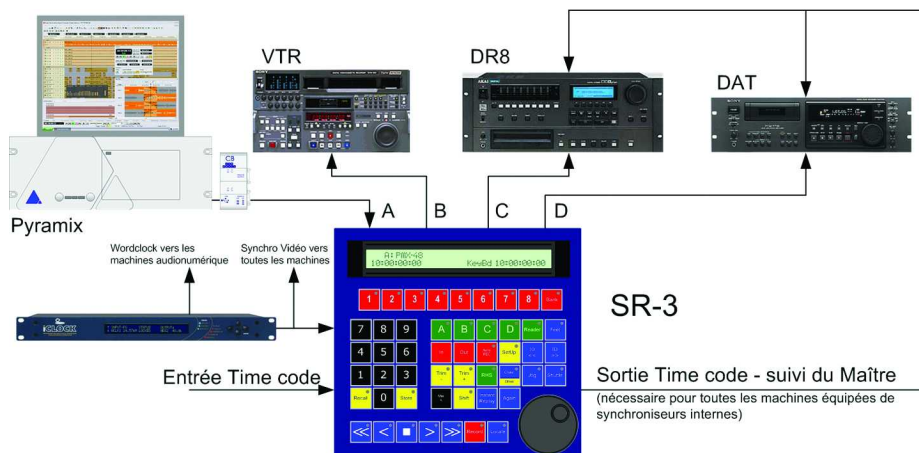8 track arm keys with bank key to allow up to 48 tracks on each machine
Timecode Generator, Virtual Machine or selected master timecode
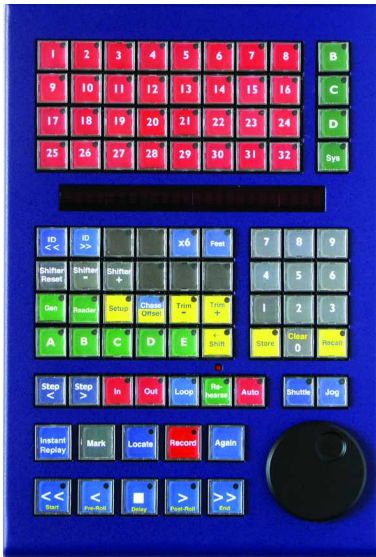Programmable Macro Keys, more than 50 predefined macros available
RS422 inputs
The serial ports on the SR-4, SR-24 or SR32 may also be configured as inputs from a console or DAW allowing multi-master control.
GPIO : 6 Inputs and 6 Outputs configured fo Lock, Record, Mute, Red Light etc

Pyramix

VTR   DR8   DAT

A   B   C   D

Wordclock vers les machines audionumérique   Synchro Vidéo vers toutes les machines

SR-3

Entrée Time code

Sortie Time code - suivi du Maître
(nécessaire pour toutes les machines équipées de synchroniseurs internes)

VTR   DA88   DR8   DAT

A   B   C   D

Wordclock vers les machines audionumérique   Synchro Vidéo vers toutes les machines

SR-4

Entrée Time code

Sortie Time code - suivi du Maître
(nécessaire pour toutes les machines équipées de synchroniseurs internes)

REMOTE CONTROL/RS-422 SYNCHRONIZERS

CBElectronics

SR-424

SR-24
Separate keyboard and display
Display: two by forty, 8mm high visibility characters
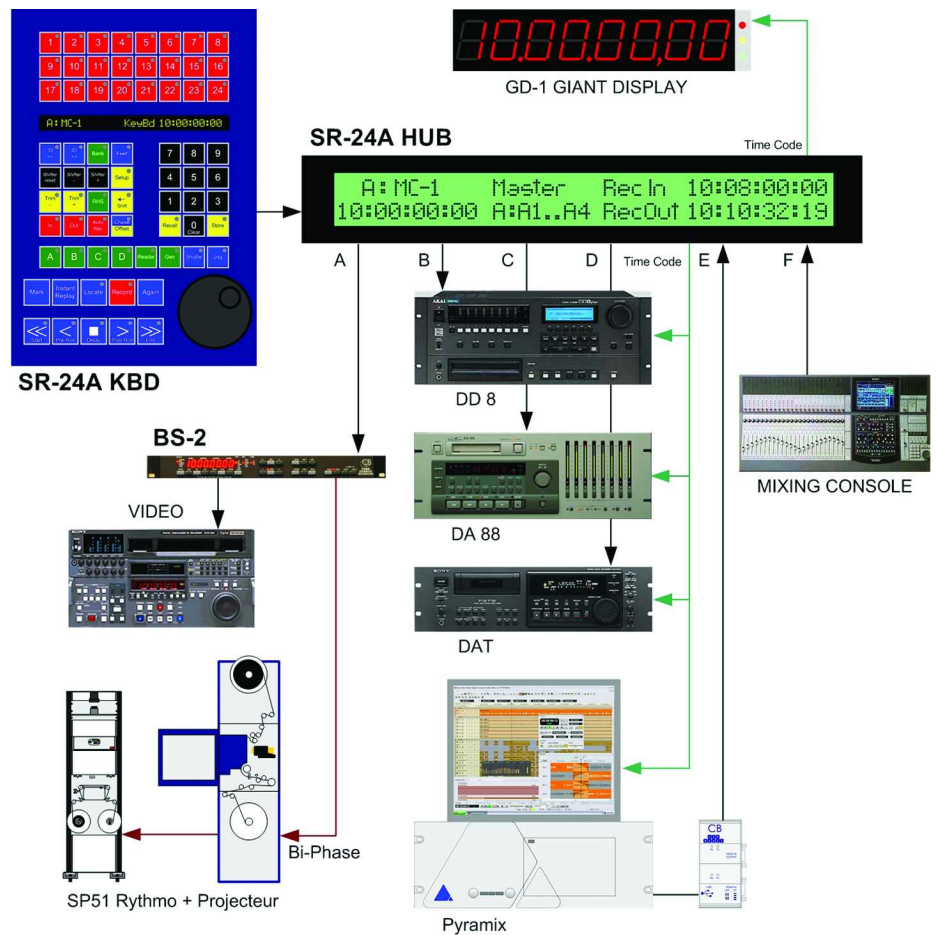4 ports configurable as inputs or outputs
24 Track arming keys
1x24 LED display in the keyboard

SR-24A
As SR-24 but fitted with 6 serial ports and parallel remote

SR-424
As per SR-4 but with extra keyboard to provide 24 track arming keys and extra macros

GD-1 GIANT DISPLAY

SR-24A HUB

Time Code

A:MC-1   Master   RecIn 10:08:00:00
10:00:00:00 A:A1..A4 RecOut 10:10:32:19

SR-24A KBD

A   B   C   D   Time Code   E   F

BS-2

VIDEO

DD 8

DA 88

MIXING CONSOLE

DAT

Bi-Phase

SP51 Rythmo + Projecteur

Pyramix

RACK MOUNTED REMOTE CONTROL/ RS-422 SYNCHRONIZERS

RM-6

Six Serial Ports, any combination of Inputs/Outputs
Plug & Play Sony P2 protocol, device recognition and configuration
Optional Protocols: Timeline, ES-BUS, Ampex, Studer
GPI's: 6 TTL Level high impedance inputs, 6 Open Collector outputs
Parallel Remote with tallies
Virtual Master Mode: Generator may be used as Tape less Master
Timecode Output: Follows master position and Offset
Timecode Input: Chase remote code
1U Rack Mount, Mounts the Machine Room
Optional Front Panel: System setup and check from Machine Room

RM-6
Rack Mount Serial Synchronizer, Full F/P
RM-6-4
Rack Mount Serial Synchronizer, Blank F/P, SR-4 remote keyboard and display
R-6-24
Rack Mount Serial Synchronizer, Blank F/P, SR-24 remote keyboard and display
RM-6-424
Rack Mount Serial Synchronizer, Blank F/P, SR-424 remote keyboard and display
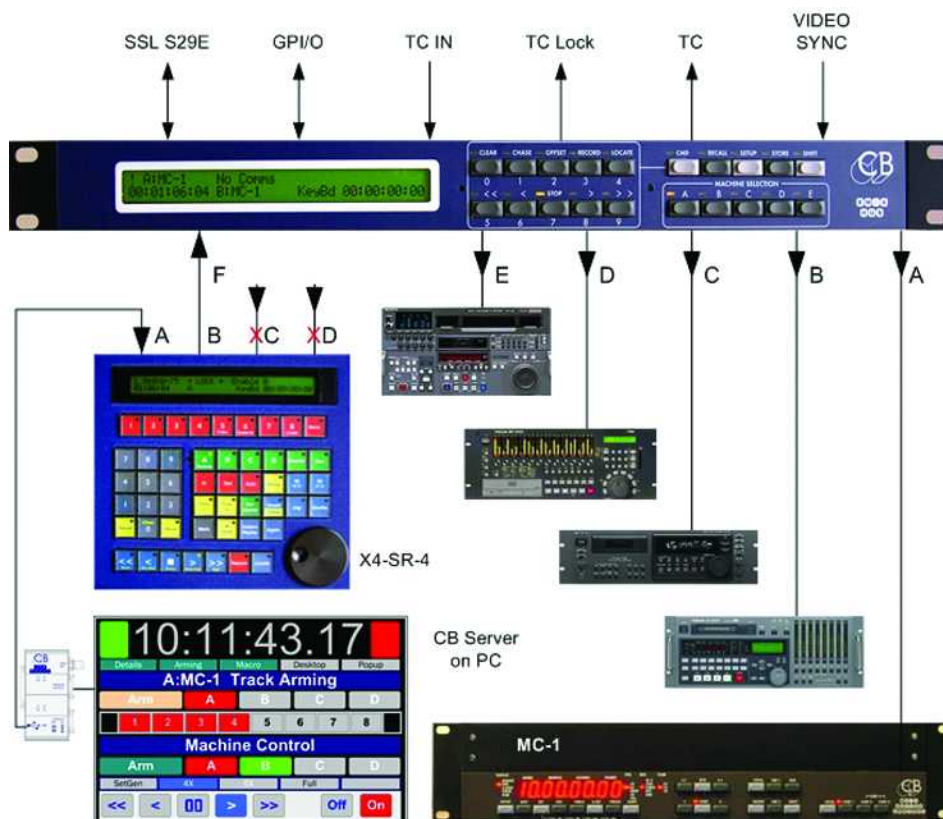**RM-2**
Rack Mount Serial Synchronizer 2 ports
CBSERVER
CB SERVER Program
RM-FP
Remote control for RM-6-4, RM-6-24 & RM-6-424

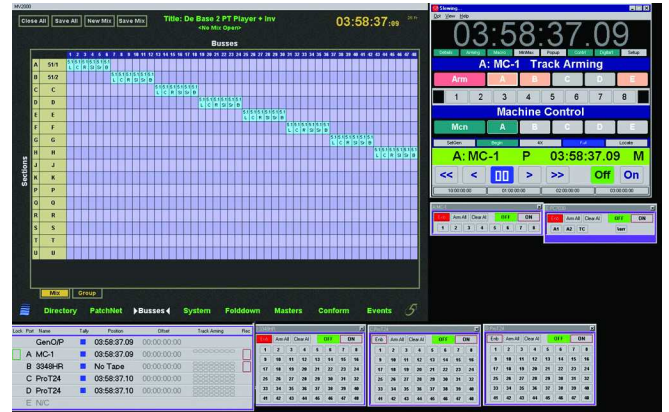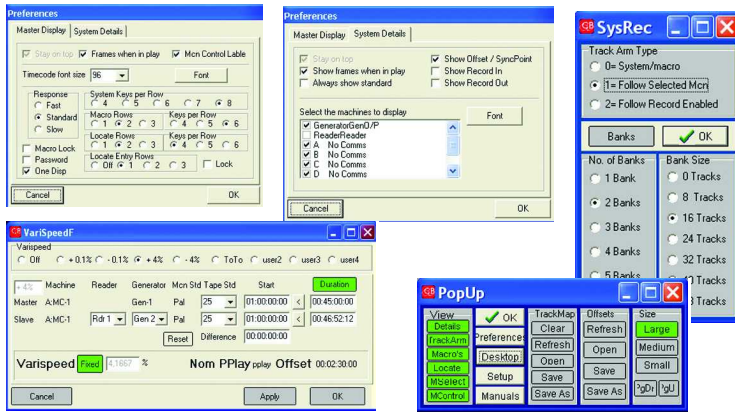Typical RM-6 Installation with CBSERVER

CBServer

CBServer is a suite of Windows programs that provide a Graphical User Interface to CB SR/MR/RM Synchronizers. CBServer provides real time control of the system and the possibility of saving/restoring system and machine parameters.

System display enables the user to select the master, chase enable, set offsets, record enable, track arm and change the setup. The cue list may be entered in real time or imported from text and EDL files. System display can be configured to show all the parameters of connected machines.
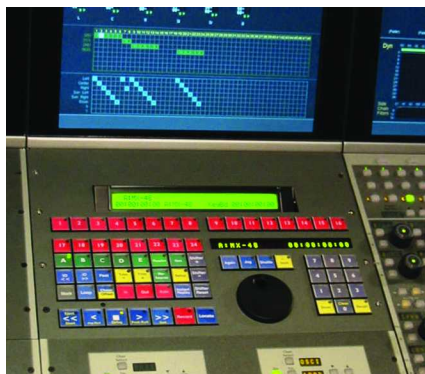
CBServer may be run within the console automation computer and be integrated with the console automation system using Sony P2 or CB XMC protocol

Example screen capture of a Euphonix console where CBServer is installed in the automation computer to enable multi machine control. The display includes System display and individual track arm panels for each machine.

Using personalized desktops CBServer may be configured for different operators or different applications, using Macros the user /users may switch instantly between desktops. Display functions include

Machine Name, position, tally, Offset, track selection
Master position, lock and Record indicator
Control and display Track Arming, Track Map, Bank
Set the number and function of macro keys
Display/set the record in and out points
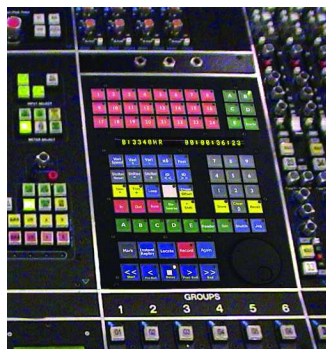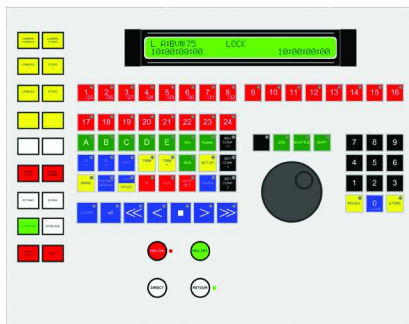
CUSTOM CONTROL PANELS

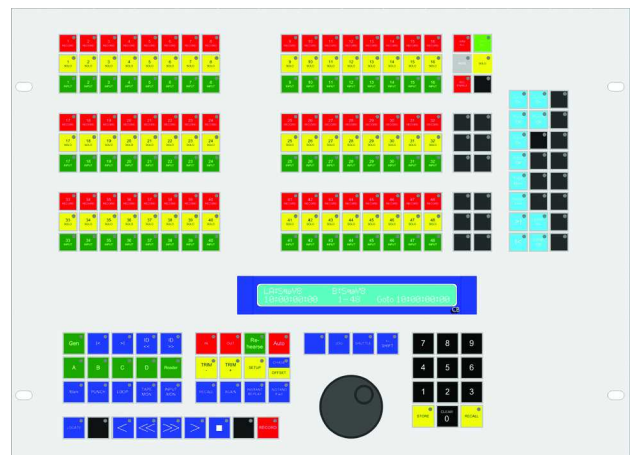Console Euphonix 5
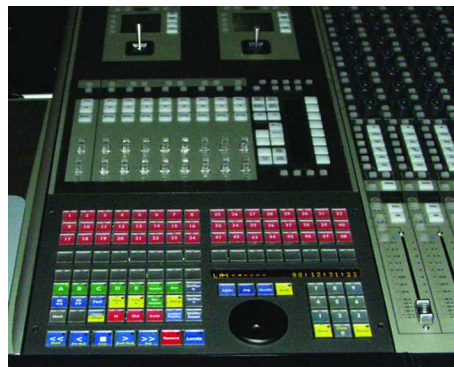
Console Euphonix 5

Console HarriSon

Using different keyboard layouts the system may be tailored to the space available within the console. If you have a specific requirement please ask and we will suggest a solution that will meet your requirements and fit both the space and budget
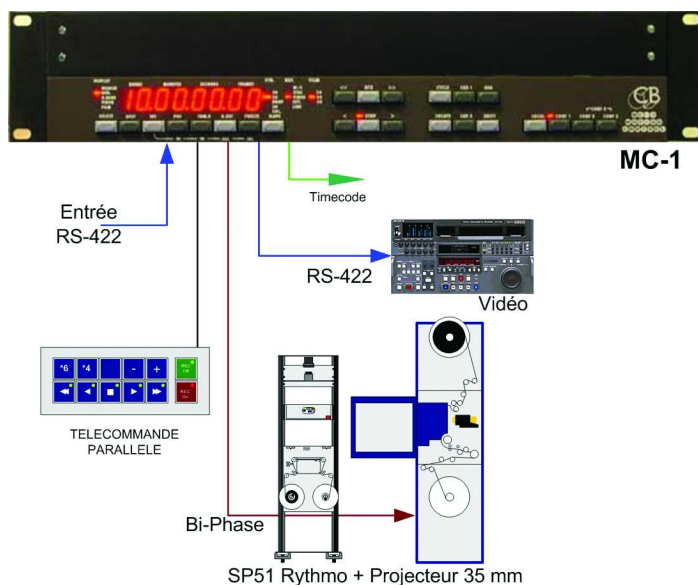
We have fitted custom panels in consoles from Euphonix, Harrison, Icon, SSL, Neve, DFC, Soundtracs…

Console API Symphony

support@colinbroad.com   Tel: +44 (0)118 9320345 or Fax: +44 (0)118 9320346

TIMECODE AND BI-PHASE PRODUCTS

MC-1

Entrée RS-422

Timecode

RS-422

Vidéo

TELECOMMANDE PARALLELE

Bi-Phase

SP51 Rythmo + Projecteur 35 mm

MC-1
Virtual Master
BS-1
Bi-Phase Synchronizer
BS-2
Bi-Phase Synchronizer with RS-422 Sony P2 to slave a Video Machine
MCBS-R
Parallel Remote Control SR / MR-6 from GPI/O
MCBS-R-S29
Parallel Remote Control MC-1 / RM-6 - SSL S29

MC-1 Virtual Master for use with Film, timecode and Sony 9 pin.
Timecode output (24, 25, Drop, Non-Drop)
4 Bi-Phase Outputs: at 24, 25 or 30 fps
1 Bi-Phase Output always at 25 fps
Tach + Direction output
Timecode Reader input
RS-422 Sony® P2 Protocol Input
RS-422 Sony® P2 Protocol output with synchronization
Parallel Remote Control
Track arming out put for 3 x 6 track
Direct Interface with SR/MR/RM Remote/Synchronisers

BS-1 Cut down version of the MC-1
Timecode output (24, 25, Drop, Non-Drop)
Timecode Reader input
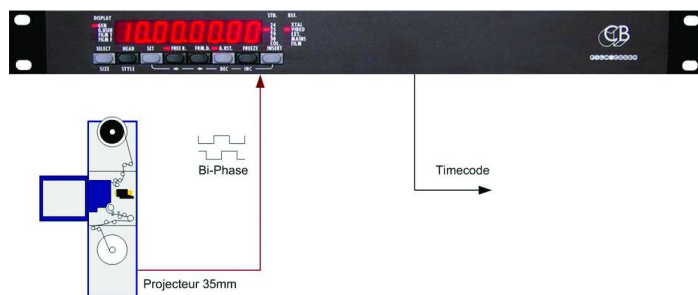1 Bi-Phase Output: at 24, 25 or 30 fps
Tach + Direction output
RS-422 Sony® P2 Protocol Input
Entrée RS-422 protocol Sony® P2
Direct Interface with SR/MR/RM Remote/Synchronisers

BS-2 same as BS-1 but includes RS-422 Sony® P2 Protocol output with synchronisation

TIMECODE AND BI-PHASE PRODUCTS

Bi-Phase

Timecode

Projecteur 35mm

FC-1
Film Coder, Bi-Phase to Time Code conversion
FC-2
Film Coder/Insterter As FC-1 + 4 separate video insertions
FCO-2
Option Multi Standard VITC Generator for FC-2
FCO-3
Synchroniser RS-422 Sony P2 for FC-1 / FC-2

FC1 Biphase to Timecode Converter
Gearbox between 24/25/30
RS-232C serial interface with ASCII protocol

FC2 FC-1 with video insertion
Four separate Insertions: Generator, Generator User Bits, Film
Position in Time, and Film Position in Feet

VIDEO & AUDIO CUING

VS1
Video Streamer

VS-LINK
Upgrade kit including new software and RS-323/Post PC Software, Impoved Video Card

VS1
Video Streamer - Video Wipes/Audio Cuing - Metronome - 500 cues list Cue list Editor & Multi Standard LTC Reader/Generator/Inserter - PC Upload/Download
Video Cuing :ADR, Scene Changes
Available with Beep or Click Output : ADR Talent Cuing or Music Tempo cues
RS-232 interface

TIMECODE READER/GENERATOR/INSERTER

TC-1
Reader/Generator LTC, Multi Standard, Multi Reference

TC-2
As a TC-1 + 4 separate video insertions

TIMECODE GEARBOX

TG-1
Timecode Standard/Framerate Converter

TG-2
Timecode Standard/Framerate Converter with serial RS-422

TG-1 / TG-2
Timecode Input any standard : 24, 25(EBU), 30(SMPTE), Drop Frame
Timecode Output any standard : 24, 25(EBU), 30(SMPTE), Drop Frame
Input / Ouput Frame Rate Gearbox : 23.97 : 24 : 24.97 : 25 : 29.97 : 30
Switchable Timecode : Generator Lock Source Reader, Video
RS-232 Serial Interface : ASCII Protocol
RS-422 Sony P2 Output : Video Slave at any Frame Rate
6 Preset configurations
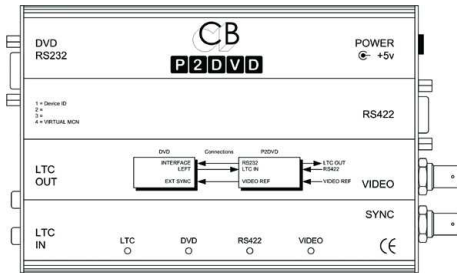Easy Setup for Repeat Job

CBElectronics

P2DVD
Pioneer DVD-V7300D RS422 Machine Control Interface

P2MMC
Midi Machine Control Interface - RS422 Sony protocol

P2DVD

The Pioneer V7300D DVD is awell proven industrial DVD Player with two unique features, lock to external video syncs, RS232 control. The combination of the P2DVD interface and the Pioneer DVD player can replace U-Matic's and Beta's as a contrillable picture source. The advent of consumer DVD recoredrs to make copies in the transfer bay makes DVD as simple to use as Beta or U-Matic. The DVD provides the advantages of Hard disk, low maintenance cost, and instant access with the picture quality and portability of tape.

The P2DVD Interface may be used as a RS422 conrolled Master with most RS422 synchrinizers, Digital Audio Work Stations and the Console automation systems.
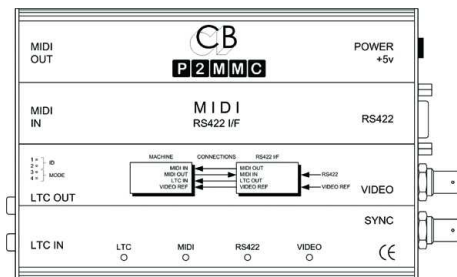
Timecode Output : from frame-count or time code on audio track

Time code Input : Convert continuous or single burst of timecode on audio track to RS422

PAL/NTSC : one machine only

Low running cost : 30 000 Hours MTBF, no expensive heads to replace

DVD, RS422, LTC Reader, Video Indicators : Self Test

P2MMC

The P2MMC Interface uses experience gained from both the SR and MR series remote control system. This Interface may be used as a serial slave with the most RS-422 editors/synchronizers.
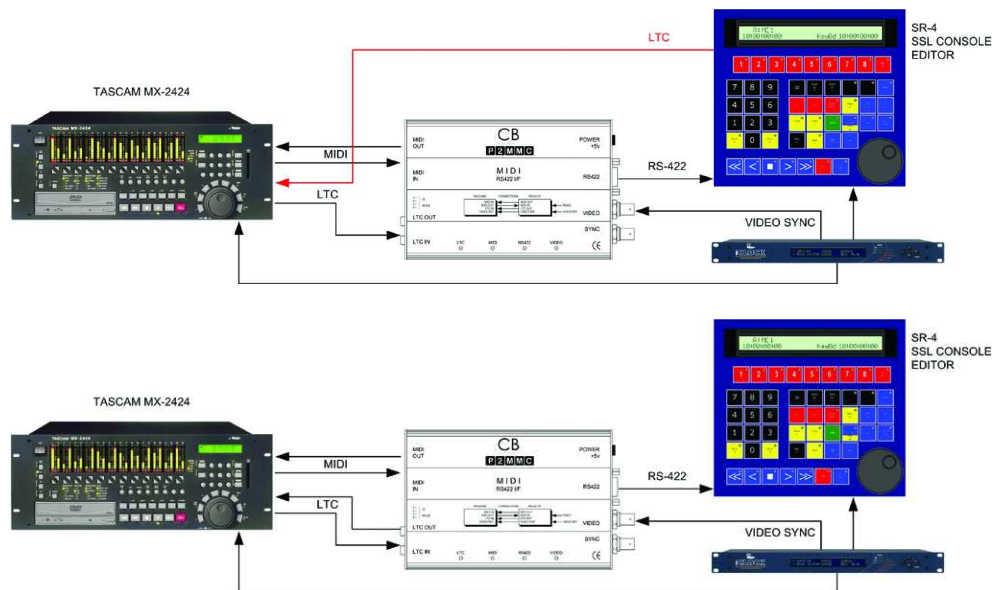
Record and Record Track Arming : Multi-Track arming passed to machine MX2424

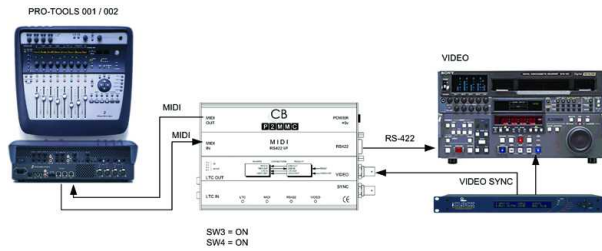RS-422 Input : For use with Consoles, DAW or Video Editorsack

Timecode Output : Virtual Master for the MX2424

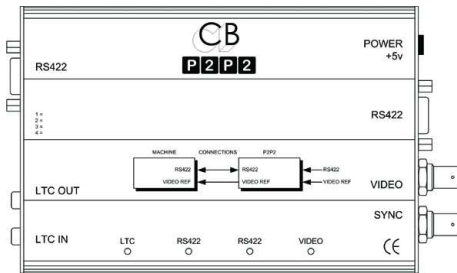Timecode Intput : More Accurate position information

MIDI, RS422, LTC Reader, Video Indicators : Self Test

RS-422 INTERFACES

P2P2
RS422-RS422 Machine Control Interface

P2P2

Designed to be used with existing consoles and DAW's to solve RS422 timing problems or to provide Timecode <> RS422 conversion.
Serial Input connect to DAW, Editor, Controller
Serial Output connect to Machine/DAW in machine emulation mode
Timecode Output RS422->Timecode
Timecode Input Timecode->RS422

TIMECODE DISPLAY

GD-1
Giant Display

LD-1
Large Display

GD-1

Our Giant Display reads and displays EBU/SMPTE/FILM Longitudinal Timecode or User Bits in Five inch high, 7 segment red LED displays with the simple, remotable, two switch operation
Three 20 mm LEDs Red, Green, Yellow : Record, Lock, Cue Indicators
Dimensions : 37"x 7" x 3"

LD-1

19" - 2U Rack Display, wall or rack mounting. Timecode to Footage, 1.75 inch high caracters.
Three 20 mm LEDs Red, Green, Yellow : Record, Lock, Cue Indicators
Use with the FC-1, MC-1, TC-1, VS-1 to display Footage.

CUE LIST PREPARATION TOOL

ADRTaker

Quick Cue list preparartion for ADR/Taker applications, output compatible with VS-Link-2, text or printer.

The ADRTaker program provides Intergral machine control with Contour ShuttlePro interface allows jog and shuttle control of RS-422 controlled machine.

Programmable input fields to suit different applications, Field that are not requied are skiped to speed up entry.

Look for direct control of DVD, Quicktime and Windows Media Player in the future.

Mulitple Selectable Entry Fields : In Time, Out Time, Caracter, Dialogue, Notes

Programmable Function Keys : Single Key Caracter Entry

Simplified Timecode Entry : Hours and Minutes tens copied from Previous Entry - Last Out point becomes next Inpoint

Sony P2 Machine control : In and Out Capture

In & Out Time Checking : Loop duration, Out before In

Printer Driver

MONITORING MULTIFORMATS MCU

MONITORING MULTIFORMATS MCU

A Monitoring system with up to 16 outputs, 64 inputs with: Mute, Dim, Input Solo, Output Solo, PEC/Direct, Individual output gain adjustment (+/- 4dB), input gain adjustment of (+/- 15dB). Both LCRS and LRCS input formats supported Two calibrated monitoring levels and non-calibrated level. Supporting Mono, Stereo and Extended surround. Remote Control with user definable keys,

MCU-1
MCU base unit 2U with Internal Remote
MCU-2
MCU base unit 2U with External Remote
MCU-IP
Input Card 2 x 8 (Max 2)
MCU-OP
Output Card 1 x 8 (Max 1)
MCU-MD
Metering output Card with gain adjustable
MCU-BP
Insert Card with gain adjustable
MCU-RC
Remote Control with display

Base Unit Specification
Inputs:
2 x 8 Channels
T/B (Also used as Slate)
Desk Monitor/Solo
Outputs:
1 x 8 Channels
Stereo Monitor O/P
Other inputs:
Mute, Dim, Solo, T/B

RS422 remote control

Inputs
A maximum of 8 x 8 inputs may be fitted (four 2x8 Channel input cards). Each 8 input card may be configured as a multi-channel input or 4 stereo inputs.

Outputs
A maximum 2 cards each with 8 outputs, with one output card the following formats are available EX/5.1/LCRS/Stereo/7.1. The extra output cared provides outputs for separate down mix and stereo near field monitoring outputs.

Remote Control
A RS422 Remote port is fitted Remote is possible from a computer or from our US-422 remote. The UR-422 remote control is user programmable and permits input section, monitoring format, monitoring level, down mix, speaker mute/solo

GPI
A 9 pin 'D' provides the following GPI inputs:
MUTE, DIM, Talback, Pec/Dir, Input.

Talkback/Slate Input
A female XLR line level slate input is provided. This may be used to setup the monitoring system when connected to a pink noise source or when connected to a talkback feed and used with a GPI allows one of the main speakers to be used for talkback

LFE Output
The LFE output may be driven from a separate input or by the sum of all the elements of the format selected via a low pass filter.

Input Level Adjustment
The input gain for each input may be adjusted by +/- 15db. Hold the input/format selection key depressed for 2 seconds, when the LED flashes the gain may be adjusted in 0.5db steps.

Output Level Adjustment
The gain of each output may be adjusted by +/- 4db. Hold the output selection key depressed for 2 seconds, when the LED flashes the gain may be adjusted in 0.5dB steps.

Monitoring Format/Source Memories
The MCU has 16 source/format memories, each memory contains the name, input level, input format, input port. These memorises may be assigned to any of the keys on the remote control or front panel. Once a format is selected, any change of parameters os saved with the format for the next time that it is selected.

Options
Insert Card
8 channel Send/Return card enabling an external unit to be inserted when required.

Metering Output
8 channel metering output with gain adjustable in 0.5db steps

Dimensions:
Main unit: Rack Mount 19" 2U

Remote Control: 112 X 55 X 31 (Without connectors)

CBElectronics

AGENTS

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