The Channel Input contains two completely independent preamp stages. Both feature electronically balanced inputs with very different but complimentary sonic qualities. The default preamp uses SSL’s acclaimed Super Analogue circuitry to provide an extremely low noise, extended bandwidth front end with the minimum of signal colouration. The ‘Drive In’ switch routes the input signal to a completely different preamp featuring the VHD™ (variable harmonic drive) circuits developed for the E-Signature strip. VHD™ emulates the characteristics of a classic valve front end but with option to tailor the harmonic mix when the preamp is overdriven via the Drive Control. In conjunction with the PAD and HI-Z input impedance option VHD™ can provide audible valve style warmth to a mic signal or aggressive tonal shaping to existing DAW tracks. A centrally controlled Input Flip function reverses the routing of the input and Monitor returns so that the DAW is automatically routed to the input preamp without requiring external patching.

The Channel section provides final gain trim and polarity inversion for the centrally selected channel source. Available input options are the output of the Input preamp, the balanced line level DAW return, or the channels associated track bus for patch tree subgroups. FILT to INP locks the high and low pass filters to the channel source.

The Dynamics section contains a compressor section identical to that of the 9000K series and also found in SSL’s Logic FX range of outboard processing units. In normal use, the compressors true r.m.s side chain and over easy soft ratio function provide a very transparent compression action even with large amounts of gain reduction. The fast attack option offers the classic SSL compressor sound normally associated with its use on drum and percussion sources. Selecting Peak (PK) mode defeats the over easy soft ratio, modifies the release curve and attack times, and unleashes a far more aggressive sounding compressor ideal for more radical sonic shaping.

Normal the Dynamics section precedes the Equaliser and filters. Post EQ places the processing after the eq.

A new side chain monitor option routes the sidechain signal to the console AFL bus simplifying set up when either an external key input or the filters to side chain option is in use.

The Gate/Expander section is a new variant of the classic 4000 series three control design. It features the choice of a steep gate or gentle expander slope, with optional fast attack. HOLD offers a choice of the original variable release control or a new variable hold time mode with a fixed release time.

Continuously variable High and Low pass filters with individual true bypass for each section. Normally fed with the output of the eq section, dedicated switching located in the Channel section places the filters directly after the channel input. S/CH routes the filter section to the dynamics sidechain.

Four band parametric equaliser based on the classic ‘Black Knob’ eq developed for the original 4000E series console. The bell option for the shelving bands provides a fixed bandwidth parametric mode for each section.

G-Eq mode introduces steeper shelving curves with a controlled amount of under-shoot at the turnover frequency, together with the classic gain/bandwidth interaction for the mid band sections which was a key characteristic of the original G-Series eq.

The balanced insert point has local switching to select a post eq signal instead of the default channel input signal. Additional centre section switching can place the insert post dynamics but pre eq providing complete flexibility in the order of internal and external signal processing routing. Processing order is graphically displayed on the channel TFT screen.

Normally the channel output receives the post fader, post channel mute, signal. The SRC SEL selects the alternate channel output feeds - Channel Input, Pre Fader or the active EFX send. Current source is shown on the channel TFT status display.

The Stereo Cue section routes a Pre Fader signal to a choice of two alternate cue busses, A or B. Additional source options are the Post fader channel feed, the Channel direct output, or the Channel ALT Input. The latter is defined as whichever input is not assigned to the main channel path and allows the stereo cue to be used as an additional line input. ON/OFF is switching is via a push push switch mounted on the output level control.

Four mono send controls feed the console Fix busses. These receive either the Post fader or Channel output signal. ON/OFF is switching is via a push push switch mounted on the send level control.

Either the Stereo Cue or any of the 4 mono sends can be nominated as an EFX send and in turn routed either to the 24 console track busses or the Channel Output.

When the Channel Output is sourced from either Input or Pre Fader, SPLIT offers a new approach to In-Line tracking on an analogue console by returning the DAW output back into the channel path just after the Channel Output pick off point. By using input or Pre as teh channel output source, clean or processed signals are routed to the DAW, with the option to use the remaining channel processing and routing to monitor the DAW return in the analogue domain.

The Channel strip contains a fully featured 5.1 panning section for both the main console busses as well as the 24 Track busses. With the most complete implementation found on any analogue console, the feature set includes a dedicated LFE send and fully variable centre divergence to vary the phantom/hard centre mix for sounds located in the front channels.
Duality Channel Strip

### CHANNEL INPUT (CHIP)

Two inputs, one dedicated as a line-level DIW return, the other as the Channel Input. Normally the Channel Input feeds the variable gain input amplifier, and the DIW return is only used temporarily. However, the input SLP switch reverses the routing so that the DIW return can be processed by the Channel Input. The input amplifier is biased to the circuit developed for the Classic Channel with the addition of a high impedance (10k) input coupled to changing the impedance of the DIW input (PA). The Channel Input can be replaced by the output of one of the 24 Track Mix busses. The DIW Return can be routed to the Channel Input via the DIW Return/Line switch, the DIW Return is selected as an input to the Channel as per previous SSL large format console. The DIW Return/Line switch allows the DIW Return to be passed to the DIW Return (ch) and changes over switch for reducing the level when the line section is being used for recording. FILTER means the filter section in the Channel Path prior to the DIW Monitor change over (SPLIT MODE).

### CHANNEL PROCESSING

Three processing blocks. A Balanced Send/Return loop for inserting outboard FX. A Dynamics section similar to the AWS but with a choice of variable Release or variable limit for the Equalizer/Gate. There is an external Key input and side chain monitor point. A 4 band EQ switches with the option to use the filter section in the Channel or Input. A Dynamics side chain monitor point for variations of the Pre-fader send or the Post-fader send. Using the Post-fader send and the selected EQ, it is possible to achieve a variable Hold for the Dynamics side chain monitor and routes the DAW return to the DAW input for recording. Additional harmonic saturation can be used by dialing in varying degrees of harmonic saturation. Alternatively, the ability to dial in varying degrees of harmonic saturation can be used by dialing in varying degrees of harmonic saturation.

### CHANNEL LEVEL AND BUS ROUTING

A balanced MDAC gain element allows per AWS 900 feeding into a 5.1 panning section with fully variable center channel divergence. Default is for stereo panning with 3 pairs of busses. The 24 Track Bus normally routes the mono Post-Fader output. TRACK route the L/R pair output to Odd/Even pairs, 1:1 mode enables the full panning options form both main mix busses and the Track Busses for stereo if TRACK is on. The EFX routing replaces the normal feed to the Track busses and defeats the Track Bus 5.1 panning inside when active.

### CHANNEL SENDS

A Stereo send to a choice of busses, CUE A or B or Mono Sends. The stereo send can source a Pre-Fader or Pre-Channel Filter (ch) return or receive the current CHOP source. There is a further source to the Stereo Send which is the Alt-Term input (i.e., whatever input is not feeding the channel path when the ACTIVE switch is not active). In conjunction with the Master Cue A and B bus mapping to Main LR busses, additional mono sources can be routed into the console via the stereo channel send. The 4 Mono FX Sends can source either post-fader or CHOP return. EFX sends allow a single send to be routed into the CHOP A, B, C, 1, 2, 3, 4, 5 busses. EFX sends can be used as Mono sends. The Duality Channel Logic tear down the feedback paths by preventing EFX send sourced from the CHOP if EFX or CHOP is active.

### PRODUCT OVERVIEW

Duality is a new multi-channel console for Music Recording and Mixing in the DAW based production environments. Incorporating full SSL control protocols on the AWS 9000 and AWS 9000K, the channel is a wholly new channel sub-module in the 25 year old-revolutionary journey of the SSL Master Studio System.

The channel strip is designed for working in conjunction with a multichannel DAW. Instead of reining in the new architecture of previous generation SSL consoles, a new SSL Master topology has been introduced which provides the equivalent of SSL's operation without the complexity of separate channel sections in a DAW.

In DAW based production, there is no longer the fixed track limitations of conventional tape based recording. This means that most sources are recorded and monitored paths.

### Channel Level and Bus Routing

- **DIW Return/Line**: Allows the DIW Return to be passed to the DIW Return (ch) and changes over switch for reducing the level when the line section is being used for recording.
- **FILTER**: Means the filter section in the Channel Path prior to the DIW Monitor change over (SPLIT MODE).
- **Dynamics Side**: Chain monitoring function and routes the DAW return into the Channel path post the Split point.
- **Dynamics Key**: Mutually exclusive. One of the two switches controls the Side chain monitor function and routes the DAW return into the Channel path post the Split point.

### Channel Metering

- **Default meter source**: The channel input post the input PAD. The channel input can be replaced by the output of one of the 24 Track Mix busses.
- **Channel Level and Bus Routing**: Contains settings for routing the channel signal to the DAW input, either the Channel Fader signal or the Channel Output signal as a source.
- **Split Point**: Leaving the analogue eq available in the DAW return.

### Channel Processing

- **Three processing blocks**: Balanced Send/Return loop for inserting outboard FX. A Dynamics section similar to the AWS but with a choice of variable Release or variable limit for the Equalizer/Gate.
- **Equalizer/Gate**: There is an external Key input and side chain monitor point.
- **4 Band EQ**: Switches with the option to use the filter section in the Channel or Input.
- **Dynamics Side**: Mutually exclusive. One of the two switches controls the Side chain monitor function and routes the DAW return into the Channel path post the Split point.

### Channel Sends

- **A Stereo send**: Allows a choice of busses, CUE A or B or Mono Sends. The stereo send can source a Pre-Fader or Pre-Channel Filter return or receive the current CHOP source.
Master Level Controls
Admist the selected first pair output controls to the main 2 Console Mix Buses. The three rows of the array control the level of the mix buses. Mix buses, each 6:2 (mix & solo). The Tack busses are performed by the four groups on each console bus. Each mix has two selectable inputs, plus the output of the stereo monitor feeds. Stereo level trim and monitoring for the two stereo bus channels. Mono trim and AFL for the four mono cues busses.

Stereo Foldback Outputs
Two identical sections FR/BR A & B bus. Stereo mix matrices are dedicated row keys on the selected bus. MIN BKE
dedicated row keys on the right of the Indicator matrix in conjunction with the AFL/SEL key to stereo mix A, B, and C.

Channel Select
In conjunction with the local channel select (CSS) switches, provides central access to channel functions by the key with the flip of a switch. The A/B channel is controlled by the KEY A/B switch. The A/B channel is controlled by the KEY A/B switch. The assignement and routing of the channel to the Mix busses pairs, Mix A, Mix B, and Mix C. The selected channel is operated in conjunction with the AFL/SEL key to stereo mix A, B, and C.

Communications
Individual momentary Talkback keys to the external Talkback outputs and the selected Talkback outputs. Selective talkback output is available on the Talkback and the General Talkback System. Talkback outputs and the selected Talkback output to the external Talkback system. Talkback outputs and the selected Talkback output to the external Talkback system.

Aux Bus Masters
Stereo level trim and monitoring for the two stereo Mix busses. A, B, Mono trim and AFL for the four mono cue busses.

Stereo Return Channels
Each channel accepts a stereo line signal which can be routed to the main console mix bus with full control of level, panning, and independent stereo return channels. Both stereo return channels can be assigned to the three main Mixes and Buses. The two channels can be assigned to the three main Mixes and Buses. The two channels can be assigned to the three main Mixes and Buses.