Solid State Logic
SOUND | | VISION

C200

V4.0/9 Software Update and Install Notes

Applicable to upgrades from V3.3/10 upwards

Packing List

Please check that the V4.0/9 Software Upgrade Kit (706C20ZH or 706C20CH) contains the following items:

1	V4.0/9 Update Notes	(This document)
1	C200 Software Disk (ZIP)	P94020ZH
	or C200 Software Disk (CF)	P94020CH
1	Sealed Software Licence envelope which contains your Software Licence string	P940220H

If any of the listed elements are missing, please contact your local SSL representative before attempting the upgrade

This document contains essential information – please read it carefully before making any attempt to upgrade the system

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Introduction

This document describes the fixes and new features incorporated in V4.0/9 software, and details the software installation procedure required to update your system to this latest release of C200 software.

Please note that this release is only applicable to those systems that have previously been installed with V3.3/10 or later software *only*. If you have any questions about this release, please contact your local SSL office or distributor.

Software Installation

Please carry out the following steps carefully:

1. Check the contents of the Upgrade Kit against the packing list; if there are any omissions, please contact your local SSL office before proceeding further.

2. As with all software installation, we strongly advise you to generate a 'mirror' copy of the C300 System Disk onto Zip *or* Compact Flash disk before proceeding:

Archiving the System Disk

1. Format a new Zip *or* Compact Flash disk using the **MISC** / **Tools** / **Format** function.

2. In the **FILE/Data** menu, select **Copy**.

3. In the resulting pop-up, stab on the large grey box beneath **Source**, which will present a list of the contents of the System Disk at root level; if not, stab the box next to **System** on the left of the pop-up.

4. Stab on the **Current Dir** box, which will select everything visible on screen (the entire contents of the System Disk). Once done, you will be returned to the **Copy** pop-up, which should now list one source item, the name given to the System Disk.

5. Stab in the small grey box beneath **Destination**, and stab the box next to **ZIP Disk/Mem Card** on the left of the resulting pop-up. This should display the root-level contents of the Zip *or* Compact Flash disk which, if newly formatted (Step 1.), should display no content.

6. Stab on the **Current Dir** box, which will select the currently visible level of the Zip *or* Compact Flash disk. Now you will be returned to the **Copy** pop-up, which should list the volume name of the Zip *or* Compact Flash disk as the destination.

7. Stab **Start Copy** at the foot of the **Copy** pop-up. When the copying process has been completed, stab on the yellow **Copy** box to quit the pop-up and dismount the disk. Remove the Zip *or* Compact Flash disk, label it and store safely.

3. Read carefully the licence agreement that is printed on the label that seals the Software Licence envelope. When you break the seal on this envelope (see later) you will be bound by the conditions in this agreement. The agreement is also printed on the last page of this document. If you do not agree to the terms of the agreement then do not open the package, discontinue the installation process and contact your local SSL representative for advice.

4. To avoid the installer failing to overwrite the EQ algorithm files when you copy the new software onto the system disk, you need to remove the write protection on these files. At the terminal, type:

`quit <CR>`	Repeat until you see the root prompt, eg. '`[C200 nnnn]>`' where "`nnnn`" is the serial number of the console.
`eqtype unprotect <CR>`	You will see confirmation as each of the four algorithm files has its write protection removed, then you can continue with the installation procedure.

5. Install the new software using the System / Install facility:

Installing new System Software

1. Place the Software Release Disk in the processor's Zip *or* Compact Flash disk.
2. Via the **System** / **Install** menu, and at the prompts, respond accordingly:
   i. Stab on the **Start** box.
   ii When instructed **Stab on device to install from**, stab on the **ZIP Disk/Mem Card** box.
   iii When instructed **Stab on device to copy to**, stab on the **System Disk** box.
   iv When the screen indicates **Install Completed**, remove the disk from the drive, and then stab on **Reboot** (at the top right of the **Install** pop-up).
3. Store the software disk in a safe place.

6. When the system has booted, stab on the tablet with the pen and a pop-up will appear on screen inviting you to enable the software. Note that you will not be able to use the console until the Software Licence has been updated.

7. Open the Software Licence envelope containing your licence string and type this carefully using the console's keyboard.

8. Once the system has verified the licence validity, the Software Licence Agreement will appear on-screen. Stab on the **I Agree** box at the top of the pop-up to complete the licensing procedure.

9. Remember to store the Software Licence string in a safe place along with the software disk.

Please Note These Steps!

10. Navigate to the **Misc** / **Front Panel** menu and select **Save** to create a new `C200_Front Panel_Settings` file. Next using the on screen terminal, identify the network ID of the front panel (Scenaria FP) in the Network page, and enter the 4 digit number as instructed below:

`Front DFP <CR>`

`Ser XXXX <CR>`

Where '`XXXX`' is the network ID for the front panel. Next, in **Misc** / **Front Panel** / **Cursor Col**, set the cursor colour of the pen. Finally, stab on **Misc** / **Front Panel** / **Save** to save the settings so they are recalled on the next system boot.

If this is not done for classic C200 control surfaces, the pen and tablet will no longer function and the Console Transport Controls will no longer illuminate after the console has been re-powered!

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11. With the introduction of Morse stagebox connectivity has been expanded – please refer to page 9. As part of the V3 to V4 C200 software installation the **Machines** / **Links** page will need to be reconfigured if your installation has a C Series Stagebox attached. Re-enter the Stagebox PAL ID, as found on the **Machines** / **Network** page under 'Fibre MicAmp', into the relevant link box.

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12. In addition to this, if you are upgrading from the V3.4/10 or lower to V4, the Stagebox names and IO grouping will need to be redone.

Note. Seperate configuration disks are no longer supplied; standard configuration files for this software release will instead be found in a 'Configuration' folder at the top level of the software disk. If required, these files can be copied into the appropriate directories on the System Hard Drive.

Bug Fixes

The following issues have been fixed in this version:

- Ref 10463 Systems equipped with the 626904Xn motherboard on their ADC card(s) will no longer crash when selecting DAC in the IO Params page.
- Ref 10444 The front panel can now be power cycled, retaining cursor control.
- Ref 10443 Centre meter screens now always display the correct graphics.
- Ref 10405 The LF Pan control now affects the right hand side of a stereo aux, on a stereo channel, when it is ganged to a large fader.
- Ref 10392 Clear Selective in Projects now clears user generated output routing.
- Ref 10370 Aux flip to fader on SF Aux – Level and Pan now control the aux level and pan as on the Large fader Aux flip to fader.
- Ref 10369 Aux Control Options – a post fader stereo Aux, ganged to Pan and Level, now follows the channel level and pan.
- Ref 10364 The insert pre button is now stored as part of a snapshot.
- Ref 10359 MT Bus routing is now reflected correctly on the Routing Panel when using Extended Aux Modes.
- Ref 10331 Local RBUS sources (EXT TB etc) that are tied to a centre section switch function can now have their routes removed if routed to Link outputs.
- Ref 10312 Small faders no longer jump full scale when pan laws are set.
- Ref 10309 Mix Fill and Mix End front panel functions now work when assigned as macros.
- Ref 10284 Automation modes and functions have been added to the Macro List.
- Ref 10243 If routing the RLocal Ext TB output source to any output on the stagebox, pressing Ext TB button in the centre section no longer freezes the console.
- Ref 10235 Graphic on the colour LCD (if present) in the Centre Section is now correctly aligned.
- Ref 10228 TB and SLS are now available in the GPIO list.
- Ref 10212 The 626960 CPU card now correctly synchronises 44.1kHz to video.
- Ref 9998 Meter ballistics on consoles with older meter graphics cards now work correctly on systems fitted with 4 DSP cards.
- Ref 9976 Audio now passes correctly when 3 stageboxes are attached to the console.
- Ref 9975 Using '**Use Tally's**' at 96kHz no longer crashes the console when you drop into record.
- Ref 9904 You can now set up and output patch from any source to a remote output.
- Ref 9868 Input patch firing now indicates the current patch (highlighted yellow).
- Ref 9812 The console will no longer lockup when entering Source Link number via the keypad.

- Ref 9776 There is no longer a conflict when writing automation moves on Faders and Auxes whilst flipped to fader.
- Ref 9679 StageBox input grouping is now retained if, when using 2 or more StageBoxes, one is powered off.
- Ref 9664 Remote IO – 2 or more StageBox names are now saved.
- Ref 9383 Group Cuts in Manual no longer automate.
- Ref 9380 Aux Setup – toggling between All Channels/Selected Channels via the radio buttons no longer causes text to disappear.
- Ref 9313 MADI sources now appear in the AES Status page as 'Professional'.
- Ref 8851 Individual channel objects now automate when all elements are set to Protect in the SET Protect menu.
- Ref 8855 Meter graphics no longer corrupt whilst bay swapping.
- Ref 8599 If the fader is in Motors Off, changing the fader level, now changes the audio level.
- Ref 8462 The intermittent booting of meter screens has been resolved.
- Ref 8132 On project load the Master fader now does not need to be touched to allow audio to pass.
- Ref 8121 Snapshot Sequencing – fader status, protect and select buttons are now disconnected from the group fader when it is assigned to control snapshot fades.
- Ref 7896 StageBox CPU DAC gains now adjust correctly.
- Ref 7861 Manual Protection is now correctly indicated on the fader.
- Ref 7816 The selection of a digital input lock clock source in the **IO Params** page is now saved.
- Ref 7562 The Monitor insert In button no longer hangs the system if the monitor insert is assigned the Mon L and Mon R signals.

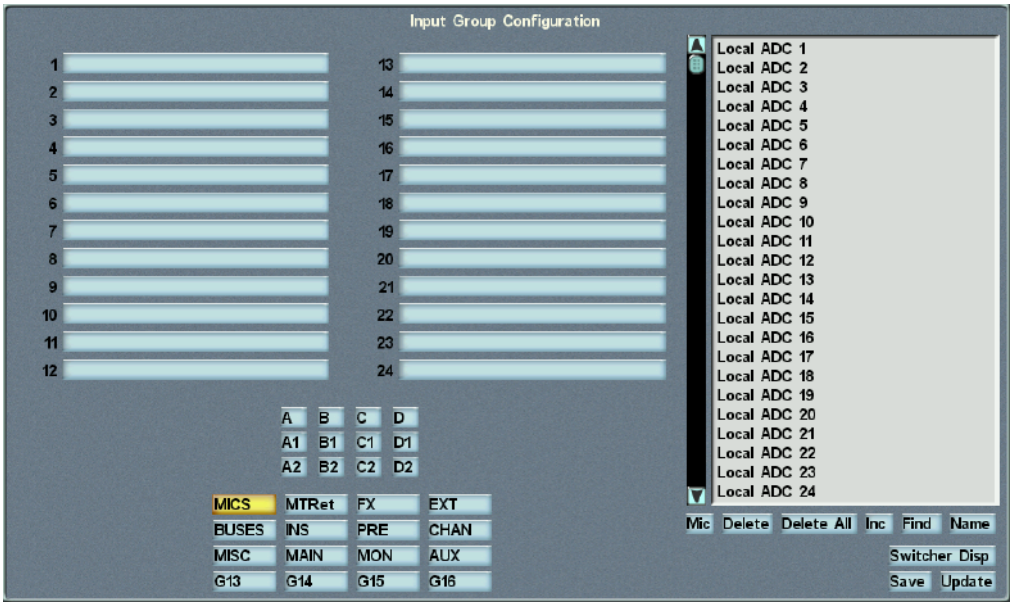
New Features

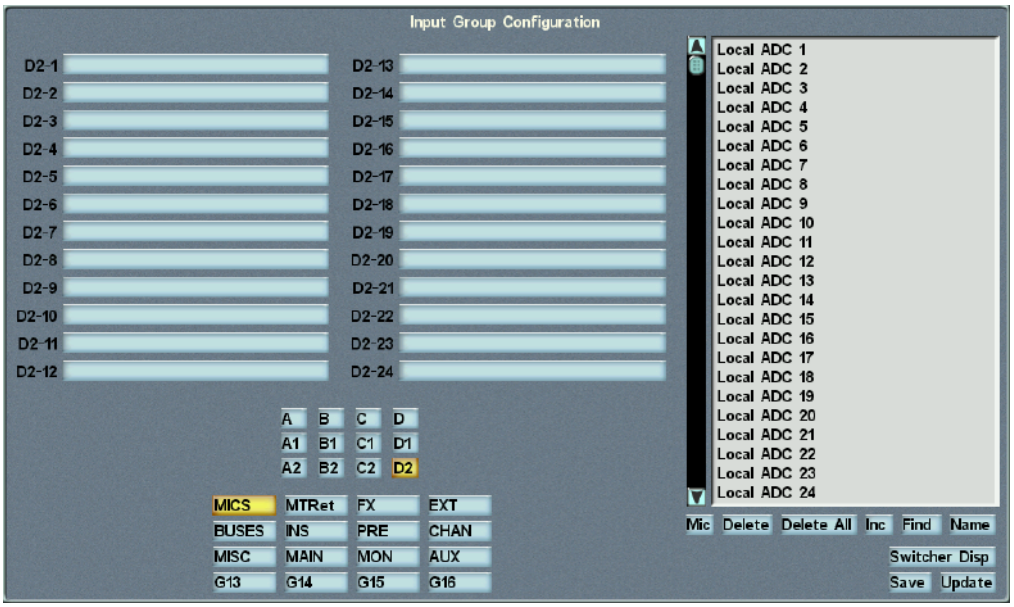
This V4.0/9 release adds many new Routing, I/O and HD features:

Feature	Page
Input Group Expansion	7
Output Group Configuration	9
New Output Routing Page	10
MORSE Stagebox I/O Expansion	11
Tri-level Sync Support	19
HD Machine Control	19

Input Group Expansion

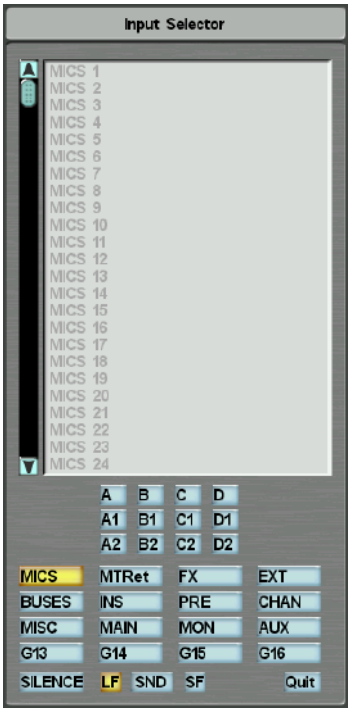
The **MACHINES**/**Inputs** page has the same layout as it did before, but instead of just the **Default** plus **A**, **B**, **C** and **D** pages, there are now also **A1**, **A2**, **B1**, **B2**, **C1**, **C2**, **D1** and **D2** pages, permitting up to 312 discrete sources to be placed in each of the 16 source type categories:



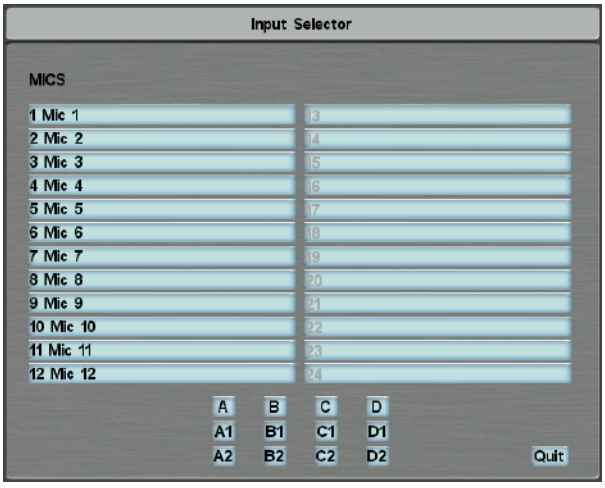


This is particularly useful for the second source type, '**MTrk**', as this group benefits from automatic record/replay/mix normalling when changing console mode. In recognition of the popularity of high-capacity hard disk recorders, this expansion also allows more than three 96-track audio workstations to be managed, with room to spare.

Once sources are entered into these expanded input groups, they are available from all user interfaces, which also show the expanded **A**, **B**, **C** and **D** pages.

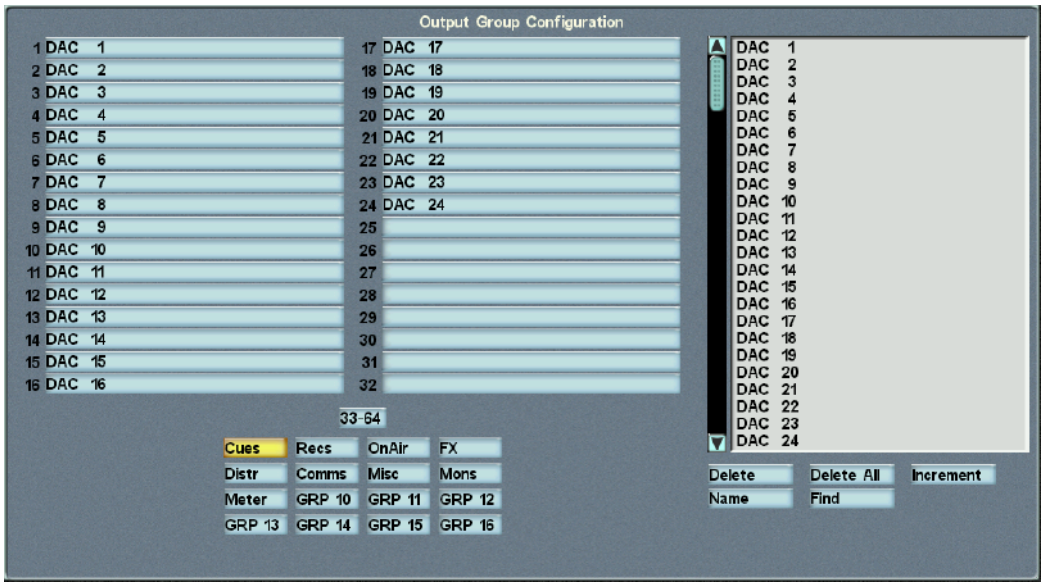


Likewise, the centre section routing panel can access all of the pages using the **A**, **B**, **C** and **D** buttons found there – from the **Default** page, a single press on the **A** button produces the **A** page, a quick double-press brings up the **A1** page and a quick triple-press displays the **A2** page. Pressing the **A** button once when in any of these pages cancels back to the **Default** page. The **B**, **C** and **D** buttons work in the same way for their own pages:



Output Group Configuration

The **MACHINES/OP Config** page is a new page that allows the original list of all available outputs to be broken into 16 smaller groups, in a similar way as the inputs are arranged. This allows much faster navigation of potentially hundreds of outputs, and makes possible the grouping of outputs by the type of destination they feed, or by the audio format:



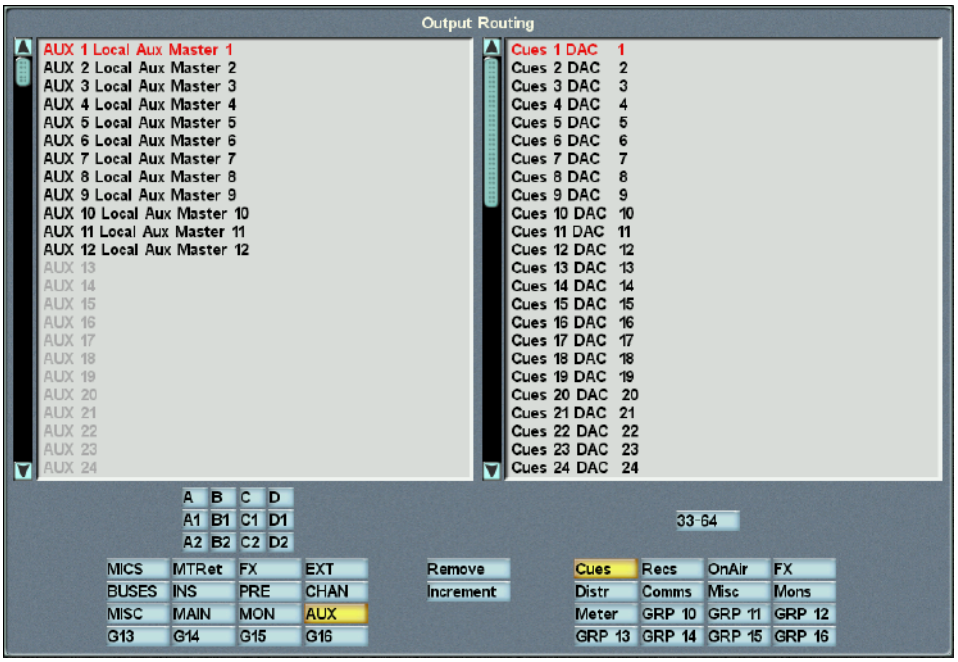
Each of the 16 groups has two pages, showing 1-32 and 33-64. Pages are selected using the button labelled '**33-64**', located above the 16 group buttons. This allows each individual physical I/O card to occupy one group, or for sixteen different destination types to be used, eg. Antennas, VTRs, DAWs, Effects, Cues, etc.

The functionality of this page is very similar to the **Inputs** page – the original long list of all available outputs is seen to the right, and the five buttons below it perform the following functions:

- **Delete** deletes an individual entry in the current group
- **Delete All** deletes all entries in the current group
- **Increment** increments the selection to the next entry when used in conjunction with **Name** or **Delete**
- **Name** names an individual entry or a group
- **Find** finds the position in these groups of an output selected from the full list

New Output Routing Page

The new **MACHINES/OP Routing** page replaces the old **MACHINES/Outputs** page, and provides the familiar output routing functionality with the expansion of input groups and organisation of output groups as detailed above. The source list is in the upper left, with the input groups on the lower left side. The destination list is in the upper right, with the output groups on the lower right side:

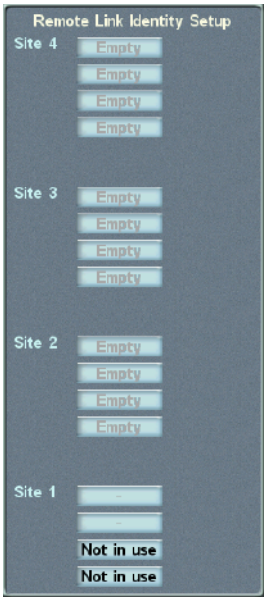


To make an output route, select the destination from the list on the right, then choose the source with which you want to feed it. When the route has been made, the destination entry will update to show the source that is currently feeding it. The **Remove** button allows existing routes to be cleared, and the **Increment** button allows the first source to be incremented as successive destinations are selected in the right-hand list.

MORSE Stagebox I/O Expansion

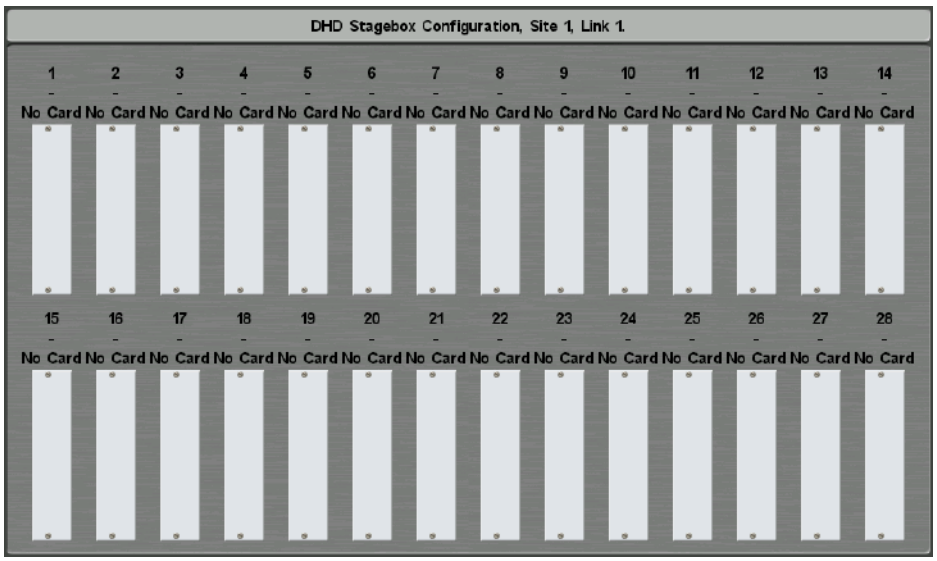
With V4.0 software, the C200 can connect directly to the compact, modular **MORSE** Stagebox, allowing it to control the mic preamp parameters directly from the control surface, and providing both I/O expansion and also new I/O options to the C200.

The **MACHINES/Links** page displays the fibre optic ports currently fitted and available on the Centuri core's routing card (**626909**). Previously these ports were only used for the earlier **C-SB** Stagebox, but the later revision (**626926**) fibre optic interfaces can be connected to **MORSE** Stageboxes for audio and control. In the **Remote Link Identity Setup** example opposite, **Site 1** has one of these **626926** ('**MORSE Link**') cards fitted, indicated by the two lowest boxes showing '**Not in use**' (the two upper boxes are irrelevant for the **626926** card):

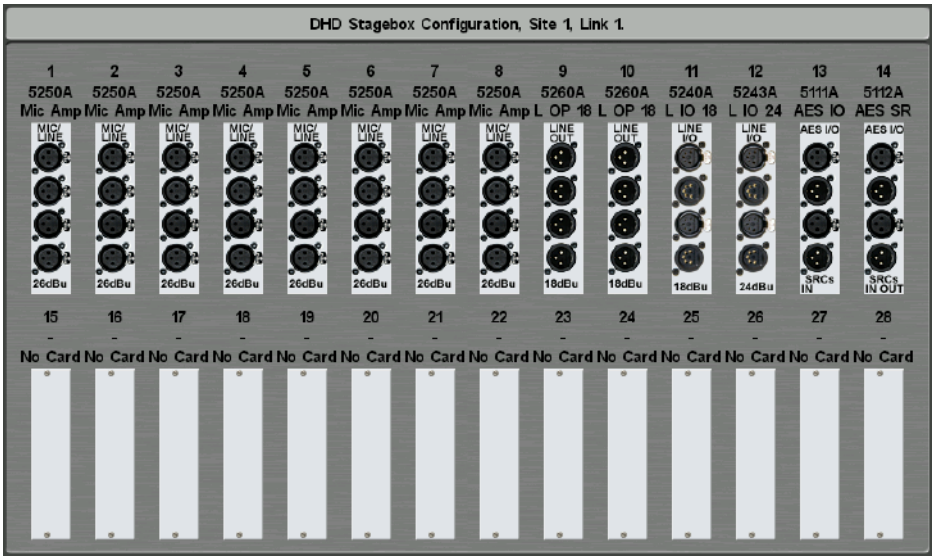


Stabbing on either of these boxes brings up a **Link Use Selector** pop-up:

Choosing '**MADI DHD**' here defines the connection type as reserved for a **MORSE** Stagebox; if '**Stagebox**' is selected it defines the connection as reserved for the **C-SB** Stagebox. Once '**MADI DHD**' is selected, a '**Config**' button appears next to the Links on that card – pressing it reveals the **DHD Stagebox Configuration**:



The MORSE Stagebox has a total of 14 audio card slots, each of which typically provides 4 audio channels. Graphical and textual representation of the card configuration from left to right is displayed in this pop-up, which is empty initially. Stabbing anywhere within the '1' area will show the list of card options for I/O slot 1 – refer to the hardware fitted in the MORSE Stagebox to get the correct order and part code numbers, then enter the correct configuration to inform the console of all the audio cards fitted, eg:



The codes shown here are the last 5 characters of the audio card's part code:

5111A Revision A of the AES I/O card, with 2 AES I/O pairs (input SRCs only)

5112A Revision A of the AES I/O card, with 2 AES I/O pairs (SRCs on both)

5170A Revision A of the SDI I/O card, with 2 AES I/O pairs (SD and HD video)

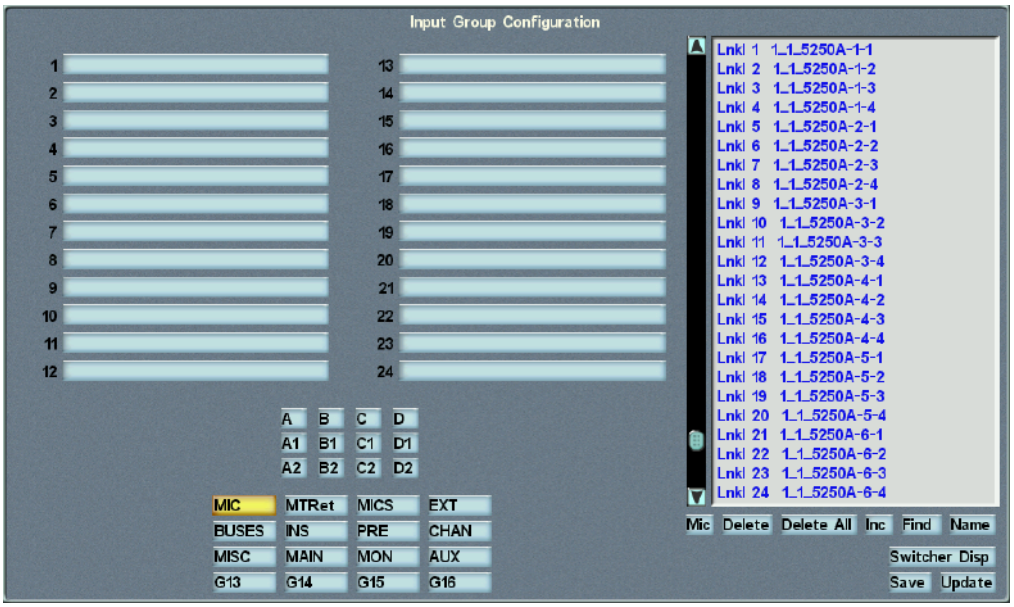
5240A Revision A of the Line I/O card, with 4 line I/O's lines (max +18dBu)

5243A Revision A of the Line I/O card, with 4 line I/O 's (max +24dBu)

5250A Revision A of the Mic input card, with 4 analogue preamps (max +26dBu)

5260A Revision A of the Line output card, with 4 line outputs (max +18dBu)

Once finished with this configuration, go to the **Inputs** page and scroll though the long list of sources to find entries beginning '**LnkI**' (Link Input) – these are the audio channels from the **MORSE** Stagebox:

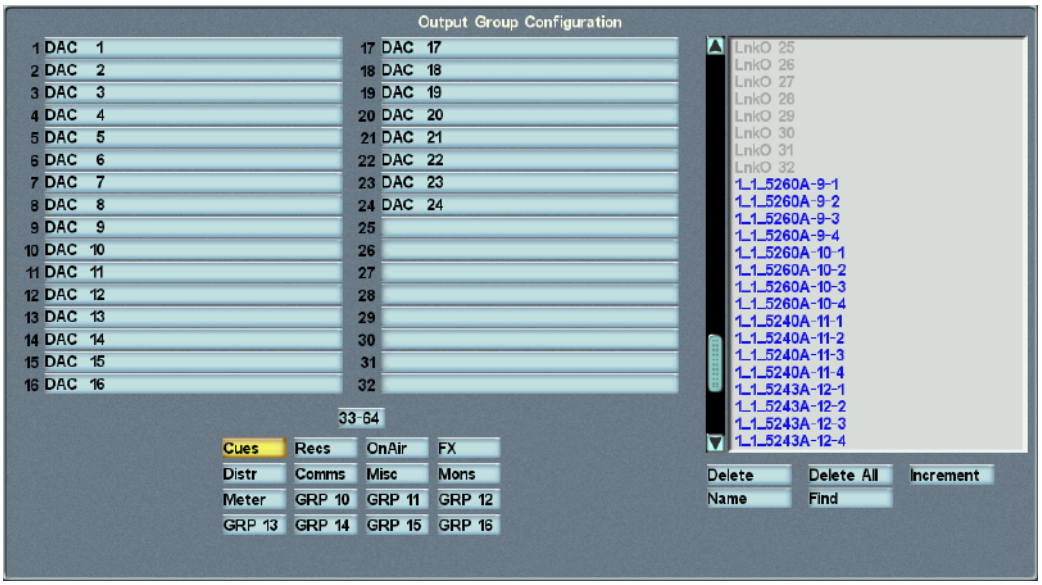


*Note. The names are automatically generated, so that the four mic preamps on a Mic card in the first slot will be called **5250A-1-1**, **5250A-1-2**, **5250A-1-3** and **5250A-1-4**. Rename and arrange them as you wish in the input groups and save the result.*

*The leading **1_1_**, **1_2_**, **2_1_**, **2_2_** etc. refer to **MORSE** Link card and port respectively, counted from the foot of the card upwards.*

*Currently you would only expect to see **1_1_**, **2_2_**, **3_3_** and **4_4_**, because the second port on each **MORSE** Link card is reserved as the backup for redundant connections.*

To find any outputs that are available in the **MORSE** Stagebox, go to the **OP Config** page and scroll though the long list of destinations to find entries beginning '**LnkO**' (Link Output) – these are the audio channels to the **MORSE** Stagebox:

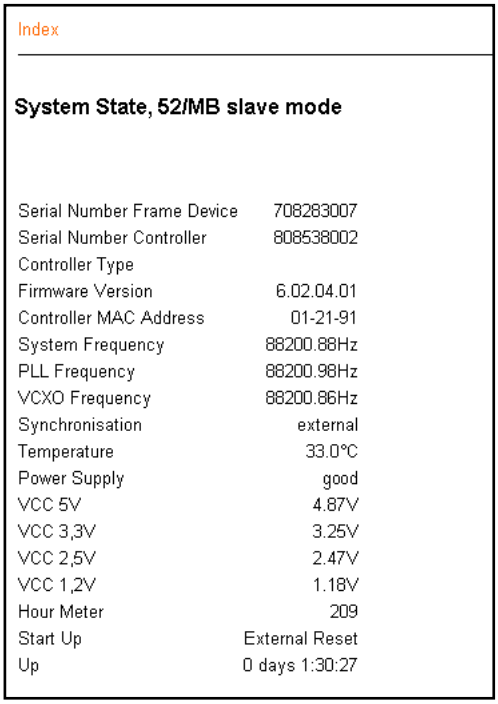


Note that these names are also automatically generated, so that the 4 line outputs on a line card in the ninth slot will be called **5260A-9-1**, **5260A-9-2**, **5260A-9-3** and **5260A-9-4**. Rename and arrange them as you wish in the output groups.

Now that you have configured the fibre optic link and have name and arranged all of the inputs and outputs in the **MORSE** Stagebox, they are ready to be used.

The Mic preamp parameters (analogue gain, 12dB pad and 48V phantom power) are all available from the usual controls on the C200 surface, and multi-mic gain changes using the routing panel's range and SET GAIN functions are also supported.

The **MORSE** Stagebox has an in-built web server for commissioning and diagnostic access. Simply connect a computer to it via Ethernet and type the Stagebox's IP address into your preferred web browser – this will give you access to internal status information such as temperature and supply rail voltages, and also graphical access to 'set and forget' audio card parameters such as the data format for the AES inputs (either AES3 or S/PDIF).

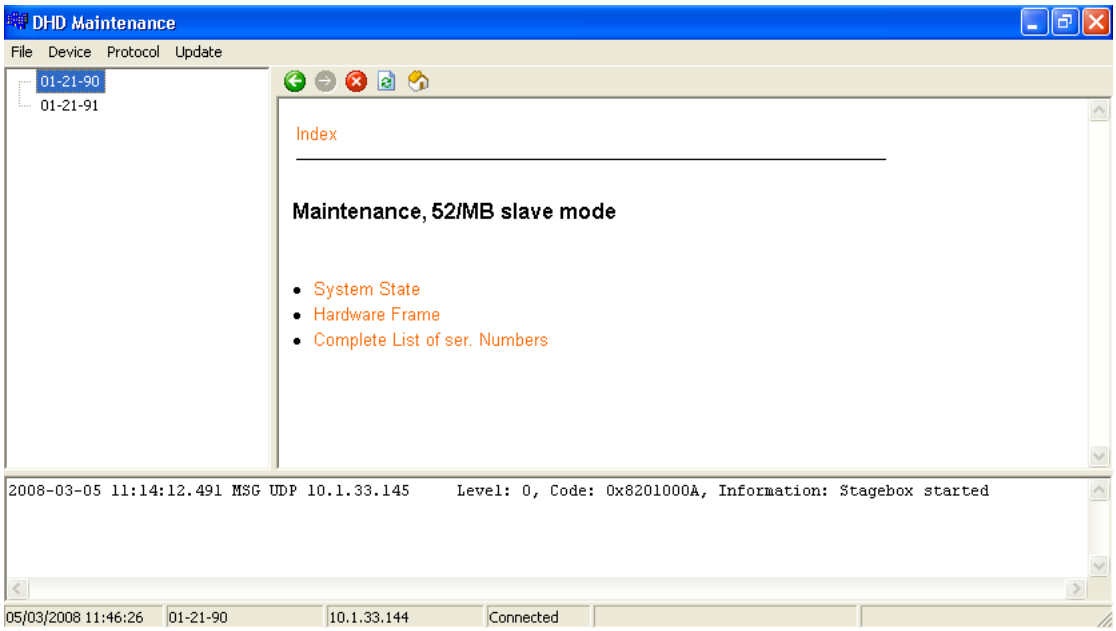


Index

System State, 52/MB slave mode

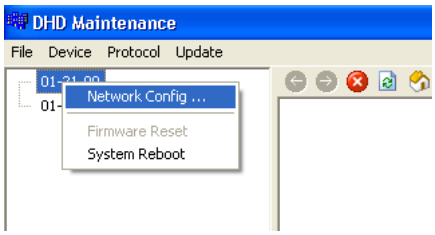
Serial Number Frame Device	708283007
Serial Number Controller	808538002
Controller Type	
Firmware Version	6.02.04.01
Controller MAC Address	01-21-91
System Frequency	88200.88Hz
PLL Frequency	88200.98Hz
VCXO Frequency	88200.86Hz
Synchronisation	external
Temperature	33.0°C
Power Supply	good
VCC 5V	4.87V
VCC 3,3V	3.25V
VCC 2,5V	2.47V
VCC 1,2V	1.18V
Hour Meter	209
Start Up	External Reset
Up	0 days 1:30:27

In case your PC does not have an internet browser installed, or in order to find out the IP address of your Stagebox(es), there is a simple and reliable method to find the Stageboxes on the network and set them up as desired from your PC, using the `MTN5.exe` program that is provided by DHD on their documentation and software CD.

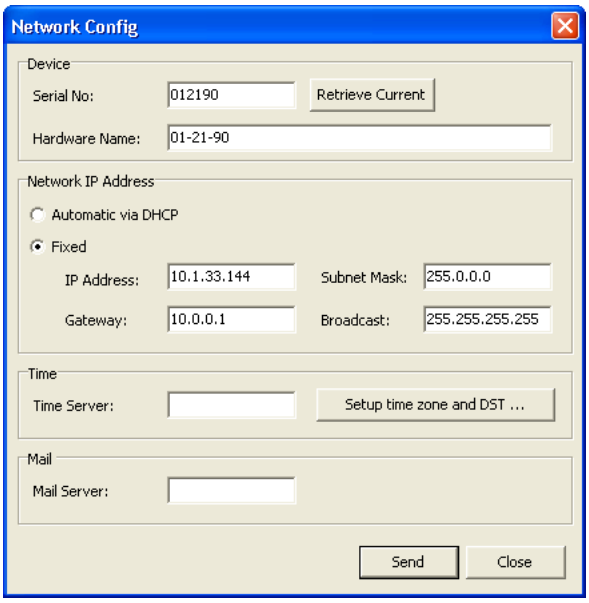


In this picture you can see the two Stageboxes that have been detected in the upper left corner, named **01-21-90** and **01-21-91**. These names imply that the units are straight from the factory and have not had their default names changed. Nevertheless, when the upper stagebox was selected, the large pane to the right shows the 'home page', indicating that the stagebox and PC are communicating properly.

If you try to select a stagebox and get a connection error message, right-click on the name of the stagebox like this:



Selecting '**Network Config…**' from this menu shows the page for the Stagebox IP settings:



In this box, you can see how the **Network IP Address** settings are configured, and can change them so that the stagebox becomes visible on the same network as the PC – if you don't know how to do this, please consult an IT expert or other qualified person.

Once these settings are correct, you can change the Hardware Name of the stagebox to something more descriptive, although you do not need to alter the **Serial No**, **Time Server** or **Mail Server** fields. Finally click **Send** to update the Stagebox, it will reset and audio will mute until it has rebooted with the new network address, around 10 seconds later.

To access the status information and other card parameters, select the stagebox in the **MTN5** software (or type the stagebox's IP address into your PC's browser) and when you see the 'home page' of the stagebox, click on either **System State** to see the internal diagnostics

Index

System State, 52/MB slave mode

Serial Number Frame Device	708283007
Serial Number Controller	808538002
Controller Type	
Firmware Version	6.02.04.01
Controller MAC Address	01-21-91
System Frequency	88200.88Hz
PLL Frequency	88200.98Hz
VCXO Frequency	88200.86Hz
Synchronisation	external
Temperature	33.0°C
Power Supply	good
VCC 5V	4.87V
VCC 3,3V	3.25V
VCC 2,5V	2.47V
VCC 1,2V	1.18V
Hour Meter	209
Start Up	External Reset
Up	0 days 1:30:27

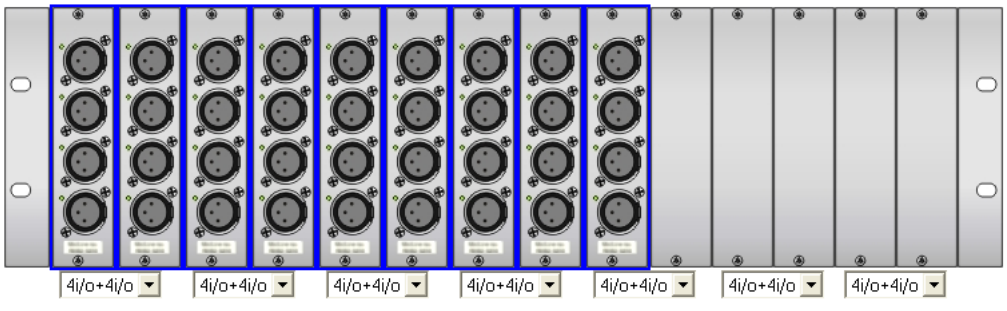
Or, for the physical frame layout, click on **Hardware Frame**:

Index

Frame, 52/MB slave mode

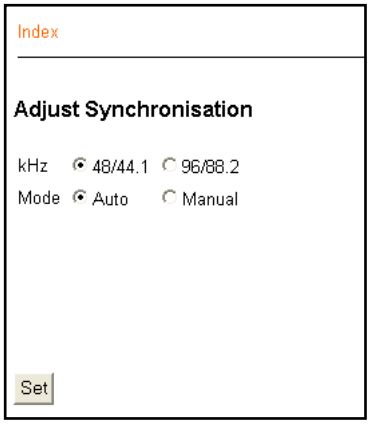
Sync 88.2kHz

Slot	ModuleType	Revision	Serial Number	Date
1	52-5250	2	W707483048	Thu May 10 17:27:58 2007
2	52-5250	2	W707483054	Thu May 10 17:50:02 2007
3	52-5250	2	W707483070	Wed May 16 13:52:04 2007
4	52-5250	2	W707483072	Wed May 16 14:51:58 2007
5	52-5250	2	W707483051	Thu May 10 17:35:26 2007
6	52-5250	2	W707483049	Thu May 10 17:30:30 2007
7	52-5250	2	W707483074	Wed May 16 15:04:48 2007
8	52-5250	2	W707483073	Wed May 16 15:00:49 2007
9	52-5250	2	W707483064	Wed May 16 13:16:51 2007
10	EMPTY			
11	EMPTY			
12	EMPTY			
13	EMPTY			
14	EMPTY			



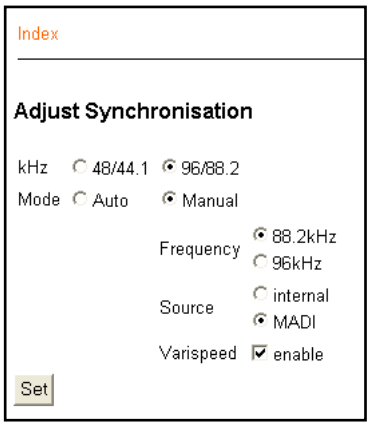
Note that each I/O card can be viewed as a separate link by clicking directly on it, and its parameters are then displayed. Changing any card's parameters and clicking **Set** will update it except for the Mic preamp cards, which are controlled from the C200 front panel only.

In order to set the sample rate of the Stagebox correctly, click the orange **Sync** label on this page to bring up the synchronisation options, which look like this by default.



If you are running the C200 at standard 44.1 or 48kHz, select the **48/44.1** button and the **Auto** button and press **Set**. If you are running the C200 at standard 88.2 or 96kHz, enable the **96/88.2** button and the **Auto** button and press **Set**.

If you are running at pull-up or pull-down rates for post-production purposes, select the **48/44.1** button for low rates or the **96/88.2** button for high rates, and then click on **Manual** – this will provide some additional options:



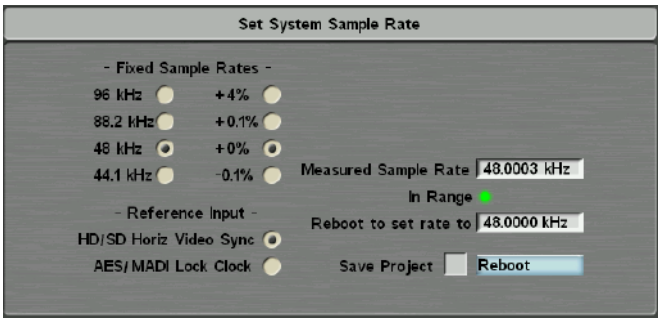
You should choose the clock **Source** to be **MADI** and ensure the **Varispeed** option is ticked/checked, as shown above, then click **Set** to save these settings to the Stagebox. These changes are remembered after power is shut off, so every time the console changes sample rate, the Stagebox(es) must be changed to match, to avoid incorrect operation.

*Note that the **MORSE** Stagebox supports all sample rates that the C200 can generate, except for 48kHz +4%.*

Tri-level Sync Support

The CPU card in consoles from serial number #2217 (from ship date 28th February 2008) has been upgraded to support tri-level sync signals as used in High Definition TV equipment. This provides forwards compatibility with facilities that have a future need to switch to High Definition in on-air or post-production operations, and allows the C200 to continue to benefit from extremely stable and accurate internal clocking, which reduces distortion and enhances the audio quality. If you don't know if you have one of these new cards, check the part code shown at the bottom edge of the computer card in your Centuri Processor core – if it reads '**960XC**' then you have hardware compatible with a tri-level sync signal.

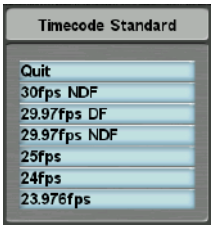
All variant sample rates can be derived from the tri-level sync (eg. ±0.1%) on consoles equipped with the **Variable Sample Rate** (VSR) option:



HD Machine Control

In addition to sync compatibility, the C200 can also lock its machine control synchroniser and automation system to the new High Definition frame rates of 23.98, 24 and true 30fps.

This results in a seamless transition to HD for any post-production operations where the machine control and dynamic automation are required, and where High Definition playback sources are used.



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