Neve 8816
16:2 Summing Mixer
User Manual

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The 8816 is a 16:2 summing mixer with comprehensive input, mixing and monitoring functions, with VU meters, remix and Recall as standard.
In addition to the standard 8816 there is also a digital outputs option and an optional fader pack.

Health & Safety Notice

For your own safety and for the protection of others, please observe the following safety instructions:

- Read these instructions.
- Heed all safety warnings.
- Do not use near water.
- Clean only with a dry cloth.
- Do not install near heat sources.
- Do not block ventilation openings.
- Protect the power cord.
- Only use accessories specified by the manufacturer.
- Unplug when unused for long periods of time.
- Refer all servicing to qualified personnel only.

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Table of Contents

Health & Safety Notice....2
System Requirements....4
Customer Service....4

Introduction....5
Note on Headroom and Levels....5

Application Scenarios....6
Recording....6
Recording with the optional Fader Pack....7
Overdubbing....8
Mixing....9
Mixing with Fader Pack....10
Mastering....11
Live Recording....12
Sub Mixer....13

Controls....14
Channel Strip....14
Level Control....14
Pan Control....14
Cue Control Button....14
Channel Cut /Solo button....15
Cue Section....15
2T to Cue....15
Headphone Mon....15
Headphone Control....15
Headphone Jack....15

Master Section....16
Alt Spk....16
iMon....16
Talkback Level....16
Talkback Microphone....16
INS MIX 16
IMR Level Control....16
INS....16
2TR MIX....17
2TR Level Control....17
Monitor Selections....17
Mon Level....18
Sum....18
Width Control....18
<W> button....18
Mix Level....18
Analogue / Digital overload indication....18
Metering....19
Power Switch....19

Options....20
Fader Pack Option....20
ADC Option....21
Sampling Frequency....21
Single / Double Rate AES Output....21
DSD....22

Rear Panel Connectors and Controls....23
Line Output....23
Line Input....23
Talkback Foot Switch....23
USB....23
Rear Panel Controls....23
Earth Lift Switch....23
Slave Bus Switch....23
ADC Option....24
ADC L & R Insert....24
AES Sync....24
WCLK In....24
WCLK Out....24
AES Out....24
DSD L and R....24
75 Ohm WCLK....24
SDIF 2/3....24

Firmware Upgrades....25
Selecting a File for Transfer....25
File Downloading....26
Corrupted or Old Firmware....26

Physical & Technical Information....27
Dimensions....27
Rack Mounting and Cooling....27
Power Requirements....27
Mains Supply....27

System Settings....28
Setting the Headroom on the optional A to D card....28
Monitor Source pre/post ADC Insert....28
Fader Pack Jumper Settings....29
Multiple 8816 / 8804....30

Unit Specifications....31

Connectors....32

Recall Software Installation....35
Installation for PC....35
Installation for Mac....37
New Versions of Recall Software for Mac....37

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Appendix: A3 Signal Flow Block Diagrams
8816
Optional Fader Pack control
Optional ADC board installation

System Requirements

The 8816 may be used as a standalone unit.

If you wish to use the units Recall facility, it should be connected directly to the computer or via a powered USB hub but **not** via a passive USB hub.

If you wish to use the Neve Recall software to store and reload user configurations you must have one of the following supported operating systems:

PC

- Windows 2000, Service Pack 4 or later
- Windows XP, Service Pack 3 or later
- Vista, Service Pack 1 or later

Mac

- Mac OS 10.3.9 or later

Customer Service

In the unlikely event that this unit should malfunction or develop a fault, then please register the fault details on our website by clicking the link below.

You will also need to enter the unit's serial number when you do this, so please have this to hand.

http://www.ams-neve.info/crm/fault_report.html

Once the fault details have been registered, one of our technical support team will be in touch via email.

This link should also be used for further operational or technical help, or any general enquiry about the unit.

Introduction



The 8816 is an extremely versatile 16:2 summing mixer, which can produce the highest possible recording and mixing performances in any format using revered Neve analogue designs including transformer mixing.

With comprehensive input, mixing and monitoring functions, 8816 can upgrade a DAW to a professional mixing facility.

Not only does the unit provide quite unbelievable analogue facilities but also has remix and Recall as standard.

In addition to the superb facilities offered as standard on the 8816 there are two options, digital outputs and a fader pack.

ADC Output
World class A to Ds with sampling rates of up to 192kHz and DSD outputs.

Analogue insert points are provided ahead of the ADCs that couple the ultimate analogue circuitry with superior digital conversion making the unit an obvious choice for complete integration with a DAW.

NOTE: The ADC option requires internal fitting. Please consult your local Neve dealer.



Fader Pack
16 Input Faders with Cut / Solo controls and post fade direct outputs plus 2 Master Faders give the engineer fine level control with a traditional feel.

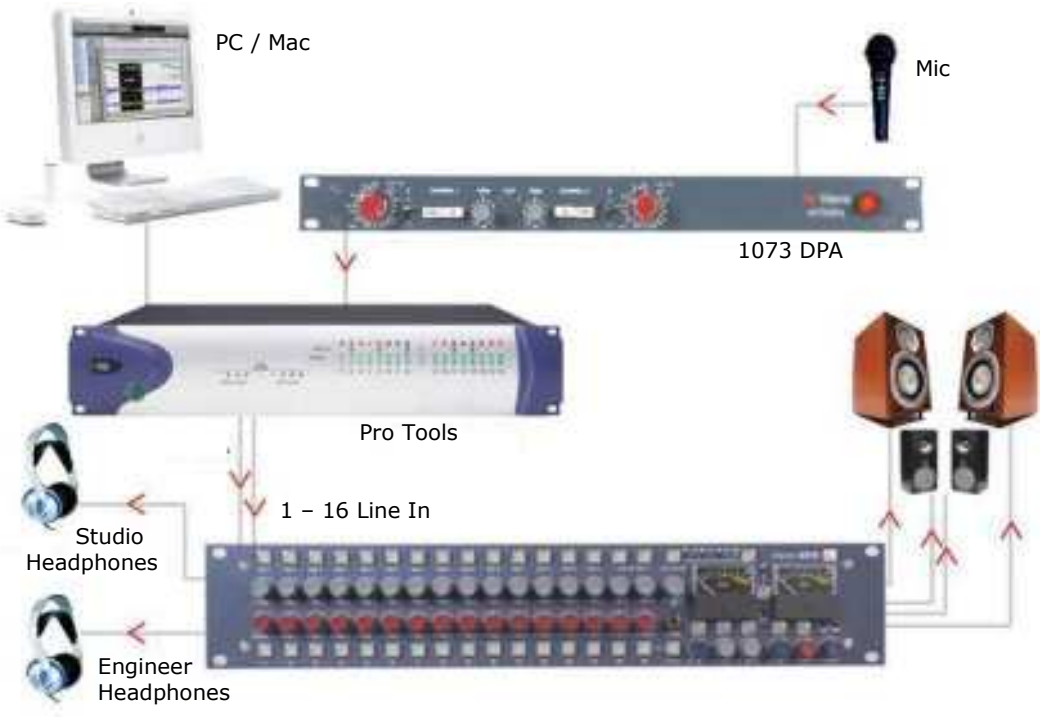
With the fader unit attached, the rotary channel level controls become aux pre-fade send levels, increasing the functionality of the unit.

Note on Headroom and Levels

- Each channel has 15dB of gain also known as 15dB 'in hand'.
- Excessive use of gain may overload your DAW or other recording device.
  0dB on the channel level control is approx at the 12'o'clock position.
- Internal headroom is 26dBu.
- If your DAW is overloading but the overload indicators on the 8816 meters are not illuminated, then reduce your **output** levels.
- If your DAW is overloading and the red overload indicators are illuminated then you may need to reduce your **input** levels.

Application Scenarios

Recording



The 8816 can be used to monitor from the workstation while recording directly from a mic pre such as the 1073DPD or as a pre-mixer for recording a number of signals simultaneously to the workstation.

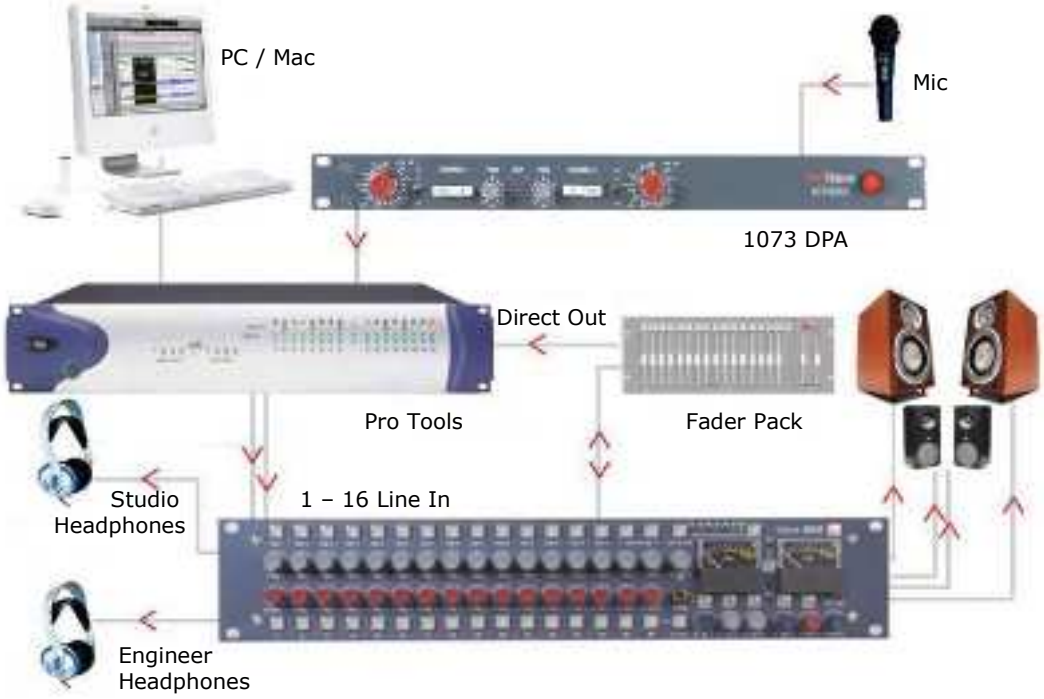
With the optional fader pack, direct outs can be used from the 8816 to the DAW enabling it to be used like a conventional desk with both recording and monitoring signals passing through the unit.

Direct recording with 8816 as monitor
Connect the output of the mic pre to the input of the workstation. Connect the outputs of the workstation to the inputs of the 8816.
The 8816 outputs can be monitored on loudspeakers or headphones as required. The performers headphones source can be switched (engineer/performer).

Sub-mixing signals to be recorded
Connect the instruments to be recorded to the inputs of the 8816 (via a 1073 or similar mic pre if required).
Connect the main output of the 8816 to the inputs of the workstation (this can be analogue or digital if the optional digital card is fitted).

Set the balance required using the channel level controls on the 8816 and record onto the workstation.

Recording with the optional Fader Pack



Connect the instruments to be recorded to channel inputs on the 8816 and connect the direct outputs from these channels to the inputs of the DAW (the direct outs are located on the fader pack).

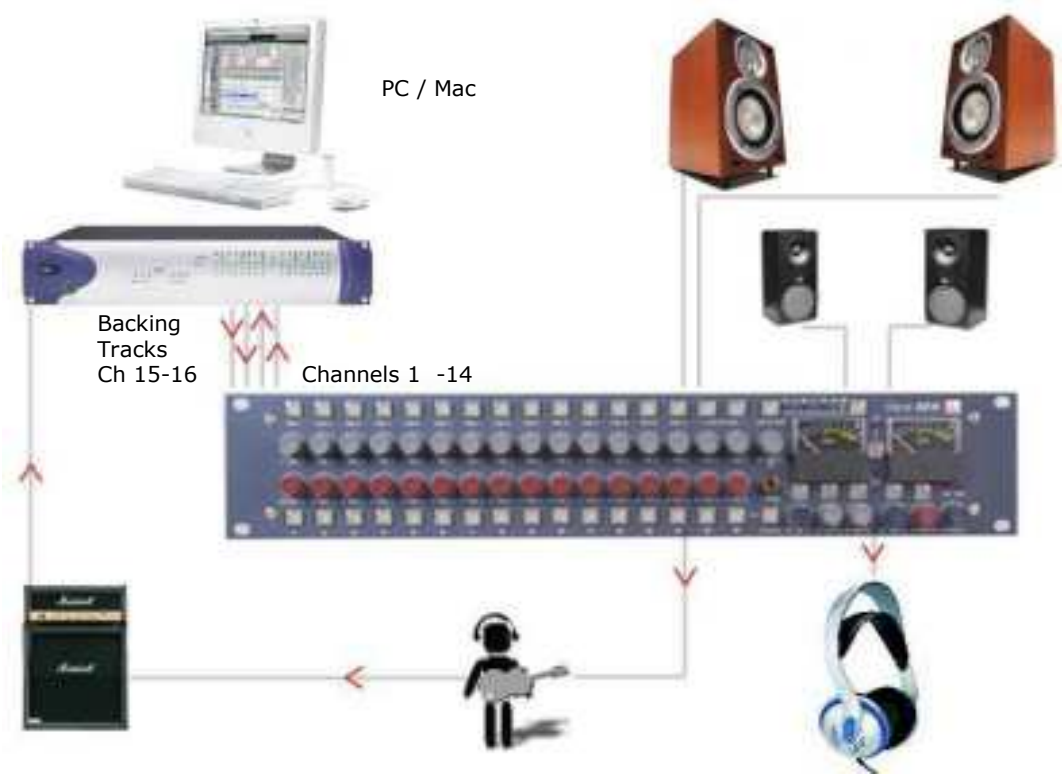
These channels can be muted so that they do not go to the main bus if monitoring via the 8816 or a monitor mix can be set up on the DAW and monitored via the **2 Track Return** on the 8816.

Signals can now be recorded with fader control over their level while the mix or play back is monitored through the 8816.

In all of the above recording situations the engineer can utilise the 8816 to control monitoring via two pairs of speakers and/or the headphones as required.

The 8816 can also be used to provide a Cue to performer headphones.

Overdubbing



Connect the outputs of the workstation to the inputs of the 8816. If you have a backing track pre-mix on your workstation assign this to outputs connected to inputs 15/16 on the 8816.

Connect the output of the track being recorded to any of inputs 1-14 on the 8816.

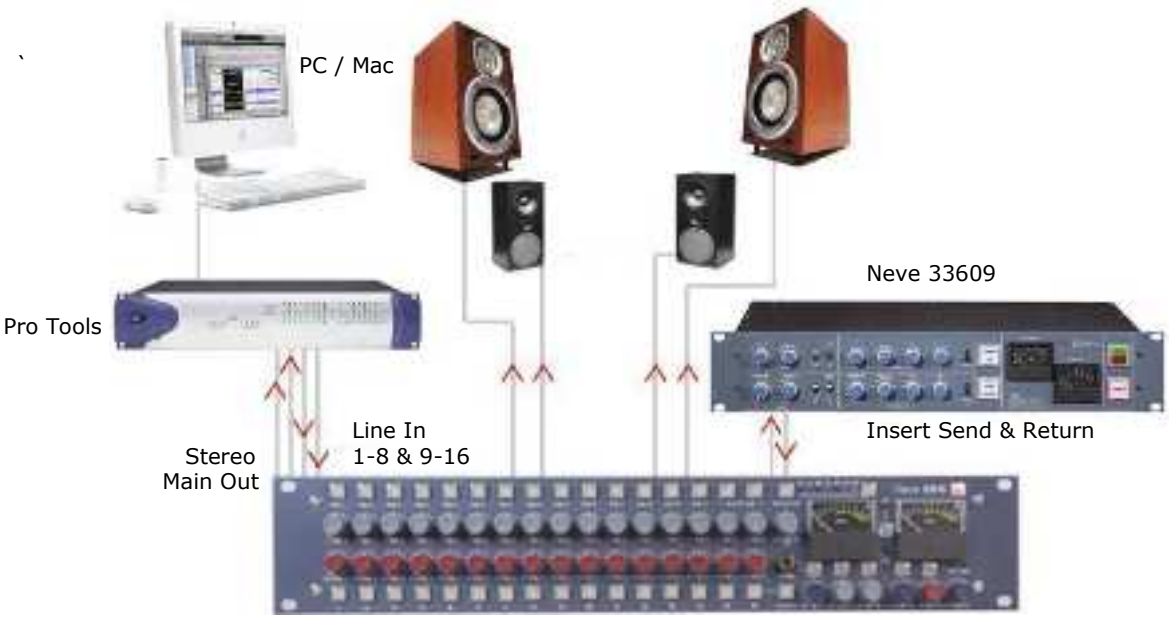
Connect the performer's headphones to the headphone socket on the rear of the 8816.

The cue mix level of the overdub against the backing track can be adjusted using the **Cue l**evel control until the mix is right for the performer.

The **2-Track Return** can also be routed to the Cue so may be used as an effects return if the performer wishes to listen to a guide reverb while recording.

The engineer can monitor on headphones connected to the front of the 8816 and can switch between monitoring the performer's cue mix and the main mix.

Mixing



Connect the outputs of the workstation to the inputs of the 8816. Key elements such as lead vocals and lead instruments should be kept separate within the workstation and connected to individual inputs on the 8816.

Other elements such as backing vocals, effects, etc can be routed to stereo groups within the workstation and these groups connected to the 8816 inputs.

Optimum sound quality within the workstation is generally achieved by setting the virtual faders to 0dB.

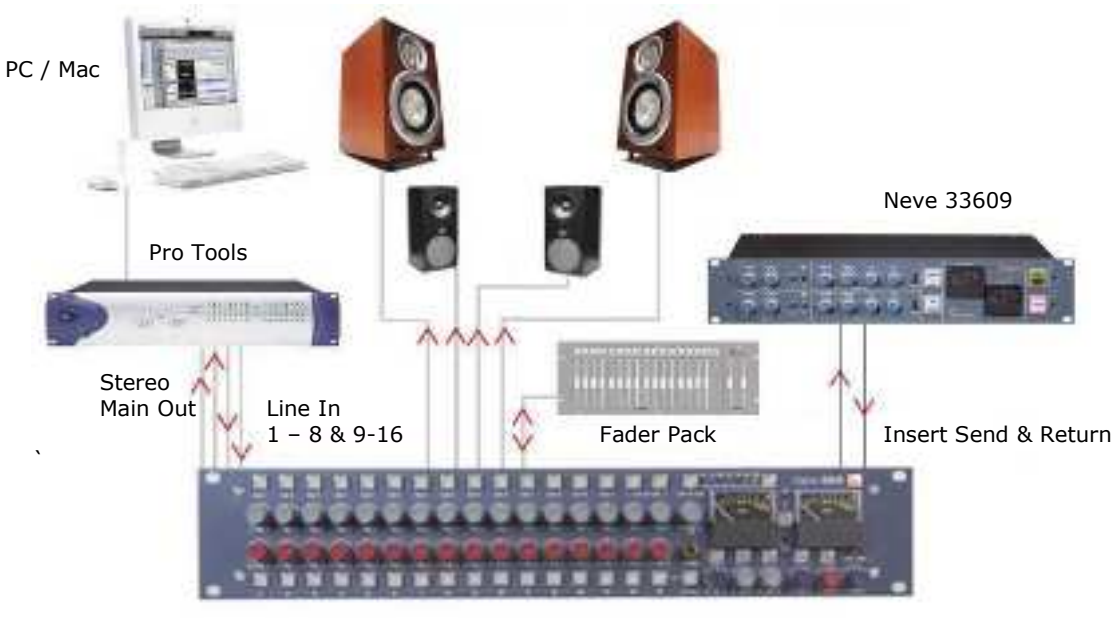
Final mix levels can be set on the 8816.

The mix is now being created on the mix bus of the 8816.
This uses the same transformer mix topology as the classic 80 series Neve consoles and recreates their legendary sound.
Recording back to the DAW or onto another device such as a CDR may be analogue or, if the digital option is fitted, can be from the Neve Analogue to Digital Converters ensuring the best possible sound quality.

A Neve 33609 compressor or a Neve 8803 EQ unit can be patched across the Insert allowing the whole mix to be compressed or EQ'd.
Sometimes it is necessary to mix between a clean mix and a processed mix, for example when using a Filter Bank to create a special effect across the whole mix for one section of a song.
This can be done by patching the filter bank across the Inserts of the 8816 and switching to **Insert Mix** mode.

The balance between the clean mix and the processed mix is now controlled by the **Insert Mix** level control and the engineer can switch between clean and processed mix or balance the two as required.

Mixing with Fader Pack

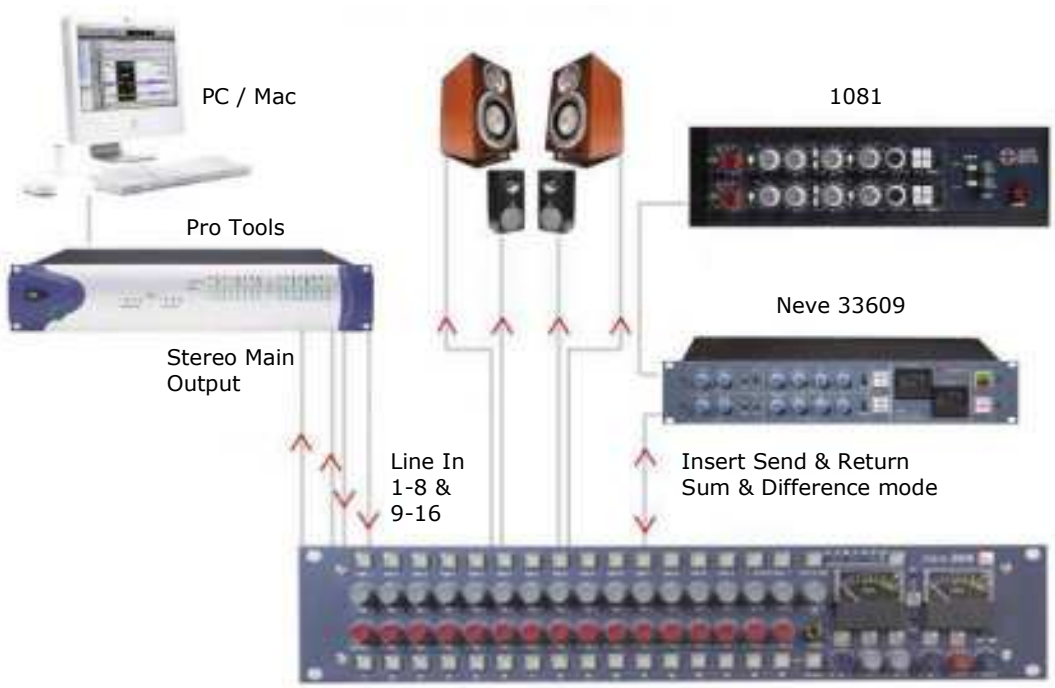


The engineer and producer can monitor on two sets of speakers, main and near field, and switch between them using the **Alt Speaker** switch allowing comparisons of the mix on small and large speakers.

Headphones can also be connected if required.

The outputs of the recording unit (or the appropriate two tracks of the DAW) can be connected to the two track return so that the engineer can switch between monitoring the mix leaving the 8816 and the mix coming back from the recorder.

Mastering



Connect the outputs of your DAT, CD player or two tracks of your DAW to inputs 1 and 2 on the 8816. Connect the master outputs of the 8816 to the inputs of the Workstation, CDR or DAT that you wish to record onto.

Connect the outputs of the recording device to the 2 track return of the 8816. The mix is now passing through the mix bus of the 8816.

A Neve 33609 compressor or a Neve 8803 EQ unit can be patched across the Insert Point allowing the whole mix to be compressed or EQ'd.

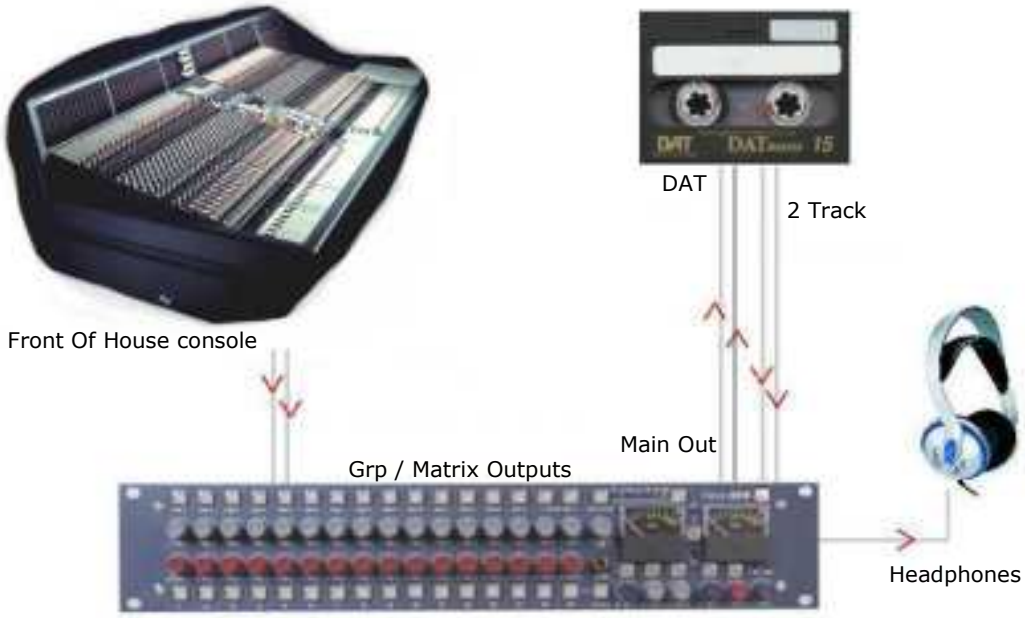
The Insert can be switched to **Sum** and **Difference** mode allowing the producer to process the centre sum/mono signal and the stereo/difference signal in different manners.

The width control can be used to reduce the stereo width, perhaps for a club remix, or to enhance it beyond standard stereo if the original mix is not wide enough.

The engineer and producer can monitor on two sets of speakers, and switch between them using the **Alt Speaker** switch allowing comparisons of the mastered mix on small and large speakers. Headphones can also be connected if required.

The monitor source select can be used to switch between monitoring the sound entering the 8816 on inputs 1 and 2, the sound leaving the 8816 on the mix bus and the sound as recorded on the CDR/DAT/Workstation via the **2 Track Return**.

Live Recording



While the output for the main Front Of House console may be of a high standard, the mix created for the venue does not have the correct balance for the recording.
The 8816 solves this problem.

The main mix outputs of the 8816 should be connected to a recording device such as a DAT or DAW running on a laptop Mac or PC.
The output of the recording device should be connected to the **2 Track Return** on the 8816.

Key elements such as the lead vocal can be connected directly to an input on the 8816 from a Direct Out on the FOH console.
Other elements such as drums, keyboards, etc can be connected to the inputs of the 8816 either from the Group Outputs or from the Matrix Outputs of the FOH console depending on the type of FOH console being used.

A correct balance between the individual and pre-mixed sounds can be set up on the 8816 using the **Channel** level controls.
The mix is now passing through the mix bus of the 8816.

The engineer can monitor the live recording on headphones and switch between monitoring the output of the 8816 and the **2 Track Return** from the recorder for a confidence check on the recorded sound.

Sub Mixer



Sometime the console being used for a mix simply does not have enough inputs.
This may be because it is a small digital mixer being used to meet a fixed budget or because the console has a limited number of inputs.

Connect the outputs of the additional instruments or sound sources such as keyboards, effects units etc to the inputs of the 8816.
Connect the **Main Outputs** of the 8816 to a pair of inputs on the main mixer.

The sounds passing through the 8816 can be balanced using the **Channel Level** controls.
These sounds are now passing through the mix bus of the 8816.

The overall level being passed to the main mixer can be set using the **Master Level** control of the 8816.

Should more than 16 inputs be required on the sub-mixer then two 8816 units can be used.

The **Mix Output** from the first 8816 is connected to the **2 Track Bus Input** of the second 8816 and the **Main Output** from the second 8816 goes to the main mixer.

Controls



Channel Strip

The channel strip comprises a **Cut/Solo** button, a rotary **Level** control, a rotary **Pan** control and a **Cue** select button.

Level Control

The Level Control has a range of ∞dB to +15dB with 0dB set at about 12 o'clock.

This range is deliberately chosen to be able to accommodate most line inputs levels whether they be professional +4dBu inputs or semi-professional -10dBV inputs.

The **Level** control sets the levels going to the main **L+R Mix Outputs** and to the **Utility Aux Bus** with the extra benefit of changing its function into an individual aux pre-fade send level when an optional fader panel is fitted.

Please note:
If you need to calibrate your DAW inputs from the 8816 (for example using tone as a reference signal), the 8816 channel gain controls should all be set at approximately the 12 o'clock position before trimming the input levels on your DAW.
This ensures that in a worst-case scenario, the differences in levels due to the variations in tolerance of the potentiometers is only +/-1dB from centre. Setting the channel gain controls to maximum is not recommended before calibrating your DAW inputs.

Pan Control

This is a classic -3dB centre pan, with S-Law shaping to help accurate panning to extremes of left and right.

Cue Control Button

When operated this takes the input of the channel (pre fader level and pre pan) and sends it to the Cue mixer via the Cue level control to feed the cue output via the Headphones jack-sockets on the front and rear of the unit.

Channels 1-14 are individually switchable to the Cue mix via the **Cue** button control.
(On older models of 8816, Cue buttons 1-14 are interlocked, while on newer models it is possible to send any combination of 1-14 to the Cue mix).

Channels 15 and 16 are linked as a stereo cue direct to the cue mix.

For overdubbing, channels 15-16 can be set up as your backing track mix on the DAW, and then selecting the appropriate channel from 1 to 14 will allow you to blend or ride a track using the cue level control, allowing the artist to hear exactly what he or she needs to hear before dropping in to record.

Channel Cut /Solo button

The function of the button can be changed from **Cut** to **Solo** by operating the **Solo Master** adjacent to channel 16.

In **Cut** mode this button will mute the feed to the main two track bus.
Cut is indicated by the button turning red.

In **Solo** mode, selecting the button will cut all channels except the one operated, commonly referred to as **Solo In Place**.
Solo is indicated by the button turning yellow.

As the solo system is latching, it is possible to build up solo groups and to then use the **Cut/Solo Master** to audition a solo group or a cut group. This can be useful for comping or sorting out EQ / balance problems in the mix quickly before printing the final pass.

Cue Section



2T to Cue

Sends the **2 Track Return** (post level control) to the headphone mix – ideally suited for replaying the last overdub to the artist for auditioning or a complete 2 track mix of the whole song without the artist needing to come into the control room.

Headphone Mon

Selects the prefade **LS Outputs** onto the **Cue** headphone outputs so the artist hears the same sources as the engineer feeds to the monitors.

Headphone Control

This control adjusts the main Headphone levels with a range of ∞dB - 0dB.

The headphone control also incorporates a switch which, when operated, feeds the unit's talkback mic to the **Headphone Output**, automatically dimming the music fed to the headphones , loudspeakers and Cues by 20dB.

There is also a parallel 1/4 inch jack on the rear of the unit for footswitch operation.

Headphone Jack

A headphone jack is provided on the front of the unit and a second parallel headphone jack on the rear.

Parallel +4dBu line outputs are provided on the rear of the unit to be used for **Cue** feeds to the studio.

NB:
Only headphones with an Impedance above 60 Ohms should be used.

Master Section



Alt Spk

Selects a second set of loudspeakers for switching between main and near field loud speakers.

iMon

This input has a 3.5mm jack socket for connecting your MP3 player to the unit's **LS** selector and feeding to the **LS Output** or **Cue** headphone outputs.

Talkback Level

This adjustment screw sets the level from the talkback mic to the cue headphones.

This is not set to a factory-preset, and the level should always be set by the user before use. Failure to set this pot may result in a low level talkback feed.

Talkback Microphone

A microphone is built into the unit to allow the engineer or producer to communicate with the artist during recording sessions.

INS MIX

Insert Mix routes the **IMR** signal to the main **2 Track Mix Output** pre-**level** control but post-**insert**.

IMR Level Control

Insert Mix Return allows for the IMR signals to be mixed directly into the main mix output, post insert but pre mix output level control.

It has a range of ∞dB to +10dB and can be used for DJ style mixing or where the engineer wants to mix some compressed or EQ'd main mix source back into the main mix outputs without the compression or EQ dominating the mix as it would using the insert.

INS

This switches the main mix pre fade insert in and out of circuit via the input and output connectors on the rear of the unit.

It has two modes selectable by pressing the **Mix** L**evel** control. When a normal pre fade insert is selected the button will illuminate **yellow**.

If the mix level control is pressed then the illumination will change to **red** indicating that the insert point has changed to a **Sum & Difference** insert.

In **Sum & Difference** mode the standard stereo signal is converted into a mono common or sum signal on the left output and a mono difference signal on the right output.

This enables the engineer to apply different processes to the common (or centre) image and the difference (or stereo) image.

At the insert return the signal is re-converted to a standard stereo signal.

The technique is frequently used in mastering recordings and is useful for:

- Using an overall stereo EQ where the L & R Image will not shift with any tracking errors within the EQ unit, or EQ the mono to subtly change the mix balance post mixing.
- Compress and limit the **Sum and Difference** separately to negate tracking errors or create a quite different stereo image.
- Add a sub bass synth to the mono program for really deep mono bass that will not make the cutter head jump if mastering to vinyl.
- Listen to the mono and trim the DAW sample delays to get perfect L & R tracking and save the results to an interleaved wav file.
- A vocal could be brightened by EQing the **Sum** signal or Cymbals could be brightened by EQing the **Difference** signal.

N.B:
*The underlying mode of the insert can be changed by pressing the **Mix** level control even if the insertion button is not selected.*

2TR MIX

When selected, sends the 2 track return signal directly to the **2 Track Mix** bus.

2TR Level Control

This adjusts the two track return level sent to the **Cue Mix** or **2 Track Mix** bus and has a range of ∞dB to +10dB.

This is useful for sending 2 track mixes to the cue headphones or as a reverb return to the cues or 2 track mix bus.



Monitor Selections

There are 3 leds above the **Mon** level control to indicate the LS monitor selection.

If no led is illuminated, then the main monitor defaults to the Main Mix output.

Selection of the sources to the monitor is by pressing the **Mon** level control.

- 1st press: selects **2TR** to Mon
- 2nd press: selects **CH1/2** pre fade sources
- 3rd press: selects **iMon** input
- 4th press: returns the monitor to the **Main Mix** output.

It is also possible to set the Main Mix source to the monitors, post the ADC insert jack (if fitted), which will allow for monitoring of the main mix signal or the inserted signal.

This could be of benefit when you need to monitor the ADC Input which could be a completely different source from the 8816 such as when using the digital option as a separate high quality stereo A to D.

NB:
The monitor source can be set to Pre- or Post- the ADC insert using jumpers within the unit.
*Information is provided in the **Jumper Settings** section on page 28.*

Mon Level

This alters the loud speaker's output level and has a range of ∞dB to 0dB.

Sum

This is selected by pressing the width control.
When illuminated yellow then the main mix outputs are summed with whatever is selected to the **LS Monitor**.

This function is useful when auditioning mixes together in the **Main** or **Alt** loudspeakers.

Width Control

The Width control is post mix level control, and alters the stereo image from mono through stereo to enhanced stereo.

<W> button

This switches the **Width** control into circuit across the Main mix output (post insert) and is indicated by the button being illuminated yellow.

Mix Level

This alters the main mix level and has a range of ∞dB to 0dB. It can be used to control the output level from the unit to the DAW.

The control can also be augmented with fader control if an optional fader pack is fitted. In this case, the mix level control no longer has any function.

Analogue / Digital overload indication



Analogue overload of the unit is indicated by a red led in the associated left or right output meter.
The actual level at which the overload led illuminates is about 1dB below the max output of the unit (+26 dBu).

If the ADC option is fitted to the unit then the led will light yellow if a digital overload occurs for more than 1 sample.
This has priority over the analogue overload indication.

Sensitivity of the digital overload indication will be set by the unit's digital operating level.

Metering

The main left and right meters are sourced directly from the main outputs so signal problems within the unit or that which is connected can be metered correctly.

The meter is a pseudo PPM type with a special scale that ranges from -16 to +26 dBu.

This type of meter and range is ideal for accurate metering of analogue levels when they are fed to a digital recorder to maximise levels and to avoid digital clipping.

Three important points are identified on the meter to help the user to match levels between the unit and a DAW.

- 0 (PPM Scale Point 5) for line-up +4dBu (0vu)
- 14 (PPM Scale Point 8.5) +18 dBu for typical DAWs set to 14 = 0dBFS, REL +4 dBu.
- 18 (PPM Scale Point 9.5) +22 dBu for typical DAWs set to 18 = 0dBFS, REL +4 dBu.

Power Switch



Switches the unit on/off and indicates a healthy +36 volts supply by illuminating red.

When powering up the unit, it is normal that:
- the buttons on the unit will flash briefly
- the internal relays will reset themselves
- the meter needles will briefly jump to full-scale.

Options

Fader Pack Option



The optional fader pack provides 16 Input faders with post fade direct outputs plus mutes and 2 **Master** faders.

- The **Input** faders have a range of -∞dB to +15dB.
- The **Master** faders have a range of -∞dB to 0dB.

With the fader pack fitted, the rotary channel level control of the 8816 becomes an aux pre-fader send level control with a range of -∞dB to +15dB.

These auxes can be set Pre- or Post-fade, and this is set in the Recall software once the 8804 is attached via USB.
This aux can be used to send channels to a reverb or other effects unit.

It is not possible to monitor this aux send on the 8816, it is only available on the D-sub output labelled **Balanced Insert Outputs** on the rear of the unit.

Recall of the faders and mutes can be stored using USB and the Recall software so that they can be included into the multi- unit Recall system provided on the 88 outboard range.

NB:
Internal jumper settings must be changed to enable the optional fader pack to take control of the main mix level.
*Please see section on **Jumper settings** on page 29.*

- *When the fader option is not fitted, the **Aux Gain** jumper sets the Aux output level to –3dBu.*
- *When the fader option is fitted, the **Aux Gain** jumper sets the Aux output level to 0dBu*

Also, please note that the **Solo** and **Mute** buttons will not synchronise between the two units until both units are connected to the PC (or Mac) via USB and the Recall software is running, as shown below.



ADC Option



Sampling Frequency

Sample frequency can be selected by pressing the button to the right of the sample frequency leds.
This will toggle through the sampling frequencies one at a time.

The 8816 has 2 sync inputs:
- AES 3 (on a female XLR), and
- Word Clock (on a chassis BNC).

If neither sync input is present, the unit will synchronise to its internal crystal clock.

If one or the other sync inputs is present, the **AES** or **WCK** led will illuminate red showing that that sync input type is detected.

When the correct sampling frequency is selected, either the **WCK** or **AES** led will light solid green to show that sync is being received and the unit has successfully locked to it.

If both sync inputs are present and valid, the Wordclock input will take preference over AES as the reference.

Normally the sync input is set to the required sample rate.
In this case both AES out 1/L and AES out 2/R carry the same stereo AES signal converted from the unit's left and right analogue outputs.

Single / Double Rate AES Output

Single Rate

If the selected sample rate on the front of the unit (for example 48kHz) is the **same** as the sync being input into the rear of the unit (48 kHz, either via Wordclock or AES sync), then the 2 XLR connectors on the rear of the ADC card will output Left and Right on both XLRs, so in effect a stereo mix on **1/L** and the same stereo mix on **2/R** (this does not just apply to the 48kHz sample rate, but to when any sample rate on the front matches exactly that being input on the rear).

Either the **WCK** or **AES** led will illuminate green indicating the sync reference is being used for the digital output.

Double Rate

If the selected sample rate on the front of the unit (for example 96kHz) is **double** that being input into the sync into the rear of the unit (48 kHz, either Wordclock or AES sync), then the 2 XLR connectors on the rear will output Left and Left on **1/L** and Right and Right on **2/R** (this applies to all those situations when the sample rate selected on the front is exactly double the actual sample rate input into the rear [either Wordclock or AES], not just at 48kHz).

Either the **WCK** or **AES** led will illuminate green indicating the sync reference is still being used for the digital output even though the ADC is sampling at twice the sync input sampling rate.

It was designed to work in this this way to make allowances for early digital equipment that had limited sample rate capability.

DSD

Selecting DSD will default to 44.1kHz reference.

If no sync is available it will use its own internal crystal reference.
The interface requires a minimum of 2 BNC cables (DSD left and DSD right) to the DSD recording device.

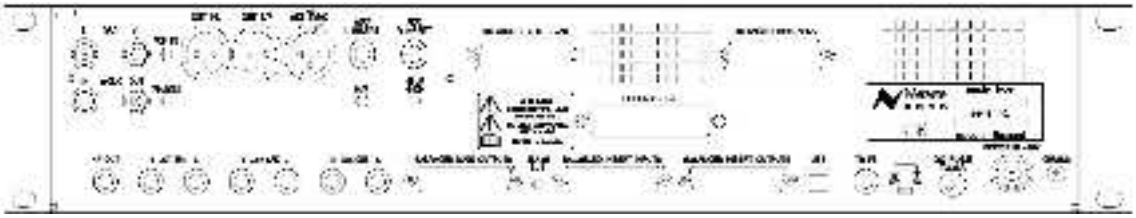
The DSD output can be switched between **SDIF 2** and **SDIF 3** formats with a rear panel switch.

SDIF 2 requires a 44.1kHz sync signal to be passed to the DAC and this should preferably come from the 8816 sync output via a 3rd BNC cable.

SDIF 3 transmits the DSD signals with clock information included and should not need the sync signal.

Please refer to your DSD recording device for information on compatibility.

Rear Panel Connectors and Controls



Line Output

DB 25 Socket (standard Pro Tools and DA88TM connection) balanced at +4 dBu for INS, Main and LS Outputs and 1/4 inch stereo jacks at -10dBv for Main and Alt (Loudspeaker) Outputs.

Line Input

- DB 25 Socket (standard Pro Tools and DA88TM connection) balanced at +4dBu.
- DC Power Input 8 Pin DIN Socket

Talkback Foot Switch

1/4 inch mono jack.

USB

Type B male.

When connecting the unit to a PC (or Mac), it must be connected directly to an available USB port or via a powered hub, and **not** via a passive hub.

Rear Panel Controls



Earth Lift Switch

This will lift the mains earth connection from the chassis of the unit, allowing for the unit to be connected to a suitable technical earth system thus avoiding hum loops.

Slave Bus Switch

This switches the 2T bus input onto the unit's main mix bus.
This allows two 8816 units to be joined together to create a slave and master system expanding the number of inputs.

It also automatically sets the unit to be part of the **Recall** system as the slave or master.

- At the **Out** position, this sets the unit to **Slave**
- At the **In** position, this sets the unit to **Master**

If you only have a single 8816, this should always be set to **Slave**.

ADC Option

ADC L & R Insert

1/4 inch jack acting as a switched insert into the ADC input.
Maximum input level +26dBu for conversion to 0dBFS.

N.B. See **Headroom Level Setting** for different input level conversions.

Hot	Tip
Cold	Ring
Ground	Sleeve

AES Sync

Female XLR to take a standard AES 110 Ohm input signal for use as a word clock sync source.

WCLK In

BNC input for TTL level world clock signal.

Input impedance can be set to 75 Ohm using the selection switch on the rear of the unit.

WCLK Out

BNC 75 Ohm output TTL level world clock signal at sampling frequencies buffered from ADC sync source.

AES Out

Male XLR outputs standard AES 110 Ohm digital audio.

In normal operation (working at 48kHz while syncing to a 48kHz clock), both XLRs will output a parallel signal of the analogue Main Mix.

When working in Dual Mode (syncing to a 48kHz clock yet selecting 96kHx on the front panel), the Left of the Main Mix will be sent on the Left XLR and the Right of the Main Mix will be sent on the right XLR.

DSD L and R

BNC 75 Ohm output TTL level DSD signal.

75 Ohm WCLK

Selects a 75 Ohm input impedance for WCLK in.

SDIF 2/3

Selects the DSD Output format; SDIF2 DSD data only, SDIF3 DSD data with embedded clock.

Firmware Upgrades

In order to get the most from your Neve unit, the latest firmware should be installed.



Upgrading your software is a simple process with on screens prompts to guide you.

- Start the **Recall** software.
- On the main screen, right-click the window title bar (Mac users select **Recalls**)
- Click **Upgrade Firmware**.
- Select the file to transfer.



You will be prompted about removing other units.



When updating units, only the unit that is being updated should be connected via USB. All other units should have their USB disconnected.

Even if you are updating two units of the same model, they should be connected individually and updated in two separate operations.
If more than one unit is connected via USB when the Update is about to be performed, a screen will prompt you to disconnect the other units.



A prompt screen will confirm the software number & version you should select, and display the current version of firmware for the unit.

▶ Click **OK**.

Selecting a File for Transfer



The **Open File** dialog will appear.

To locate the firmware file, browse to the location:

- PC users: C:\Program Files\Neve Recall\Firmware
- Mac users: Applications\Neve Recall\Firmware

The file names follow the format **down_88XY_V.hex** where XY are the last two digits of the 88 unit name (e.g. '**16**' for 8816) and **V** is the software version number.

A typical filename could be **down_8804_3.hex.**

▶ Double click on the latest filename which matches your unit.

If an incorrect file is selected the user will be prompted to select another file.

File Downloading



Once the file is selected, the transfer will begin and the Recall screen will display that the download is under way.

This process may take up to two minutes for each unit.



Upon completion, the message **Firmware Update Successful** will be displayed.

- Click **OK** to continue.

You can continue to update other units successfully without restarting Recall, but the Recall software must be restarted once this process is finished.



If the transfer fails (for example if the USB is removed by accident or power is lost to the unit), a warning message will prompt to the user to try again.

If Recall is started with a unit that has no firmware, the user will be prompted to upgrade the firmware, as the unit cannot be used in Recall unless the firmware installation is successful.

Corrupted or Old Firmware

If the firmware is corrupted or the unit has an old version of firmware, a prompt will appear upon starting the Recall software to indicate that firmware must be updated before the user can proceed.

The process described above can then be followed to update the latest firmware.

Physical & Technical Information

Dimensions

Unit name	Unit Depth	Depth mm (inches)	Height mm (inches)	Weight kg (lbs)
8816	2U	390 (15.4)	88 (3.5)	7 (16)

Rack Mounting and Cooling

The rack unit can be installed in a standard 19" cabinet with access to the front and the rear.

No specific air conditioning is required for the rack, providing there is free flow of air through the rack from front to back and side to side, and that the ambient air is maintained below 25°C / 77°F.

Racks may be stacked, but at least 1U space should be allowed between each unit.

Power Requirements

8816	
Rated Voltage	36v DC
Rated Current	1.6A Max
Primary Protection Fuse:	
Operating Voltage	36v
Fuse Rating & Type	T3. 15A anti-surge 20mm x 5mm glass
Location	Next to DC input on rear of unit

Mains Supply



The power supply unit is a free standing external type with a universal input, therefore no mains operating voltage setting is required.

There is a mains earth lift switch located at the rear of the unit next to the fuse holder.

When operated this isolates the mains earth from the chassis of the unit.

If this is operated, earth must be maintained to the chassis of the unit by using the studio technical earth or equivalent earthing system.

When illuminated the red led on the power switch indicates a healthy +36V supply.

System Settings

Setting the Headroom on the optional A to D card



The unit can be set to one of three headroom settings; +14dB, +18dB or +22dB relative to +4dBu.

The headroom is defined as the number of dBs above +4dBu before the ADC clips.

The clip led within the left and right output meter will light if the selected input level is exceeded for more than 1 sample.

The headroom can be changed by accessing the switches through two holes on the A/D card, labelled **HR** and **+18 UP +14 DN,** indicated left.

+14 dB	**Both** switches in the **down** position.
+18 dB	HR switch **down**, and +18 & +14 **up**.
+22 dB	HR, +18 and +14 **all up**.

NB: Only use a non metallic plunger tool to operate the level change switches.

Monitor Source pre/post ADC Insert

NB:
The monitor source can be set to **Pre-** or **Post-** the ADC insert using jumpers within the unit.
These jumpers are located on the main motherboard of the 8816, just adjacent to the A/D card.
The photo below shows the view from the front of the unit.



With the jumpers on the two **left** most pins, the monitor source is **Pre**- the ADC insert.
With the jumpers on the two **right** most pins, the monitor source is **Post**- the ADC insert.

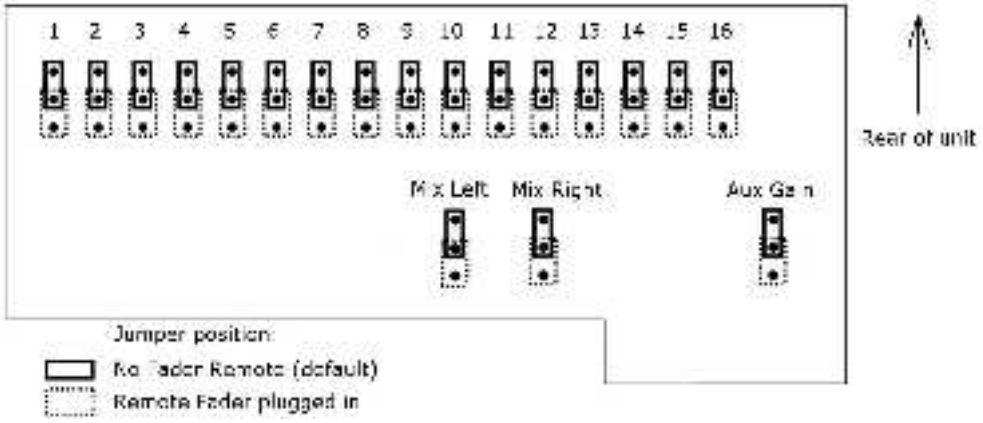
Please consult your local Neve dealer if this information is not clear.

Fader Pack Jumper Settings

Internal jumper settings must be changed to enable the optional fader pack to take control of the fader and main mix levels.

THESE SWITCHES ONLY NEED TO BE SET IF YOU HAVE THE OPTIONAL FADER PACK. IF THERE IS NO FADER PACK PRESENT, DO NOT SET THESE SWITCHES.

Please consult your local Neve distributor if the following information is not clear.



There are a total of **19** internal jumpers that need to be set for the remote fader pack to control the 8816:

- One jumper for each fader (16)
- Mix Left / Mix Right (2)
- Aux Gain (1)

The jumper settings are the same regardless of whether the 8816 is acting as Master or Slave.

Multiple 8816 / 8804



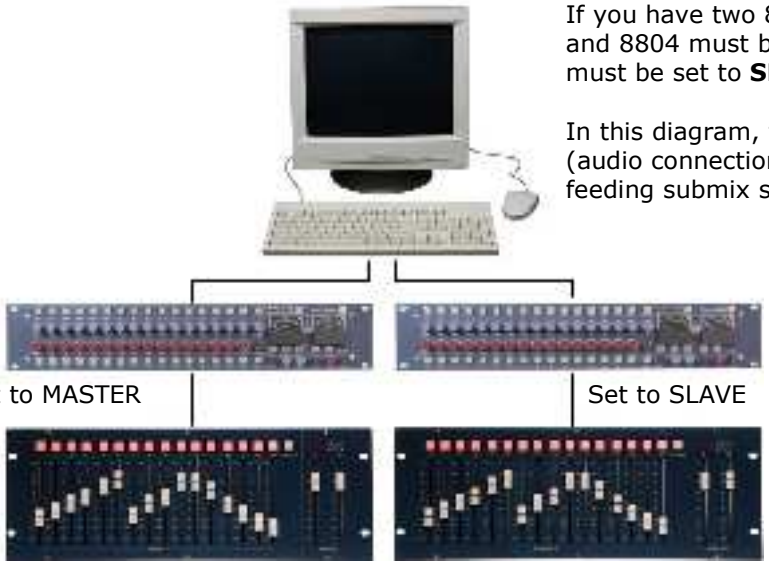
Set to SLAVE

Set to SLAVE

It is possible to have up to two 8816s and two optional 8804 fader packs connected via USB to the Recall software.

Please see also the 8804 User Manual on how to set the Master / Slave status on the 8804.

If you only have one 8816 and one 8804 fader pack connected, both units must be set to **SLAVE** so the Recall software will operate correctly, as shown left.



Set to MASTER

Set to SLAVE

Set to MASTER

Set to SLAVE

If you have two 8816s and two 8804 fader packs, then one 8816 and 8804 must be set to **MASTER**, and the other 8816 and 8804 must be set to **SLAVE**.

In this diagram, the 8816 on the left is the master in terms of audio (audio connections are not shown), with the unit on the right feeding submix signals into it.

The Master / Slave status is set on the rear of the unit with the switch labelled **Slave Bus**.

- At the **Out** position, this sets the unit to **Slave**
- At the **In** position, this sets the unit to **Master**

If you only have a single 8816, this should always be set to **Slave**.

Unit Specifications

Input Impedance	(Balanced +4dBu) >20KΩ	
Output Impedance	(Balanced +4dBu) 50Ω (Unbalanced +4dBu) 100Ω	
Headphone Jack Output Impedance Loading	More than 60Ω	
Max Input Level	(Balanced) Better than +26 dBu	
Max Output Level	(Balanced) Better than +26 dBu into 600Ω (Unbalanced) Better than +14 dBu into 600Ω	
Frequency Response:		
Ch 1 Line input to Main Output	20 Hz to 20 kHz +/- 0.5dB Better than -3dB @ 60k	
THD:		
Ch 1 Line input to Main Output	50 Hz to 20 kHz, Better than 0.02% Measured at +20 dBu into 10k with 80k filter.	
Noise:		
No channels routed	Better than -86 dBu	20 Hz to 20 kHz filter
1 channel routed	Better than -85 dBu	
16 channels routed	Better than -80 dBu	
All specifications with no processing in circuit		

Connectors

There are five 25-way D-type connectors.

- Connectors 1 and 2 for Channel Inputs
- Connector 3 for Auxiliary Outputs
- Connector 4 for Master section Input
- Connector 5 for Master section Outputs.

The 16 line inputs are on 2 x 25way D type connectors and follow the standard pin-outs used by Pro Tools & Tascam DA88.

Connector 1 - **Balanced Inputs 1 – 8**			
Circuit	**Shield**	**Hi**	**Lo**
1	25	24	12
2	11	10	23
3	22	21	9
4	8	7	20
5	19	18	6
6	5	4	17
7	16	15	3
8	2	1	14

Connector 2 - **Balanced Inputs 9 – 16**			
Circuit	**Shield**	**Hi**	**Lo**
9	25	24	12
10	11	10	23
11	22	21	9
12	8	7	20
13	19	18	6
14	5	4	17
15	16	15	3
16	2	1	14

The same pin arrangement is used on Connectors 3, 4 and 5 to provide the following circuits:

Connector 3 – **Balanced Insert Outputs**	
8	Pre Fade Insert Left Send
7	Pre Fade Insert Right Send`
6	Insert Mix Left Send
5	Insert Mix Right Send
4	Aux Bus Send
3	-
2	-
1	-

Connector 4 – **Balanced Insert Inputs**	
8	Pre Fade Insert Left Return
7	Pre Fade Insert Right Return
6	Insert Mix Left Return
5	Insert Mix Right Return
4	2 Track Left Return
3	2 Track Right Return
2	2 Track Left Bus Input
1	2 Track Right Bus Input

Connector 5 - **Balanced Main Outputs**	
8	Main Mix Left Output
7	Main Mix Right Output
6	Monitor Main Speaker Left Output
5	Monitor Main Speaker Right Output
4	Monitor Alternate Speaker Left Output
3	Monitor Alternate Speaker Right Output
2	Cue Left Output
1	Cue Right Output

There are two unbalanced mono ¼" jack outputs:

Main Mix L & R	
Tip	Hi
Sleeve	Screen

There are four unbalanced mono ¼" jack outputs:

Main SPK L & R and **ALT SPK L & R**	
Tip	Hi
Sleeve	Screen

There are two unbalanced stereo ¼" jack outputs:

L & R Cue & **Headphone**	
Tip	Left
Ring	Right
Sleeve	Common

There is one unbalanced 3.5mm stereo jack:

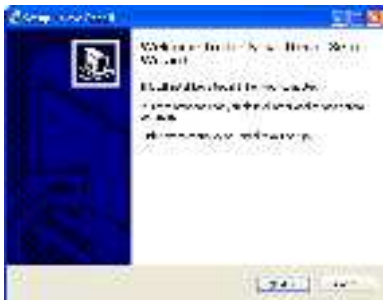
iMon	
Tip	Left
Ring	Right
Sleeve	Common

There is one control 1/4” jack:

Talkback footswitch	
Tip	Control
Sleeve	Common

Recall Software Installation

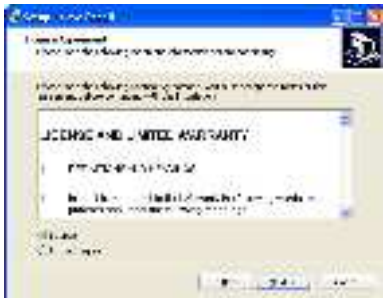
Installation for PC



Insert the CD into the drive and the **Setup** program should automatically launch.

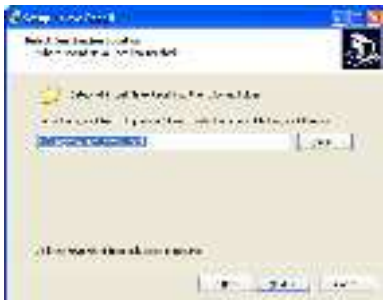
If the application fails to launch automatically on inserting the CD, then go to the CD Drive in Windows Explorer and double-click the **NeveRecall.msi** file or the **setup.exe** file to launch the Setup program manually.

▶ Click **Next**.



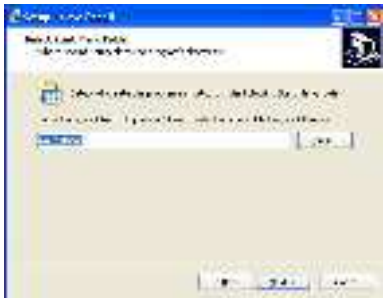
▶ Click **I Agree**, then click **Next**.

If you click **I Do Not Agree**, the install procedure will terminate.



The installation programme will select a default location for files to be copied and created to.

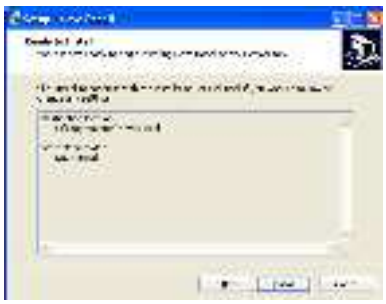
▶ Click **Next** to keep the default location, or click **Browse** to select another location.



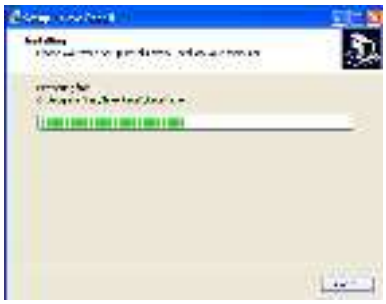
▶ Click **Next.**



▶ Tick as desired then **c**lick **Next.**



▶ Click **Install.**



The install will start and the progress displayed.



If you wish to launch Recall, tick the **Launch Neve Recall** box.

▶ Click **Finish.**

The software will now be ready to use, and will be accessible from **Start Menu / Programs / Neve Recall / Neve Recall**, or from the **Recall** icon on the Windows Desktop.

Installation for Mac



Insert the CD containing the software into the Mac, and the install programme will launch automatically.

- Click **Continue**.



Select the location where you wish the software to be installed to.

- Click **Continue**.



- Click **Upgrade**, and the software will start to install.



The progress bar will show the state of the installation.

- Once completed, click **Close**.

The software is now ready to use.

New Versions of Recall Software for Mac

Where you wish to install a new version of the Recall software on a Mac, you will need to uninstall the previous version first and remove some files:

- From the **Applications** folder, move the **Neve Recall** folder to the **Trash**;
- From the //**System Library/Extensions** folder, move **Neve8816.kext** to the Trash (move this file, regardless of the actual outboard units you may have connected via USB)
- From the //**Library/Receipts** folder, move **Neve Recall.pkg** to the Trash.

You will now be able to install the new version.

DRAWING No.	SHT	1 of 1
EB11729		

CH	CON	CH
1	1	1
2	1	2
3	1	3
4	1	4
5	1	5
6	1	6
7	1	7
8	1	8
9	2	1
10	2	2
11	2	3
12	2	4
13	2	5
14	2	6
15	2	7
16	2	8

FADER OPTION #
CH 1-16
I/P O/P

Channel 1

CH I/P
+4dbu

Level
Inf to +15

Pan

Solo
or
cut

Red = Cut
Yel = Solo

Mix L Mix R Aux

DC
Solo
cut
bus

Solo
Enable

Cut/Solo

Yel

2T Retun
or
Reverb Return

+4dbu

2TR
Level
Inf to +10

2TR
Mix

2T Bus
I/P

2T To Bus

Slave
Master

Recall

Rear pnl SW

Sampling Frequency Select Toggle

44.1 Red
48.0 Grn
88.2 Red
96.0 Grn
176.4 Red
192.0 Grn
DSD Yel

Sampling Frequency Select (kHz)
44.1, 48.0, 88.2, 96.0, 176.4, 192, DSD

Red/
Grn
Wclk

Red/
Grn
AES

Digital O/L op R
Digital O/L op L

OPTIONAL A TO D

+22
+18
+14
Sense

HR Sel

+18/+14 Sel

Rear pnl SW's

W/C IN
W/C OUT
AES SYNC
AES CH 1
AES CH 2
DSD CH L
DSD CH R

ADC Insert

+4dbu

PCB Jumpers
to move Monitor
point post ADC insert

Ins

Yel = Normal
Red = Sum+Diff

Aux bus
Output
+1dbu

Pre Fade
Insert
L

Pre Fade
Insert
R

+4dbu

ENCODE
SUM
&
DIFF
L=SUM
R=DIFF

DECODE
SUM
&
DIFF
L=SUM
R=DIFF

ANDB

Insert
Mix
L

Insert
Mix
R

IMR
Level
Inf to +10

Ins
Mix

FADER OPTION #
O/P I/P

Mix
Level
Inf to +0

Mom

Width
Control

Narrow
Wide

Width
Control

PPM Range
-20dBu to+26dBu

CAL Points
0(+4dBu), 14(+18dBu), 18(+22dBu)

Led's In Meter
Yellow = Digital O/L
Red = Analogue Clip (+25dbu)

PPM

PPM Drive

Main
Mix
Output

+4dbu
-10dBv

Mon
Level
Inf to 0

-25db

Main
LS
Output

ALT
SPK
Output

mom

ALT
SPK

Cue Select

Feeds From
Channel
Pre Levels

CH 1
CH 2
CH 3
TO
CH 13
CH 14
CH 15 (ST Cue L)
CH 16 (ST Cue R)
2TR To Cue L
2TR To Cue R

Cue 1
Cue 2
Cue 14
15 ST Cue
16 ST Cue
2T To Cue

I/L

Level
Inf to +10

Cue Mix

HP
Level
Inf to 0

HP
Mon

HP
Amp

Cue
Outputs
+4dbu

HP Jack on Front Pnl
HP Jack on Rear Pnl

-20db
Pad

TB Foot Switch

TB
Level

+40dB

Pre Set

Eng TB Mic

i MON
3.5mm
Jack
-14dbv

Sum

2TR

CH
1/2

Mon

Mon I/L Latch Toggle
Main Default, 2TR, CH1/2, iMon

Toggle

Sum CTL

+36v 1.6A
Supply
To
Unit

T3.15A

Power ON/OFF
"N"

Red

70W
External
PSU

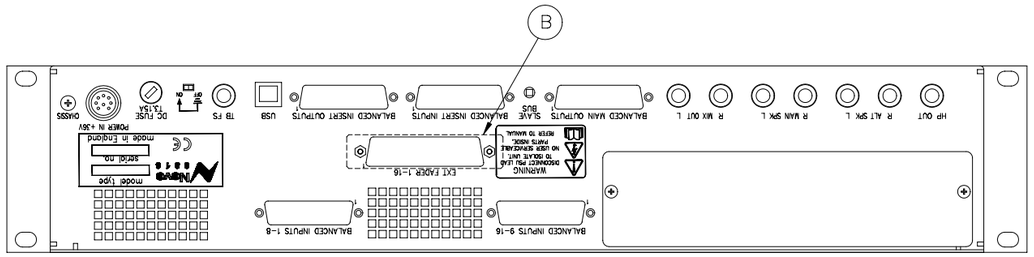
Earth Lift SW

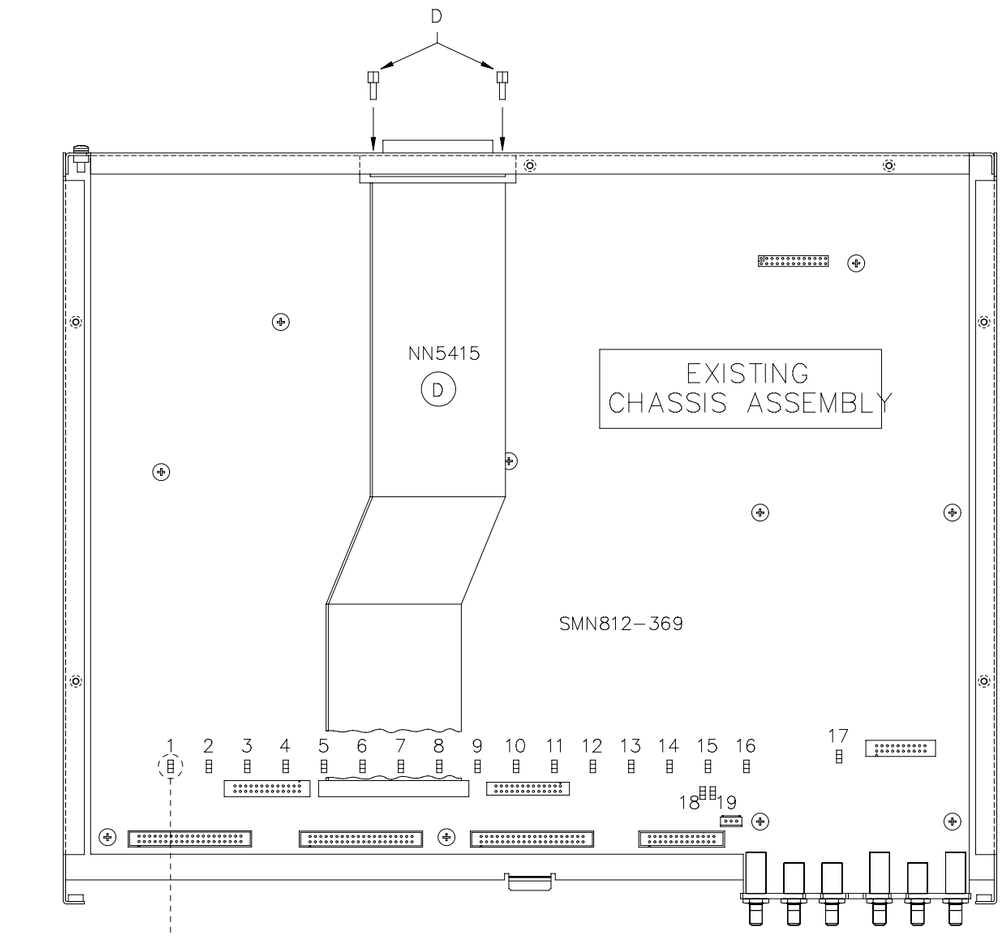
L
N
E

Mains I/P
90v to 240V
50Hz to 60Hz

Notes:
1. All I/P's and O/P's marked +4dBu are electronically Balanced.
2. All I/P's and O/P's marked with -10dbv or -14dbv are unbalanced
3. Controls marked with a # can be recalled.
4. Controls marked with a * can be reset.
5. All switches are Momentary except where marked a %.
6. All -10dbv o/p's are via 1/4" jacks on the rear of unit.
7. When Sum is selected this will Mix the Main Mix o/p with what ever is selected on the monitor at that time.
8. -10dbv = -8dbu.

G	F	E	Issue	Dm R.A.P/SC		TITLE 16:2 Summing Mixer	USED ON 8816
13/1/06	12/1/06	15/12/05	Date	Traced R.A.P			Drg. No. EB11729
			C.N. No.	Checked			SHT. 1 of 1
			Checked	AMS NEVE LTD		2005 ©	A0

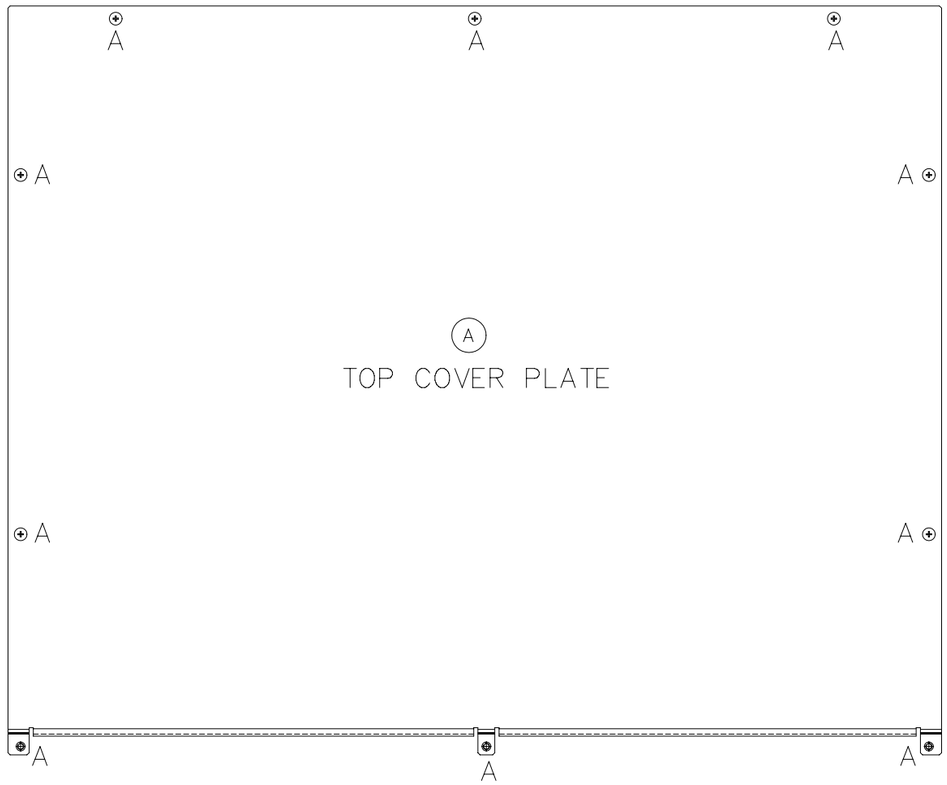




INSTALLATION PROCEDURE	TOOL REQUIRED
(A) REMOVE 10off SCREWS (MARKED A) & TOP COVER PLATE FROM THE UNIT & KEEP SAFE TO RE-USE – SEE ITEM (E)	
(B) REMOVE EXISTING SCREWS, NUTS, WASHERS & COVER PLATE – DISCARD OR DRILL OUT EXISTING PILLARS FROM REAR USING 6mm DIA DRILL BEING CAREFUL NOT TO BREAK THROUGH THE CHASSIS WALL FULLY	OR
(C) SWITCH EXISTING 19off JUMPERS FROM DEFAULT POSITION TO NEW POSITION AS SHOWN	
(D) FIT CABLE NN5415 TO CONNECTOR SHOWN ON MOTHERBOARD SMN812-369 & TO REAR PANEL WHERE SHOWN. SECURE USING 2off JACK POSTS SUPPLIED (MARKED D) DO NOT OVER TIGHTEN	
(E) RE-FIT TOP COVER PLATE USING EXISTING 10off SCREWS FROM ITEM (A)	

TOOLS YOU WILL NEED

- POZI-DRIVE SCREWDRIVER
- PLIERS
- 6mm DIA DRILL



SMW	----	17.5.06	1
NAME	MOD. No.	DATE	ISS.

☆NOTE – SOME DETAIL OMMITED IN THE INTERESTS OF CLARITY

THIRD ANGLE PROJECTION
DRAWN TO B.S.308

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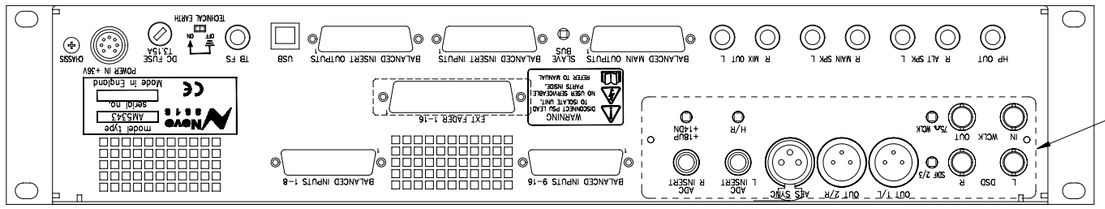
SCALE 1:1

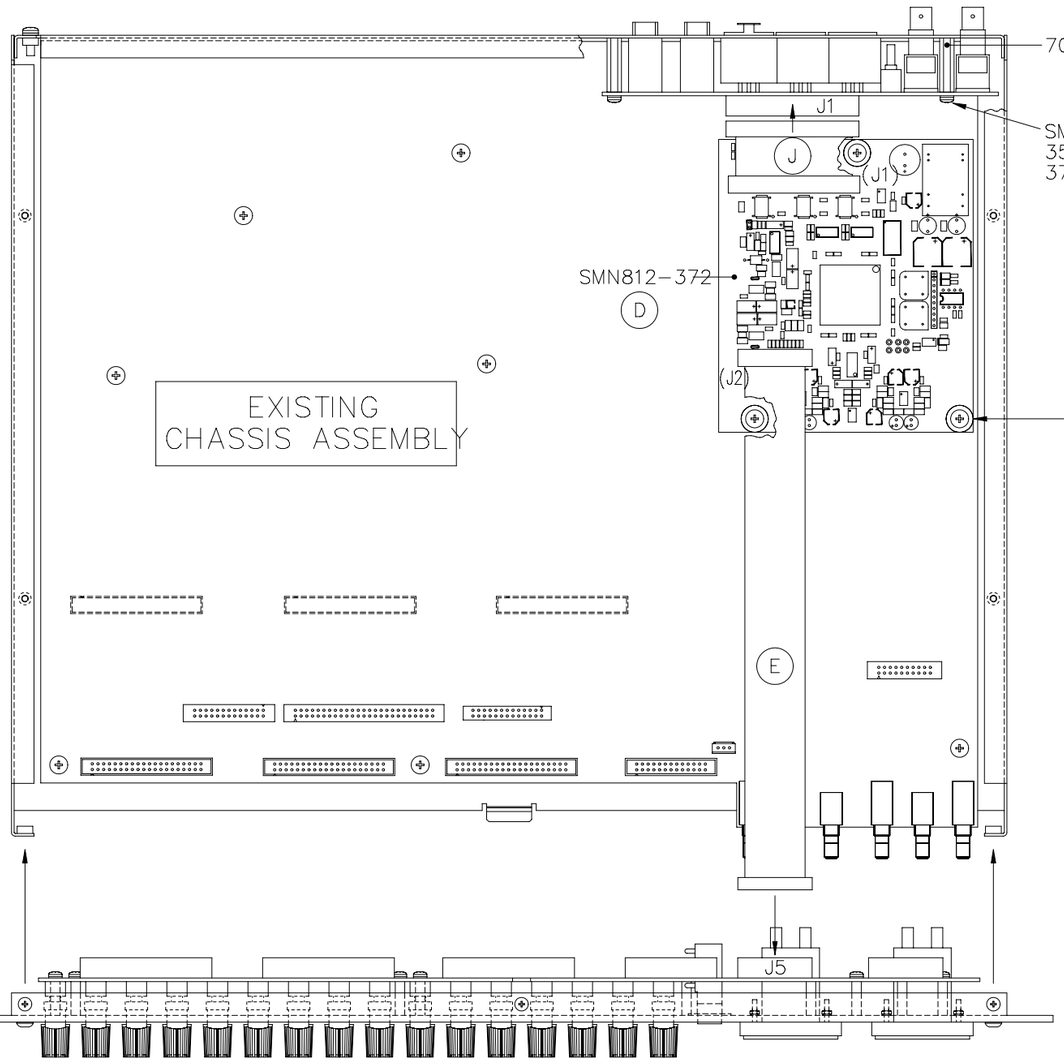
TITLE: AM5393 – MODS TO 8816 TO FIT 8804 FADER UNIT

DRAWN	APP'D	DATE
SMW		17.5.06

AMS NEVE LTD. BILLINGTON ROAD, BURNLEY. LANCS. BB11 5UB. ENGLAND. TEL. (01282) 457011 FAX. (01282) 417282.

DRG No.	SHT
AM5393	3







REMOVE BLANKING PLATE (636-272)
& 2off SCREWS (350-254) (F)

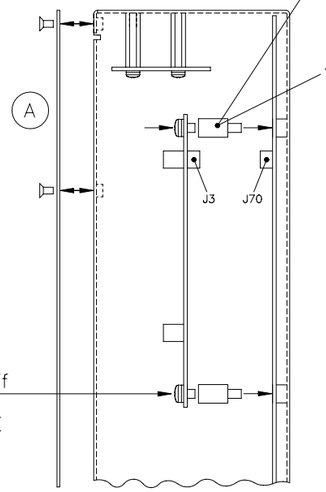
☆NOTE – MAKE SURE CONNECTORS ARE IN LINE BY SCREW HOLE NEAR J1 BEING IN CENTRE OF THE PILLAR

705-062x4off G

SMN812-371
350-015x4off H
370-005x4off

SMN812-372
(D)

REMOVE EXISTING 3off
SCREWS & WASHERS
& RE-INSTALL HERE
(B)



380-071x3off
(C)

TOOLS YOU WILL NEED

- POZI-DRIVE SCREWDRIVER
- PLIERS
- 5mm A/F SPANNER

INSTALLATION PROCEDURE	TOOL REQUIRED
(A) REMOVE TOP COVER PLATE & SCREWS FROM THE UNIT & KEEP SAFE TO RE-USE AT ITEM (K)	
(B) REMOVE EXISTING 3off SCREWS & WASHERS – KEEP SAFE TO RE-USE AT ITEM (D)	
(C) SCREW 3off 380-071 THREADED SPACERS THROUGH MOTHERBOARD	
(D) FIT PCB SMN812-372 (J3) TO MOTHERBOARD (J70) USING SCREWS & WASHERS FROM ITEM (B)	
(E) CONNECT EXISTING CABLE FROM SMN812-372 TO FRONT PANEL PCB (J5) ☆NOTE – ON EARLIER UNITS RETAIN SILICON SEALANT, LATER UNITS SHOULD HAVE LATCHED CONNECTOR.	
(F) REMOVE EXISTING BLANKING PLATE (636-272) & 2off SCREWS (350-254)	
(G) SCREW 4off SPACERS (705-062) ONTO STUDS ON INSIDE REAR OF UNIT	
(H) FIT SMN812-371 BOARD ASSY IN POSITION USING 4off SCREWS (350-015) & WASHERS (370-005)	
(J) CONNECT EXISTING CABLE FROM SMN812-372 TO SMN812-371 (J1)	
(K) RE-FIT TOP COVER PLATE USING EXISTING SCREWS FROM ITEM (A)	

☆NOTE – ON POWER UP, INITIAL STATE SHOULD BE SET TO 44.1Hz WITH RED LED LIT UP

NAME	MOD. No.	DATE	ISS.
SMW	M38000/21V	15.12.06	2
SMW	D38000/QW	15.2.06	1

THIRD ANGLE PROJECTION
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TITLE: 8816 OPTIONAL ADC INSTALLATION INSTRUCTIONS

AMS NEVE

DRAWN	APP'D	DATE	DRG No.	SHT
SMW		6.1.06	527-363	2

SCALE 1:1

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