

Studer Vista 6

Digital Mixing System



Disclaimer

The functions and features described herein cover the Studer Vista 6 System software version V3.3 and the Studer Configuration Tool software version V3.3, unless otherwise stated.

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Studer Vista 6: Digital Console Operation Takes a Quantum Leap

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1 Introduction

The Studer Vista 6 Digital Mixing Console combines an unparalleled operating concept with Studer's renowned technology and processing algorithms.

The Studer Vista 6 is a digital mixing console that reaches far beyond the limitations of existing designs. It is the first digital mixer incorporating a unique ergonomic operating concept that extends throughout the whole console. The unique and revolutionary Vistonics® user interface (pat. pending) provides instant overview as well as immediate access to critical controls, making operation quick, easy and intuitive.

When familiarizing yourself with the Studer Vista 6, you'll soon discover that you already know how to operate this console. Even freelance hired engineers will quickly find their way among the numerous exciting new features. In general, production workflow will become much smoother and production time will be shorter than ever before.

The Studer Vista 6 fits the requirements of just about any production environment. The new mixer's flexibility, reliability and quality sound are based on Studer's well-proven digital technology.

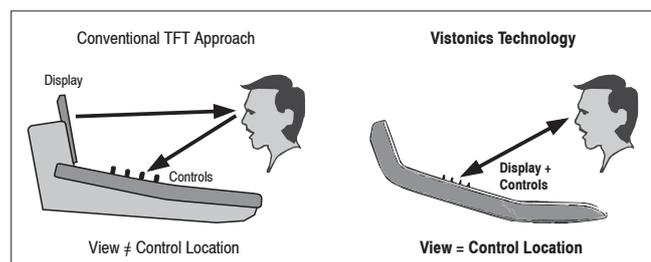
2 Vistonics®

2.1 The Key to Efficient Console Operation

The Studer Vista 6 incorporates the unique Vistonics® user interface which ensures quick and easy console operation – the key to a smooth workflow and short production time.

In hot production situations sound engineers depend on a mixing console which allows a fluent working process. Furthermore, a production facility with numerous engineers and freelancers or one which is open to external production teams must provide an easy-to-learn mixing console.

Control of the digital mixing console is therefore a major issue. Today's practice of arranging controls around or below a TFT flat screen display has obvious ergonomic limitations. Audio parameters are displayed on the screen but their relevant controls are located elsewhere. Operators must therefore go through a mental translating process countless times throughout the day which makes production fatiguing and the working process prone to errors.



This is where the unique Vistonics® (pat. pend.) operating concept of the Studer Vista 6 comes in. It includes the patented technology for integrating rotary controls and keys within a flat screen display to finally bring visualization and operation into immediate proximity.

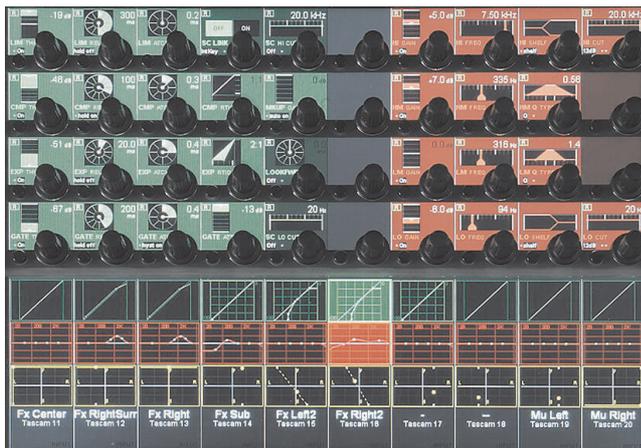
Vistonics allows color and shape of controls to be varied according to good ergonomic practice. A given audio function is always associated with the same color and a parameter is always associated with the same icon displaying values graphically – just as or even more intuitive than an analog console.

Channel controls on the Studer Vista 6 consist of a TFT screen with keys and rotary controls mounted on it with a touch screen area immediately below. Other channel specific controls such as the fader, mute, on/off keys, etc., are arranged above and below the screen to provide an instant and perfect overview, rapid familiarization and confident operation. The Studer Vista 6 is the only digital mixer which tells you exactly what it's about to do.

2.1.1 Vistonics: Operation

A simple touch on the desired function of the chosen channel opens up the complete function onto Vistonics. The operator can immediately adjust values and close the selected view afterwards.

By touching, for example, the equalizer and the dynamics on the same channel, they both will open up onto Vistonics with their complete set of functions. The operator can immediately and easily adjust one function in relation to the other by adjusting, for example, the equalizer and the compressor simultaneously.



Functions have their dedicated color: Equalizers and Filters are red on Vistonics as well as on all related keys. The same applies to the dynamics (green) and the panorama (yellow).

By simply turning the knob, the chosen value can be adjusted and the changing value is immediately displayed, graphically and numerically. Vistonics has icons which have been carefully designed to represent a logical readout for each individual function: levels are displayed as bar graphs, time settings

as circles, frequencies as frequency graphs, to mention but a few. This allows easy recognition of the function itself as well as its state and approximate value – without the need to actually read the word and numerical values display.

Pressing the physical key next to the rotary on the Vistonics activates a part of the function. The status is indicated by “On” or “Off” in the readout as well as by the brighter color of the display which is visible even from a distance.

Operation of the Studer Vista 6 resembles that of an analog console but is even more intuitive. Established ergonomic practice blends with modern technology to increase operating comfort, improve efficiency and boost studio productivity.

2.2 Five Operational Key Features

No efforts have been spared to improve and simplify the operation of the Studer Vista 6. Vistonics is part of a comprehensive and unique operating concept, enhanced by the clear philosophy of a few simple rules which can be combined and remain unchanged throughout the console.

2.2.1 Touch'n'Access

The Vistonics patented technology for integrating rotary controls and keys within a flat screen display brings visualization and operation into immediate proximity. The operator touches the desired function overview and is given immediate access to all available controls. There are no submenus – every parameter is just one key-press away.

2.2.2 Fast Copy/Paste, Half-Lit Keys

The console incorporates dedicated copy/paste keys for each audio function including EQ, dynamics, panorama and delay. A simple key-press in the original channel and another in the target channel copies the settings across. Copy/Paste is guided up by the half-lit keys: if one key has been pressed and the desk is awaiting a second key-press, all available target keys illuminate at half brightness until one of them has been selected. Also, complete channels can be cloned to one or many target channels. Setting up the Studer Vista 6 for a production becomes a quick and easy task. Non-productive time is reduced considerably.

2.2.3 Scrolling

DSP channels not visible on the physical desk are accessed by scrolling the channels available in the DSP core. The channel order is freely assignable: Channels can be grouped or even shown repeatedly on the surface. This ensures physical orientation on the desk so that the operator is always clearly informed as to what is happening. Channel bays with, for example, the master channels can also be locked in place.

2.2.4 Momentary/Latching Activation of the Keys

The console recognizes and senses the key-press duration and responds accordingly. The keys therefore act momentarily or latching, depending on how they were pressed (pressed-and-held or briefly tapped). In addition to talkback, PFL, EQ on/off, etc., the functions affected include those accessed by the touch screen – such as viewing of audio functions – as well as the monitoring source selectors.

2.2.5 Ganging

The ganging function in the mixer allows the operator to quickly apply functions to multiple channel strips because channels within the gang act as one. This can be used, for example, for mute, faders, bus assignment and much more to increase speed and comfort in operation. Creating a gang over the console makes the set-up quick and easy.

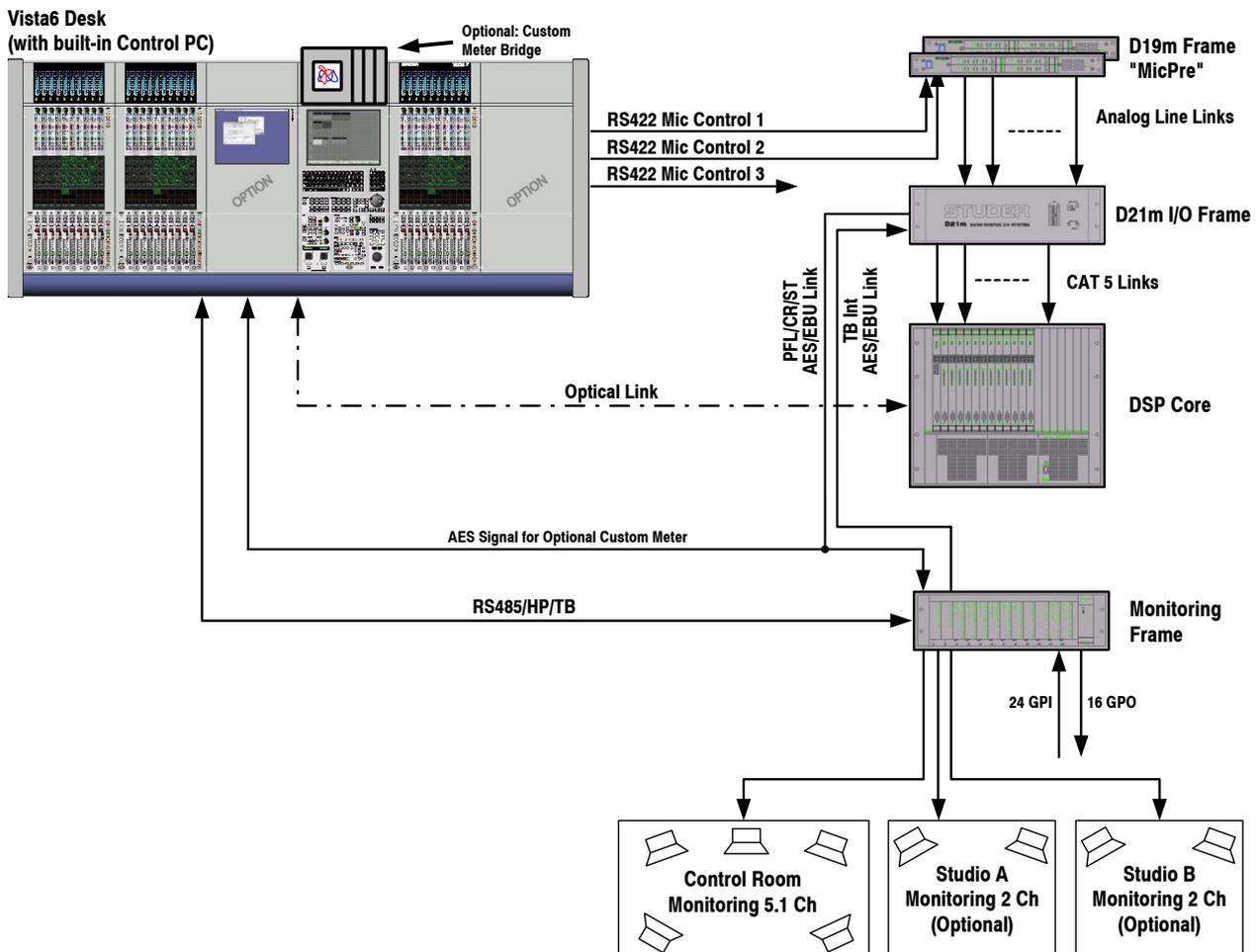
3 System Structure, Hardware

The system structure of the Vista 6 Digital Console can be separated into four main areas:

- Control Surface
- DSP Core
- I/O
- Monitoring & Signaling

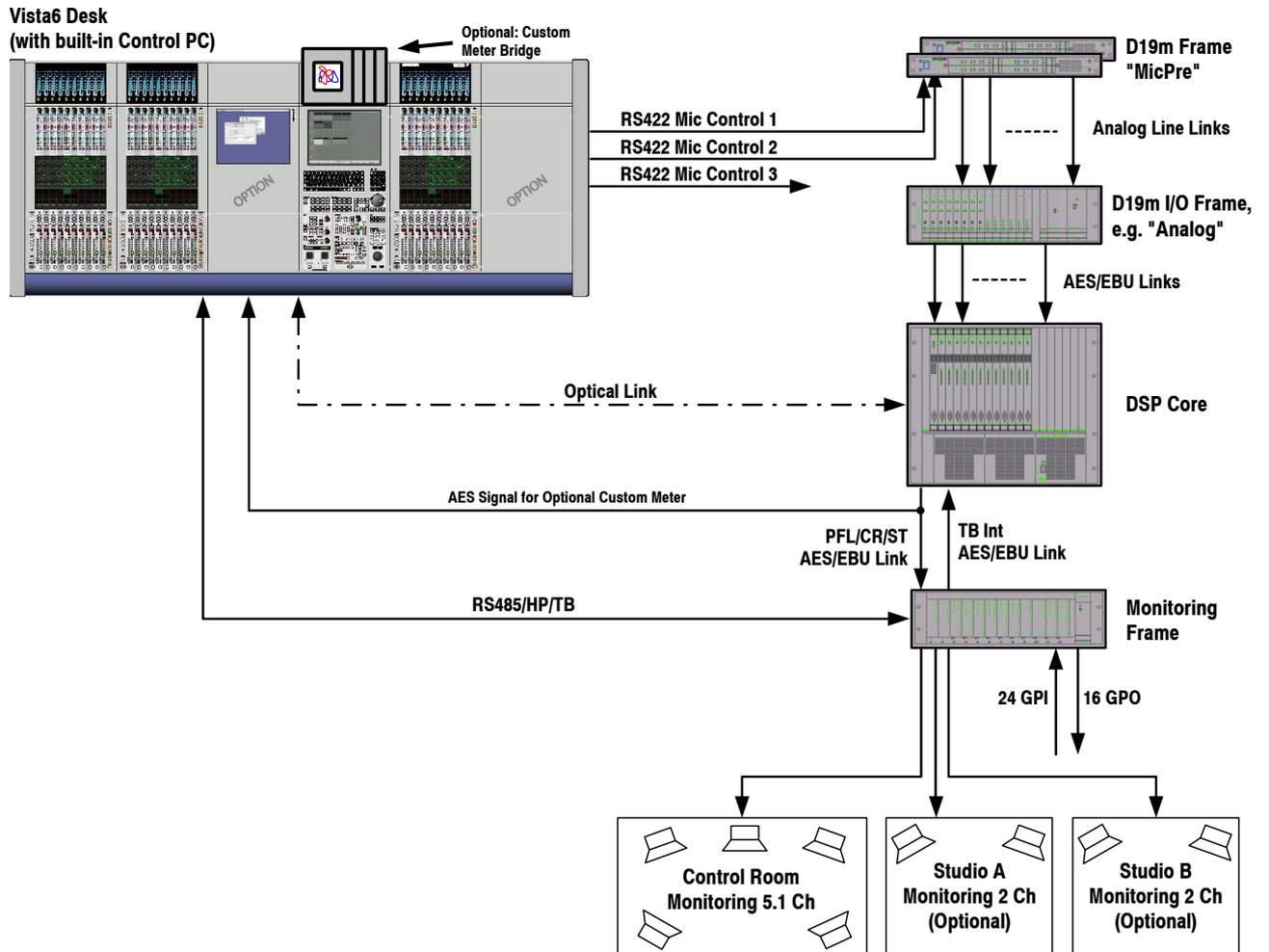
3.1 System Block Diagrams

3.1.1 System with D21m I/O*

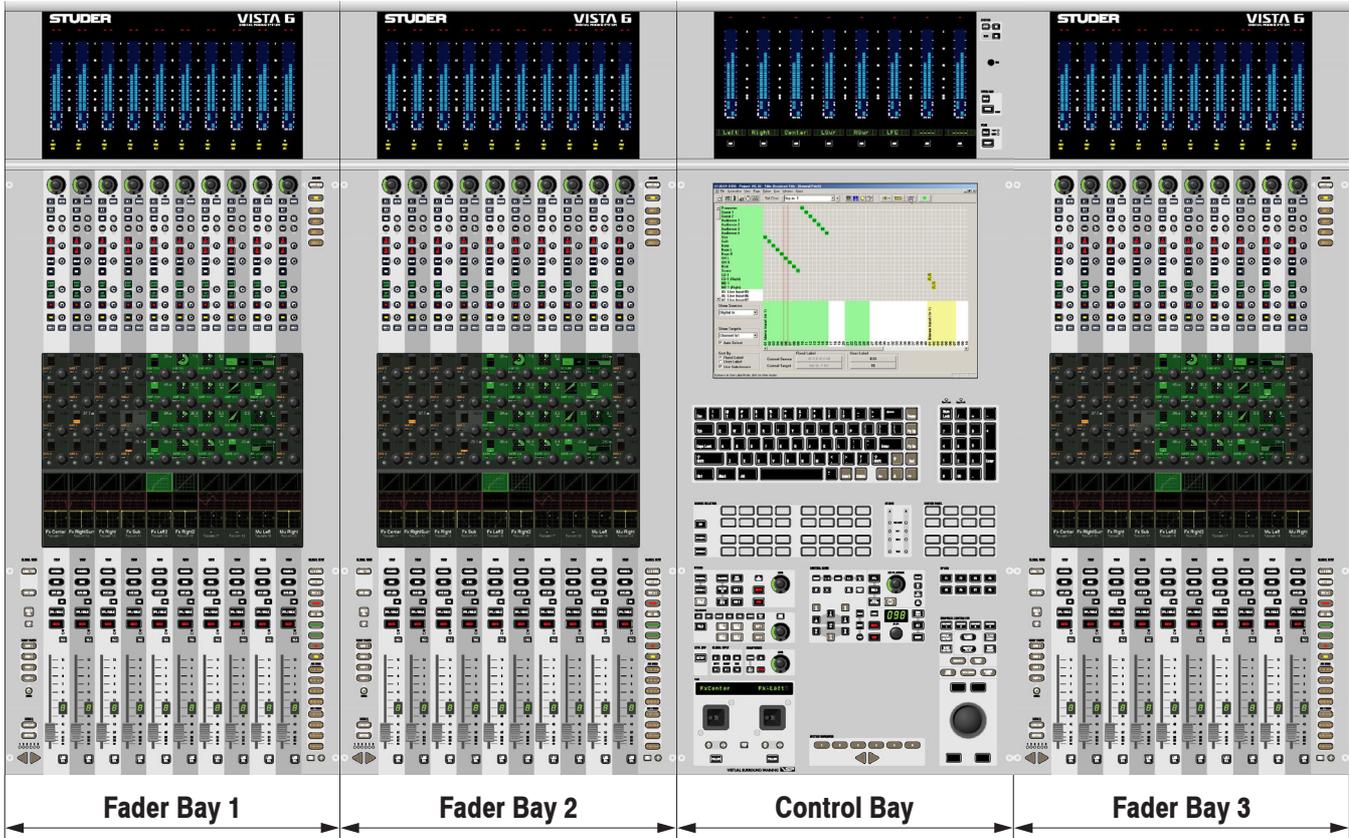


* D21m I/O system is only suitable if I/O is to be placed near to the DSP Core (maximum distance from core 10 m).

3.1.2 System with DI9m I/O



4 Vista 6 Control Surface



The desk consists of two types of bays: Up to seven identical fader bays and one control bay.

The fader bays contain the console channel strips with rotary controls, faders, keys, and meters. Ten strips are located next to each other in one bay. They are not dedicated to any DSP channel.

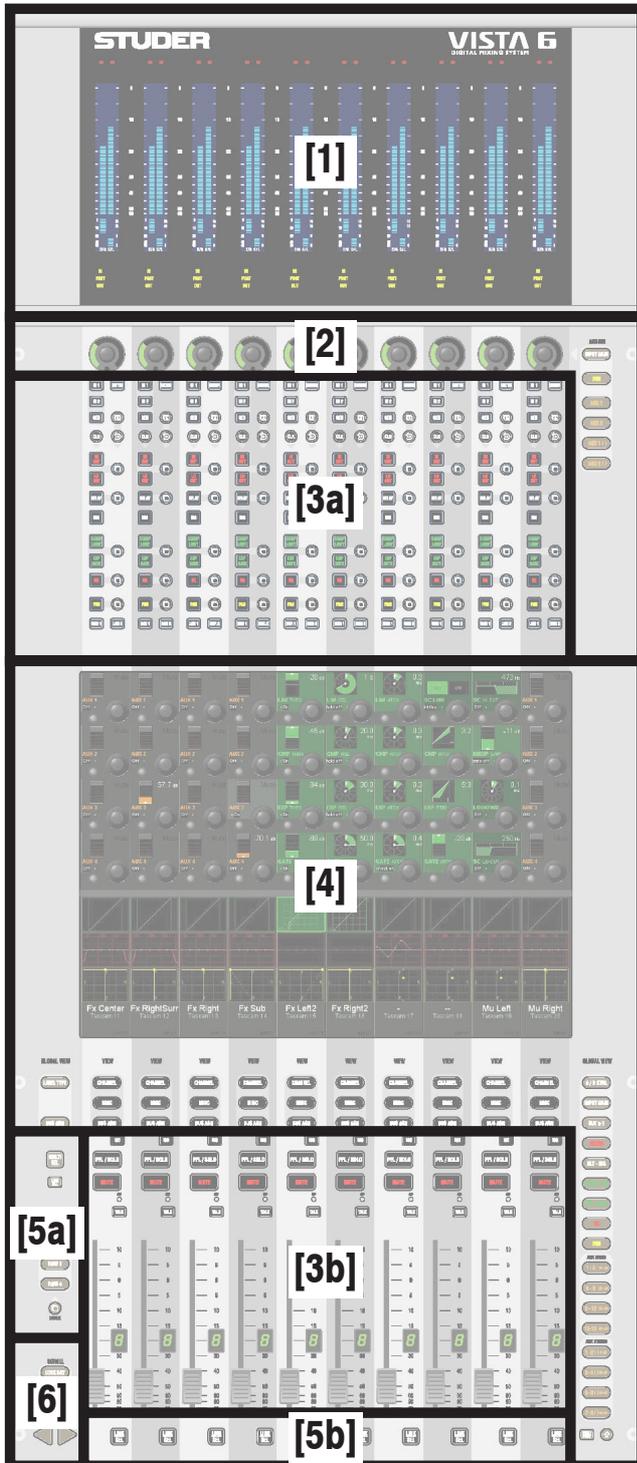
The control bay hosts the global desk operation controls, such as a TFT display for the Graphic Controller, a keyboard, a trackball, (optional) joysticks, a monitoring panel, a studio signaling panel, and a panel with custom keys.

The minimum possible system size is two fader bays and one control bay. The control surface contains the control system and the power supplies for the desk.

If a fader bay should fail to operate, the others will continue to work. In such a case, access to all channels is provided nevertheless thanks to the Vista desk scrolling feature.

4.1 Fader Bay Overview

A fader bay can be subdivided into six areas:



Area [1]

Contains level meters dedicated to each channel strip.

Area [2]

Contains rotary controls dedicated to each channel strip. This rotary control can have one out of six functions, assigned by the attached viewing keys. Changing the assigned function normally affects the whole console and not only that specific bay.

Areas [3a] and [3b]

Contain various controls, dedicated to each channel strip: Audio functions on/off, Copy/Paste, Selectors, and other standard elements, such as Fader, Mute, PFL etc.

Area [4]

Hosts the Vistonic[®] element with 10×4 on-screen rotary controls and a touch screen area. Some rounded keys are located next to the screen in order to change parameter views on the Vistonic[®] screen. The Vistonic[®] module can act as a channel-strip-specific control, dedicating four rotary controls as well as their associated bitmaps and graphical displays of the most important settings to each channel strip. It can also act in a sort of “central assign section”-way, occupying any number of Vistonic[®] controls, in order to access multiple parameters of one specific channel strip. In that case the control elements of adjacent channels are used as well.

Areas [5a] and [5b]

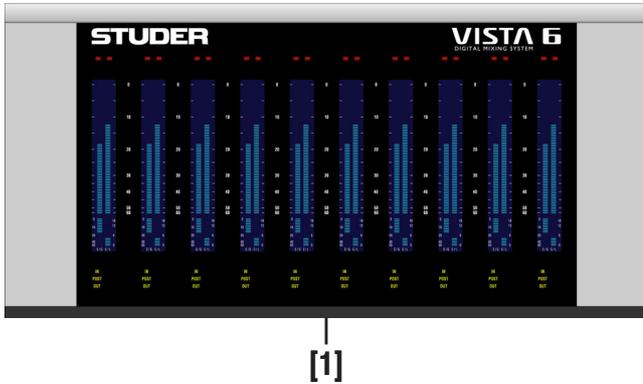
These keys are generically used either to select channels or influence any operation on them.

Area [6]

Contains controls that are determining which DSP channels are currently visible on that bay. It is possible to either change the whole console to display a different section, or just let that specific bay change to show some different DSP channels.

4.2 Fader Bay Details

4.2.1 Area 1 – Channel Metering

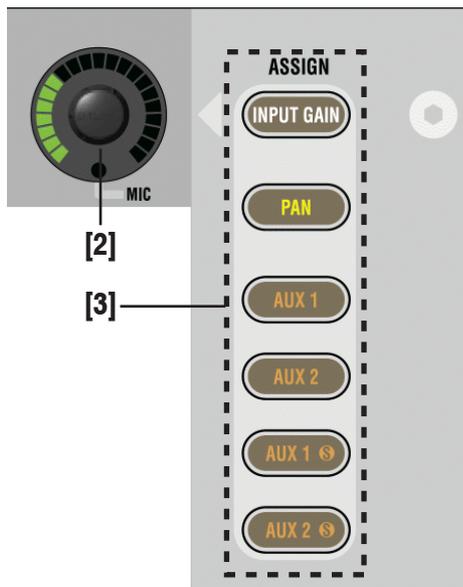


[1] Level Meters

Show digital peak values with indication of headroom (one blank bar), clipping (red LED), peak hold (temporary or continuous), gain reduction (expander/gate: bottom left, compressor/limiter: bottom right), meter tap point (the indicated meter value is either the input, post fader, or direct output level). The bargraph meters may be split to display the left and right signals of a stereo channel.

N–I: The bargraph meter of an N–I bus owner channel is split to show the return level on the left-hand bar, and the N–I send level on the right-hand bar of the meter.

4.2.2 Area 2 – Channel Control



[2] “Dedicated” Rotary Controls

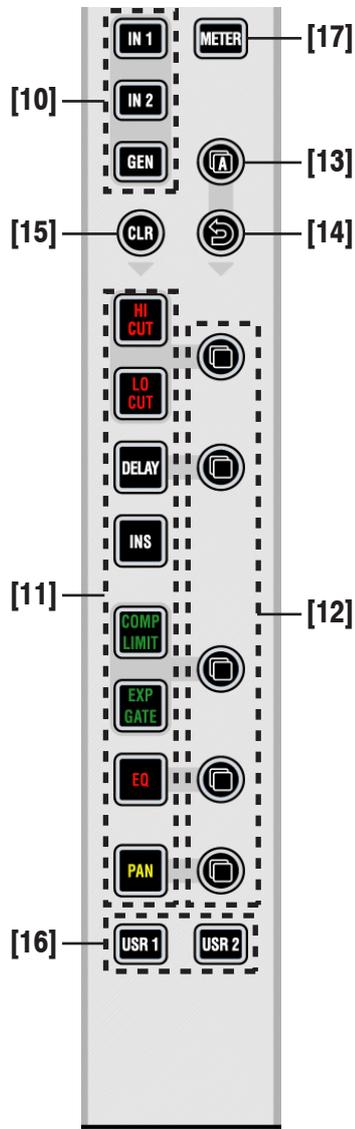
The user may put one out of six available functions onto this rotary control.

[3] ASSIGN

The function of the “dedicated” rotary control is selected by pressing one of the six ASSIGN keys. When ASSIGN: INPUT GAIN is selected and a Studer D19m or D21m microphone pre-amplifier is connected, its analog gain will be controlled before the analog/digital converters. Otherwise the rotary control will adjust digital input gain. In any case, further control is available on the Vistonics® module. The control of a Studer D19m or D21m microphone pre-amplifier is indicated by a small red MIC LED at the bottom of the rotary control.

Normally, the function changes throughout the whole console. If the bay is locked, only the assignment in the corresponding bay changes.

4.2.3 Area 3a – Channel Control



[10] Input Selector

Each channel has three patch points available. Input 3 is patched to the internal generator's output by default, but can be changed by the user at any time.

[11] Audio functions on/off

If lit, the corresponding audio function is activated. If dark, the function is bypassed.

[12] (Copy/Paste)

Dedicated to each audio function, these keys act as copy (first press) and paste (second press) at the same time. After having copied the value of the source channel into the internal clipboard (first press), the source channel key is fully lit while all possible destination channels are half-lit. This guides the user to select the destination channel efficiently. There are several ways to paste the clipboard value to multiple channels (e.g. create a gang)

[13] A (Copy/Paste All)

As above, but includes all functions of a channel at the same time. This includes input gains, AUX, fader and bus assign. This function “clones” the whole channel.

[14] (Undo/Redo)

After having copied a setting into one channel, this key will reverse the last paste function. If a clear function has been performed, this key will reverse the last clear function.

[15] CLR

After having pressed this key once, all possible destination keys (audio on/off keys) are half-lit. Pressing one of them will reset its value to the default value. In order to set the fader of the channel to 0 dB, it is possible to touch the fader after having pressed CLR. After releasing the fader, it will set to 0 dB.

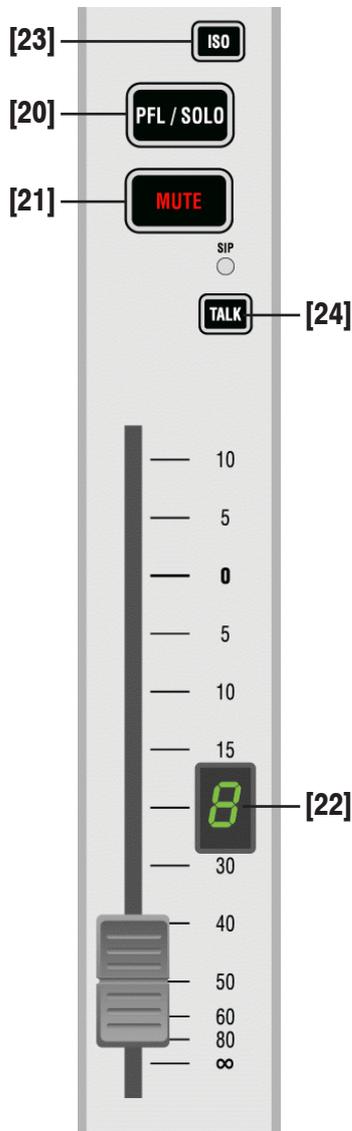
[16] USR 1 / USR 2

Keys for programmable user- or application-specific functions (such as signaling, fader start, etc.).

[17] METER

Toggles the meter tap point between input, post-fader, or direct output.

4.2.4 Area 3b - Faders



[20] PFL/SOLO

Depending on the setting of PFL, SOLO, and SOLO IN PLACE keys [115], this activates the PFL, SOLO, or SOLO IN PLACE function of the corresponding channel.

[21] MUTE

Mutes the corresponding channel. The small SIP LED indicates when the channel is muted by a SOLO IN PLACE function.

[22] Control Group Indication

Indicates the control group to which this channel is assigned.

[23] ISO

Isolates the channel from Snapshot Automation and therefore protects it from being overwritten when recalling a snapshot.

[24] TALK

Activates talkback to the direct output of this channel and, if applicable, to the N-I bus output.

4.2.5 Area 4 – Vistonics®



[30] Vistonics® Rotary Control Area

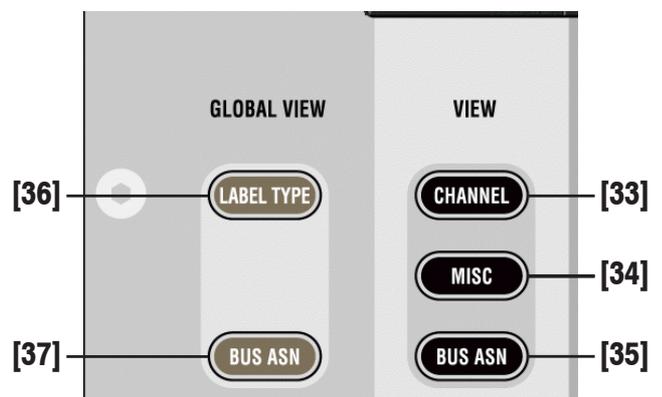
Each rotary control is grouped with a key to form a control element. These control elements are sometimes used in a channel-related manner, dedicating four control elements to each channel strip; sometimes, neighboring channels are used in order to show a complete parameter set of one single channel. This is the case when touching any graphical display of EQ, dynamics, or pan, but also when activating VIEW: MISC [34] or VIEW: CHANNEL [33].

[31] Vistonics® Touch Screen Area

Graphical indication of dynamics, equalizer and pan. Touching the graphics will open up all corresponding parameters on the rotary control area. This section is also able to display bus assignment. Two modes are available: Bus assignment as a “bubble view” to give an overview over the whole console, or bus assignment of a specific channel (one per bay).

[32] Generic Display Area

This area is used to display mainly channel label information and other information, including fader values.



[33] VIEW: CHANNEL

Brings up a view of all control elements of this channel besides dynamics, equalizer, and pan, covering the whole Vistonics® rotary control area.

[34] VIEW: MISC

Brings up a view of selected control elements out of dynamics, equalizer, and pan, covering the whole Vistonics® rotary control area. The VIEW CHANNEL [33] and VIEW MISC keys form a sort of “center assign panel” function, known from many other consoles, such as the Studer D950 M2.

[35] VIEW: BUS ASN

Brings up the bus assign view of one channel, covering the whole touch screen area.

When showing the bus assignment of a single channel, the assignment can be changed by touching the bus number.

[36] GLOBAL VIEW: LABEL TYPE (see previous page)
Changes the label type of the second line in the generic display area [32] to show:

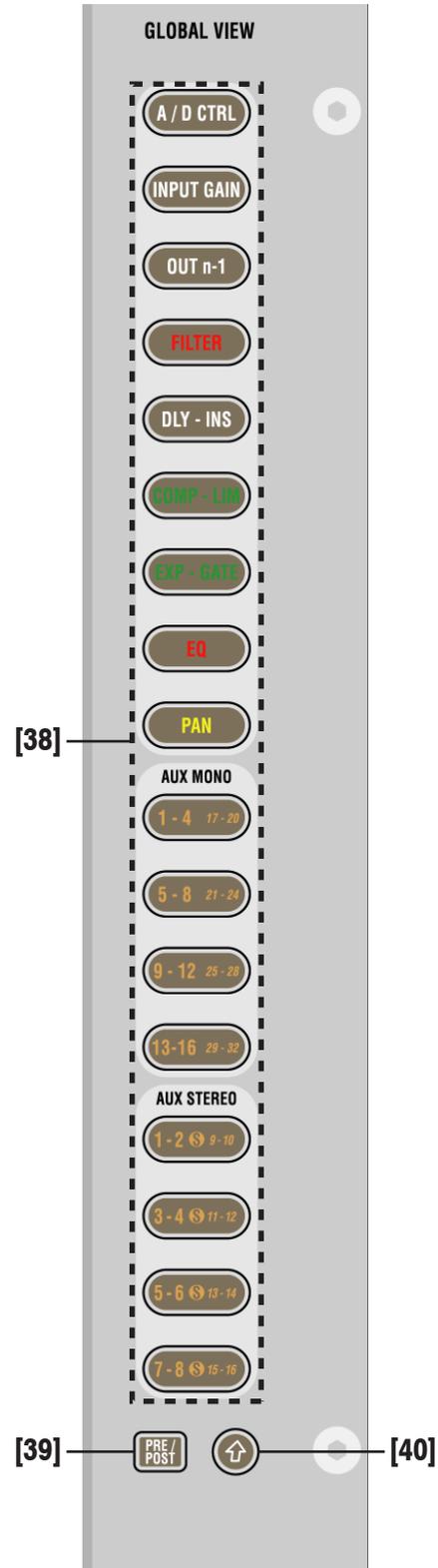
- Inherited label (also known as source label)
- Fixed label (shows the channel number)
- User label (same as first line).

[37] GLOBAL VIEW: BUS ASN (see previous page)
Activates a “bubble view” of the bus assignment throughout the whole console. If the bay is locked, only the corresponding bay is affected.

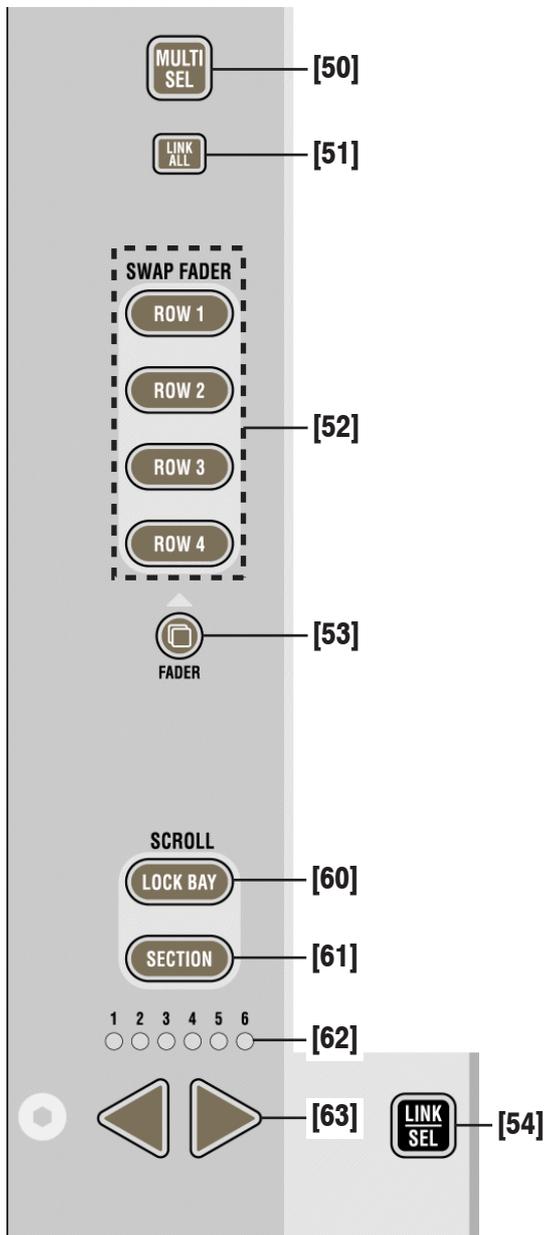
[38] GLOBAL VIEW
Function selection of the four Vistonics® rotary controls. The different views will only cover the rotary controls that are necessary to display the corresponding function.

[39] PRE / POST – AUX View Modifier
When auxiliaries are shown on the rotary controls, they have an on/off key next to the rotary control. By pressing the PRE / POST modifier key, the key next to the AUX rotary control will change its function to pre-/post-fader.

[40] ↑ (Shift)
Changes the meaning of the GLOBAL VIEW: AUX... keys to select the upper half of auxiliaries: AUX MONO 17-32 or AUX STEREO 9-16.



4.2.6 Areas 5 and 6 – Channel Selection, Desk Scrolling



[50] MULTI SEL

Used to make multiple selections; acts similar as the “Ctrl” key on a PC keyboard.

[51] LINK ALL

Links all channels of one type together (“Super Gang”) mainly for setup purposes.

[52] SWAP FADER: ROW 1...ROW 4

Swaps the current fader value onto the selected rotary row while the value of that row is temporarily displayed on the faders.

[53] FADER

A function allowing all fader values of a current gang to be copied onto the control element shown on the corresponding rotary row, if there is an appropriate parameter visible; e.g. AUX level or Direct Out Level.

[54] LINK / SEL

This key has two main functions. It is used to select channels in different situations:

- Select a channel for “channel patch view” on the Graphic Controller
- Select a channel for joystick assignment (PAN)
- Select/de-select a channel from a control group when in CGM setup mode
- Select a channel type when linking all channels of the same type together.

Pressing two of these keys simultaneously will form a “gang” between the two. With MULTI SEL [50] it is also possible to select channels that are separate from each other.

[60] SCROLL: LOCK BAY

Used to lock the corresponding bay. This prevents this particular bay from global scrolling. Even a locked bay can be scrolled when using the scroll keys on this particular bay. Global view changes are also only affecting this particular bay if the key is pressed on the locked bay. The global view is not changed if a GLOBAL VIEW key is pressed on another bay.

[61] SCROLL: SECTION

When activated, pressing the arrow keys [63] will navigate not only by one bay, but by a whole section (= number of physical faders).

[62] Section Indication

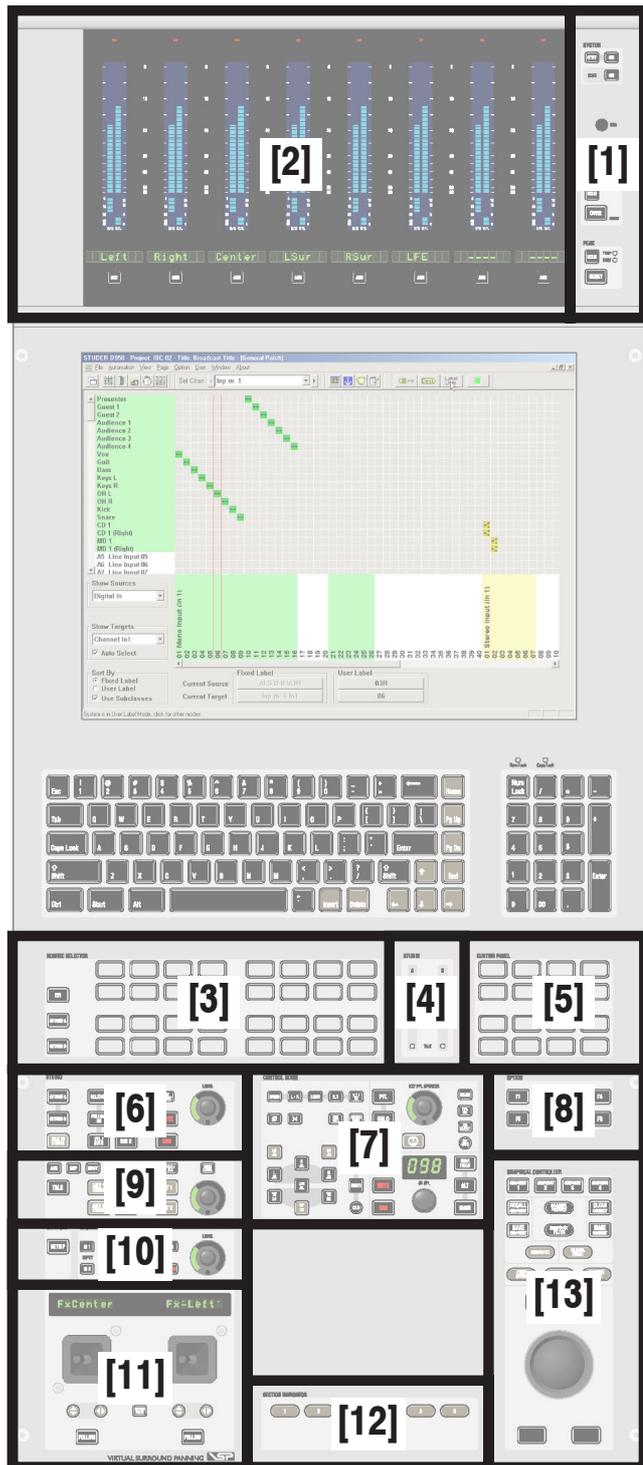
Indication of the current position within all sections. Acts similar to a scroll bar.

[63] ◀ ▶ Scrolling Arrow Keys

By pressing one of these arrow keys, the desk will move by 10 faders to the left or right, similar to scroll keys on a PC.

4.3 Control Bay Overview

The control bay houses all general and global controls plus a set of eight freely assignable, high-resolution dual bar graph meters which can be switched to display monitored sources, PFL and solo. The operation principle in the control bay as well as the whole console is “one control per function” – no paging, no hidden functions, providing instant overview and immediate access to critical controls for quick and safe operation.



Apart from the TFT display area with the Graphic Controller application and a keyboard with numerical keypad, the control bay is subdivided into 13 different areas:

Area [1]

For system power up/down, meter settings, and talkback microphone.

Area [2]

Contains the monitor metering with VFD bargraph meters. As an option, a wide range of third-party or Studer meters can be fitted instead of the standard VFD meters.

Area [3]

Monitoring source selector (applicable to all controllable rooms).

Area [4]

Studio signaling indication.

Area [5]

16 custom keys.

Area [6]

Studio monitoring control unit (Level, Solo, Dim, Mute...).

Area [7]

Control room (CR) monitoring control unit (Level, Solo, Dim, Mute...).

Area [8]

Keys for future functions and/or options.

Area [9]

Talkback section.

Area [10]

Control group setup, headphones control, global In1/In2 switches.

Area [11]

Motorized joysticks for panning (optional).

Area [12]

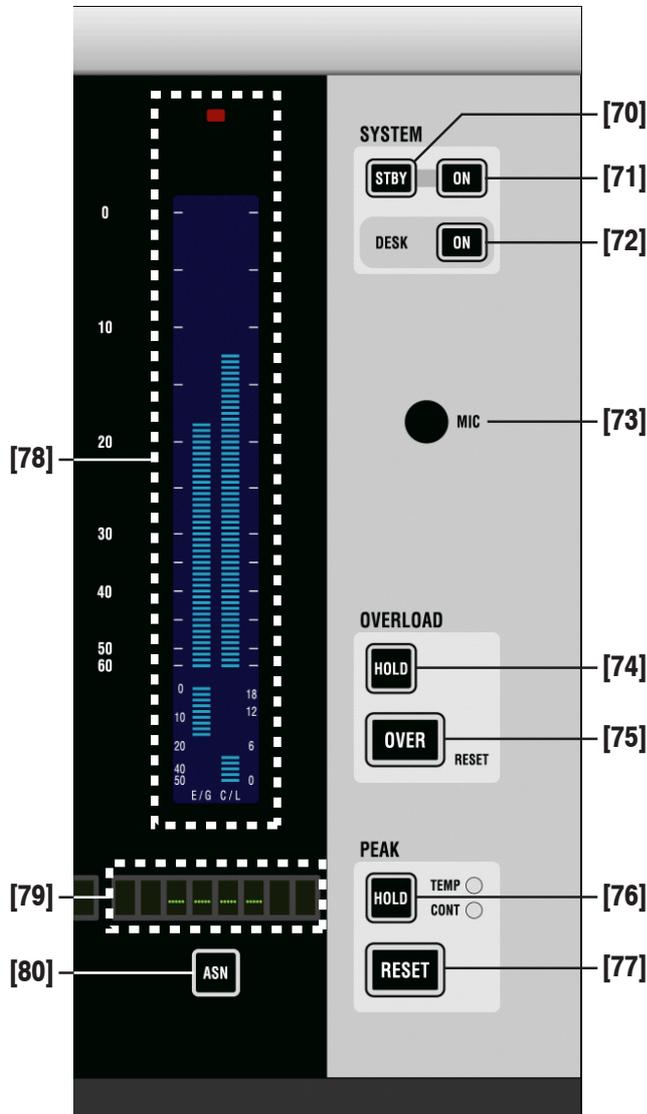
Section navigator with keys for navigation (section jumps/scrolling) through the console.

Area [13]

- Trackball for Graphic Controller operation
- Hardware keys for selecting major pages in the Graphic Controller
- Dedicated keys for snapshot operation.

4.4 Control Bay Details

4.4.1 Areas 1 and 2 – System Power and Monitor Metering



[70] SYSTEM: STBY

Indicates that AC power is connected to the desk.

[71] SYSTEM: ON

Indicates that the 5 V_{DC} supply is present in the system. Flashes if one of the redundant 5 V_{DC} supply units is defective.

Pressing STBY and ON simultaneously will switch the system on. For switching the system off, normally the Shutdown command in the windows desktop is used. Pressing STBY and ON together for several seconds will activate an emergency shutdown.

[72] DESK: ON

Indicates that the 24 V_{DC} supply is present in the system. Flashes if one of the redundant 24 V_{DC} supply units is defective.

[73] MIC

Internal talkback microphone.

[74] OVERLOAD: HOLD

Activates the hold function for all overload LEDs in the console.

[75] OVERLOAD: OVER RESET

LED indicates if any meter in any section is indicating overload. If OVERLOAD: HOLD is on, this LED is held as well. Pressing this key will reset all held overloads.

[76] PEAK: HOLD

Toggles the peak hold function through off, TEMP (temporary hold), and CONT (continuous hold).

[77] PEAK: RESET

Pressing this key will reset the peak hold indication, if continuous hold has been activated with PEAK: HOLD [76].

[78] Assignable Monitor Level Meters

Indication of either monitor level (if METER MON [113] is lit), or DIRECT OUT level of assigned channels, including gain reduction meters.

Vista 6 also allows the installation of individual, customer-specific monitor meters; please refer to chapter 9.4.

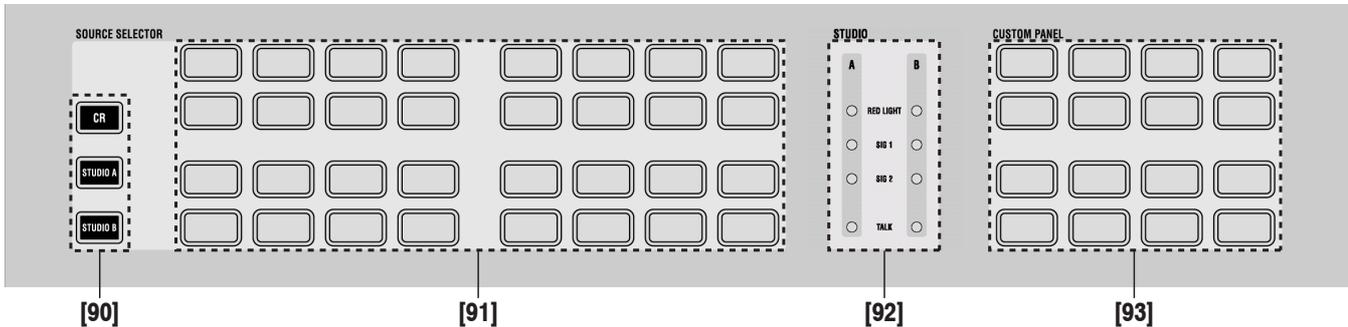
[79] Label

Displays the inherited label of the assigned channel or of the monitored signal.

[80] ASN

Pressing ASN followed by any LINK / SEL key of a channel will make the meter show the direct output level of that channel.

4.4.2 Areas 3, 4, 5 – Monitoring Source Selection, Studio Signaling, Custom Keys



[90] SOURCE SELECTOR: STUDIO A / B SOURCE SELECTOR: CR

Determines whether the 32 source selectors [91] are active for studio A, studio B, or the control room.

[91] SOURCE SELECTOR Keys

Each key can be assigned to three sources: One for the control room, one each for studios A and B. Each source may be a multi-channel source up to 7.1-channel surround format.

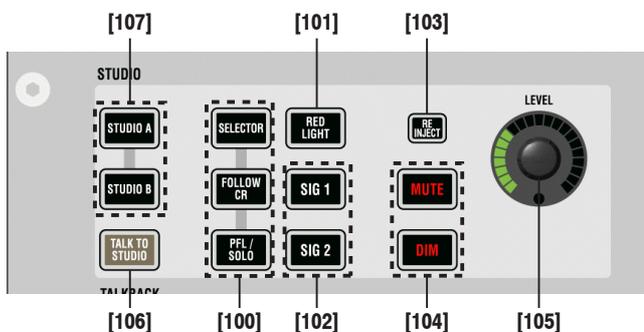
[92] STUDIO Signaling

STUDIO, SIG1, SIG2, and TALK Signaling Indicators.

[93] CUSTOM PANEL

These keys provide latching or toggling functionality. They are wired directly to open-collector outputs for controlling external devices.

4.4.3 Area 6 – Studio Monitoring



[100] SELECTOR / FOLLOW CR / PFL/SOLO

Determines whether the studio is fed with:

- what is selected on the SOURCE SELECTOR (32 keys [91]),
- the same source as the control room, or
- the PFL/SOLO signal only.

[101] RED LIGHT

Indicates active red light. Can also be pressed in order to switch the red light on/off manually.

[102] SIG 1, SIG 2

Two GPIOs (general-purpose I/O – with relay outputs and optocoupler inputs) are assigned to these keys.

[103] RE-INJECT

If the studio is muted by an active RED LIGHT, this key allows to inject the signal anyway.

[104] MUTE, DIM

Keys for muting or dimming the studio speakers.

[105] LEVEL

Level control for the studio speakers.

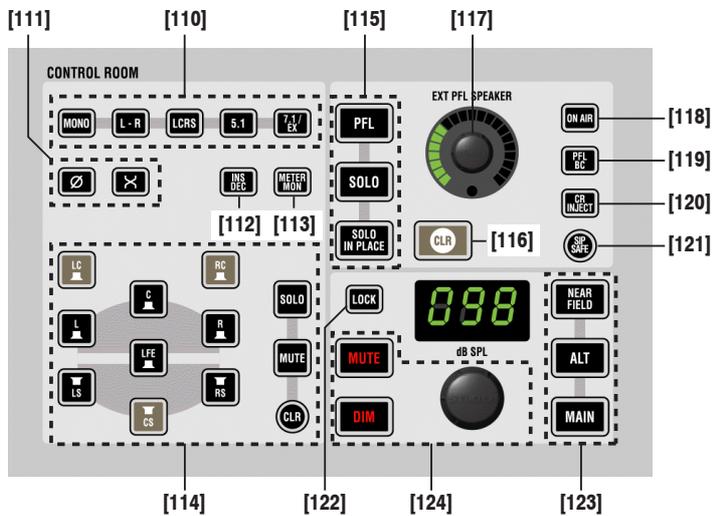
[106] TALK TO STUDIO

Shortcut key for talkback from the internal talkback microphone to the studio.

[107] STUDIO A, STUDIO B

Pre-selector keys for routing the TB signal and assigning the signaling keys to Studio A or B.

4.4.4 Area 7 – CR Monitoring



[110] Format Selection

Selects the control room monitoring format by muting unused speakers. The “mono” setting will sum the left and right monitor speaker signals.

[111] Phase/Ch Swap

Phase inversion on left channel, and left/right channel swap for mono or two-channel stereo mode.

[112] INS DEC

Inserts encoder/decoder chain.

[113] METER MON

Makes the monitor meters indicate the monitored signal instead of the pre-assigned signals.

[114] Solo and Mute Selection

These keys act as solo or mute keys for each speaker. The mode is pre-selected by the SOLO and MUTE keys on the right. It is also possible to clear all pressed keys with the (circular) CLR key next to MUTE.

[115] PFL/Solo Mode Selection

These keys determine the mode the console is in when pressing PFL/SOLO on a channel strip. It can be either PFL (pre-fader listening), SOLO (post-fader listening incl. pan), or SOLO IN PLACE (solo by muting all channels but the selected one; destructive mode).

[116] CLR

If any of the PLF/SOLO keys on the console is active (even if it is not currently visible on the surface), this key will be half-lit. Pressing it clears all activated PFL/SOLO functions on the channels.

[117] EXT PFL SPEAKER

If an external PFL speaker is used, this rotary control adjusts the level of the PFL signal on that speaker.

[118] ON AIR

This key provides SAFE mode activation — SOLO IN PLACE and talkback to the master buses are disabled.

[119] BC PFL

Broadcast PFL mode. If activated, this function ensures that any channel PFL is turned off when the channel fader is opened.

[120] CR INJECT

If active: PFL/SOLO signals will be audible in the control room speakers as soon as any PLF/SOLO function is activated.

[121] SIP SAFE

Pressing this key enters setup mode for editing the channels that should be safe from muting when activating SOLO IN PLACE on any other channel; by default, all master channels are safe from muting when SOLO IN PLACE is active. It may be desirable to protect effect returns from muting by adding them to the group of safe channels.

[122] LOCK

Locks the control room level and prohibits it from being changed by accident.

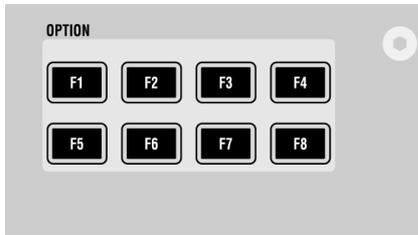
[123] Speaker Selection

Selection of three speaker sets: MAIN and ALT can be multi-channel surround systems, NEAR FIELD is a two-channel stereo system. A separate level control is available.

[124] CR Speaker Level

Muting and dimming of the control room speakers, and setting their level.

4.4.5 Area 8 – Function Keys

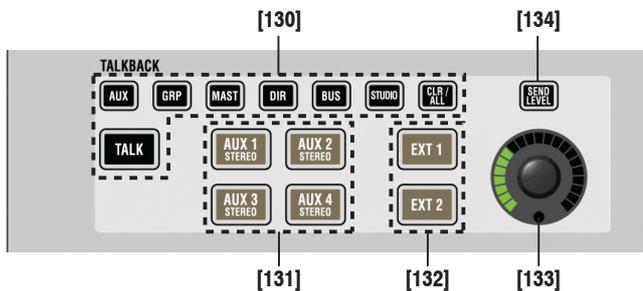


This area contains spare keys for future functions and/or options.

F4 is used to directly open/close the clipboard library window.

F8 is used to activate the external VGA input allowing to display an external VGA signal on the GC's TFT screen.

4.4.6 Area 9 – Talkback Control



[130] TALKBACK

Whenever TALK is pressed, the signal from the internal talkback MIC [73] is fed to the corresponding group.

Available talk destinations: AUX (direct outputs of all AUX masters), GRP (direct outputs of all group masters), MAST (direct outputs of all masters), DIR (direct outputs of all input channels), BUS (outputs of all multi-track buses without faders in between), STUDIO.

[131] AUX 1...4 STEREO

For talking to headphone mixes, these keys can be used to directly activate talkback to the corresponding AUX master outputs.

[132] EXT 1, EXT 2

Talk to external locations (analog).

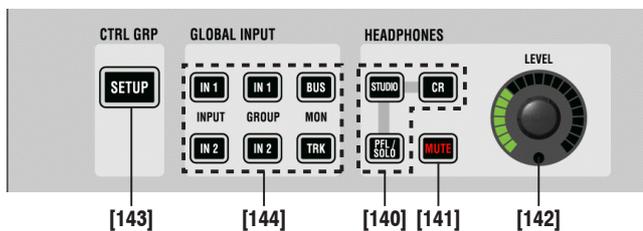
[133] Talkback Return Level

Level setting for external speakers.

[134]

If the SEND LEVEL key above the talkback return level knob [133] is active, this knob adjusts the input sensitivity of the internal talkback MIC [73] instead of the TB return level.

4.4.7 Area 10 – Headphones, Control Group, Global Input



[140] Headphones Source Selector

[141] Headphones MUTE

[142] Headphones LEVEL Control

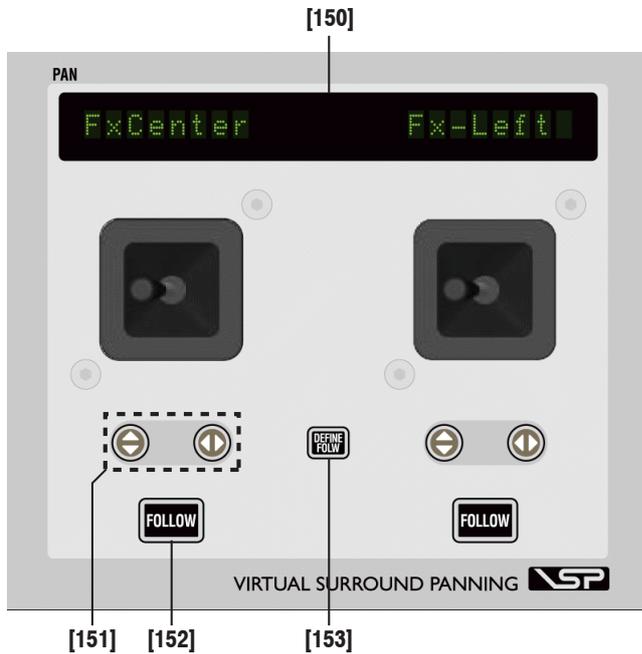
[143] CTRL GRP: SETUP

Pressing this key will enter the control group setup mode. This allows selection of channels to particular control group masters.

[144] GLOBAL INPUT

Global keys to switch all input, group, or multi-track monitor channels between inputs 1 and 2.

4.4.8 Area 11 – Joysticks (Optional)



[150] Display

Displays the inherited label of the channel currently assigned to the joystick.

[151] ⬆ Y axis lock, ⬅ X axis lock

Lock the Y axis (⬆) or X axis (⬅) when moving the joystick. Pressing ⬆ and ⬅ simultaneously deactivates the joystick completely.

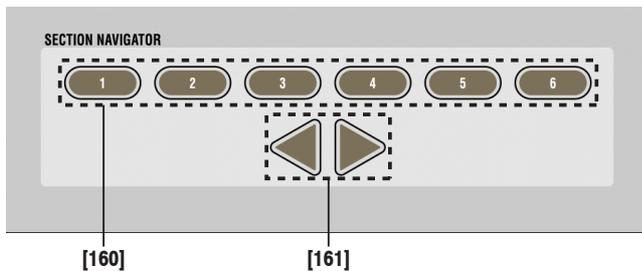
[152] FOLLOW

Activates the joystick to display the currently selected channel (select with LINK/SEL [54]). If a gang is present, the joystick will influence the whole gang. FOLLOW can be deactivated by a second press; the joystick will then stay assigned to the current channel.

[153] DEFINE FOLLOW

When a gang is active and the joystick is set to FOLLOW mode, the joystick will physically move to the average of all the pan values of the gang, allowing the user to make slight adjustments very quickly. However, if the user wants to do a “full” pan, so that all channels will be e.g. fully left, he needs to define the channel for the joystick to display. The joystick will then move to the pan position of the defined channel, but will still keep influencing the whole gang.

4.4.9 Area 12 – Section Navigator



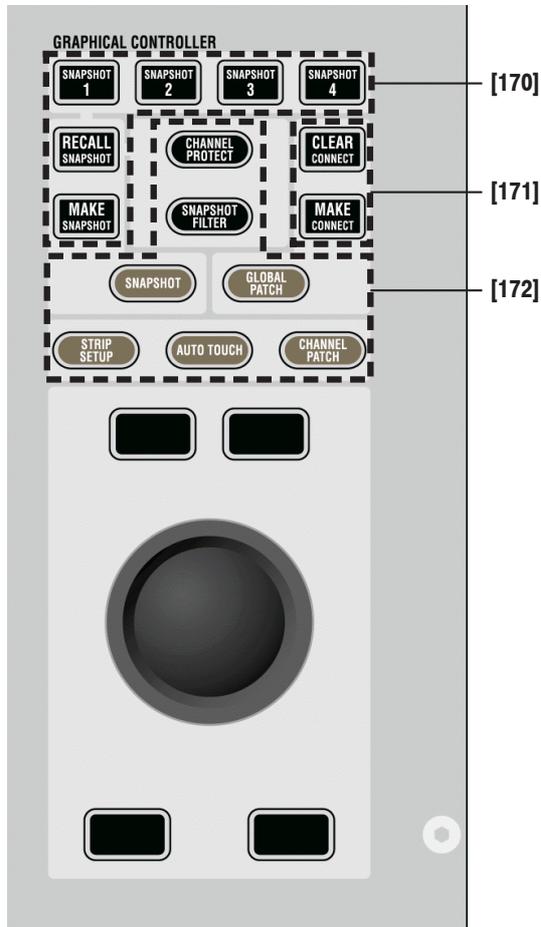
[160] 1...6

Indication of the current position within all sections. Pressing one of these keys will navigate the desk to the corresponding section directly.

[161] ◀ ▶ Scrolling Arrow Keys

By pressing one of these arrow keys, the desk will move by ten faders to the left/right, similar to scroll keys on a PC.

4.4.10 Area 13 – GC Shortcut Keys



[170] MAKE / RECALL SNAPSHOT 1...4

A snapshot contains all audio settings including patching and labels. These keys allow four snapshots to be stored and recalled without making use of the Graphic Controller screen. In addition, they allow snapshot previewing of the four stored snapshots.

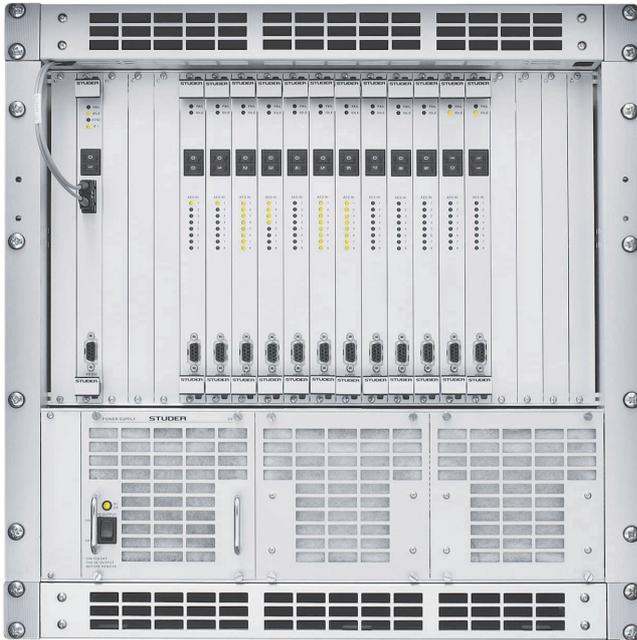
[171] MAKE CONNECT, CLEAR CONNECT

These keys are used for making and clearing patch connections in the General Patch.

[172] CHANNEL PROTECT...

These shortcut keys will open the corresponding windows on the Graphic Controller.

5 DSP Core



The DSP core of the Studer Vista 6 builds on Studer's well-proven digital technology. It incorporates an excellent reliability record and inspires a high degree of confidence enjoyed by the numerous users operating systems in mission-critical applications. The DSP core uses parallel processing

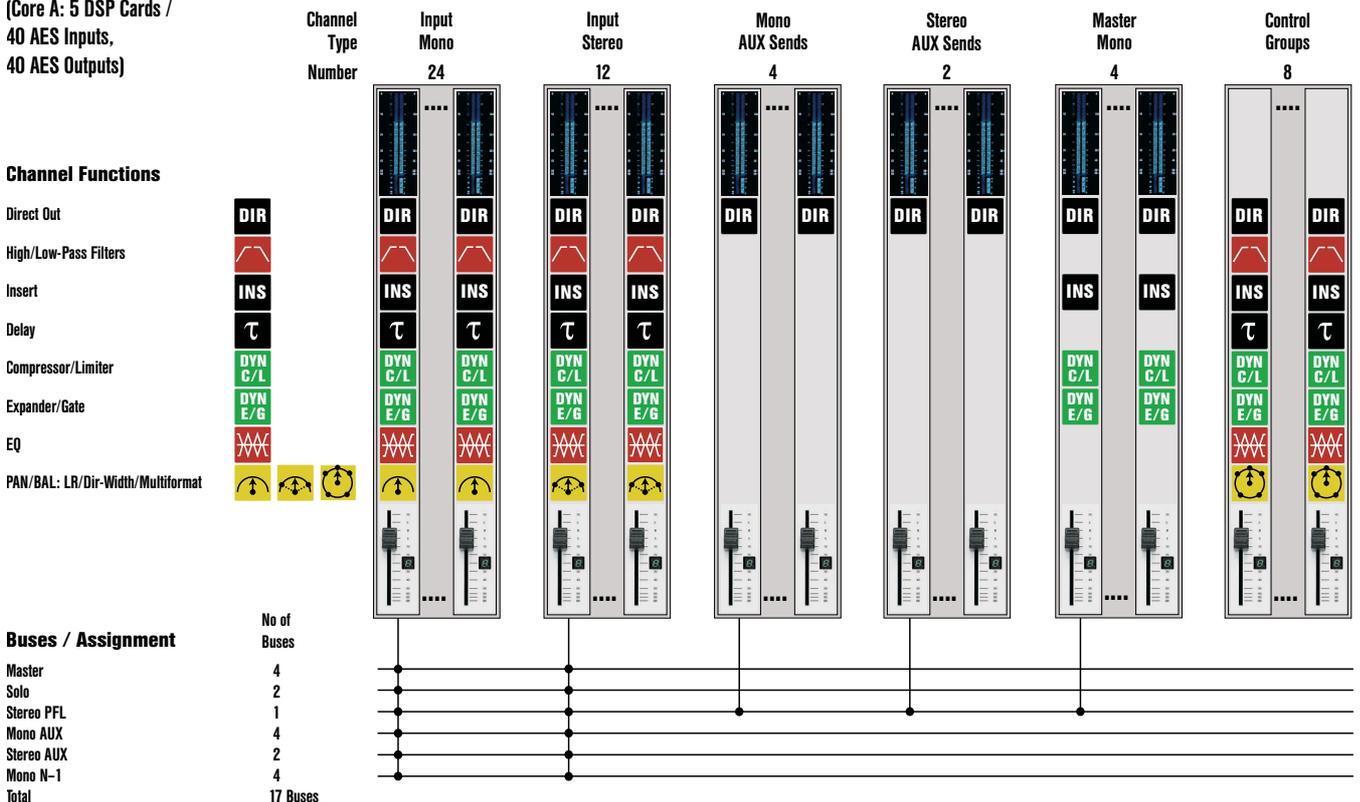
architecture with integrated floating point circuitry and an internal word length of 40 bits. No overloads will ever occur within the console, since floating point architecture is even used in the summing buses. The system can be used in 48 or 96 kHz mode.

The DSP Core is based on modular cards and the more DSP cards that have been fitted in the core, the more DSP power is available. If only AES I/O is required or the D19m I/O system is utilized, the number of DSP cards also relate to the number of AES/EBU interfaces that are available. In this instance, each DSP card hosts eight AES/EBU inputs (two with SFC) and eight AES/EBU outputs. Special D21m DSP cards are available for interfacing D21 I/O. Eight standard DSP core sizes are available: Four for the D19m I/O and four for the D21m I/O.

- Core A (D19m) — 5 DSP cards, 40 AES/EBU inputs and outputs
 - Core B (D19m) — 8 DSP cards, 64 AES/EBU inputs and outputs
 - Core C (D19m) — 12 DSP cards, 96 AES/EBU inputs and outputs
 - Core D (D19m) — 15 DSP cards, 120 AES/EBU inputs and outputs
 - Core E (D21m) — 5 DSP cards, 192 D21 inputs and 96 D21 outputs
 - Core F (D21m) — 8 DSP cards, 192 D21 inputs and 96 D21 outputs
 - Core G (D21m) — 12 DSP cards, 192 D21 inputs and 96 D21 outputs
 - Core H (D21m) — 15 DSP cards, 288 D21 inputs and 144 D21 outputs.
- Each core size is accompanied by four standard DSP configurations which are shipped with the console. Below are shown two configuration examples.

Typical Stereo Broadcast Configuration (Small)

(Core A: 5 DSP Cards /
40 AES Inputs,
40 AES Outputs)



Typical Stereo Broadcast Configuration (Medium)

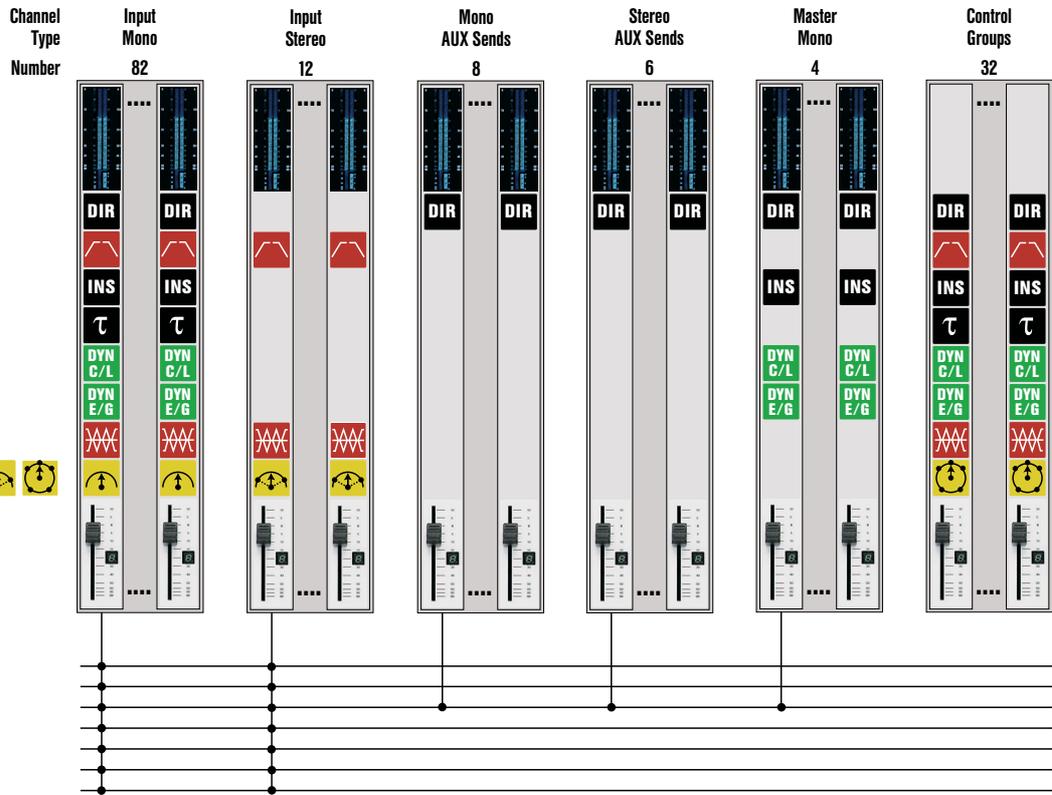
(Core C: 12 DSP Cards /
96 AES Inputs,
96 AES Outputs)

Channel Functions

- Direct Out 
- High/Low-Pass Filters 
- Insert 
- Delay 
- Compressor/Limiter 
- Expander/Gate 
- EQ 
- PAN/BAL: LR/Dir-Width/Multiformat 

Buses / Assignment

	No of Buses
Master	4
Solo	2
Stereo PFL	1
Mono AUX	8
Stereo AUX	6
Mono N-1	8
Stereo N-1	4
Total	33 Buses



In addition to the standard configurations, an offline configuration editor tool is available as an option which allows the available DSP power to be reconfigured by the customer. This includes changing the number of channels, audio processing and bussing structure of the console for a particular project. Extensive import functions allow the user to adapt

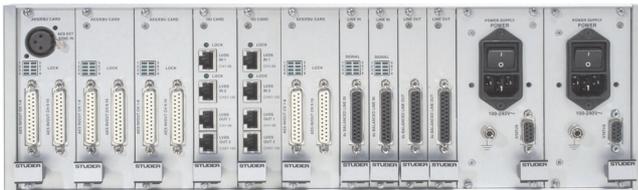
existing configurations to meet changing needs. In addition, the combination of modular DSP cards and the configuration editor means that future console expansion is as simple as adding more DSP cards and making new, larger configurations with the configuration editor.

6 I/O System

Two input/output systems are available for the Studer Vista 6. For 96 kHz I/O, or for I/O that can be located near to the DSP core (within 10 m), the D21m I/O system can be used. For remote I/O the D19m system must be utilized. During the sales acquisition it will be established which I/O system is most suited.

6.1 D21m 24/96 Digital I/O System

The D21m I/O system is an audio interface architecture that fulfills today's and tomorrow's needs. Consisting of a base frame with a high-density link to the core and a wide variety of audio cards, the system can be configured to meet specific requirements for 96, 48 and 44.1 kHz applications. The D21m high-density audio interface system is like a hub to the Vista 6 DSP Core. The 19" Frame can hold up to 12 interface cards where audio is collected from or distributed to all standard professional industry audio formats.



Up to 384 inputs and outputs from 12 audio card slots are collected in the center of the 3U D21m frame where one or two high-density cards can be placed. These cards provide the link to the DSP Core of the console using standard CAT5 cable connections. Each connection carries up to 96 channels into the Performa DSP Core and 48 channels out in 24-bit 96 kHz quality. The system automatically detects newly inserted cards and assigns the appropriate number of input/output channels to it. A status display on the front panel informs the user if a card is present or if the card has failed or been removed. The frame can also be ordered with redundant power supplies. In addition, all D21m audio cards are hot-pluggable.

6.1.1 D21m Audio I/O Cards

- Microphone/line pre-amp card: 4 × Mic/line pre-amps with 24 bit, 48/96 kHz A/D converters
- Line in card: 8-channel D/A converter card
- Line out card: 8-channel A/D converter card
- AES/EBU card: 8 × AES/EBU in and 8 × AES/EBU out
- AES/EBU card with input/output SFC: As above, but with asynchronous sampling frequency converters on both inputs and outputs
- ADAT card: Dual 8-channel ADAT input/output card
- TDIF card: Dual 8-channel TDIF input/output card

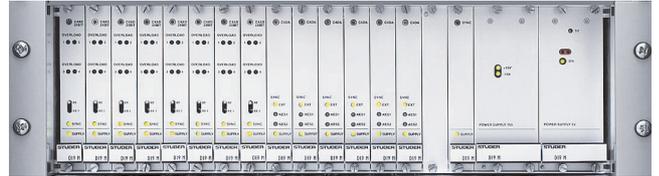
D19m Microphone pre-amps may also be combined with the D21m system for A/D conversion and interfacing to the Vista DSP Core.

6.2 D19m Digital I/O System

For systems requiring remote I/O interfaces (i.e., located more than 10 m from the DSP Core) the D19m I/O system is required.

Note: The D19m system is designed for 48/44.1 kHz operation only.

The D19m I/O system is a modular system allowing a total number of 56 I/O channels of varying professional audio formats to be handled in a single 3U frame. All cards can offer AES/EBU outputs and are also designed to feed or be fed from a TDM bus for conversion to/from a MAD1 link. MAD1 interfacing is then possible to the Vista DSP Core as an option.



All cards are plugged into the frame from the front, with all connectors on the rear of the frame. Redundant power supplies and hot-pluggable cards provide a resilient and reliable 24-bit I/O system to interface to the Vista 6.

6.2.1 D19m Audio I/O Cards

- Microphone/line pre-amp card (MP4RC): 4 × Mic/line pre-amps with line level outputs
- Line input card: 4-channel A/D, 24 bit conversion
- Line output card: 4-channel D/A, 24 bit conversion
- ADAT input card: Dual 8-channel ADAT input card
- ADAT output card: Dual 8-channel ADAT output card
- TDIF input card: Dual 8-channel TDIF input card
- TDIF output card: Dual 8-channel TDIF output card
- MAD1 input card: Handles 1 × 56-channel MAD1 interface
- MAD1 output card: Handles 1 × 56-channel MAD1 interface

6.2.2 Standard D19m I/O Frames

A number of standard D19m I/O frames are available for the Vista 6. Each of these connects to the Vista 6 DSP Core via AES/EBU connections:

- I/O frame "Analog" — 32 line inputs, 24 line outputs
- I/O frame "ADAT" — 32 channel ADAT I/O, 8 line inputs, 8 mic/line inputs, 16 line outputs, 8 GPIO
- I/O frame "TDIF" — 32 channel TDIF I/O, 8 line inputs, 8 mic/line inputs, 16 line outputs, 8 GPIO
- I/O frame "Mic" — 16 mic/line inputs in a single IU frame. Connects to an "Analog" I/O frame for conversion and interfacing to Vista 6 DSP Core (also used in conjunction with the D21m I/O system).

Customized D19m input/output frames (including stage boxes) are also available to perfectly fit into specific requirements.

6.2.3 MAD1 Interfacing

A special MAD1 I/O interface card for the Vista 6 DSP Core is available as an option. This card offers two MAD1 inputs and two MAD1 outputs directly to/from the core. The MAD1 format allows 56 channels to be transmitted on a single fibre optic cable. These can be used for interfacing direct to recording systems or alternatively used as a second method of connecting remote D19m frames to the DSP Core. Fibre cable connections to and from the core in this instance is via SC connectors.

7 Monitoring, Talkback, Signaling

A single 3U rack unit is utilized for housing all of the monitoring and signaling cards of the system.

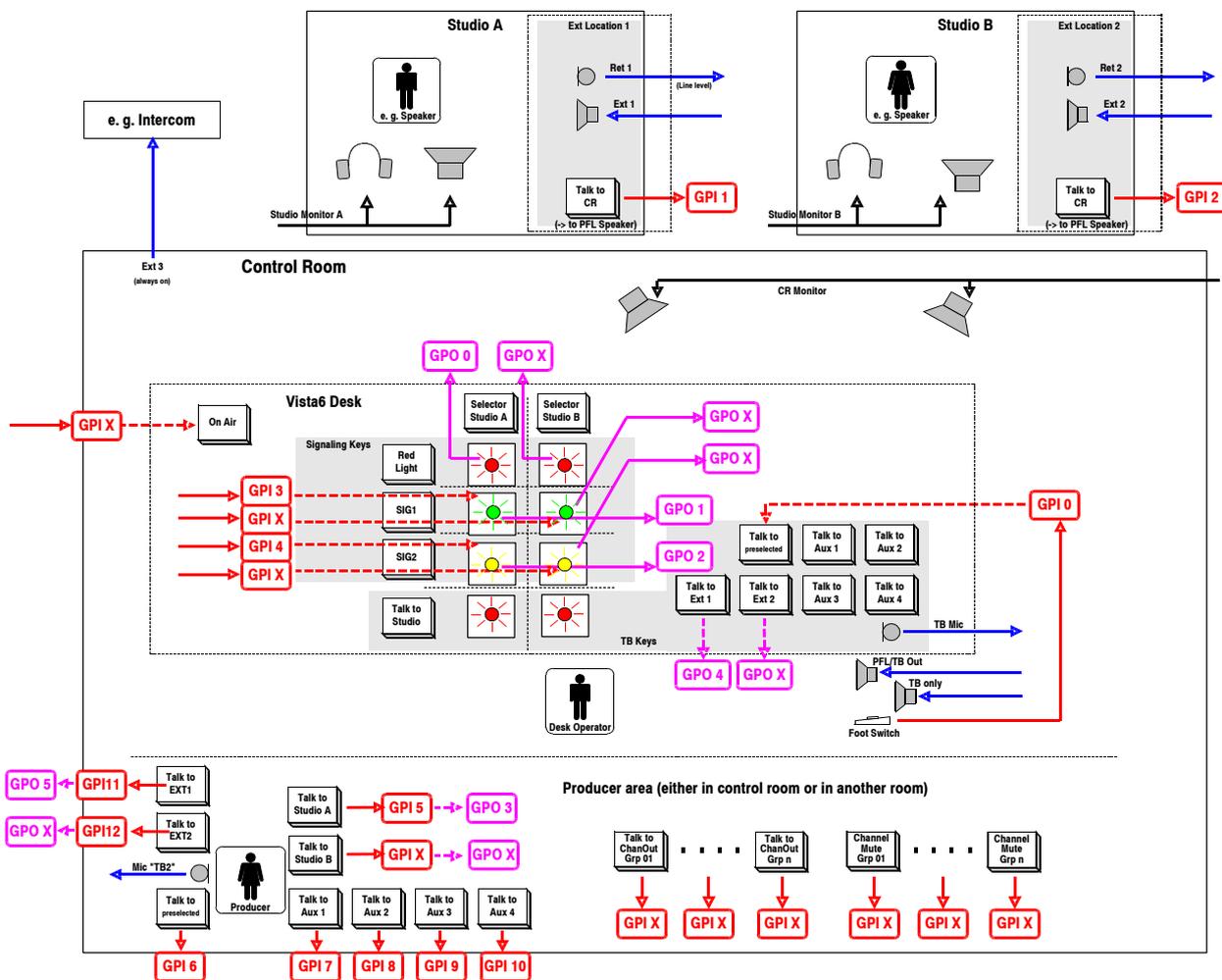
7.1 Monitoring

The monitoring is controlled in the analog domain. Some fixed AES/EBU outputs are utilized from the Vista 6 DSP Core and are fed to converters built into the monitoring frame. 5.1 monitoring is standard on the Vista 6, with 7.1 and Dolby EX monitoring as an option. The control room monitoring section on the control surface provides control of up to three different speaker systems (two multi-channel and one stereo) and up to 76 source selectors. All internal digital sources can be assigned to any of

the source selector keys as mono, stereo or multichannel sources. Two optional studio monitors are configurable in the same way as the CR monitoring section, although only one stereo loudspeaker pair is supported. A headphone socket is also available on the control surface for use in the control room.

7.2 Talkback and Signaling

An extensive talkback system is implemented within the Vista 6. The talkback source can either be the desk operator microphone or an external producer microphone. Several destinations, such as buses, direct outs, auxiliaries, groups and master outputs are available on block. The block diagram below shows the talkback and signaling possibilities of the Vista 6.



Legend :

- GPI 1 = GPI already configured in *.ini files
- GPO 2 = GPO already configured in *.ini files
- GPI X = GPI prepared to use, but not assigned to signaling card. This can be configured in *.ini files
- GPO X = GPO prepared to use, but not assigned to signaling card. This can be configured in *.ini files

Relations:

- Dim CR and PFL** if: Anytalk in Desk OR (Anytalk Producer AND Producer located in CR) [DimLock is activated]
- Dim StudioA** if: Ret1 Talk to CR AND Ret1 located in Studio [DimLock is activated]
- Dim StudioB** if: Ret2 Talk to CR AND Ret2 located in Studio [DimLock is activated]
- Cut StudioA** if: (Faderstart of source which is assigned to StudioA) OR (StudioA is OnAir)
- Cut StudioB** if: (Faderstart of source which is assigned to StudioB) OR (StudioB is OnAir)
- Cut Ext1** if: StudioA Cut AND Ret1 located in Studio
- Cut Ext2** if: StudioB Cut AND Ret2 located in Studio
- Sig1 LED StudioA** = Sig1OutStudioA OR Sig1InStudioA
- Sig2 LED StudioA** = Sig2OutStudioA OR Sig2InStudioA
- RedLight StudioA** = StudioA Cut OR RedlightStudioA manual
- TalkLED StudioA** = DeskTalktoStudioA OR Ret1TalktoCR
- Sig1 LED StudioB** = Sig1OutStudioB OR Sig1InStudioB
- Sig2 LED StudioB** = Sig2OutStudioB OR Sig2InStudioB
- RedLight StudioB** = StudioB Cut OR RedlightStudioB manual
- TalkLED StudioB** = DeskTalktoStudioB OR Ret2TalktoCR
- OnAirMode** = OnAirKey OR GPI

8 Graphic Controller (GC)

The Graphic Controller is used for operating all mixing console functions that extend the console's functionality.

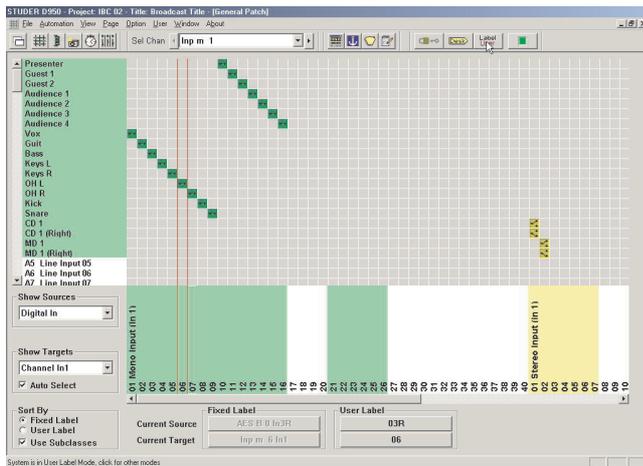
Specifically the Graphic Controller's extended functions include:

- General and channel-specific router control (defining the order of processing elements within a channel)
- Recall and management of snapshots
- Saving of desk clipboards
- Assignment of the DSP channels to the fader strips
- Tone generator and metering control
- Production and title management
- System administration

Various display windows and dialog boxes logically group the individual functions. Visual elements are optimized for simple and intuitive operation.

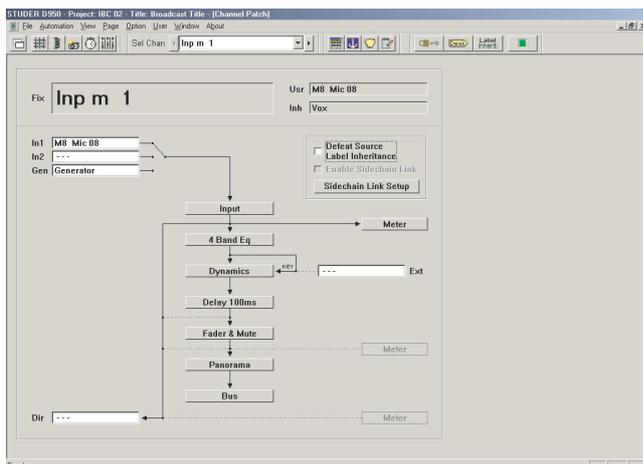
8.1 General Patch

With the easy-to-understand and color-coded General Patch page the setup of router cross points is dramatically simplified:



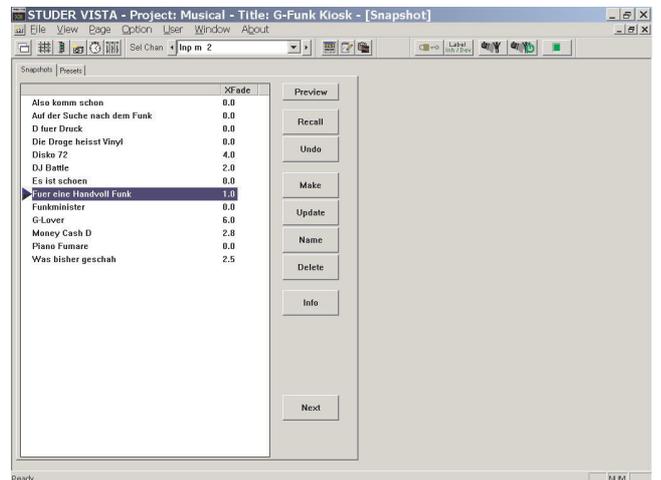
8.2 Channel Patch

The Channel Patch page for defining the order of processing elements within a channel:



8.3 Snapshots

Via the Snapshot window, all mixing console parameters can be stored and recalled using mouse clicks (some of the most important functions are also available on dedicated keys on Vista's control bay):



Extensive Snapshot Functionality: The Snapshot Preview mode is entered by clicking on the Preview button. Whichever Snapshot the user selects, pink elements within all Viconics® elements will show any difference between the current console settings and the settings within the previewed Snapshot. It is still possible to recall any Snapshot by all mechanisms described above.

When pressing any of the four dedicated SNAPSHOT 1...4 keys without pressing the RECALL SNAPSHOT key at the same time, that corresponding snapshot is automatically only previewed. It is also possible to preview it only momentarily by pressing e.g. the SNAPSHOT 1 key for a longer period; the key will be lit as long as the preview is active.

Partial Snapshots: It is possible to create snapshots that do not affect the whole console when recalled. They are called "partial snapshots". When recalling such a snapshot, only some of the channels — or even only some of their elements — are being changed on the desk. Partial snapshots are being marked with a checkmark next to the crossfade time.

Snapshot Filtering (Static Automation): At the time of recalling a snapshot, there might be a filter active, leaving some console settings unchanged upon recall of any snapshot. Each console parameter can therefore be in one of the following states:

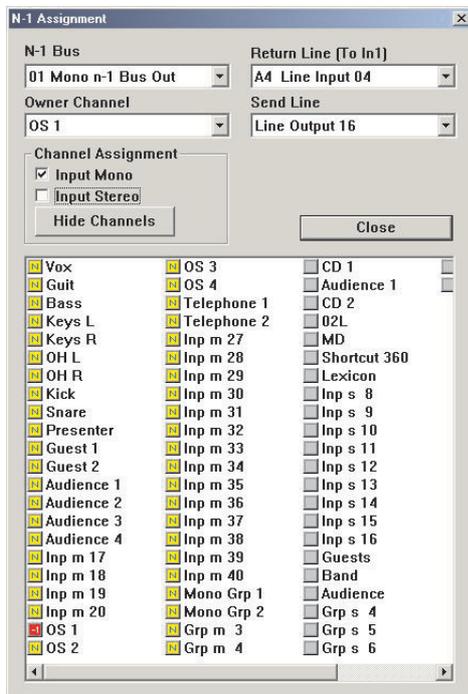
- Isolate (= part of the filter); this parameter will not be influenced by snapshot recalls. Indication: yellow "I".
- Read (= not filtered); this parameter may be changed upon recall of any snapshots. Indication: none.
- Trim (= offsets applied to snapshot recalls); any changes since the last snapshot recall will be applied in a relative way to upcoming snapshot recalls. Indication: red "T".

There are several different ways to define the parameters to be filtered out.

8.4 N-I Assignment

The N-I system for the Vista 6 is based on a busing system. Each outside source or telephone hybrid can be assigned to be the owner of one bus. Any channel on the console can be routed to these N-I buses (except the owner to the relevant bus). All control of overall level, N-I on/off, and talkback are provided on the channel itself. In addition, a bus owner splits its input meter to show the return level at the left-hand side and the N-I send at the right-hand side of the meter. It is advised that every outside source is routed to a separate channel and appears on the console. Any number of mono and/or stereo N-I buses can be configured in a Session Configuration.

The N-I Assignment window allows setup and configuration of the N-I structure:



9 Options

Below are shown the possible options for the Vista 6 which are not delivered as standard with the console:

9.1 Desk Options

Pre-wired Channel Bay

A “blank” Channel Bay in the space where in the future a normal Channel Bay can be installed. All the necessary wiring is fitted, and the power supply capacity is specified for the additional Channel Bay.

Pre-wired Channel Bays must be part of the initial system order. Mechanical frames cannot be added to a mixing console later.



TFT Bay (15" VGA Screen)

A 15" VGA screen built into a blank Channel Bay panel. Any external workstation may be connected and thus be integrated into the surface of the mixing console (resolution: 1024 × 768).

Pre-wired Channel Bays must be part of the initial order of the system. Mechanical frames cannot be added to a mixing console later.



Remote Bay

The Remote Bay provides exactly the same functionality of the Channel Bay as the Vista 6 main console but can be placed remotely from the main console, thus enhancing the flexibility of the console in many applications.

Must be part of the initial system order. Only available with consoles having 30 or more faders.



Dual Joysticks

Two motorized joysticks to make surround panning very intuitive. Each joystick may be assigned to a single channel or to temporary gangs of several channels.

Can also be added to the desk after the initial order.



Near-Field Speaker Mounting Kit

A small platform (300 × 200 mm) for e.g. a near-field speaker or a table top meter. Can only be mounted at the junction of two mechanical bays. It is not possible to mount this kit at the very left or very right of the desk.

Can be ordered at any time, part no. 1.949.061.00



Script Tray, Large

An elegantly designed script tray with four wheels. It is the width of a Channel Bay and provides additional space to put the engineer's paperwork or even a remote control device.

Can be ordered at any time, part no. 1.949.060.00



Script Tray, Small

Same as above, but for the lower (fader) section of the control surface.

Can be ordered at any time, part no. 1.949.063.00



9.2 System Options

MasterSync Unit

The Vista system normally works with the internal sync signal of the core. If there is a requirement for a standalone sync unit, the D19 MasterSync can be ordered.

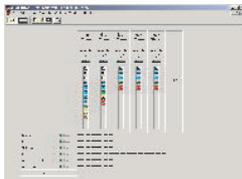
Can be ordered at any time, part no. 60.681.01000



Configuration Editor SW

The Configuration Editor software enables the standard mixing console configurations to be adapted to suit individual customer requirements.

Can be ordered at any time, part no. 1.950.395.24



19" Rack

Selecting this option ensures the supply of a rack with sufficient space for all the rack equipment of the Vista system including any additional options ordered.

Must be part of the initial system order.



Redundant Power Supplies

- For the desk surface
- For the DSP core
- For the monitoring frame
- For the D21m I/O system

For the desk and the monitoring frame, the redundant power supply must be part of the initial order. For the DSP core and the D21m units, the redundant power supply can also be added later.



UPS (Uninterruptible Power Supply)

For the control surface only.

Must be part of the initial system order.

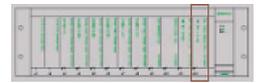


9.3 Monitoring Options

GPI/GPO Cards

GPI opto input card with 24 inputs. GPO relay output card with 16 outputs.

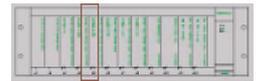
The monitoring frame is pre-wired for all optional cards. Optional cards can be fitted at any time.



CR Monitor Option for 7.1 or Dolby EX

Additional Monitor Group Selector card for two additional channels of CR monitoring.

The monitoring frame is pre-wired for all optional cards. Optional cards can be fitted at any time.

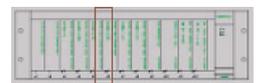


Studio Monitor Options

One or two additional Monitor Group Selector card(s), for one or two stereo studio monitors.

If two studio monitors are required, control room monitoring is reduced to 6 channels max. (i.e., 7.1 format CR monitoring is possible only with one single studio monitor).

The monitoring frame is pre-wired for all optional cards. Optional cards can be fitted at any time.

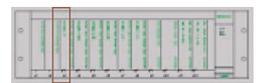


Additional D/A Converter Card

Additional D/A converter card with ten channels of 24 Bit/96 kHz capable converters.

Only applicable for consoles with no more than ten monitoring channels in use. Larger systems have the second D/A converter card fitted as standard.

The monitoring frame is pre-wired for all optional cards. Optional cards can be fitted at any time.



9.4 Monitor Metering Options

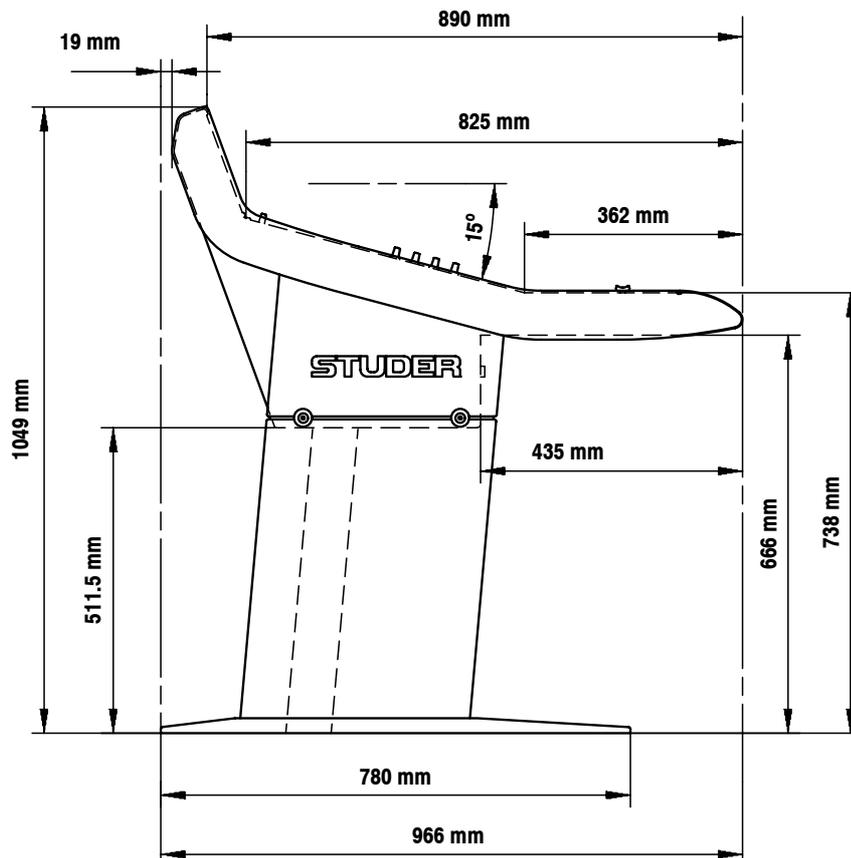
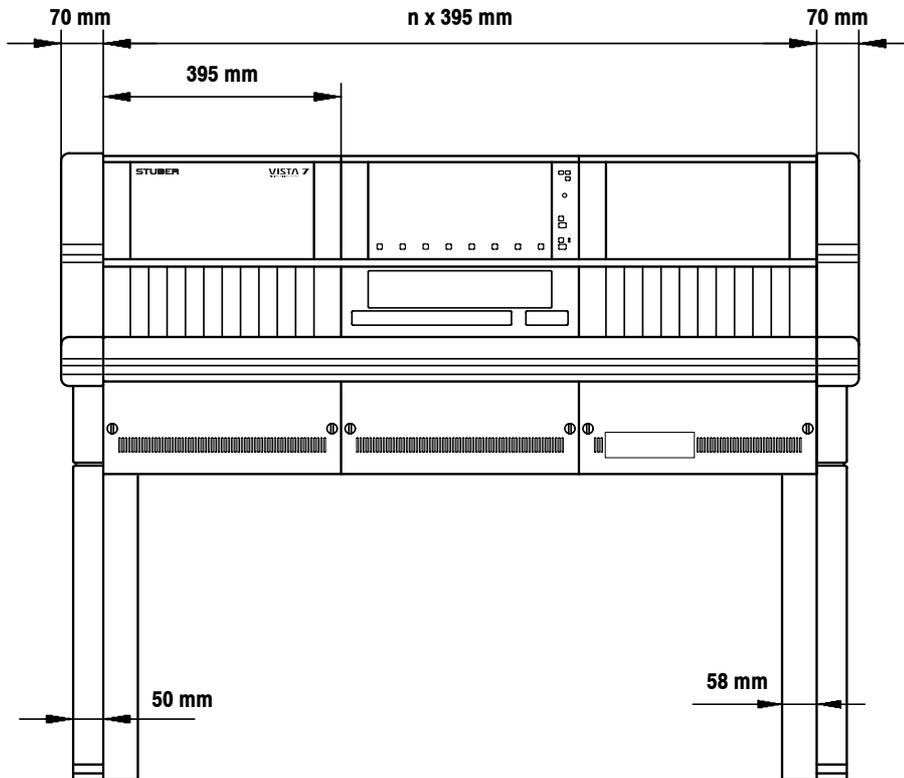
As an alternative to the standard meters (eight assignable VFD bargraph meters with gain reduction display), eight units of space for a selection of 190 mm meter modules is available. A choice of third-party analog or digital meters can be ordered as well as all 190 mm Studer meters. (The picture just shows one example out of many different configuration possibilities.)

Must be part of the initial system order.

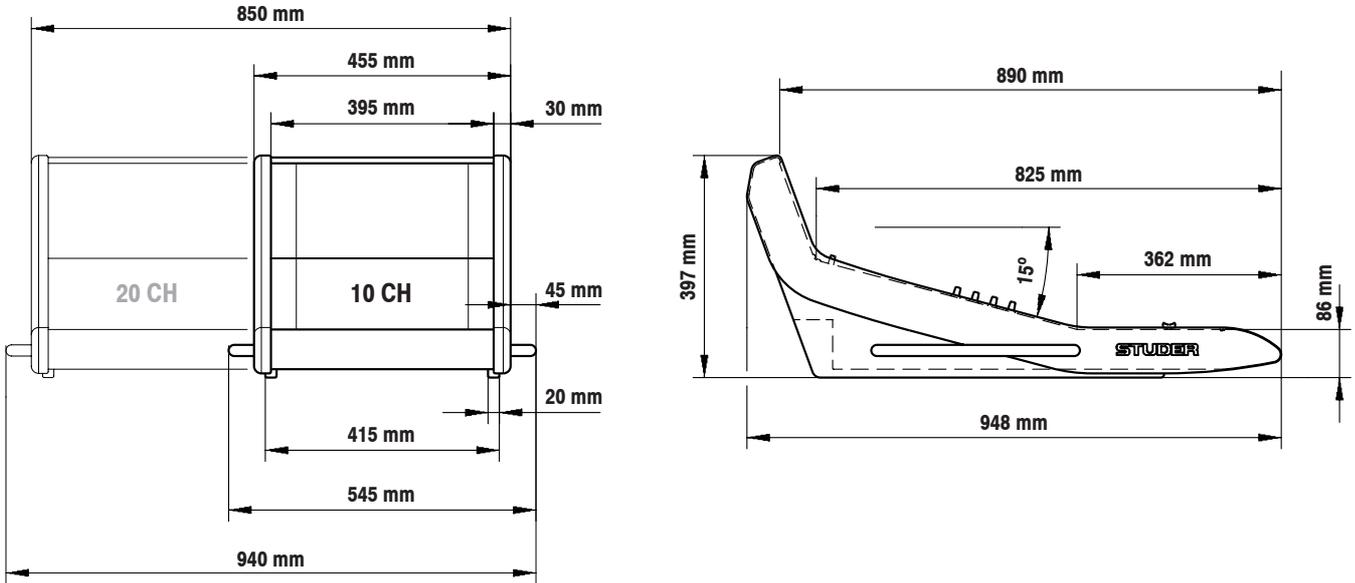


10 Technical Specifications

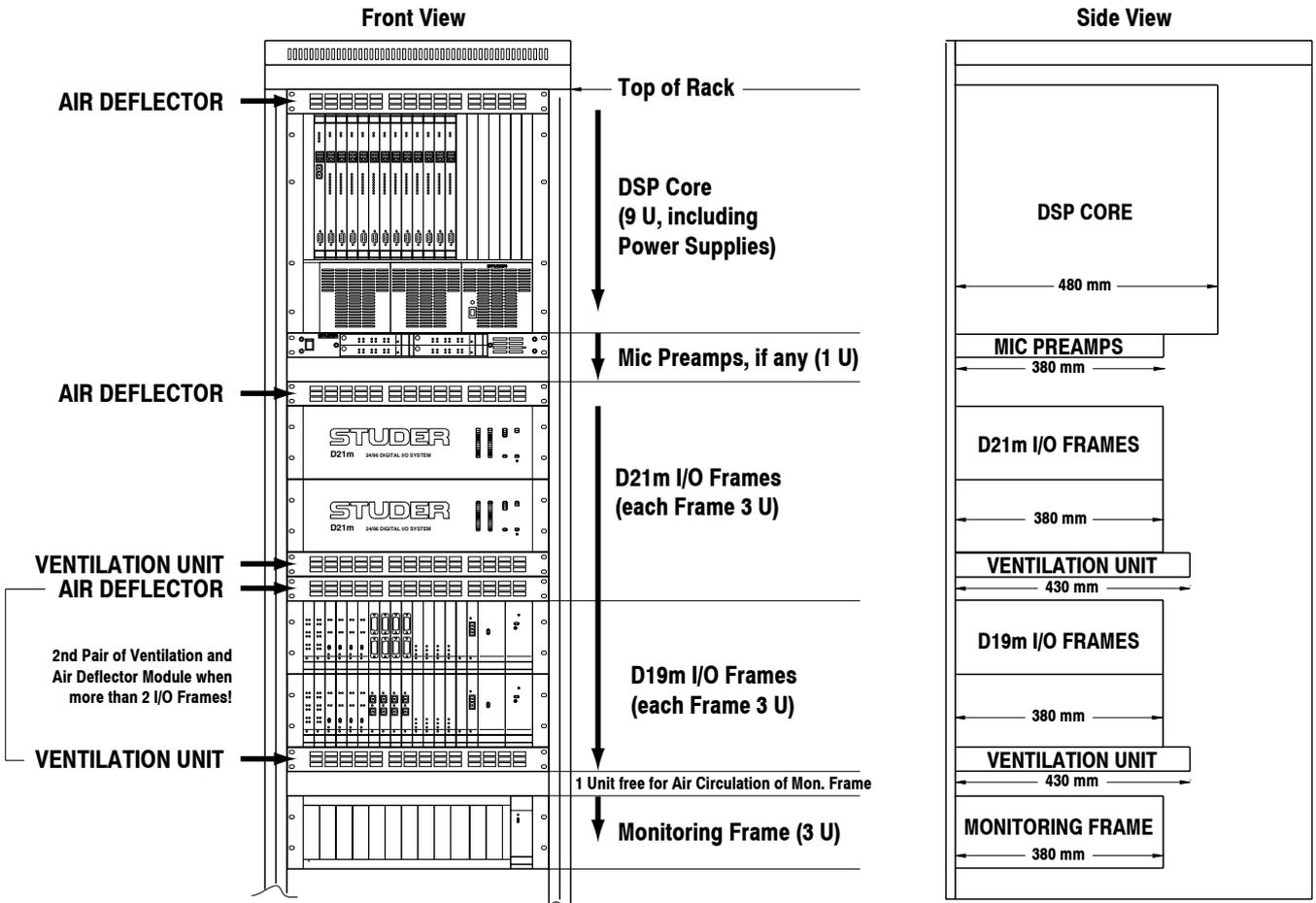
10.1 Control Surface Dimensions



10.2 Remote Bay Dimensions

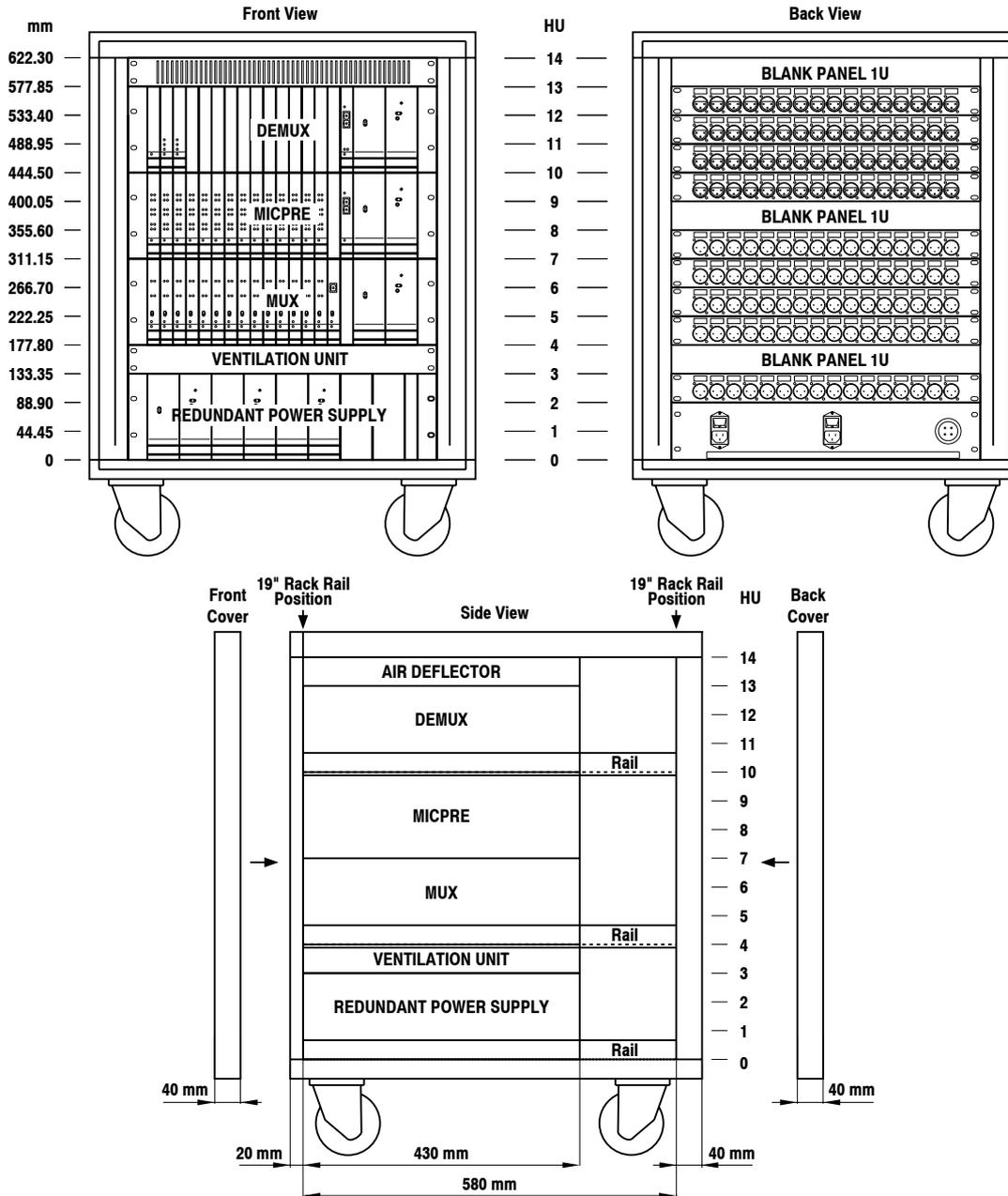


10.3 DSP Rack/Monitoring/D21m/D19m Dimensions



(Dimensions do not include Connectors. For Siemens Connectors, add 50 mm)

10.4 Stage Box Dimensions (Typical Example)



10.5 Power Consumption

Please note that the exact power requirements for a system will depend on the size and the amount of I/O required and therefore will vary from system to system.

Typical Figures:

Control Surface

30 faders operating desk:	260 W
40 faders:	320 W
50 faders:	380 W
60 faders:	440 W
70 faders:	500 W

DSP Rack

DSP Frame w. 18 processing cards:	650 W
Monitoring Frame:	100 W
D21m I/O Frames:	150 W per frame

10.6 I/O Specifications

10.6.1 D21m System



D21m Mic/Line Pre-Amp Card

4 Analog inputs, electronically balanced, with A/D converters (line/mic sensitivity, gain setting in 1 dB steps, low-cut filter and 48 V phantom power switchable); **4 analog split outputs, electronically balanced.**

Input sensitivity (for full scale/FS)	-60...+26 dBu
Input impedance	1.8 k Ω
Split out gain (input sensitivity -60...0 dBu)	0 dB
(input sensitivity 0...26 dBu)	-20 dB
Split out impedance	50 Ω
Equivalent input noise (R_i 200 Ω , max. gain)	-124 dBu
Crosstalk	< -110 dB
Frequency response (30 Hz...20 kHz)	-0.2 dB
THD&N (35 Hz...20 kHz, -1 dB _{F5} , input level fixed)	< -97 dB _{F5}
(1 kHz, -30 dB _{F5} , input level fixed)	< -111 dB _{F5}
(min. gain, inp. level 6 dBu)	< -107 dB _{F5}
Low-cut filter	75 Hz / 12 dB/oct.
Current consumption (7 V)	0.2 A
(± 15 V)	0.25 A
Operating temperature	0...40° C



D21m Line Input Card

8 Analog inputs, transformer-balanced

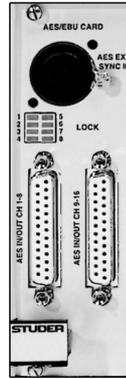
Input level (for full scale/FS)	7...26 dBu (adjustable), or 15 or 24 dBu (fixed, jumper-selectable)
Input impedance	> 10 k Ω
Frequency response (20 Hz...20 kHz)	-0.2 dB
THD&N (35 Hz...20 kHz, -1 dB _{F5} input level fixed)	< -97 dB _{F5}
(1 kHz, -30 dB _{F5} input level fixed)	< -111 dB _{F5}
Crosstalk (1 kHz)	< -110 dB
Current consumption (7 V)	0.42 A
(± 15 V)	0.1 A
Operating temperature	0...40° C



D21m Line Output Card

8 Analog outputs, electronically balanced

Output level (for full scale/FS)	7...26 dBu (adjustable), or 15 or 24 dBu (fixed, jumper-selectable)
Output impedance	40 Ω
Min. load (at +24 dBu)	600 Ω
Frequency response (20 Hz...20 kHz)	-0.2 dB
THD&N (20 Hz...20 kHz, -1 dB _{F5} input level fixed)	< -90 dB _{F5}
(1 kHz, -30 dB _{F5} input level fixed)	< -110 dB _{F5}
Crosstalk (1 kHz)	< -110 dB
Current consumption (7 V)	0.23 A
(± 15 V)	0.25 A
Operating temperature	0...40° C



D21m AES/EBU Input/Output Card

16 Input and output channels; 16 asynchronous sampling rate converters (SFC)* (selectable output sampling rates: 96 kHz, 48 kHz, 44.1 kHz, or external reference signal; input SFCs can be bypassed individually, output SFCs can be bypassed in groups of four; output dither selectable for each output).

Output impedance	110 Ω
Output level (into 110 Ω)	5 V
Sampling rate	32...108 kHz
Current consumption (3.3 V)	0.6 A
(5 V)	0.65 A
Operating temperature	0...40° C

* **Note:** D21m AES/EBU I/O cards are also available without SFCs, or with input SFCs only.



D21m ADAT Input/Output Card

2 x 8 Input and output channels on optical Toslink connectors (96 kHz, 48 kHz, or 44.1 kHz operation; long-distance version optional).

Max. distance (standard version)	5 m
(optional long-distance version)	1000 m
Current consumption (3.3 V)	0.1 A
(5 V)	0.2 A
Operating temperature	0...40° C



D21m Analog Insert Card

4 Analog inserts, electronically balanced (for use with adjacent D21m Mic/Line Pre-Amp Card)

In/out level (for full scale/FS)	15 dBu (6 or 24 dBu w. soldering jumper)
Input impedance	10 k Ω
Output impedance	50 Ω
Current consumption (± 15 V)	0.05 A
Operating temperature	0...40° C

10.6.2 DI9m System



DI9m Mic/Line Pre-Amp Card
4 Analog inputs, transformer-balanced (gain setting in 1 dB steps, 48 V phantom power switchable); **4 analog line and 4 analog split outputs, electronically balanced.**

Input sensitivity (for +15 dBu nom. out)
 Mic/Line -60...0 dBu/-10...+24 dBu

Input impedance Mic/Line > 1 kΩ/> 2 kΩ

Equiv. mic input noise (Ri 200 Ω, max. gain) -124 dBu

Crosstalk
 Mic (30 dB gain, 1 kHz) < -110 dB
 (30 dB gain, 15 kHz) < -90 dB
 Line (0 dB gain, 1 kHz) < -110 dB
 (0 dB gain, 15 kHz) < -90 dB

Output level
 Line 15 dBu ±3 dB
 Split, Mic/Line +26 dB/+1 dB

Output impedance Line/Split 50 Ω

Frequ. response
 Line (30 Hz...20 kHz) ±0.1 dB
 Mic (30 Hz...20 kHz) ±0.4 dB

THD&N
 Line (0 dB gain, +15 dBu in) < 95 dB_{FS}
 Mic (30 dB gain, -20 dBu in) < 95 dB_{FS}
 (60 dB gain, -54 dBu in) < 70 dB_{FS}

CMRR
 Mic (35 dB gain, 1 kHz) > 85 dB
 (35 dB gain, 15 kHz) > 75 dB
 Line (0 dB gain, 1 kHz) > 85 dB
 (0 dB gain, 15 kHz) > 70 dB

Low-cut filter 75 Hz / 12 dB/oct., switchable

Soft clipping switchable for all inputs in common

Current consumption (5 V) 0.25 A
 (+15 V/-15 V) 0.30 A/0.25 A

Operating temperature 0...40° C



DI9m Line Input Card
8 Analog inputs, transformer-balanced

Input level (for full scale/FS) 0...26 dBu (adjustable), or 15 or 21 dBu (fixed, jumper-selectable)

Input impedance > 10 kΩ

Frequency response (20 Hz...20 kHz) -0.2 dB

THD&N (30 Hz...20 kHz, -1 dB_{FS}, input level fixed) < -97 dB_{FS}
 (1 kHz, -30 dB_{FS}, input level fixed) < -108 dB_{FS}

Crosstalk (1 kHz) < -110 dB

Sync input AES/EBU DARS

Sync input impedance 110 Ω

Sync input sensitivity min. 0.2 V

Sync source (sync input or bus) jumper-selectable

Output sampling rate 28...55 kHz w. ext. sync, 44.1 or 48 kHz w. int. sync (standalone)

Output impedance 110 Ω

Output level (into 110 Ω) 5 V

Channel status Stereo or two-channel (jumper-selectable)

Current consumption (5 V) 0.4 A
 (+15 V/-15 V) 0.25 A/0.06 A

Operating temperature 0...40° C



DI9m Line Output Card
8 Analog outputs, electronically balanced

Output level (for full scale/FS) 0...26 dBu (adjustable), or 15 or 21 dBu (fixed, jumper-selectable)

Output impedance < 40 Ω

Min. load (at +24 dBu) 300 Ω

Frequency response 30 Hz...20 kHz -0.2 dB

THD&N (20 Hz...20 kHz, -1 dB_{FS}, input level fixed) < -87 dB_{FS}
 (1 kHz, -30 dB_{FS}, input level fixed) < -110 dB_{FS}

Crosstalk (1 kHz) < -110 dB

Digital Inputs (Sync) AES/EBU DARS

Input impedance 110 Ω

Input sensitivity min. 0.2 V

Sync source (sync input or bus) jumper-selectable

Input sampling rate 30...54 kHz
 Standalone, w. AES/EBU in: 30...54 kHz, or 60...108 kHz

Input impedance 110 Ω

Channel status Stereo or two-channel (jumper-selectable)

Current consumption (5 V) 0.2 A
 (+15 V/-15 V) 0.25 A/0.15 A

Operating temperature 0...40° C



DI9m AES/EBU Input Card
Converts 2 AES/EBU inputs to 4 TDM bus time slots and to 2 additional AES/EBU outputs*, with SFC*.

Input impedance 110 Ω

Input sensitivity min. 0.2 V

Input sampling rate 28...55 kHz

Output impedance 110 Ω

Output level (into 110 Ω) 4 V

Dynamic range (20 Hz...20 kHz, -60 dB_{FS}) > 120 dB

THD&N (20 Hz...20 kHz, 0 dB_{FS}) < -94 dB_{FS}
 (1 kHz, 0 dB_{FS}, f_{s in}/f_{s out} = 0.7...1.4) < -110 dB_{FS}

Audio delay 3 ms

Max. f_{s in}/f_{s out} ratio 1:0.5...1:2

Current consumption (5 V) 0.55 A

Operating temperature 0...40° C

* Note: DI9m AES/EBU input cards are also available without the additional AES/EBU outputs and without the SFCs.



DI9m AES/EBU Output Card
Converts 4 TDM bus time slots to 2 AES/EBU outputs or to 4 AES/EBU mono outputs.

Output impedance 110 Ω

Output level (into 110 Ω) 4 V

Sampling rate 28...55 kHz

Current consumption (5 V) 0.4 A

Operating temperature 0...40° C



D19m ADAT Input Card

Converts 2 optical 8-channel ADAT inputs to 16 TDM bus time slots. Sync by the TDM bus frame signal, by an optional AES/EBU sync input, or from the optical input. (*Option: Conversion to 8 AES/EBU stereo outputs for standalone applications).

Sync input impedance 110 Ω
Sync input sensitivity min. 0.2 V
Sync input sampling rate 28...55 kHz
***AES/EBU output impedance** 110 Ω
***AES/EBU output level (into 110 Ω)** 5 V
Current consumption (5 V) 1.1 A
Operating temperature 0...40° C



D19m ADAT Output Card

Converts 16 TDM bus time slots to 2 8-channel ADAT outputs. (*Option: 8 AES/EBU stereo inputs for standalone applications).

***AES/EBU / sync input impedance** 110 Ω
***AES/EBU / sync input sensitivity** min. 0.2 V
Sync input sampling rate 28...55 kHz
Optical output wavelength 660 nm
Max. optical cable length (plastic fibre) 3 m
Current consumption (5 V) 0.4 A
Operating temperature 0...40° C



D19m TDIF Input Card

Converts 2 8-channel TDIF inputs to 16 TDM bus time slots. Sync by the TDM bus frame signal or by an optional AES/EBU sync input. (*Option: Conversion to 8 AES/EBU stereo outputs for standalone applications).

TDIF inputs according to TDIF specifications
Sync input impedance 110 Ω
Sync input sensitivity min. 0.2 V
Sync input sampling rate 28...55 kHz
***AES/EBU output impedance** 110 Ω
***AES/EBU output level (into 110 Ω)** 5 V
Current consumption (5 V) 1.1 A
Operating temperature 0...40° C



D19m TDIF Output Card

Converts 16 TDM bus time slots to 2 8-channel TDIF outputs. (*Option: 8 AES/EBU stereo inputs for standalone applications).

***AES/EBU / sync input impedance** 110 Ω
***AES/EBU / sync input sensitivity** min. 0.2 V
Sync input sampling rate 28...55 kHz
TDIF outputs according to TDIF specifications
Current consumption (5 V) 0.35 A
Operating temperature 0...40° C



D19m MADI Input Card

Converts a MADI frame to 56 TDM bus time slots. Versions for coaxial and optical (glass fibre) MADI input available. Sync by the received sync signal, from the MADI signal (optional), or in standalone mode by a backplane signal.

Optical MADI in:
Connector SC
Max. cable length 500 m
Coaxial MADI in:
Connector BNC, 75 Ω
Max. cable length 50 m
AES/EBU sync input impedance 110 Ω
AES/EBU sync input sensitivity min. 0.2 V
AES/EBU output impedance 110 Ω
AES/EBU output level (into 110 Ω) 5 V
Current consumption (5 V) 0.8 A
Operating temperature 0...40° C



D19m MADI Output Card

Converts 56 TDM bus time slots to one MADI frame. Versions for coaxial and optical (glass fibre) MADI output as well as with redundant optical MADI output available. Sync by the received sync signal. (Time slot allocation externally controlled via RS485).

Optical MADI out:
Connector SC
Max. cable length 500 m
Coaxial MADI out:
Connector BNC, 75 Ω
Max. cable length 50 m
AES/EBU sync in/out impedance 110 Ω
AES/EBU sync in sensitivity min. 0.2 V
AES/EBU sync output level (into 110 Ω) 5 V
Internal reference frequency 44.1/48 kHz
Clock accuracy ±1 ppm
Current consumption (5 V) 0.8 A
Operating temperature 0...40° C

II Glossary of Terms

CGM

Control group master; a non-audio master channel which is used to offer VCA or moving fader functionality to a selected group of channels.

DSP

Digital signal processing.

DSP Configuration

The definition of the console in terms of channels, processing within the channels, buses, and I/O.

GC

Console graphic controller for controlling routing, snapshots, console administration, etc.

GPIO

General purpose inputs and outputs. These are used for signaling and control of external equipment. Certain console parameters can also be controlled from external devices using these GPIOs.

I/O

Inputs/outputs.

MADI

Multi-channel audio digital interface.

SFC

Sampling frequency converter (or sample rate converter).

Vistonics®

Patented Studer technology for mounting 40 rotary encoders and switches on a TFT screen.

I2 Vista 6 Desk Layout Example (with three Channel Bays)

