

# C100 HD PLUS

Digital Broadcast Console

Comprehensive on-air audio mixing and production.

Solid State Logic  
SOUND | | VISION



# C100 HD PLUS Digital Broadcast Console

## On-Air Audio Excellence

Around the world, the highest profile broadcast organisations rely on C100 to deliver reliable, sonically superb audio performance. C100 is a fully scalable Console, Processing and I/O system designed to enable experienced audio engineers to meet the challenges of even the most demanding HD production applications. Proven reliability, and fully mirrored redundant system configuration mean C100 provides total reassurance of system integrity. C100 is ideal for mid to large scale broadcasters and offers elegant multi studio, multi control room audio asset sharing, controlled from the console. The C100 compact convection cooled frame also makes it an optimal solution for OB Vehicle installation. C100 consoles are in use for News, Sports, Entertainment and Broadcast Production every day, all over the world.

- Proven robust reliability & ultimate redundancy with fully mirrored system capability
- Scalable Control Surface, modular I/O and upgradable virus proof processing power
- Ergonomically advanced control surface that is elegant, comfortable, logical and freelance friendly
- ‘C-Play’ - integrates a fully featured spot and music Playout system into the console
- ‘Dialogue Automix’ - automates the task of riding the faders to maintain a smooth, balanced mix in the fast paced environment of a live multi mic talk show
- Advanced remote control capability with Grass Valley Ignite, Ross Overdrive, Sony ELC & Mosart Production Automation, Pro-Bel protocols and extensive GPI parameter control
- DAW control delivers better ROI via post production during down time
- Comprehensive 5.1 production tools with superb metering, monitoring, bussing, single fader control, intuitive panning and 5.1 Upmix
- Unrivalled pre and post sale support, professional installation and exemplary training from SSL’s renowned worldwide support network

## HD Production Powerhouse

C100 is built upon the solid foundations of SSL’s benchmark audio quality and provides a comprehensive set of powerful audio processing tools to give the broadcast engineer everything required to deliver perfect audio every time. With C100 you will always be confident that your console sounds great and you will have the tools and processing power you need to get the job done. The **C100 control surface** benefits from over three decades of design experience and offers an elegant, comfortable, flexible and logical working environment that is freelance friendly. Based around a combination of dedicated and assignable hardware controls, TFT channel information displays and a central touch screen, the C100 makes the advanced processing, routing and monitoring capabilities of the system easy to access, control and configure.

C100 meets all of the demands of **5.1 HD audio production** with an extensive specialised 5.1 production feature set including; freely configurable mono, stereo or 5.1 channels, elegant single fader handling of 5.1 stems (and multi fader spilling), per channel 5.1 metering, 5.1 bus architecture... and ‘5.1 Upmix’. ‘5.1 Upmix’ automatically creates a convincing 5.1 stem from any stereo source. It provides front/rear and width control, can be applied per channel or to busses and features 5.1 down-mixing... all without the unwanted artefacts often produced by other upmix systems.

SSL’s ‘**Dialogue Automix**’ solves the task of riding the faders to maintain a smooth, balanced mix in a live multi-mic talk show. Once a relative level has been set for each channel, Dialogue Automix provides software driven automation of this process, eliminating missed upcuts as operators struggle to match the pace of the show. The system also maintains unity gain throughout the show ensuring that levels of background noise remain evenly balanced.

SSL ‘**C-Play**’ embeds a fully featured music and spot Playout system into the console. It provides significant ergonomic and workflow advantages with console hardware control and all Playout settings recalled as part of a console Project.

The C100 **Production Automation** implementation supports Grass Valley Ignite, Ross Overdrive, Sony ELC and Mosart Medialab systems making the audio production power of C100 available for remote control in situations where no dedicated audio operator is required.

SSL’s **DAW control** enables the console to be used for post production duties during studio down time to deliver extended return on investment.

Detailed feature information for C100 is available online at [www.solidstatellogic.com/C100](http://www.solidstatellogic.com/C100)  
Detailed Product Specifications and Documentation are available from SSL.





# C100 HD PLUS. Control Surface

## Ergonomic Elegance

The advantages of both assignable and dedicated control philosophies are blended on the C100's control surface, with definable Free controls and the dedicated Master Channel and Fader Strip.

- Freely configurable mono, stereo and 5.1 channels with flexible processing order
- Scalable control surface with up to 80 fader strips plus master section
- Master Channel controls may be fitted in each bay, allowing hardware redundancy and multiple points of access
- Simple setups for each show through touchscreen or graphical offline configuration
- Channels arranged in layers, with control of the active layer below the touchscreen
- Channels arranged in layers, with control of the active layer below the touchscreen with infinite layers available
- 'Expand' button spills multichannel and VCA control group breakouts
- Rearrange channels or 'clone' a channel to all layers, even while on-air
- Unique graphical front panel management provides redundant access to processing
- SSL's unique Control Linking™ feature allows per-channel recall of all default settings for a source when routed to an input

### Master Channel Panel

- Dedicated sections for control of inputs, bussing, outputs, EQ, Dynamics, Filters, Delay, Insert and Aux sends
- Colour coded for fast recognition
- Broadcast-specific feature set
- Optional multiple unit hardware redundancy
- Ergonomic design and excellent overview

### Metering TFT Screen

Integrated TFT screen can be used for a range of metering options including SSL's LMS-16 multi-channel loudness monitoring system shown here.

### System status

- Main and backup PSU status

### Channel meter and status display

- Mono/stereo/5.1 meter on every channel
- Choice of 5 meter points
- Input level and Dynamics Gain reduction
- Dialogue Automix activity display
- Process matrix and bus routing
- Dynamics, EQ and Filters graphs
- Aux Send level and Pan status
- Main, Alternate, Insert and Fader names

### Free controls

- Dedicated channel controls are assignable to any Master Channel parameter
- May be used for GPI control
- 4-character display for name/value
- Controls can be toggled between multiple layers

### Monitor controls

- Main (5.1), Mini (stereo) and PFL (stereo) outputs
- Phase and L/R reverse, monitor flip and mono functions
- 5.1 insert with separate alternate stereo return
- Individual monitor cuts/solos
- Integrated talkback microphone

### Traditional controls

- Dedicated AFL, PFL and ON buttons
- Pan control and 8-character fader name

### Special access

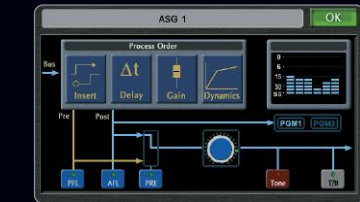
- Channel Link provides A/B fast channel flip
- 'Expand' button spills multichannel breakouts

### Fader Section

- Motorised faders
- Slim 30mm fader pitch
- GPI control
- Reset and layer protection
- User-programmable backstop PFL

### Touchscreen

- Permanent level and gain displays for all busses
- Colour coded tone and talkback indicators
- 4-way monitor source selector
- Session management functions
- Touch-activated parameter display and adjustment:



### User Layers

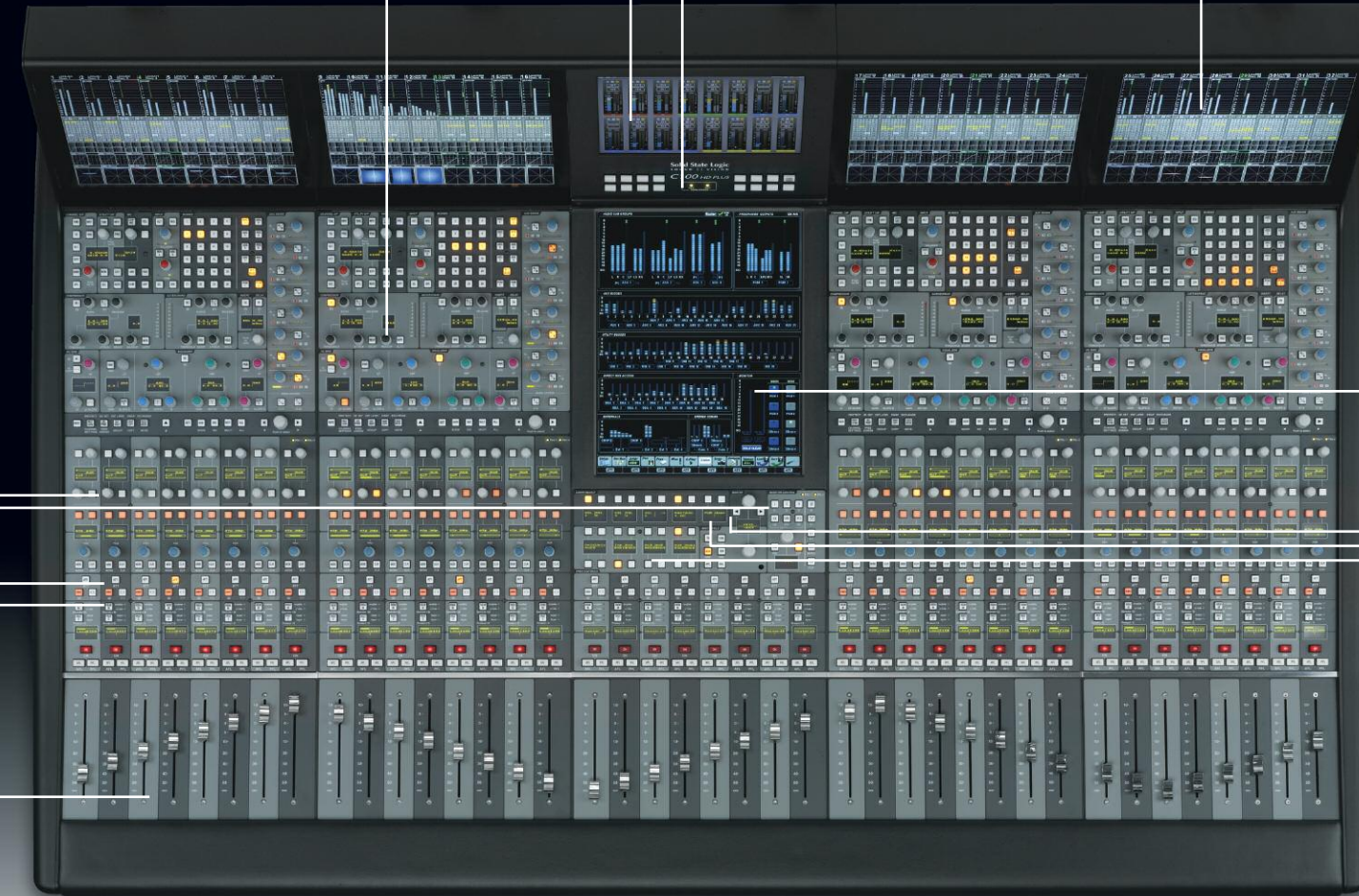
- Customise layouts for instant recall

### Bus and layer control

- Access to all channel layers
- Access to group master, ASG, and PGM faders
- Monitoring and communications bus trims

### Soft Keys

- 60 (10 x 6) definable buttons may be cloned from touchscreen functions
- User defined four character labels

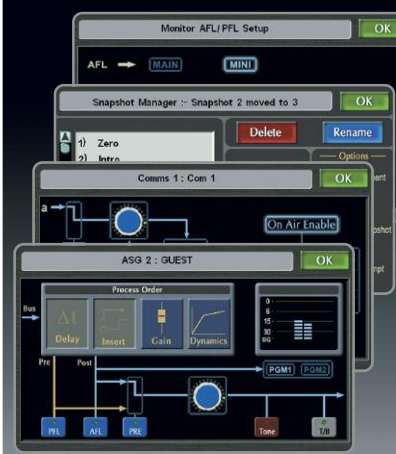




# Intuitive Touchscreen Control

The central touchscreen provides permanent, simultaneous metering of all output feeds and additional input resources, plus access to configuration tools. All outputs have integral tone and talkback injection, with signal level bargraph, output gain indication, and bus name tag for each. In addition, any output bus may be fader-controlled.

Dynamic display area changes according to selected function



ASG busses provide 8 stereo, or twin 5.1 plus twin stereo group busses, with dynamics gain reduction meter and PGM routing indicators

24 pre/post Aux busses allow stereo linking between pairs, or mono use and advanced aux to fader features

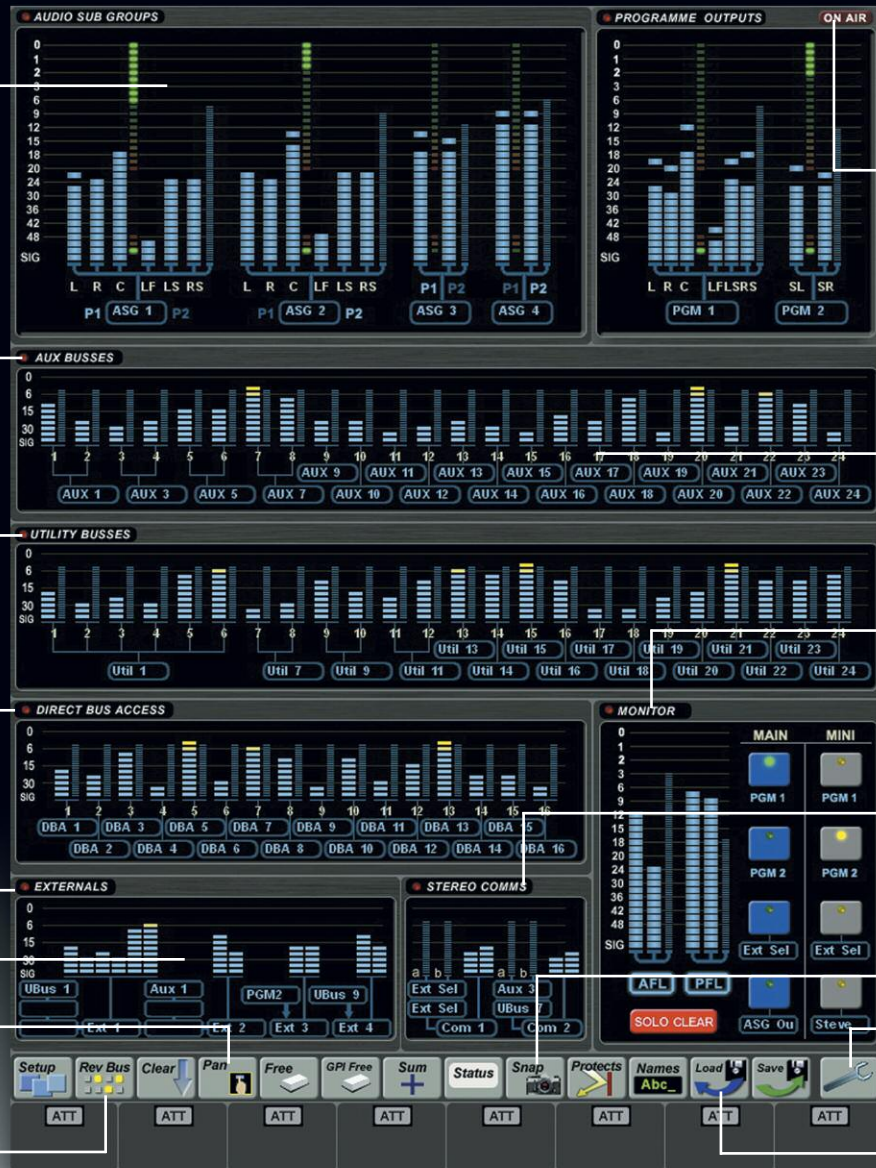
24 Utility busses provide additional 5.1, stereo or mono IFB, record and submix capability

16 Direct Bus Access (DBA) inputs allow injection of signal to any and all busses, for submix inputs, FX returns or comms injection

Four external selectors each have 12 inputs and provide fast switching for monitor loudspeakers, headphones etc. in 5.1 and stereo

Touch Pan provides fast and precise 5.1 pan positioning

Reverse Bus feature allows overview and control of channel contribution to selected bus



PGM outputs provide 2 outputs in stereo and/or 5.1, with dynamics gain reduction meters and simultaneous stereo and mono downmix feeds

The ON AIR indicator is driven from internal 'Mic Live' logic or triggered externally. It may also be signalled through any GPI output

Active talkback is indicated by busses turning green, and active tone is indicated by busses turning red, for immediate visual feedback

The Monitor section shows activity, gain and signal levels for the stereo AFL and PFL busses, plus 4-way source selectors for both main 5.1 and mini stereo loudspeakers

2 stereo Comms mixers combine dual stereo inputs and have an auto-mute function that may be triggered by the On-Air logic, for studio loudspeaker applications

Additional functions including Snapshot reset, bus naming and Free button assignment

The 'Spanner' icon leads to diagnostics and system setup

Direct Load and Save functions for the easy access to console set ups



## NFL Films - USA

"SSL consoles are designed from the end user point of view making our transition from analogue to digital easy"

**Rich Markowitz**  
Director of Audio Engineering



## Golf Channel - USA

"Once our engineers have programmed in the settings for one of our internal productions, we can take that Preset and apply it to any of the three consoles. This gives us huge flexibility for scheduling multiple productions."

**Ken Botelho**  
Senior Director of Engineering



# Comprehensive Channel Display

The Channel Information screen provides a wealth of feedback about the signal, routing and processing, laid out in a clear and logical fashion. Each screen displays 8 channels simultaneously, with a more detailed view of the processing across the lower part of the screen, automatically following the channel which has its attention (ATT) button pressed.

The meter may be sourced from one of 5 points in the channel, indicated here above the Dynamics Gain reduction meter

5.1, stereo and mono channels may be arranged in any order, and clearly identified

5-way processing order is shown as icons, with bypassed processing 'greyed out'

Indicators for the 24 Utility busses are shown, with the 8 ASG, the 2 PGM and the subtractive N-1 bus

Lower section shows details of channel selected, including sources for sidechain, insert etc.

High-res frequency response graph for the 4-band EQ and 2-band Filters



Each channel shows the fader number, source name and DSP channel in use, dynamically updated when a change is made

Dialogue Automix activity display

Indicators for the 24 Utility busses are shown, with the 8 ASG, the 2 PGM, and the N-1 bus

Multi-purpose display momentarily echoes the last parameter altered on the selected channel

Enlarged process order icons, showing Insert point, EQ and Filters, Fader, Dynamics and Delay sections respectively

High-res Dynamics (Compressor/Limiter and Gate/Expander) transfer response graph

Aux Send gain indicators, showing mono aux level and stereo aux level/pan position, and colour coded pre/post and on/off status



## MSG Media - USA

"We have an extremely demanding production and post-production schedule, and the SSL consoles afford us very worthwhile efficiencies for our different programming missions. They also consistently deliver great sound."

Michael Mitchell  
Chief Engineer



## YLE - Finland

"SSL won the tender because the consoles offer the power and advanced capability we needed for this application at a cost-efficient price point."

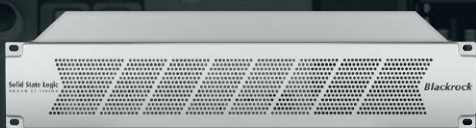
Antti Immonen  
Technical Producer



# Custom configuration, seamless integration, exemplary support, total reliability and ultimate peace of mind...

The C100 Control Surface, Processing and I/O are modular and scalable. Through consultation we ensure each system is specified and built to exactly match your current requirements whilst retaining the facility for future expansion. We then provide first class installation, configuration and training, to make sure your system and staff are ready on time to deliver pristine HD ready audio.

The C100 offers the exceptional level of reliability broadcasters require. All of the C100's console computer systems are 100% proprietary, so our system is extremely stable, firewalled and 100% virus-proof. The C100 features internal self-testing, error-correcting software so conditions which might result in a fault are quickly detected and resolved before they cause problems. The C100 provides extensive SNMP remote diagnostics software, allowing remote, automated console interrogation, significantly streamlining maintenance operations. The C100 system takes redundancy to the next level with capability to run two completely mirrored system set ups each with their own processing and I/O hardware, with a single control surface. 1+1 redundancy with fully mirrored systems means that in the unlikely event of a failure, switch over from the main to backup system is almost instant with current project settings intact.



## Blackrock Processor

The Blackrock processor provides the speed, stability and flexibility expected of purpose-built SSL processing, customised to your requirements. With a purpose built DSP architecture the

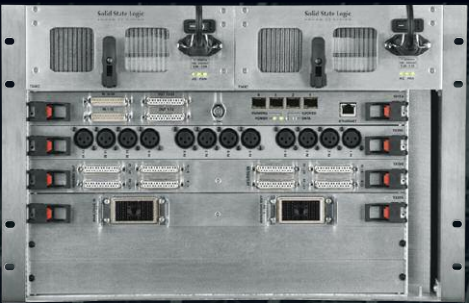
Blackrock processor ensures that dedicated processing is available for every channel simultaneously. Blackrock is a 2U chassis with redundant PSUs, redundant Ethernet console connections and audio I/O via standard MADI or SSL's proprietary Blacklight audio I/O which delivers 256 channels using a single standard fibre optic cable.

## I/O Options



## Alpha-Link LIVE-R & 8RMP Cost-effective multi-use I/O

Alpha-Link LIVE-R is a stand-alone audio converter that can be specified as low cost console I/O. It provides bi-directional conversion between 64ch MADI fibre I/O, 24ch line level analogue and 24ch AES3 digital I/O simultaneously. The Alpha-Link 8RMP is an 8ch mic pre to 8ch analogue line converter. Up to three 8RMP units connect to an Alpha-Link Live and can be remotely controlled by the C100 via the Alpha-Link Live MADI fibre cabling.



## B-RIO - High density local I/O

B-RIO provides up to 256 channels of advanced, modular local console I/O, customised to meet your requirements. B-RIO connects to the console using either standard MADI fibre or SSL's proprietary Blacklight system which delivers 256 channels using a single standard fibre optic cable. Control data and SNMP diagnostics are embedded in the cabling. B-RIO offers 5 card slots which can house a combination of Mic/Line, Line and AES3 digital cards.



## MORSE Stagebox - Modular versatile I/O stagebox

MORSE Stageboxes provide an I/O solution wherever you need it. Each MORSE Stagebox offers 14 card slots which can house a combination of Mic/Line, Line, AES3 digital and SDI (HD or SD) Embedder/De-embedder cards.

## Additional I/O Options

- **SDI-MADI:** A 3G SDI audio de-embedder providing four auto sensing SDI Inputs to MADI and AES Digital Audio Outputs.
- **MADI-Dante Bridge:** Fully redundant 1U unit that provides a 64ch @ 48kHz interface between any MADI device and a Dante IP Audio network.
- **Remote GPIO:** A 1U unit which can provide up to 48 channels of GP input and output connected to the console network via Ethernet.

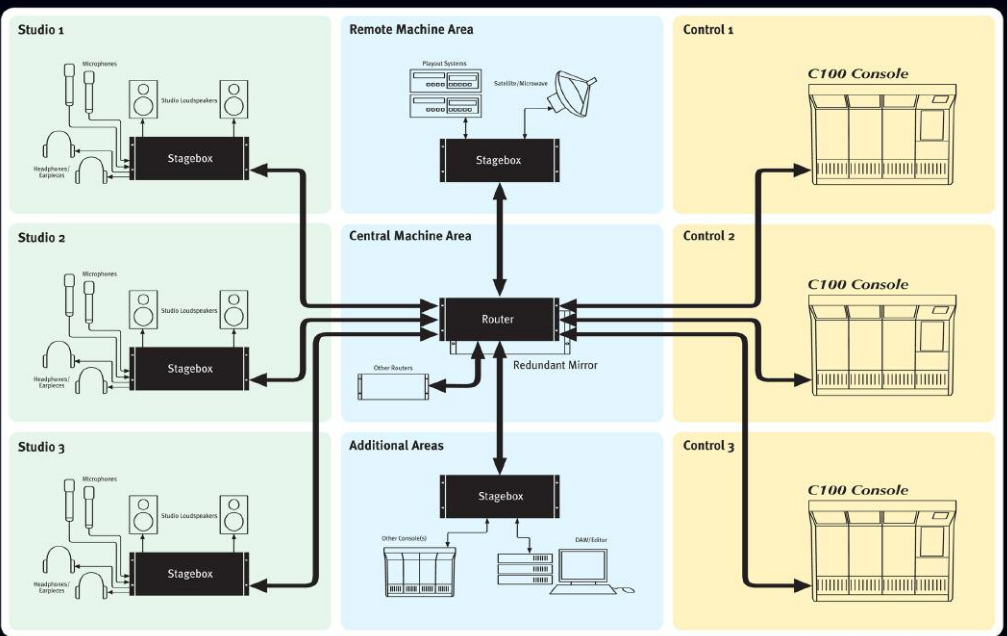
## Routing and Resource Sharing



## MORSE Router

For multi-studio broadcast facilities the MORSE Router provides a flexible solution for sharing audio I/O between multiple studios and control rooms and managing related control data. The MORSE resource sharing system is configured from a standalone computer but allows seamless reallocation of projects and signal feeds without any re-plugging, controlled from the console surface. The MORSE Router can be used with both C10 and C100 consoles.

## MORSE I/O Sharing Application Example





## C100 HD PLUS Specification

### Hardware architecture:

- Frame sizes from 16+8 to 72+8 faders, with dual mains inlets and redundant PSUs
- Blackrock processor core with RAID 1 disk array, providing console control interface and self-healing audio processing
- Option to upgrade to dual Blackrock processor cores, offering total 1+1 redundancy for CPU, DSP, MADI I/O, HDD, and file system
- 4 MADI I/O ports or a redundant Blacklight port offering up to 256 channel audio interfacing, with embedded control data for all SSL I/O solutions
- Option to upgrade to 8 MADI I/O ports, 4 Madi Ports together with a Redundant Blacklight port, or two redundant Blacklight ports offering up to 512 channel audio interfacing
- Integration Computer providing secured network login for file management, SNMP and remote diagnostics
- MORSE optical MADI routing option allows networked resource sharing and extensive IO capacity.
- Option to expand GPI/O via network controlled 24 or 48 channel 1U units
- Production automation interface option

### DSP architecture:

- 256 full mono input channels, each with dedicated 4-band EQ, Comp/Lim, Gate, Alt. Input, Insert and Direct Output
- Second input path provides up to 512 channels to mix.
- 24 mono Utility Busses for Mix Minus, IFB, recording and clean feeds - can be formatted as 5.1, stereo or mono
- 24 mono Aux busses with odd/even stereo bus linking
- 16 dedicated ASG busses, formatted as 8 x stereo or 2 x 5.1 & 2 x stereo, with inserts and comp/lim processing
- 12 dedicated PGM busses, formatted as 2 x stereo, 2 x 5.1, or 1 x 5.1 & 1 x stereo, with inserts, comp/lim, and LFE filters
- Dual independent channel outputs can provide 'N-1 and direct recording feeds simultaneously
- 64 Delay modules, 5.4 seconds each, assignable to input channels, ASG busses and Program busses or as stand alone delay channels to feed monitoring and comms circuits
- Independent stereo PFL and AFL monitoring
- 4 x 12 way external monitor source selectors (5.1/stereo)
- 16 mono direct inputs with level, on/off and AFL, can be linked for stereo/5.1 operation and can feed any and all console busses
- 2 communications mixes, each with 2 x stereo source selection, level, on/off, AFL, T/B and on-air mute logic
- 3 monitor busses, in 5.1, stereo and stereo/mono formats, with insert point, source selection, solo/mute, phase and level control
- In-built 5.1 BLITS tone generator routes to all 5.1 format PGM, ASG, Channel and Utility Buses

## Physical and Environmental Specification

Max Height .....	100.6cm (39.61")	Weight (40 fader) .....	~190kg (~419lb)
Height Adjustment .....	-0,+1cm (-0",+0.39")	Each bay adds weight .....	~35kg (~77lb)
Width 40 fader (flat end trim) .....	143.1cm (56.34")	Console Power .....	100-240V AC, (dependent on frame size) 300-700W
Each bay adds/subtracts .....	28.5cm (11.22")		
Contoured end trim adds .....	7.2cm (2.83")		
Max Depth .....	92.6cm (36.46")	Control Surface Cooling Method	.Convection (silent)

Solid State Logic   

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