

# Solid State Logic Aysis Air Plus Digital Broadcast Console



Model shown: AA+ Mobile 4848

**Aysis Air Plus** is a digital broadcast console designed specifically for on air production. It combines operational simplicity with the total reliability essential in a broadcast environment.

Familiar in layout, the console control surface provides dedicated controls and indicators making it ideal for real-time applications. With a choice of compact frame sizes, **Aysis Air Plus** is suitable for both studio and mobile vehicle installations.

The console's all-digital signal path guarantees signal integrity and resolution. Over 250 inputs and outputs may be accessed as a stand alone system, or the console can be networked with other SSL products to expand the I/O capabilities and provide resource sharing.

All console parameters may be stored and recalled, enabling a full system reset in a fraction of the time required for an analogue console, and increasing productivity from the installation.

#### Key Features:

- All-digital signal path
- Familiar control surface
- Compact size
- Comprehensive snapshot facilities using the totally new HS Processor, with instant reset
- Integrated digital routing matrix
- Full surround sound capability
- INFO faders provide at-a-glance confirmation of grouping and system status
- Integral TFT flat screen allows ultra-wide viewing angles and external XVGA input
- Proven field performance

### 96 Input Channels

**Aysis Air Plus** provides up to 96 input channels depending on its physical frame size (16 to 96 fader). Each bay can support two 'banks' of channels providing access to 16 fully featured channel strips. Channels may be switched individually between the upper and lower layers, or the master 'Flip' button may be used to invert all channels instantly.

### 'Mobile' configuration

Where the largest number of inputs are required in a restricted space, such as in a vehicle, an optional 'Mobile' configuration is available. Here, a reduced size master section shortens the console by 400mm (16") enabling 48 channel faders to be accommodated across the width of a standard truck.

### Dedicated Signal Processing

**Aysis Air Plus** includes all the digital signal processing required to support full functionality across all channels of the console. Dedicated hardware for each processing function, combined with SSL's proprietary design and real-time operating system, ensures maximum reliability, with backup PSU redundancy included in the package for both control surface and processor.

Dedicated channel processing functions include, as standard: gain, phase reverse, a 4-band parametric equaliser, 3-band dynamics section, 8 mono (configurable as stereo) auxiliary sends, plus stereo and surround panning control.

### Fast Access to Inputs and Outputs

The console's integral routing matrix enables any microphone, line level analogue, or digital input to be routed to any channel on the console or directly to any output. Channel input and mix bus selections are made directly from the channel strip, ensuring that show setup times are fast and efficient, with last minute changes easily accommodated. All source, bus and output routes are stored as part of a 'Project', with the ability to reset a range of channels in real time using Input Patches. Thus, the console may switch between multiple sets of microphones during the show, enabling **Aysis Air Plus** to deal with many more sources than its analogue equivalent.

### Remote Controlled Mic/Line Inputs

The console's microphone amplifier units contain both the analogue input stage and digital conversion. This enables the unit(s) to be located

remotely from the control room or mobile, and connected back to the console's processor using either coaxial cable (up to 100m) or fibre links (up to 2km). All analogue parameters, including mic gain, a switchable high pass filter and limiter, are remotely controlled directly from the channel strip.

For studios, this makes for fast, clean and efficient installation. In a mobile installation, microphone stageboxes can be placed close to the audio source with a single fibre connection running back to the truck. Hence, the grounding issues, quality loss and rigging problems of long analogue multi-core cable systems become a thing of the past.

### Mono and Stereo Channels

Channels may be specified as mono or stereo in bays of eight. Additional features on a stereo channel include individual left and right source assignment, dedicated stereo metering and stereo width control. Stereo image control and flexible MS decoding is standard.

Uniquely, two dedicated channel buttons provide the ability to mono the left, right or both inputs quickly for dealing with unpredictable stereo or two-channel sources.

### Audio Subgroups

In stereo mode, **Aysis Air Plus** provides four stereo audio subgroups, each with direct outputs, insert points, stereo dynamics processing and dedicated faders. Programme keys assign each subgroup to the main stereo programme mix.

In surround mode, two subgroup faders are utilised for the 5.1 mix to give separate 5-channel and subwoofer level control. A separate group provides a stereo mix which can be used independently or may be mixed into the main 5.1 output.

### Control Grouping

Any channel fader on the **Aysis Air Plus** console may be grouped to any other channel fader, or to one of the eight dedicated master faders in the centre section of the console. Groups may be nested to create submaster faders, and all AFL and PFL selections follow the fader grouping.

### Snapshot Reset

Up to 64 Snapshot memories per project version may be used to store and recall console parameters. Snapshot recall may be global or selective, providing the ability to isolate areas of

the console, such as presenter or audience microphones, from the reset.

#### **Mix Minuses**

**Aysis Air Plus** has 20 Mix Minus outputs for generating N-1 feeds. Each output has switchable tone and talkback, and can be routed, via the console's integrated router, to single or multiple analogue and digital destinations. (See also Clean Feed Buses option)

#### **Multi-format Monitoring and Metering**

**Aysis Air Plus** has full facilities for stereo, LCRS and 5.1 monitoring, including insertion points for matrix encoders and decoders. In addition, stereo Mini and stereo studio loudspeaker feeds are provided with independent source selection and level controls. The 'Audition' monitoring function available for the mini loudspeakers provides rapid access to monitor any external source from the console's central routing panel.

As standard, four analogue VU master meters and a comprehensive phase scope with both analogue and AES/EBU digital inputs are fitted to the centre section. For alternative meter requirements, please see the options listed on Page 6. In addition, eight LCD bargraph meters may be switched to display any internal or external source.

#### **Stereo PFL and AFL**

Dedicated channel and subgroup PFL and AFL buttons allow channels and groups to be monitored pre or post fade. The listen bus is stereo, such that channels may be monitored pre fade, and pan positions set before opening the fader. AFL signals are normally presented on the main loudspeaker output, whilst PFL interrupts the minis.

#### **Broadcast Signalling**

**Aysis Air Plus** includes as standard 56 GPI inputs and outputs. One of the outputs may be defined to operate a studio red light system, such that a relay is closed when defined microphone sources are routed to air. Other GPI applications include fader open machine starts and cue lights.

GPI inputs may control any part of the console using the integral macro control system.

#### **Tone and Talkback**

**Aysis Air Plus** comes with an inbuilt mono oscillator, talkback microphone and reverse talkback speaker, amplifier and level control.

Primary functions are switched from the dedicated communications panel, with switching to additional outputs handled from the console's central routing panel. A feed of this talkback is available for external communication systems together with GPI contact closures for control.

#### **Main Options:**

##### **Audio Compensation Delays**

This option provides 48 full quality audio delays. These may be assigned to individual channels to compensate for lip sync errors in incoming video feeds. They may also be assigned to groups to compensate for video delays in the studio system (eg: DVE and virtual studio processing). Each delay can be adjusted between 0-1300ms.

##### **48 Clean Feed Buses**

48 clean feed buses can be added to **Aysis Air Plus** to handle complex programming requirements. Channels may be freely assigned to any number of clean feed buses, with switchable talkback and tone to each output. A built-in utility provides a rapid setup of mix-minus routing, fully modifiable.

##### **Switcher Interface**

The switcher interface option enables SSL's routing matrix to be controlled by an external interface conforming to the widely accepted Pro-Bel General Switcher Protocol. Up to 256 analogue, digital or console sources may be routed to up to 128 **Aysis Air Plus** outputs, via the interface. Applications include audio-follow-video switching and remote monitoring positions.

##### **SSL Quality Assurance**

SSL's purpose built headquarters are equipped with the latest production technology and mandate rigorous test and Q/A procedures, ensuring that every component meets demanding specifications. Facilities naturally include a purpose-built EMC test cell to confirm electromagnetic emissions and immunity.

Factory acceptance tests, on-site commissioning, and operational training from our own product specialists are all included with the **Aysis Air Plus** package. This is backed up by SSL's customer support hotline providing both technical and operational support.

**Functional Specification:**

**Input Stage**

Main/Alternate Input selection  
Phase Reverse (for L & R on stereo channels)  
Digital Gain Trim  $\pm 20$ dB

**Metering per channel**

Dedicated Input Level meter  
Switchable LCD bargraph meter  
Dynamics Input Level & Gain reduction/expansion

**Dynamics section per channel**

Lower Band	Gate
Middle Band	Compressor/Limiter/Expander
Upper Band	Compressor/Limiter/Expander
Thresholds	$-\infty$ to $-5$ dBfs
Ratios	1:1 to $\infty$ :1 (Comp/Limiting) 1:1 to 1:2 (Expansion)
Attack Time	0.1ms to 997ms
Decay Time	10ms to 9970ms
Feedforward Delay	0 to 999 samples

**48 Assignable Inserts**

Analogue or digital insertion to channel processing

**EQ section per channel**

Gain (all bands)	$\pm 20$ dB
HF Type:	<u>Shelf</u> (Parametric or Filter)
Freq. range:	1.3 to 17kHz
Q:	0.5 to 1.5
HMF Type:	<u>Parametric</u> (Shelf or Filter)
Freq. range:	455Hz to 7.5kHz
Q:	0.4 to 20
LMF Type:	<u>Parametric</u> (Shelf or Filter)
Freq. range:	127Hz to 2.8kHz
Q:	0.4 to 20
LF Type:	<u>Shelf</u> (Parametric or Filter)
Freq. range:	15Hz to 480Hz
Q:	0.5 to 1.5

**Auxiliary sends per channel**

8 mono sends configurable as stereo  
Individual On/off and Pre/Post fader selection

**Pan controls per channel**

Left/Right Pan  
Front/Back Pan  
Divergence 0% to 100%  
Width (stereo channels)  $+100\%$  to  $-100\%$   
MS decode  $-\infty$  to  $+6$ dB S-component  
Mono L, Mono R or Mono Both (stereo channels)

**AFL and PFL per channel**

Dedicated Stereo AFL and PFL monitoring

**Outputs**

4 Stereo Audio Subgroup buses featuring

- dedicated fader, AFL and PFL control
- assignable insert point
- dynamics processing
- main programme assignment
- TB & Tone switching

6-channel Programme Output featuring

- Prog L+C+R and Prog Ls+Rs folddowns

20 Mix Minus Outputs featuring

- TB & Tone control

48 assignable Direct Outputs featuring

- TB & Tone control

**Monitoring**

6-channel Main Monitor Output

- Matrix Encode/Decoder Insert Point

Stereo Mini LS Output  
Stereo SLS Output  
Stereo AFL & PFL Bus Output

**Centre Section Metering**

2-channel MSD2000 Phasescope  
4 mechanical VU meters (Left, Right, Centre, Surround)  
8 LCD meters with programmable source selection

**Centre Section Control**

8 Dedicated Control Group Master Faders  
8 Dedicated Aux Master Controls  
Talkback control and return talkback speaker  
Oscillator  
Snapshot, Project and Master menu control  
Built-in RGB Monitor  
Tablet & Keyboard

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**Standard Utilities**

**PSU Redundancy**

Console	Dual PSU supply per bay
Processor	Dual PSU supply
Hub Router	Dual PSU supply (if fitted)

**SSL RelayBox**

56 GPI Inputs	Triggered by 5 to 30V D.C.
56 GPI Outputs	Can switch loads up to 1A

**Serial Machine Control**

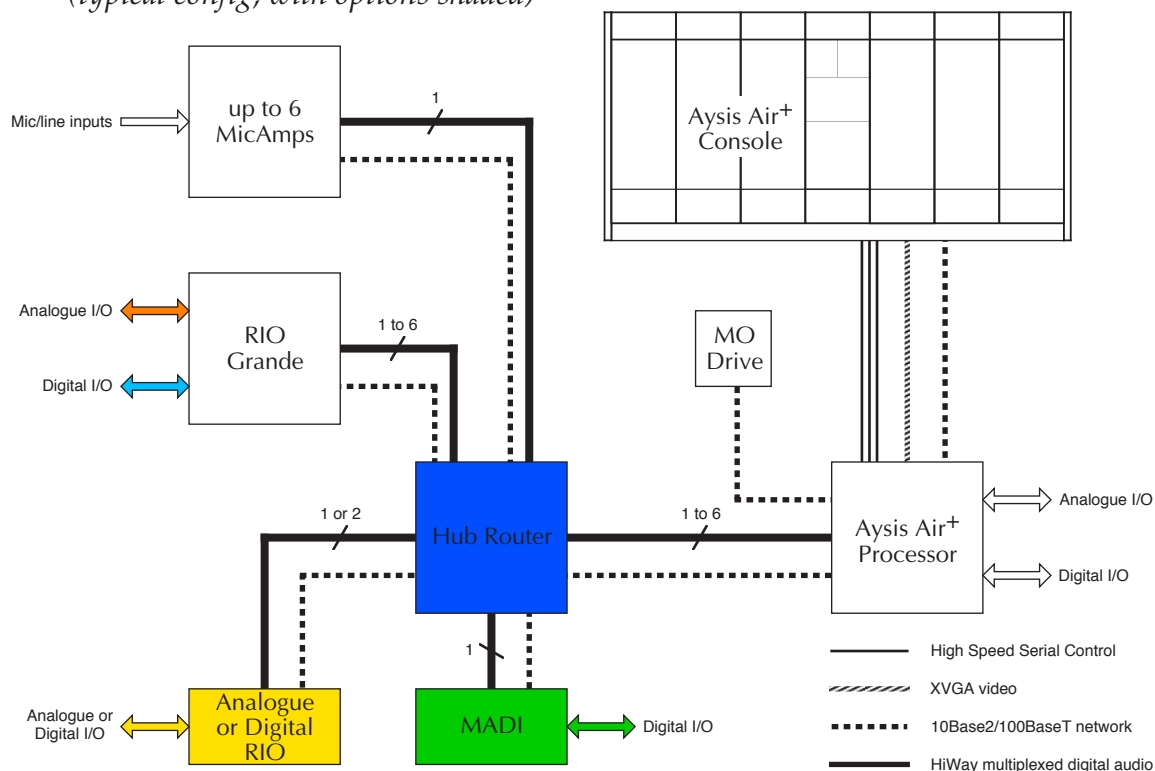
4 Serial Ports	Sony (RS422) protocol
Connectors	4 x 9-pin 'D'-Type

**Project Data Archive**

Super MO Magneto-Optical Drive  
Super Disk 120MB Floppy Drive

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Example Aysis Air+ Block Diagram  
(typical config, with options shaded)



**Input/Output Specification:**

**Audio Inputs and Outputs**

**Mic/Line Inputs**

Connector(s)	XLR-F Inputs
Input range	0dBfs = -57dBu to +13dBu (+33dBu with Pad)
Impedance	8.4kΩ or 1.2kΩ
Phantom power	48V switchable
High pass filter	Out, 16Hz or 60Hz
Protection Limiter	Out, In > -6dBfs
Resolution	20bit

**Analogue Line Level Inputs**

Connector(s)	DL
Input trim	0dBfs = +15 to 24dBu
Resolution	24bit

**Analogue Line Level Outputs**

Connector(s)	DL
Output trim	0dBfs = +15 to 24dBu
Resolution	24bit

**Digital AES/EBU Inputs**

Connector(s)	DL 75Ω BNC (option)
Input sample rates	30kHz to 56kHz
Resolution	24-bit (20-bit with SRC)

**Digital AES/EBU Outputs**

Connector(s)	DL
Output sample rates	32, 44.1 or 48kHz or referenced to i/p
Resolution	24-bit (20-bit with SRC)

**Reference Inputs**

**Video Sync**

Black-and-Burst	0.3V (±6dB) pk/pk
OR Composite Video Sync	2V (±6dB) pk/pk
Connector	75Ω BNC

(Note: SSL's DL connectors are high grade shielded, zero insertion-force multipole connectors suitable for both analogue and 110Ω balanced digital audio.)

**Options:**

**Console**

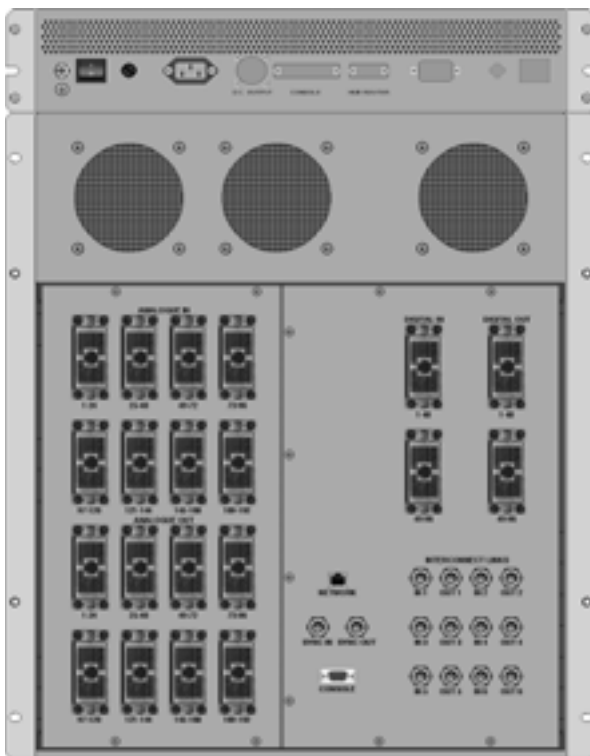
- Extra 8-channel bay (mono or stereo)
- Extra 8-channel prewired bay
- Producer's table
- 7, 12 or 17° angled sections:



- Rolling Script Tray
- Infra-red Keyboard
- Split points for shipping/installation
- Centre section metering
- Power supply redundancy

**Additional Inputs and Outputs**

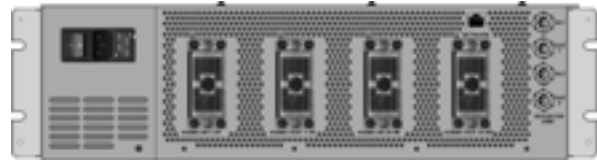
- **RIO Grande 14U modular I/O chassis**, accepts up to 192 analogue I/O and 96 digital I/O, front loading for easy expansion and servicing (*model 72673511, or with optional power supply redundancy, model 72673521*):



*rear panel shown*

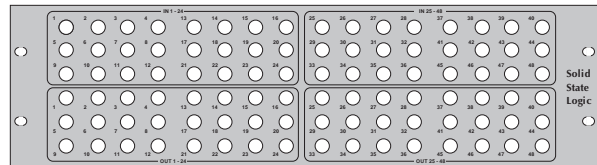
- 16-channel 24-bit analogue I/O card for RIO Grande (*model 626286X1*)

- 24-channel Sample Rate Converting AES/EBU card for RIO and RIO Grande (*model 626242X2*)
- **RIO 3U Modular I/O chassis**, accepts up to 48 analogue I/O or 96 digital I/O (*model 72663515*):



*rear panel shown*

- 8-channel 24-bit analogue card for RIO (*model 626284X2*)
- **75Ω BNC Interface 3U**, provides connectors for Processor, RIO, or RIO Grande AES/EBU inputs and outputs (*48 pair model 626657XK*):



*front panel shown*

- **Mic Amp 2U**, 12-channel remote analogue inputs (*model 72663583*):



*front and rear panel shown*

- **MADI tape m/c interface 2U** with integral RelayBox (*model 72664961*):



*rear panel shown*

- **SDIF-2 SRC tape m/c interface 2U** with integral RelayBox (*model 72664941*):



*rear panel shown*

- **SDIF-2 interface** 2U (*model 72664911*)
- **DC 'StageBox' PSU** 7U, DC power for 3 items (MicAmp, FreeWay) providing fanless, dual redundant power for StageBox installations (*model 626662X4*):



*front panel shown*

- Remote DC powered Mic Amp stagebox
- Remote DC powered RIO stagebox (8 or 16-channel)
- **FreeWay** 1U fibre optic interface (*model 72664521*):



*rear and front panel shown*

- **Hub Router** 10U modular digital audio router, accepts up to 6 cards providing 4 HiWay ports each (*model 72663831*):



*rear panel shown*

- Extra 2 HiWay ports fitted to processor rack (4 fitted as standard, 6 maximum, *model 626650XT*)

### Centre Section Metering

Options include:

- 8-channel phasescope
- BBC PPM
- EBU
- Nordic Bargraph
- DIN Bargraph

Standard meters included with an AA3232 are 4 VUs and a 2-channel phasescope:



### Additional Processing

48 Clean Feed Buses

48 Assignable Delays

### Communications

- Remote talkback
- Custom patch and monitor rack
- Headphone amplifier

### Miscellaneous

- **Keypad** remote function switcher (*model 72666811*).

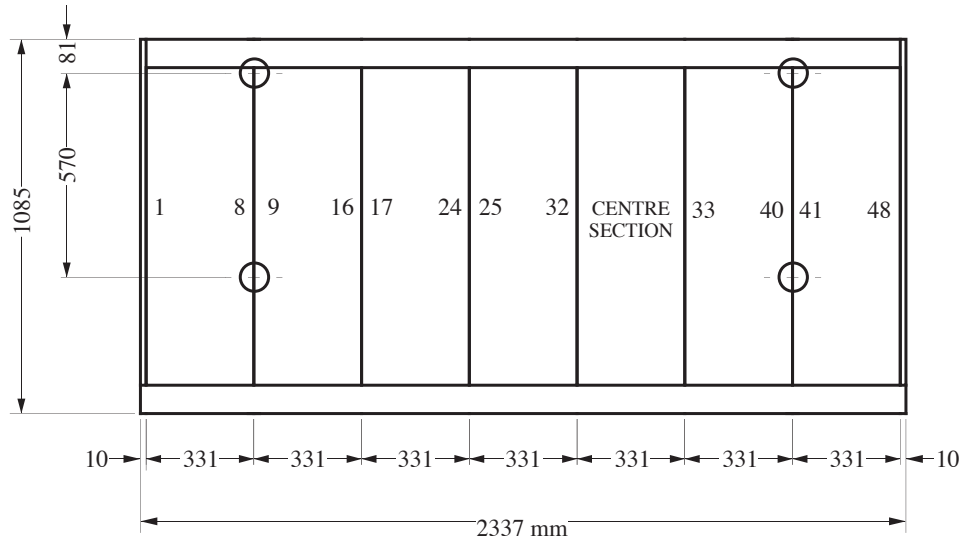


- **RelayBox** 56 GPI inputs and outputs (*model 72664921*):



*rear panel shown*

# Aysis Air Plus



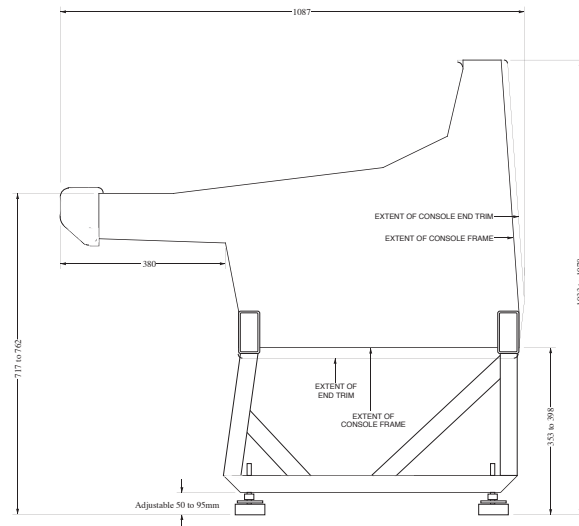
## Physical Specification:

### Console:

Max Height	1078mm (42.4")
Max. Width (see above)	2244mm (88.4")
Max. Depth	1085mm (42.7")
Weight, (AA+Mobile 48 fader)	340kg (750lbs)
Power Consumption (100-240VAC, typ.)	
Continuous	<1.3kW
Peak	<2kW

### Processor Rack:

Height	14U
Max. Depth	475mm (18.7")
Weight	35kg (77lbs)
Power Consumption (100-240VAC)	
Continuous	<300W
Peak	<400W



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