

Solid State Logic

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C100 HDS

Digital Broadcast Console

V6.0/6 Software Update and Install Notes

Applicable to upgrades from V5.0/5 onwards

Packing List

Please check that the V6.0/6 Software Upgrade Kit (726750S9 – *redundant systems will require a kit for each processor*) contains the following items:

I	V6.0/6 Update Notes	82S6QC101AL <i>(this document)</i>
I	C100 HDS Software Disk (DVD-ROM)	P996C100L <i>(or website download)</i>
I	Software Licence String <i>(redundant systems will require two licence strings)</i>	P996C120L

If any of the listed items 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

Solid State Logic

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Document History

January 2013 Initial release

As research and development is a continual process, Solid State Logic reserves the right
to change the features and specifications described herein without notice or obligation

E&OE

INTRODUCTION

This document describes the new features, new options and bug fixes incorporated in the V6.0/6 software upgrade and details the hardware and software installation procedure required to update your system to this latest release of C100 HDS software.

Please note that this release is only applicable to those systems that have previously been installed with V5.0/5 or greater software and that have had the new 256 channel Blackrock DSP card installed.

Do not apply power to – or re-start – the Blackrock processor with the C100 HDS Software Disk in the processor's DVD drive; doing so will force a complete system re-install!

INSTALLATION PROCEDURE

Assumptions

The following points are assumed in these installation instructions:

- A1. This installation procedure details installation of new software and hardware on a running system, not a fresh installation.
- A2. During commissioning/installation of the C100 HDS system, at least one networked computer within the studio facility – ideally located in the same room as the console – will have been configured to communicate with the system. Access to one of these computers will be required to run the software installation process. This will be referred to in the following text as the '**networked computer**'.
- A3. The network IP Address that has been assigned to the C100 HDS system will be required. If you do not know either of these details, please contact your IT or Studio Maintenance Department.
- A4. The **networked computer** used for this installation should have an SSH client installed ('PuTTY', for example). This program will be used to communicate with the C100 HDS system – login as 'sbc' using 'server' as the password. If you are unsure how to run this program, or the default password has been changed, please contact your IT or Studio Maintenance Department. This computer must also be fitted with a DVD ROM drive.
- A5. Backing up of the current system and installation of the new software will require that the **networked computer** has access to the folders exported by the C100 HDS system. This can be achieved as follows:
 - a. Click on 'Run' in the Windows Start menu.
 - b. In the 'Run' box, type '\\<IP_Address> <CR>'Where: '\\' indicates that we wish to mount a file share,'<IP_Address>' is the IP Address of the C100 HDS system,'<CR>' indicates the 'Return' key on the computer keyboard.
 - c. At the resulting login prompt, enter the username ('sbc') and password (the default for this login being 'sbc123'). This will result in a view of the shared folders on the C100 HDS system.

Firmware Update

The minimum firmware requirements for CI00 software V6.0/6 are as follows:

T9960KF6	PCIE ROUTING & SPI 256CH
T989RPLF	MADI MEZZANINE (B-RIO) CONTROL V15.0 – (for 626989X2 and 626989X3)
T989PCU9	MADI MEZZANINE CONTROL UPPER V9.0 – (for 626989X4)

Please check the version of firmware running on the SSL PCI-E card and MADI Mezzanine cards using the `firm` command in `tclient` and, if required, update the firmware to current revision.

- The UID numbers reported by `firm` will be as follows for the new firmware:

T9960KF6	UID :- 922
T989RPLF	UID :- 1446
T989PCU9	UID :- 1447

If required, please contact your SSL representative for further instruction.

If Core MADI Redundancy is required then a firmware upgrade is needed. Please contact your SSL representative for further instruction.

SSL Service Personnel Only: If configuring a system with Core MADI Redundancy please refer to FSB 932 and FSB 933.

SOFTWARE INSTALLATION ON A SINGLE BLACKROCK SYSTEM

This installation procedure applies to single Blackrock systems only – the process for redundant systems is slightly different and so is detailed separately on page 5.

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

Archiving the System Disk

2. As with all software installations, we strongly advise you to generate a 'mirror' copy of the C100 HDS System Disk before proceeding. Open the SSH client on the **networked computer** and login to the C100 HDS system (ref. **Assumption A4.**). Once you are logged in (as user 'sbc'), type:

```
backup_system_disk <CR>
```

This will create a time and date stamped backup file in the 'system_backup' folder.

The backup process copies the entire C100 HDS System Disk and so will take a considerable time (about 5min) to complete. It is of course also recommended that any backups created are stored off-line elsewhere.

3. To ensure that sufficient space is still available to contain the upgrade, type:

```
df -h /home <CR>
```

Check that the percentage used is less than about 90%. If it is higher, consider removing any old backups from the 'system_backup' folder.

Installing the Support Software

4. Place the C100 HDS Software Disk in the DVD drive in the **networked computer** and open a window that displays the contents of the DVD – *do not place the software disk in the DVD drive on the Blackrock processor!*
5. Locate the 'updates' folder within the folders exported by the C100 HDS system (ref. **Assumption A5.**).
6. On the DVD, open the 'C100_V6_0_6 Updates' folder and drag the following three .rpm files from the DVD into the 'updates' folder:

- kernel *SBC kernel and associated modules*
- ssl_console_files *Blackrock system software and files*
- ssl_host_tools *SBC support files and applications*

7. Once the .rpm files have been copied, return to the SSH client and type:

```
install_updates <CR>.
```

This will unwrap and install each of the .rpm archives. Follow the on-screen instructions to install them. Ignore any error messages printed to the terminal during this time.

Installing the CI00 HDS System Software

8. Once the files are installed the system code will need to be copied to the flash memory on the Blackrock processor's PCIe card. At the terminal prompt typing `load_console_code <CR>` will result in a list of software versions similar to that shown here.

Select the version of code you wish to install by entering the number next to the software version, eg. 1 <CR> in the illustration opposite. The system code will now be copied to the flash device on the PCIe card. A percentage indicator on the terminal will provide an indication as to how far through the process the system is. On completion a prompt will request a key on the keyboard be pressed to shutdown 'p' or reboot 'r' the Blackrock processor.

It is strongly recommended that at this point the Blackrock processor be shutdown and re-powered if at all possible!

Enabling the New System

9. When the system has fully booted, a pop-up will appear on screen inviting you to enter a Software Licence string and so enable the software.

You will not be able to use the console until the Software Licence has been accepted.

Open the Software Licence envelope containing your Licence string and type this carefully using the on-screen keyboard. Once the system has verified the validity of the Licence, a 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.

Reboot the processor to ensure the licence is correctly read.

10. Remember to store the Software Licence string in a safe place along with the CI00 HDS Software Disk.

Once the update is complete and the console has rebooted, any Windows workgroup the Blackrock has been assigned to may need to be reassigned (updates performed by the SSL Host Tools package may erase various parts of the network integration settings) – you may need to contact your contact your IT or Studio Maintenance personnel to check this.

INSTALLATION ON A REDUNDANT BLACKROCK SYSTEM

Installation of software and support files on a redundant Blackrock system must be performed on one processor at a time with the other processor powered down. Do not attempt this process with both units running!

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

Archiving the System Disk

2. As with all software installations, we strongly advise you to generate a 'mirror' copy of the C100 HDS System Disk before proceeding. Open the SSH client on the **networked computer** and login to the C100 HDS system (ref. **Assumption A4.**). Once you are logged in (as user 'sbc'), type:

```
backup_system_disk <CR>
```

This will create a time and date stamped backup file in the 'system_backup' folder.

The backup process copies the entire C100 HDS System Disk and so will take a considerable time (~5min) to complete. It is of course also recommended that any backups created are stored off-line elsewhere. This must be done separately for both Blackrock processors – but this can be done on both processors simultaneously.

3. To ensure that sufficient space is still available to contain the upgrade, on each system type:

```
df -h /home <CR>
```

Check that the percentage used is less than about 90%. If it is higher, consider removing any old backups from the 'system_backup' folder.

Installing the Support Software

4. Ensure that the slave Blackrock processor has been powered down. Proceed through the following steps on the master processor first.
5. Place the C100 HDS Software Disk in the DVD drive in the **networked computer** and open a window that displays the contents of the DVD – *do not place the software disk in the DVD drive on the Blackrock processor!*
6. Locate the 'updates' folder within the folders exported by the C100 HDS system (ref. **Assumption A5.**).
7. On the DVD, open the 'C100_V6_0_6 Updates' folder and drag the following three .rpm files from the DVD into the 'updates' folder:

- kernel *SBC kernel and associated modules*
- ssl_console_files *Blackrock system software and files*
- ssl_host_tools *SBC support files and applications*

8. Once the .rpm files have been copied, return to the SSH client and type:

```
install_updates <CR>.
```

This will unwrap and install each of the .rpm archives. Follow the on-screen instructions to install them. Ignore any error messages printed to the terminal during this time.

Installing the CI00 HDS System Software

9. Once the files are installed the system code will need to be copied to the flash memory on the Blackrock processor's PCIe card. At the terminal prompt typing `load_console_code <CR>` will result in a list of software versions similar to that shown here.

Select the version of code you wish to install by entering the number next to the software version, eg. 1 <CR> in the illustration opposite. The system code will now be copied to the flash device on the PCIe card. A percentage indicator on the terminal will provide an indication as to how far through the process the system is. On completion a prompt will request a key on the keyboard be pressed to shutdown 'p' or reboot 'r' the Blackrock processor.

It is strongly recommended that at this point the Blackrock processor be shutdown and re-powered if at all possible!

Enabling the New System

10. When the system has fully booted, a pop-up will appear on screen inviting you to enter a Software Licence string and so enable the software.

You will not be able to use the console until the Software Licence has been accepted.

Open the Software Licence envelope containing your Licence strings. Each processor will have a different licence; match the 5 digit PAL id. given with the licence to the Blackrock network ID on the sticker on the front face of the Blackrock unit and type this in carefully using the on-screen keyboard. Once the system has verified the validity of the Licence, a 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. Reboot the processor to ensure the licence is correctly read.

11. Power down the master Blackrock processor and power up the slave processor, such that only the slave processor is on and running. Repeat this process from Step 2. for the slave processor.
12. Once all updates have been performed, **re-boot both processors** together.
13. Remember to store the Software Licence strings in a safe place along with the CI00 HDS Software Disk.

Once the update is complete and the console has rebooted, any Windows workgroup the Blackrock has been assigned to may need to be reassigned (updates performed by the SSL Host Tools package may erase various parts of the network integration settings) – you may need to contact your contact your IT or Studio Maintenance personnel to check this.

New Features

Function Key Macros

It is now possible to action multiple console commands simultaneously, using the new Macro facility. This allows for the configuration of commonly required functions such as talkback groups, multichannel input flip and routing groups.

Macros are created, activated and edited in the console's system files, as described in the appendix to these update notes.

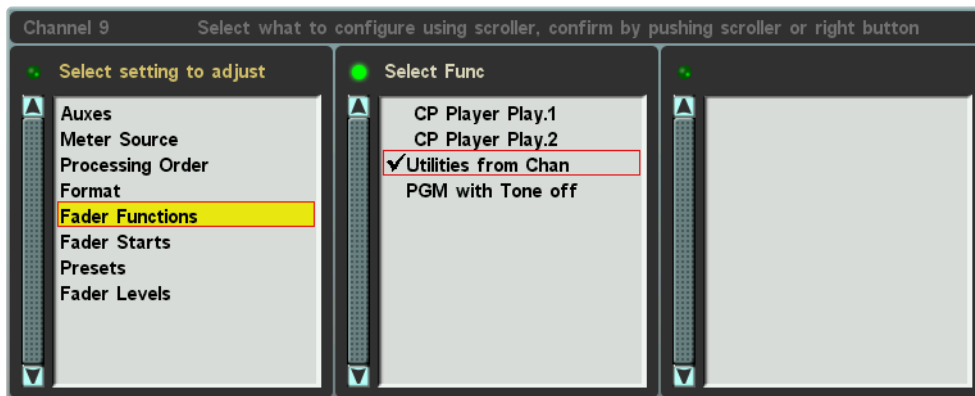
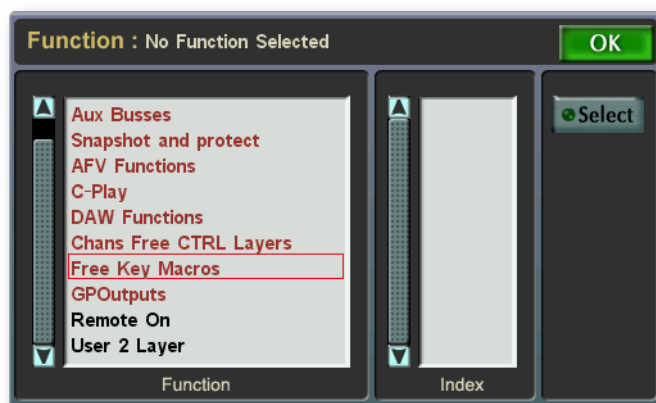
Important Note: Please do not attempt to edit these files unless you are absolutely confident that you know what you are doing. Incorrect edits may result in a console which will not boot. Please contact your SSL service representative for assistance, if required.

There are four ways in which a macro can be triggered: Channel softkeys, Centre Section softkeys, Fader 'Functions' and GPIs.

For triggering macros using Centre Section or Channel Softkeys, open the relevant **Functions** display and locate the **Free Key Macros** folder which is now located there. Softkeys can then be assigned using the standard Free Assign procedure.

See the main manual for descriptions of these procedures.

Macros which have been configured for use with fader starts will appear in the **Fader Functions** list, accessed via the **Channel Settings** display:

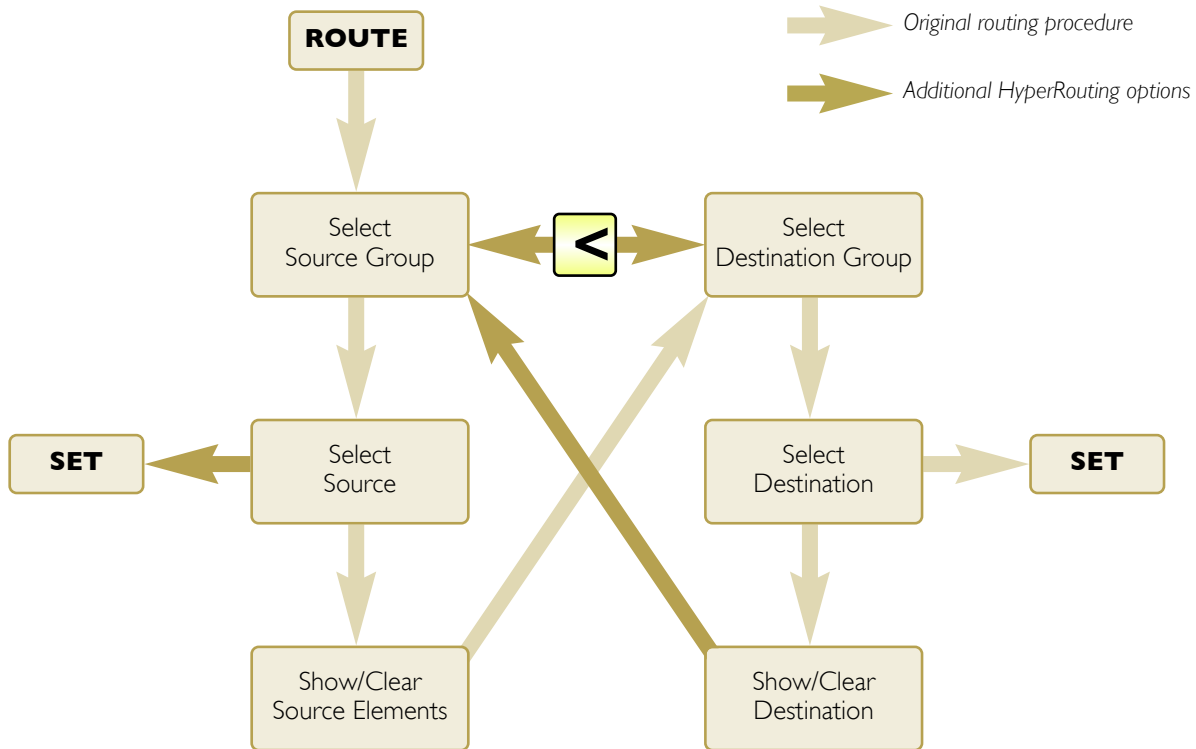


All macros will be listed in the **Functions** and **GPI** displays, whether or not they have been configured. Any macro which has not been named will appear as '**Unused Macro XX**' in the **Functions** displays; Macros are always displayed by number, not name, in the GPI display. The macro's configuration will define whether it appears in the **Fader Functions** list.

HyperRoute

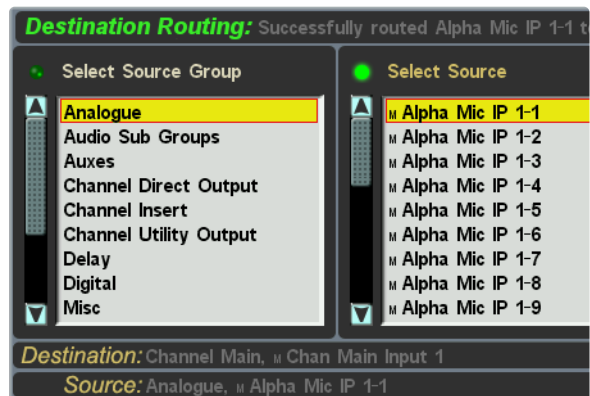
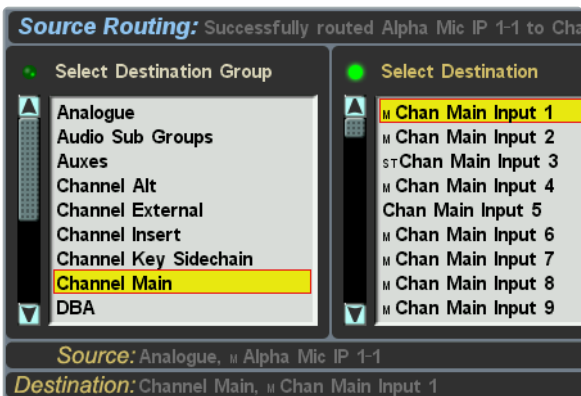
The console's routing procedures have been extended to allow quicker navigation between Source and Destination columns. Whenever the cursor in the left-hand column of the **Routing** display (the **Select Source Group** column in the standard display), the **MASTER** encoder's left switch can be used to toggle between the familiar **Source Routing** display and a new **Destination Routing** display.

The Destination display functions exactly like the Source display, except in reverse – start by selecting your Destination Group and Destination, before then selecting the Source Group and Source. The diagram below illustrates the extended navigation flexibility of HyperRoute:



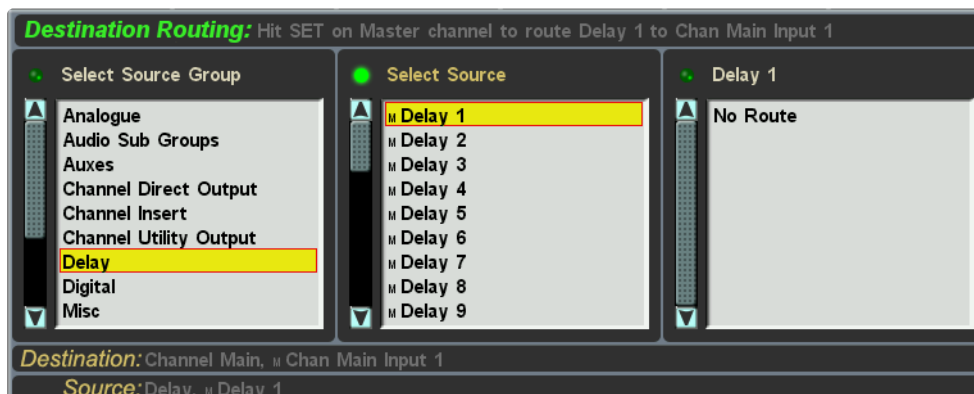
Note that the older routing procedures with which you are probably familiar still work in exactly the same way.

The title at the top-left of the display indicates which mode you are in: **Source Routing** (in blue) or **Destination Routing** (in green). The column order and the order of the **Source** and **Destination** labels at the base of the display provide additional indication of the current mode:



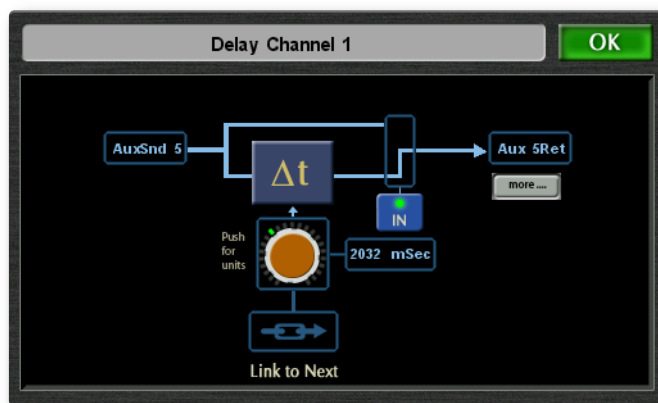
Delay Channels

There are now 32 delay modules which can be connected to any internal or external source and destination, including the insert points for any channel or bus. These delays are routed using the console's standard routing procedures:



When routed to console channel insert points, assigning the return automatically routes the send to the delay input, as with local IO insert routing. When routing to bus or monitor inserts this is not the case and two routes need to be made.

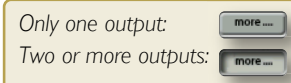
Modules can be configured using the **Delay Channel** display, opened via the **Misc** menu's new **Delay** button.



Use the left and right **MASTER** scroller switches to scroll through the modules.

The input and output routing is indicated in the boxes on the left and right of the display's system diagram.

The **more...** indicator beneath the output box will appear 'pressed in' to indicate that the delay is routed to more than one output, of which only the first is listed.



Use the **MASTER** Scroller to change delay amount, as indicated in the blue box to the right of the pot graphic. Press the Scroller to cycle the delay units through the four options: seconds (**s**), milliseconds (**ms**), frames (**fr**) or samples (**sa**).

You can also switch the delay in and out of circuit by clicking on the **In** button below the switch graphic, or on the delay icon itself – When the delay is out, the delay icon is greyed out, the switch is labelled **Out**, and the switch graphic will indicate 'open circuit'.

Delay units can be linked together, making it easier to configure stereo or 5.1 delays: select the **Link Next** button at the base of the display to link the next unit in the list. Any number of delay units can be linked in this way.

Note that when linking units, the settings from the lower-numbered unit will overwrite the old settings in the higher-numbered unit.

These delay units use the same pool of delays as the Channels, ASG and PGM outputs – a total of 64 delays can be employed across the console, up to 32 of which can be used up by the delay modules.

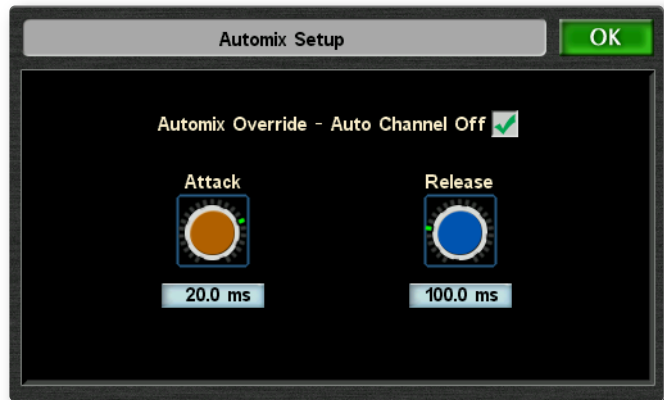
*Note that whenever a delay module has a delay value greater than 0, one delay from the pool of 64 is used up. Switching a module off using its **In/Out** button does not release the delay back into the pool.*

On completion of a Software Update, the Delays need to be added to Source and Destination IO Groups, see the main manual for details. If in doubt please contact your SSL service representative.

Automix Override

It is now possible to automatically remove a channel's contribution to the AutoMix processing whenever its fader is closed. This option is set globally:

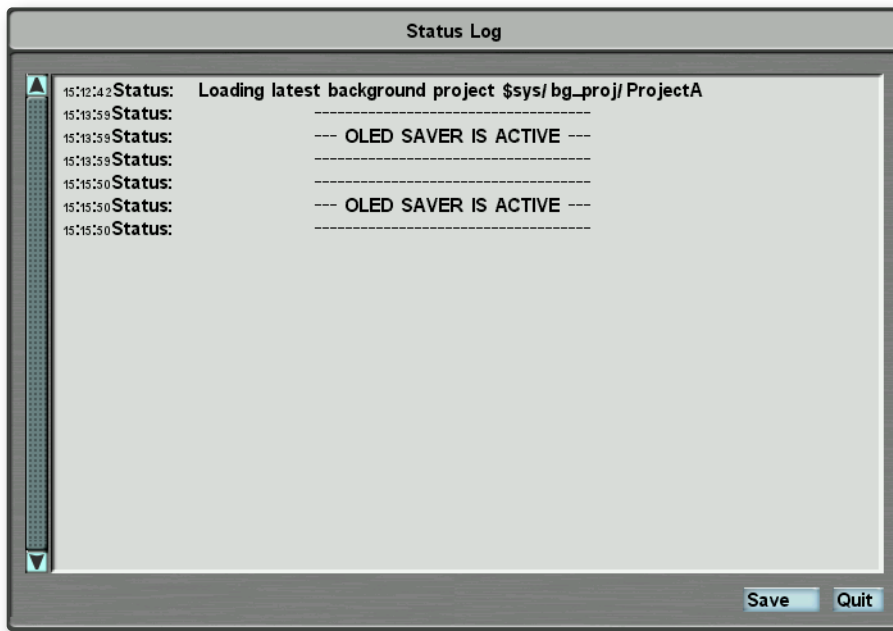
Open the **Automix setup** display (**Misc / Automix**), and place a tick in the **Automix Override - Auto Channel Off** box.



Surface OLED Saver

The CI00 V5 software update introduced an OLED saver feature. If no user input is detected on the surface for the duration of the user defined screen saver period, the surface control panel displays, as well as the channel info/meter screens, are blanked. The centre touch screen remains active. Touching any control will deactivate the screen saver, restoring the front panel displays.

In V6, when this timeout is reached, the **Status Log** window will now open to notify you that **OLED SAVER IS ACTIVE**:



Note that the configuration of the OLED saver timeout is described in the appendix to these update notes.

Appendix: Advanced Configuration

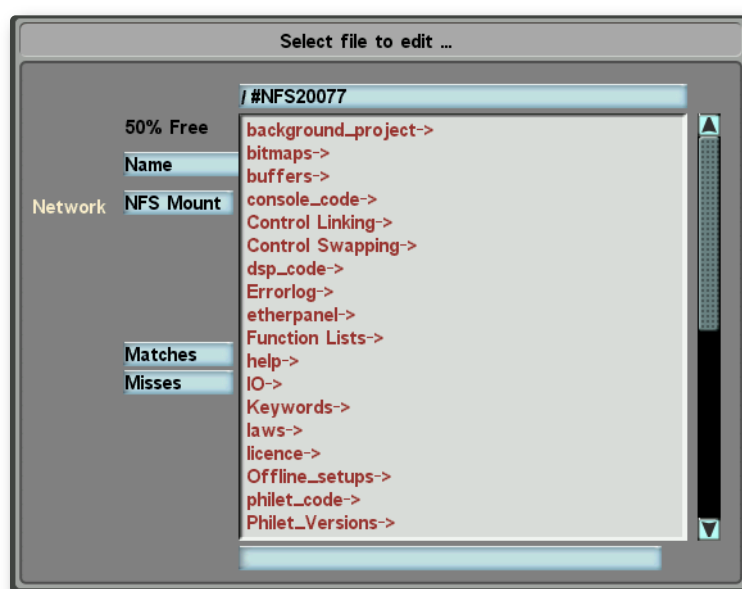
INTRODUCTION

This appendix to the C100 V6 update notes provides studio system administrators some assistance with those configuration elements of the update which require technical expertise, either using the Terminal or the console's system files.

Editing Text Files

Important Note: Please do not attempt to edit system files unless you are absolutely confident that you know what you are doing. Incorrect edits may result in a console which will not boot. Please contact your SSL service representative for assistance, if you are in any doubt.

To edit the console's system files, go to the touchscreen's maintenance pages and select **File / Edit**. A screen similar to this one will open:



Folders are listed in red, and files are listed in black. Touch on an entry in the list to open it. The current file location is shown in the blue box at the top, beginning with the console's network ID. (as shown above) – touch the box to navigate up a level.

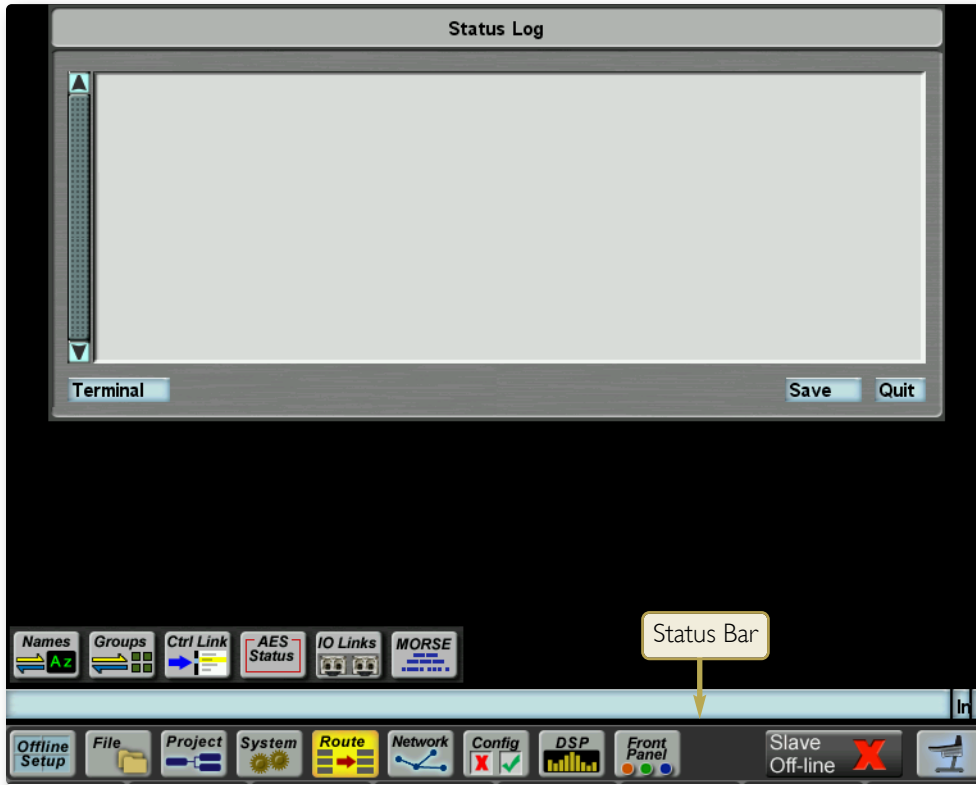
Further details regarding editing files can be found in the System Administrator section of the console's operating manual.

Using the Terminal

This Appendix also assumes some familiarity with the SSL terminal; instructions to access this from an external computer are included in the install guide. All instructions are to be run from within the SSL terminal, from the standard Linux terminal this can be accessed with the command:

```
tclient <CR>
```

The SSL terminal can also be accessed from the console touchscreen by touching the blue status bar while in the studio menu, then selecting the **Terminal** button that appears in the resulting **Status Log** popup.



PROGRAMMING FUNCTION KEY MACROS

Overview

Macros allow an operator to condense multiple actions into a single function that can be triggered by a single action, saving time and increasing workflow. This could simply be performing the same action in multiple locations, eg. switching all channels to the alt input. It could also be a very specific sequence of functions for a particular purpose, eg. switch PGI off on channel 4, 10 and 14 to 20, while switching in the compressor on channel 14 to 22 and sending them to Aux 3, at the same time as switching channel 10's channel output (CHOP) to N-I and its meter source to CHOP.

Up to 128 Macros can be programmed. Macro Programming is done via a text file; it is advised that an SSL Service Engineer or Studio Maintenance Engineer/Administrator programmes the Macros.

Creating Macros

Macros are setup by editing a text file, then rebooting. To access the text file, open the file edit window (as described in the introduction to this appendix), locate the folder /Free_Key_Macros and open the Free_Key_Macros file it contains. The file will open on the touch screen and can be edited using the keyboard and mouse:

```

Text Editor
/#NFS20047/Free_Key_Macros/Free_Key_Macros  Cut Copy Paste P Save Quit

<Macro_file>
{
MACRO "N"
"USER NAME","USER 4 CHARACTER NAME"
MODE "N" <1=FLIP, 2=FOLLOW, 3=INVERT, 4=ON, 5=OFF>
FADER "N" <0=OFF, 1=ON>
Add Functions in the Form
"FUNCTION NAME", "FUNCTION INDEX"
"NEXT FUNCTION NAME", "FUNCTION INDEX"
"NEXT FUNCTION NAME", "FUNCTION INDEX"
etc

Multiple similar functions can be separated by commas in the
Function Index field, e.g. ASG on, "2,3,4". Likewise to enter
consecutive similar functions use the minus sign between the first
and last number in the Function Index field, e.g. ASG AFL, "1-6"
Function indices must be in quotes. EG "1,2,5-8" or "ALL"
Otherwise any commas will be interpreted as "end of field"
You may omit the USER NAME, USER 4 CHARACTER NAME line if you wish.
The system will generate a default in this case.
User names must not be longer than 31 characters.

256 must be added to all Channel Function numbers

The first set of examples are generic Macro Functions which may be of use in many situati
}

{ <- remove this opening brace and text to use these macros

MACRO 1

```

The file includes instructions for writing Macros and some examples. It looks like this:

```
<Macro_file>
{
MACRO "N"
"USER NAME", "USER 4 CHARACTER NAME"
MODE "N" <1=FLIP, 2=FOLLOW, 3=INVERT, 4=ON, 5=OFF>
FADER "N" <0=OFF, 1=ON>
Add Functions in the Form
"FUNCTION NAME", "FUNCTION INDEX"
"NEXT FUNCTION NAME", "FUNCTION INDEX"
"NEXT FUNCTION NAME", "FUNCTION INDEX"
etc
.
.
}
```

The core elements of the text file are edited as follows:

Macro Number

MACRO "N" – eg. MACRO 1

This is the MACRO number 1 – 128, not every macro number needs to be included and the macros do not need to be sequential.

Macro Name

"USER NAME", "USER 4 CHARACTER NAME" – eg. Channel Alt Flip All, FLIP

The name "Channel Alt Flip All" would be displayed in the Channel softkey, Centre Section softkey and Fader Functions Menus. The name "FLIP" would appear on the 4 character display with the appropriate softkeys.

Macro Mode

MODE "N" – eg. MODE 1

Each Macro entry operates with one of the following modes:

1. FLIP – toggles the current state of the assigned functions.
2. FOLLOW – assigned functions are ON for the duration of Macro key closure unless already ON.
3. INVERT – assigned functions are OFF for the duration of the Macro key closure unless already OFF.
4. ON – forces the ON state of the assigned functions.
5. OFF – forces the OFF state of the assigned functions.

Note that with the exception of FLIP, if the assigned functions already match the active state, the macro has no action on those functions. A single function's state can be altered by multiple Macros, to prevent Tally conflicts the switch will only tally on for the duration of the switch press. For similar reasons only the functions state rather than the Macro state is saved.

Fader Status

FADER "N" – eg. FADER 1

Macros configured for Fader mode (FADER 1), can be triggered from the fader status. The fader status includes the state of the channel On switch and the fader being open or closed. To trigger the fader status as "open" the channel has to be on and the fader lifted from closed. For the majority of uses it is advised that only Follow and Invert are used for functions intended for use with Fader Status'. For obvious reasons using Invert on a Function that is triggered by that fader as standard is not valid, eg. channel On cannot be inverted on the same channel. This would cause a function state to constantly toggle, traps are included to prevent the software entering an endless loop.

Functions

"FUNCTION NAME", "FUNCTION INDEX" – eg. Alternate,"ALL"

Macro Programming is available for any 2-state switching functions available on the console. Each Macro entry can include multiple functions and other Macros. The Function name must exactly match the name that appears in the Functions List file, located in /Functions Lists/Functions.lst. Function names may also be found using the terminal 'assign assign touch' command. See later in this document for details.

Functions also require an index. Busses are indexed by the bus number, therefore Aux Bus 3 requires the index "3". Channels are indexed by the channel number with a 256 offset, therefore channel 1 is index "257". An index of "ALL" will act on all available indexes. The minus sign can be used to specify a range of indexes, eg. "1-8". Individual indexes can be separated by commas, eg. "257,290,300". Indexes must always be in quotes otherwise commas may be interpreted as end of field.

The Function to nest other Macros is Free Key Macro 002,"1" – where 002 states that it is macro 2, the index should always be 1.

Examples

The first set of examples are generic Macro Functions which may be of use in many situations:

```
{
MACRO 1
Channel Alt Flip All,ALT
MODE 1
FADER 0
Alternate, "ALL"

MACRO 2
Tone Off everywhere,Toff
MODE 5
FADER 0
PGM Tone, "ALL"
ASG Tone, "ALL"
Aux Tone, "ALL"
Utility Tone, "ALL"
CHOP Tone, "ALL"
UOP Tone, "ALL"
}
```

Fader Functions

This fader example will need adapting for specific needs in a custom setup. It is primarily intended for demonstration of what can be achieved:

```
{
MACRO 101
Utilities from Chan,UON
MODE 2
FADER 1
Utility 1 In, "257,260-272"
Utility 3 In, "257,260-272"
Utility 5 In, "257,260-272"
Utility 6 In, "257,260-272"
}
```

Macros within Macros

```
{
MACRO 102
PGM with Tone off,PGM
MODE 2
FADER 1
PGM 1 In, "258"
Free Key Macro 002, "1"
}
```

/<Macro_file>

Note the end of the file outside of the braces, without this the Macros will not work.

Advice when editing the Macro file

The default file has all the example macros initially commented out. Any text between braces (“curly brackets”) is defined as a comment, not as part of the configuration. To enable the examples, remove the braces { } at either end of the relevant text, along with its associated removal instructions. Alternatively, simply write your own outside of the braces.

Note: It is essential that this is done correctly. Otherwise, the console may not boot.

```

<Macro_file>
{
MACRO "N"
"USER NAME", "USER 4 CHARACTER NAME"
MODE "N" <1=FLIP, 2=FOLLOW, 3=INVERT, 4=ON, 5=OFF>
FADER "N" <0=OFF, 1=ON>
Add Functions in the Form
"FUNCTION NAME", "FUNCTION INDEX"
"NEXT FUNCTION NAME", "FUNCTION INDEX"
"NEXT FUNCTION NAME", "FUNCTION INDEX"
etc

Multiple similar functions can be separated by commas in the
Function Index field, e.g. ASG on, "2,3,4". Likewise to enter
consecutive similar functions use the minus sign between the first
and last number in the Function Index field, e.g. ASG AFL, "1-6"
Function indices must be in quotes. EG "1,2,5-8" or "ALL"
Otherwise any commas will be interpreted as "end of field"
You may omit the USER NAME, USER 4 CHARACTER NAME line if you wish.
The system will generate a default in this case.
User names must not be longer than 31 characters.

256 must be added to all Channel Function numbers

The first set of examples are generic Macro Functions which may be of use in many situati
}

{ <- remove this opening brace and text to use these macros
MACRO 1

```

When you have made the relevant edits the file should be saved.

Care should be taken to use only valid characters in the text file. However the files syntax can be checked using the terminal command:

```
map18 loadfile <CR>
```

If the syntax is ok the terminal will report

```
map18: load_macro_file, all OK.
map18: parse_macro_list, all OK.
```

Functions Names and Indexes

You can also find a function name and index from the terminal. With the console in the state where the next switch press is the function you are interested in (ie. with any relevant menus open or channels called to attention), type the following on the tclient terminal:

```
assign assign touch <CR>
```

When touching the channel **Alt** button on channel 1, the terminal will show:

```
AS1: Control "In Alt" regular 1
      is assigned to Function "Alternate" regular 257 which has legend "ALT"
      and calls at line 191 of cp63_misc_chan_controls.pas.MASH.p->switch_action
```

In this case the Function name is “Alternate” and the Function index is “257”.

Note: To ensure reliable operation the console should be rebooted after using “assign assign touch.”

Here are some popular channel Functions as they appear in the Functions.lst file. The index required will be channel N + 256.

Alternate, 1,	512,Switch	
ASG 1 In,	1,	512,Switch,
Aux 1 On,	1,	512,Switch,
Chan Meter Input,	1,	512,Switch,
Chan Meter Pre Processing,1,	512,Switch,	
Chan Meter Pre Fader,	1,	512,Switch,
Channel ON, 1,	512,Switch,	
CHOP Inp,	1,	512,Switch,
CHOP Ext,	1,	512,Switch,
Mono L,	1,	512,Switch,
Mono R,	1,	512,Switch,
Utility 1 In,	1,	512,Switch,

Here are some popular Bus Functions as they appear in the Functions.lst file. The index required will be the Bus number.

ASG ON,	1,	8,Switch,
Aux Talkback,	1,	24,Switch,

Backing up the Macro File

There is the potential to include characters in the Macro file that will cause a cyclical crash on boot. If you delete the `Free_Key_Macros.txt` file and reboot, the default file will be remade. Some simple housekeeping terminal commands will allow you to rectify this situation without losing all previously programmed Macros.

Prior to editing the file make a backup of the `Free_Key_Macros.txt` file:

```
newfs <CR>
cd Free_Key_Macros <CR>
cp Free_Key_Macros Free_Key_Macros_Backup <CR>
```

If you need to revert to saved version during boot use the commands:

```
wait <CR>
newfs <CR>
cd Free_Key_Macros <CR>
del Free_Key_Macros <CR>
yes <CR>
cp Free_Key_Macros_Backup Free_Key_Macros <CR>
```

OLED SAVER CONFIGURATION

The OLED Saver allows you to set a front panel screen saver. If no user input is detected on the surface for the duration of the user defined screen saver period, the surface control panel displays, as well as the channel info/meter screens, are blanked. The centre touch screen remains active. Touching any control will deactivate the screen saver restoring the front panel displays.

To enable the screen saver, set a time period using the following command in `telnet`:

```
OLEDsaver setb n <CR> (Where 'n' is the screen saver time period in minutes)
```

This setting is stored in a data file `$sys/oled_saver/oled_blank_mins`. Setting the time period to 0 (zero) – the default – disables the screen saver. A reboot is required for the change to become active.

By default the screen saver is disabled. However, it is strongly recommended that the function be enabled on all systems; our recommended delay period being '30' for 30 minutes.

If required, please contact your SSL service representative for further instruction.

Bug Fixes

- Playlist cuts are no longer skipped if the channel fader is closed at the end of the current cuts playout end time.
- The console will no longer reboot if a project load is activated, from the front panel assign key, whilst the Edit Layer window is open and in use.

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