



4081

Quad Mic Preamp

User Manual
Issue 3

Firmware V2.0 or later

The 4081 is a quad mic / line pre-amplifier, based on the classic 1081 modules and provides both powerful control and the legendary Neve sound.



Health & Safety Notice

**FOR YOUR OWN SAFETY AND THE PROTECTION OF OTHERS,
PLEASE OBSERVE THE FOLLOWING HEALTH AND SAFETY INSTRUCTIONS**



- ⇒ Read These Instructions And Keep Them Handy
- ⇒ 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
- ⇒ Use Only Accessories Specified By The Manufacturer
- ⇒ Unplug When Unused For Long Periods Of Time
- ⇒ Refer All Servicing To Qualified Personnel Only
- ⇒ No User Serviceable Parts Inside

**FAILURE TO FOLLOW THESE PROCEDURES AND RECOMMENDATIONS
COULD INVALIDATE THE MANUFACTURER'S WARRANTY**

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In the unlikely even that your 4081 should malfunction or develop a fault, please register the fault details on our website by clicking the link below.

You will also need 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.

For further operational or technical help, or for any other general enquiry about the 4081, please email info@ams-neve.com.

Introduction



The 4081 Quad Mic Preamp builds on the incredible success of the **1081** and **1081R** modules and provides both powerful control and legendary Neve sound.

Perfect for vocals, ADR and Foley recording, the 4081 features make it the number one choice for any studio, OB truck or live stage environment.

Every function of the 4081 can be controlled directly from the front panel or by remote control using a Mac or PC with the Neve Remote Control software.

This provides a simple and elegant solution for users of ProTools and other DAW systems.

Multiple 4081 units can be linked together to create up to 64 independent channels of Mic Pre-amps or Line Level inputs, all controlled from a single point.

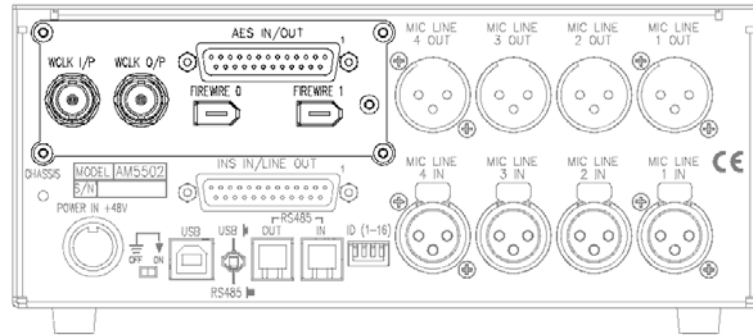
The unit always powers up with all settings, levels and states as they were at power-down.

An optional Digital module provides a Firewire/AES interface with four channels of A/D and D/A conversion to either AES or Firewire.

An Insert point is available before the A/D converter on each channel to allow external, analogue outboard equipment to be switched into the signal path.

- Legendary Neve microphone preamp design
- Four genuine 1081 Mic preamp channels in a single unit, 8.5" wide
- Two units can be fastened together to provide 8-channels in a single 19" unit
- Remote control using a Mac / PC and the Neve remote control software
- XLR Mic input can be switched between Mic and electronically balanced Line
- Switchable 48V Phantom power supply
- Digital I/O Option:
 - Firewire/AES interface with four channels of A/D conversion to either AES or Firewire and 4 channels of D/A conversion
 - Analogue Insert (pre A/D converter) per channel

Optional Digital / Firewire card

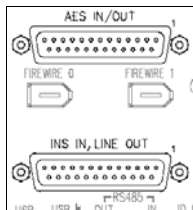


This optional module has 2 FireWire ports, Wordclock sync **IN** and **OUT** and a 25-way D-type connector for AES Ins/Outs.

If this option is not present, there will be a blanking plate fitted instead, and the **Sample Rate** leds & buttons on the front of the unit will not function.

The **AES IN/OUT** and **Firewire** ports are intelligent, in that if a Firewire connection is detected, then the 4081 will presume that FireWire will be the digital interface, and not the AES.

If a Firewire connection is not detected, then the 4081 will presume the audio is coming in via the **AES IN/OUT** 25-way D-type connector.



The optional expansion module has 4 DA/AD converters:

- AES signals going into **AES IN/OUT** connector (or Firewire if detected) will also be sent as analogue outputs from the **LINE OUT** of the 25 way D-sub connector.
- If **INS** is selected on a channel, then the corresponding analogue input signal connected to **INS IN** of the 25 way D-sub connector will be converted and output as AES signals from the **AES IN/OUT** (or Firewire if detected).

By default, the Post- gain amplified signal from the Mic/Line input will also be routed to the A/D inputs.

Channel Controls

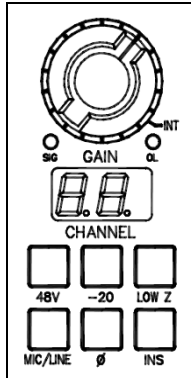
Each channel can be controlled from the front panel, from a remote Mac or PC, or via Pro Tools using the optional remote control software.

By default, the unit powers-up with all functions locally controllable, and with all settings & switch states fully recalled as they were at power-down.



► The unit is powered by the silver switch with the Neve logo, which will light red once the power is on.

Front panel control is available on each input for:



- **48V**: Turns on Phantom Power to the Mic (not available for **LINE**)
- **-20**: Pad, attenuates the incoming Mic signal by -20dB (not available for **LINE**)
- **LOW Z**: Impedance for Ribbon Microphones (not available for **LINE**)
- **MIC/LINE**: Selects between the Mic or Line input. Lights yellow when **MIC** is selected; unlit for **LINE**.
- **Ø**: Swaps the incoming phase of the Mic or Line signal.
- **INS**: This selects the source for the A/D in the FireWire expansion module if fitted. When illuminated, allows an external Insert Pre- the A/D of the expansion module.

► Turning the **Gain** control will vary the gain as shown in the display beneath.

The Gain level is not related to the actual position of the knob, which will infinitely rotate.

- The **MIC** gain control runs from +20dB to +70dB in 5dB steps.
- The **LINE** gain control runs from 0dB to +20dB in 5dB steps.

Just beneath the Gain control are two leds that indicate:

- Signal Presence (lights green at approx -30dBu or greater)
- Signal Overload (lights red at 2dB below clipping)

The metering point is Post- the Gain stage.

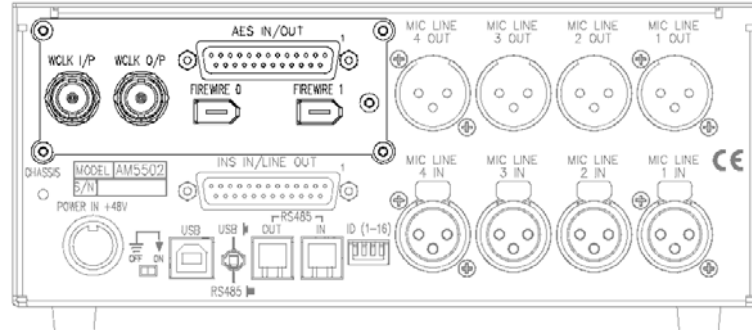
Maximum signal level is 26dBu.

The Gain knob also has a push-switch which will only function if the unit is attached to an AMS Neve 88R console where it is used to interrogate console control settings (to be implemented in V3.0 software).

AD/DA / Firewire Card (optional)

The 4081 FireWire expansion board provides a digital interface for the 4081, both to FireWire and AES/EBU, and has two modes of operation as described below.

If this digital board is not fitted, then the **Sample Rate** and **Sync Source** leds on the front of the unit will not light or function.



Standalone mode (with no FireWire connected)

This mode is designed for operation with ProTools, or any other digital system which uses AES/EBU as its digital I/O interface.

Essentially, it provides 4 mono ADC channels (from the 4081) to AES/EBU over two stereo AES/EBU ports, and is compatible with sample rates up to 192kHz on each of these AES/EBU ports (true stereo single wire 192kHz operation).

As an added feature, it also has two stereo AES/EBU ports to four DAC channels which can be used for monitoring. Again, these can run at up to 192kHz (true stereo single wire 192kHz operation).

Control of the sample frequency and synchronisation source in standalone mode is done entirely through the front panel buttons.

As a general rule, any flashing led on the digital panel shown below indicates that the unit is not locked to the selected sample rate or source. If this happens, please check that the sample rate selected on the 4081 matches that which is being supplied, either by AES, Wordclock or FireWire.

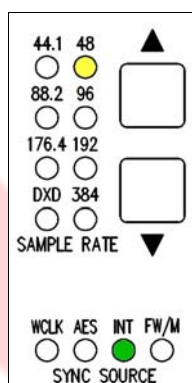
Solid leds indicate the unit is locked to the selected source at the chosen rate.

Setting the sync source in standalone mode

In standalone mode, the FireWire expansion board can lock to internal, AES/EBU, or TTL wordclock, at sample rates from 44.1kHz to 192kHz.

► Press both buttons together to step through the sync sources (Wordclock, AES & Internal).

- A solid green led means the unit has locked to the selected sync source.
- A flashing led indicates it cannot find the selected sync source, so please check that the selected sync source is connected.



Internal lock in standalone mode

The green **INT** led will illuminate, and the yellow sample rate led will indicate the sample rate the 4081 is running at.

► Step through the sample rates by pressing the ▲ or ▼ buttons.

The yellow led will light solidly to indicate the sample rate selected. A flashing led indicates it cannot lock to the selected sample rate.

NB:

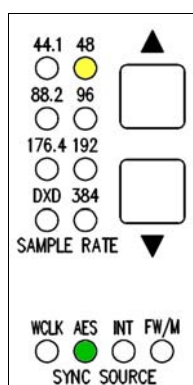
Internal lock should be used if no external sync source is available, or if you want the 4081 to be the Master sync source for your system.

AES/EBU lock in standalone mode

The green **AES** led will illuminate when AES/EBU sync is selected.

If the green led is flashing, it means that the AES/EBU source is running at a different sample rate to the 4081.

► Change the sample rate of the 4081 using the ▲ and ▼ buttons until the desired sample rate led is solid.



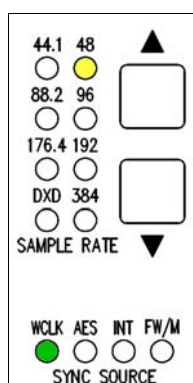
Picture, left, shows the 4081 locked to a 48kHz AES source.

Word clock lock standalone mode

The green **WCLK** led will illuminate when word clock sync is selected.

If the green **WCLK** led is flashing, it means that the word clock source is running at a different sample rate to the 4081.

► Change the sample rate of the 4081 using the ▲ and ▼ buttons on the front panel buttons until the green led is solid, or the sample frequency of the word clock source matches that of the 4081.



Picture, right, shows the 4081 locked to a wordclock source at 48kHz.

FireWire mode (with FireWire connected)

FireWire mode allows the 4081 to be directly connected to a DAW which is FireWire capable (for example Logic or Reaper) and provides four mono ADC to FireWire, and four mono FireWire to DAC channels directly from the DAW.

Before the 4081 can be used with your DAW, the AMS Neve drivers need to be downloaded and installed from the AMS Neve support site. Drivers for both the Mac and PC can be downloaded from:

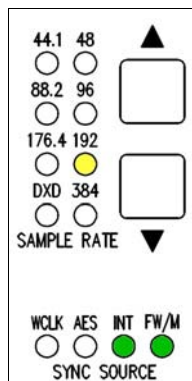
<http://www.ams-neve.com/site/Products/Outboard/4081/4081.aspx>

Your DAW documentation will have detailed instructions on setting up your DAW application to work with FireWire devices.

As an added feature, the four ADC channels are also routed to the two stereo AES/EBU ports when in FireWire mode, allowing the 4081 to simultaneously be connected to the FireWire DAW, and an AES/EBU I/O system, such as ProTools.

In FireWire mode, unfortunately, it is not possible to simultaneously route the AES/EBU inputs to the DAC outputs, as these are reserved for the FireWire.

Setting the Sync source in FireWire mode



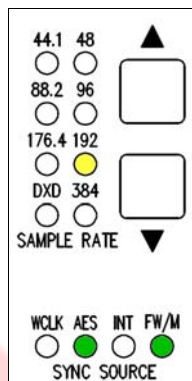
In FireWire mode, selection of the sync source and sample rate is done entirely from the DAW application, and the two front panel buttons will have no effect.

When a valid FireWire input is connected, the green **FW/M** led will illuminate.

As in standalone mode, the green leds indicate the lock source selected, and the yellow leds indicate the sample rate (from 44.1kHz to 192kHz).

Picture, left, the 4081 under FireWire control, set to Internal sync running at 192kHz.

AES/EBU lock in FireWire mode



Once AES/EBU sync is selected on the DAW application, the green **AES** led will illuminate.

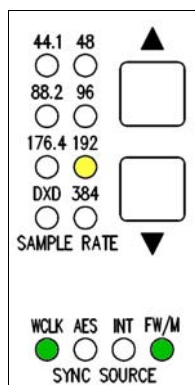
If the green led is flashing, it means that the AES/EBU source is running at a different sample rate to the 4081.

► Change the sample rate of the 4081 from the DAW application until the green AES/EBU led is solid, or change the sample rate of the synchronisation source to match that of the 4081. The sample rate of the 4081 is indicated by the yellow leds.

The 4081 can lock to either of the AES/EBU inputs.

Picture, left, shows the 4081 under FireWire control locked to a 192kHz AES source.

Word clock lock in FireWire mode



Once word clock sync is selected on the DAW application, the green **WCLK** led will illuminate.

If the **WCLK** led is flashing, it means that the word clock source is running at a different sample rate to that selected on the 4081.

► Change the sample rate of the 4081 from the DAW application until the green AES/EBU led is solid, or change the sample rate of the sync source to match that of the 4081.

The sample rate the 4081 is locked to is indicated by the yellow leds.

Picture, left, shows the 4081 under FireWire control locked to a word clock source running at 192kHz.

Installing the software – PC

USB Driver

Before installing the control software, you will need to install a USB driver on the PC to enable communication between the PC and the 4081.

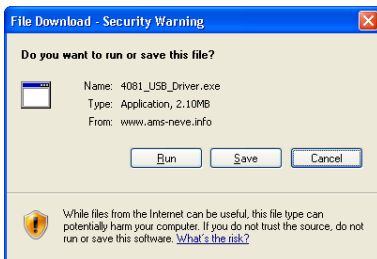
This can be downloaded from:

http://www.ams-neve.com/Sites/8/Files/Documents/Outboard/4081_USB_Driver.exe

► Before installing the driver, please connect the 4081 by USB to the PC and power it up.

► Click the link to download the driver.

► When presented with the option to either **Run** or **Save**, click **Save** and specify a location for the file to be saved to.

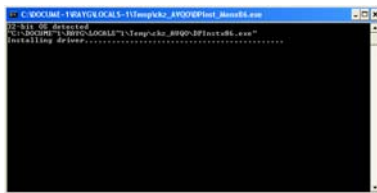


► Once it has downloaded, double click the file to run and install it.

The Windows operating system will be determined, as will the correct driver for your system.

A Windows **CMD** screen will show the install by a series of progressing dots.

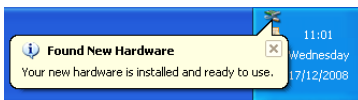
For users with Windows 7 operating system, the driver has been successfully installed once the **CMD** screen closes.



For users with XP or Vista operating systems, as the driver nears the end of it's installation procedure, the **CMD** screen will close and the **Taskbar** will show two messages:



The first will show that the driver has found new hardware and a USB port has been detected.



The second will show that it is ready to use.

Once the USB driver has been installed, you can install the 4081 control software.

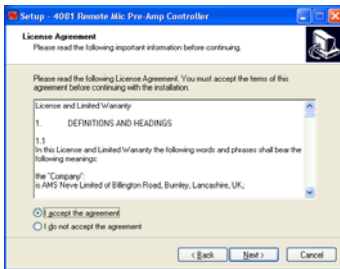
Remote Control software

The install procedure is the same regardless of whether the software is installed on a standalone PC or on a DAW PC.

Double-click the **Setup** icon and the install will begin.

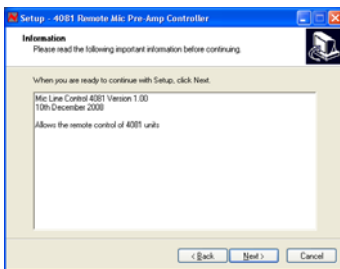


► Click **Next**.



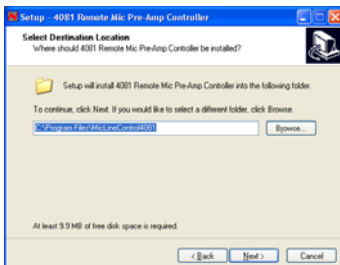
► Select **I Accept the Agreement** (if you select **I Do Not Accept The Agreement**, the install procedure will terminate here).

► Click **Next**.



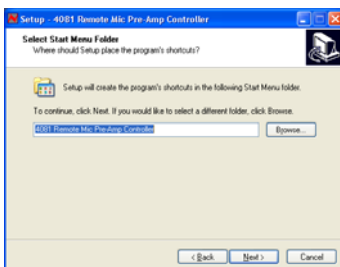
A summary of the software development will be shown.

► Click **Next**.



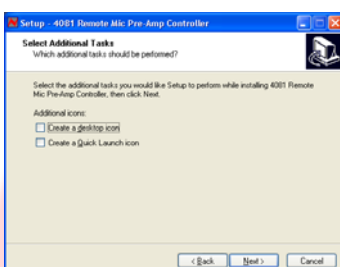
Select the location to install the software to.
It is recommended you leave this set to the default location.

► Click **Next**.



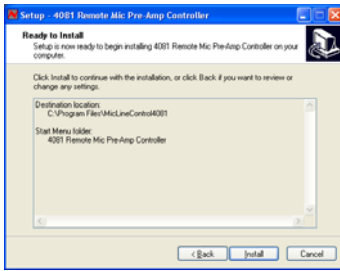
You will be asked where you wish to place the programme on the **Start** menu.

► Either select another destination or leave it at default location (recommended).

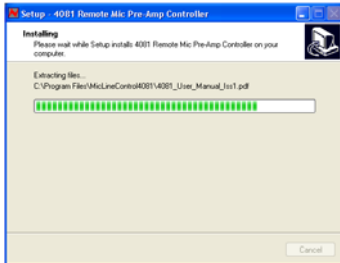


► Select either or both of these options if you wish to have a Desktop icon or a Quick launch icon for the installed application.

► Click **Next**.



► Click **Install**.



The software will start to install, with a bar indicating how far it has progressed.



If you wish to launch the programme at this point, select **Launch 4081 Remote Mic Pre-Amp Controller** option before clicking **Finish**, and the programme will then open.

► Click **Finish**.

The first time the software is opened, you will need to set the Com Port so that communication can be established.

Please refer to page 17 to see how to set this.

Installing the software – Mac

USB Driver

The Mac will also need the USB driver installed so it can convert 4081 serial comms to USB.

This is available as a download from our website:

<http://www.ams-neve.com/Products/Outboard/4081/4081.aspx>

Please install this driver before installing the remote control software.

Remote Control software

This install procedure outlined below is for Mac software version 10.5 or above.

If you have a different version of Mac OS installed, there may be subtle differences on the screens shown below, but the install procedure is still the same.

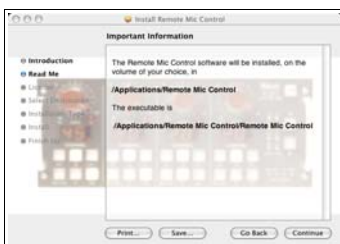
► At any point in the install, you can return to the previous screen by click **Back**.

► Before installing this software, please connect your 4081 via USB and power the unit up.

► Double click on the icon called **Remote Mic Control.pkg** and the install program will open with the **Welcome** screen.

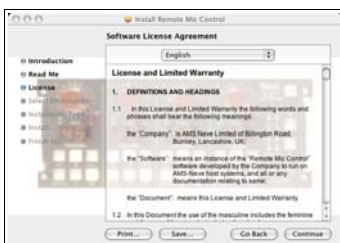


► Click **Continue**.



The **Information** screen will display where the software will be installed on the Mac.

► Click **Continue**.



The License **Agreement** screen will open.

► Click **Continue**.

To continue installing the software, you must agree to the terms of the software license agreement.

Click Agree to continue or click Disagree to cancel the installation.

You will be asked to confirm that you have read the agreement.

► Click **Agree**.

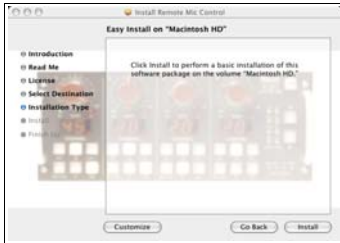
If you click **Disagree**, the Install procedure will terminate.



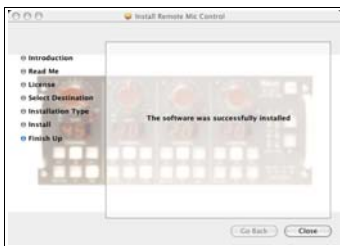
You will be asked to select a location to install the software to.

► Click on **Macintosh HD** as shown left, so a green arrow is placed on the drive on-screen (depending on the number of drives in your system, this may be done automatically for you).

► Click **Continue**.



► Click **Install** to continue, and the software will start to be installed.



Once installed, a confirmation screen will report it has been installed successfully.

► Click **Close**.

Once installed, a program called **Remote Mic Control** will be placed in the **Applications** folder.

The programme can either be run from there, or dragged onto the Dock and run from there.

Operationally, there is no difference between controlling the 4081 from a Mac or a PC.

Standalone Control Setup – PC version

Before starting the software or powering the unit on, please make sure it is connected via USB first.

The software is launched from Windows **Start Menu / Programs / 4081 Remote Mic Pre-Amp Controller**.

Also at this location is the User Manual plus the option to uninstall.

As the software opens, it will automatically detect how many racks are connected, and display this information at the bottom of the screen.

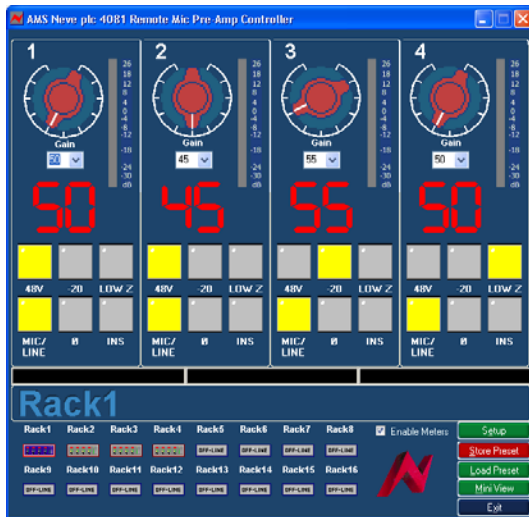
- Under each of the numbered racks, a small 4081 graphic will be displayed for each unit detected.
- The word **OFFLINE** will be displayed where no unit has been detected.

A red highlight bar will also indicate the rack whose controls are currently being displayed on the upper half of the screen.

Once the control software is running, a small Neve icon will appear in the Windows taskbar.



This will either be displayed in green if the MIDI is running, or in red if it is not.



As shown left, four racks have been detected, yet it is the settings for the first rack that are currently displayed (there is a red highlight bar round **Rack 1**).

Select the rack you wish to display the settings for by clicking on the icon underneath **Rack 2**, **Rack 3** etc. The red highlight bar will confirm your selection.

The screen will be updated with any changes made through the modules' front panels, and likewise, the units front panels will be updated with any changes made on screen.

► If you wish to enable the metering on the Main Screen, ensure the **Enable Meters** tickbox is checked. If this is left unticked, the only indication of signal level will be the **SIG** and **OL** leds on the front of the unit.

► The **Gain** can be set by selecting the Gain value from the pulldown menu (if this value is out of range, the selection will remain unchanged). The Gain value for Mic and the Gain value for Line will be remembered for each, so that swapping between Mic and Line will show the previously set gain value.

► The **Phantom**, **Pad**, **Phase**, **Impedance**, **Mic/Line** selection and **Insert** can all be set by clicking on the appropriate button on-screen (**Phantom**, **Pad** and **Impedance** can only be selected if **Mic** is selected first).

The icons at the bottom of the screen indicate how many remote racks are connected.

The rack indicated by the red outline is the one currently controlled from (and displayed on) the upper part of the screen.

► To select another rack, click on it's icon and the red outline will move to indicate that the screen is now displaying parameters for that rack.

You cannot select any unit that is currently displayed as **Offline**.

The settings can be saved and recalled independently using the **Store Preset** and **Load Preset** buttons that launch conventional Windows **Save** and **Load** dialogues (see below).

These Stores will save all the control settings for all the attached racks, and not just those for the currently selected rack.

Setup / Test

Important Note

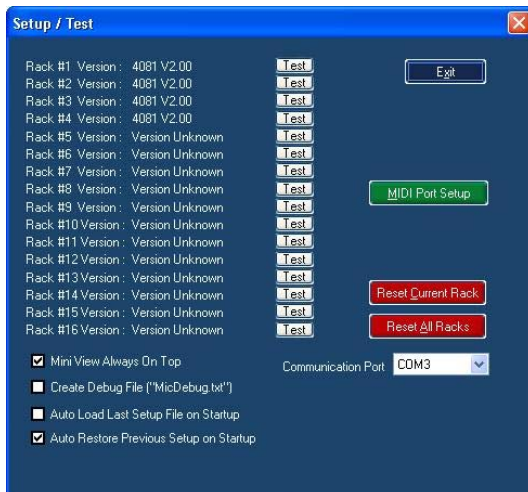
When the **Setup / Test** screen is open, any changes made on the front of the unit will not be sent to the on-screen display shown behind the Setup screen.

This can result in mis-matches between what is selected on the unit, and what is displayed on-screen.

For this reason, please do not make any changes to the settings on the front of the unit when the Setup screen is open.

The Setup screen allows you to test that the unit IDs are set correctly, and also fully configure the software.

As can be seen below, four 4081 units have been detected, as the version of firmware is displayed next to the first four units.



► To test the ID of each unit, click the relevant **Test** button.

This will flash all of the **Phase** buttons once on that particular unit, and you will hear the units internal relays click as this happens.

Please note that if you wish to change the ID of a unit with the dip switches, you will need to power-cycle the unit so the new ID number is sent to the software.

Communications Port

After installing the software, you will need to set this before control can be established.

This is usually set to **COM 3** (depending on your computers particular hardware configuration).

Please note that once the communications port has been set, the 4081 unit must be switched on **before** the software is restarted.

If this is not observed, the software will fail to find a valid port and will default back to being Port 1 again.

This will require the correct port to be reselected again.

MIDI Port Setup

Please see section on Pro Tools Control.

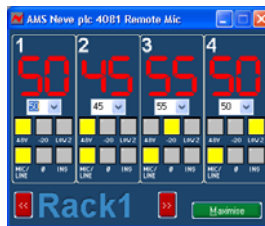
Reset Current Rack / Reset All Racks



► Click either of these two buttons to either reset the currently selected rack, or reset all the detected racks back to default values (both Mic Gain & Line Gain set to minimum values; all switches set to **Off**)

Please note that the command to reset everything will not be sent until **Exit** is clicked and the **Setup** page has closed.

Checkboxes



Mini View Always On Top

With the Mini View selected from the Main screen, a cut-down version of the Settings screen will be displayed instead.

► Ticking this option ensures that it is displayed on top of all other Windows screens that may be open.

► With this option unticked, the screen can be placed behind other Windows screens that may be open.

In all operational aspects, this screen is identical to the full-size screen except for:

► Click << or >> to step through the racks in numerical order (the display will reflect which rack is being displayed and whether it is offline/online).

► Click the **Maximise** button to restore the screen back to it's full size.

For units that are offline, the large Gain display will be absent.

Create Debug File

For AMS Neve R&D Dept only and has no operational effect.

Auto Load Last Setup File On Startup

When ticked, once the control software is opened, the last Store file that was loaded will be reloaded again.

NB: If the settings on the front of the unit have changed in the meantime, then these changes will be overwritten.

Auto Restore Previous Setup On Startup

When ticked, once the software opens, the settings of all the attached units as they were when the software was closed will be reloaded again.

NB: If the settings on the front of the unit have changed in the meantime, then these changes will be overwritten.

Store Preset

- ▶ When selected, a standard Windows **Save** dialog will open.

This allows you to take a snapshot of the settings of all the racks that are currently connected and save it to a desired location.

This file is global, ie it takes a snapshot of all controls for all the connected racks.

There is no limit to the number of preset files that can be created.

Any Store file created will have a **.mic** suffix.

Load Preset

- ▶ Once selected, opens a standard Windows **Load** dialogue, so that the files created above can be loaded back to the units.

The settings are global, ie there is nothing to set or select before the settings are impacted on the attached units.

- ▶ Select the file to load and then click **Open**.

All the attached racks will be reset according to the settings held in the selected file, and the filename will be displayed on the title bar.

This will be displayed until another file with a different name is loaded, and the filename will be refreshed.

Mini View

Please see **Mini View Always On Top**, above.

Pro Tools Control Setup

Before starting the software or powering the unit on, please ensure it is connected via USB first.

*Depending on how your Mac is configured, you may need to enable the **USB** port in **Setup / Communication**.*

Control is sent and received between the 4081 and Pro Tools via USB or RS 485 protocol.

It is necessary for a suitable driver to be installed on the Pro Tools computer such as the **MIDI OverLAN** driver available from www.nerds.de.

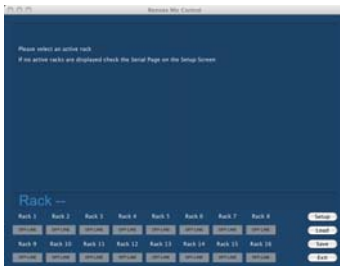
For more information, please click on the above link.

NB:

Without this driver installed, none of the midi ports will appear as described below.

The first 4081 unit needs to have the USB / RS485 switch on the rear of the unit set to USB (plus a USB cable from the unit to the PC / Mac).

Subsequent units in the daisy-chain, need to have this switch set to RS485 (plus the RS485 cable needs to connect these units together).



► Open the **Remote Mic Control.app** application.

This will appear either as an icon on the desktop or can be accessed from the **Applications** folder.



► On the main page, click **Setup** and the **General** screen will open.

► At the top of the screen, click **MIDI**.



► In both upper displays, click the **Midi In** and **Midi Out** you wish to link and then click **Link Port**.

The ports that have been linked will appear in the lower window.

► Repeat for as many midi ports you wish to link.

These midi streams must match those set in Pro Tools.

► Under the lower window, click **Start Midi**.

The **Start Midi** button will now say **Stop Midi** to indicate that the midi communication has been started.



On the main screen, **MIDI ON** will be displayed in green text (just above the rack 8 icon) to show that the midi comms have been started.

► If you need to set further links (or to use the **Remove** button to cancel any of these links), you will need to click **Stop MIDI** before doing this.

- On a Mac, options on the **MIDI** menu allow you to start or stop the midi.
- On a PC, right click the Neve logo on the taskbar to start or stop the midi and select **Stop Midi**.

► Click the **General** button.



► Ticking the **Auto Load Last Setup File On Startup** option will cause the last saved or last loaded system setup to be reloaded when the software is next started.

When controlling the 4081 from Pro Tools, it is advisable to turn this option off.

One way communication is available from Pro Tools to the 4081.

For example:

- Clicking the phase button in Pro Tools will swap the phase on the relevant 4081 channel (and light that button on the unit);
- Pressing the same phase button on the 4081 will not affect the state of that channel's phase at Pro Tools.

Configuring Pro Tools

Please refer to your Pro Tools documentation on how to configure Pro Tools.

AD/DA / FireWire Expansion Board

This optional board can either be specified at the time of ordering, or purchased at a later date and retro-fitted into the 4081 by the user.

This section describes how to fit the expansion board into the 4081.

Parts supplied in the upgrade kit

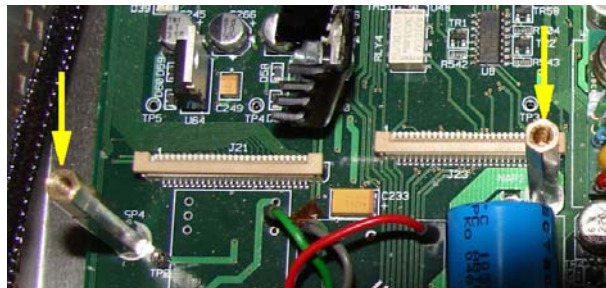
- 1 x SMN812-389 FireWire IO board
- 2 x 6 pin FireWire cable
- 2 x 26-way ribbon cable
- 1 x power cable
- 2 x mounting pillars

Tools Required:

- M3 pozi screw driver
- M3 allen key
- Pair of pliers

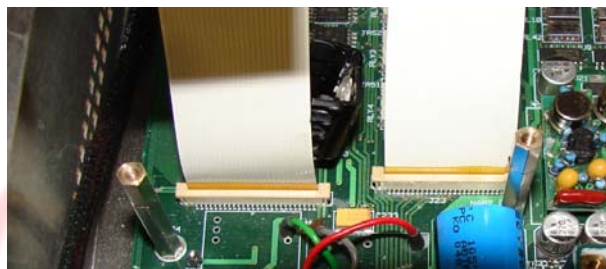
Fitting Instructions

- Ensure that the 4081 unit is powered down and remove the 48v power cable from the 4081.
- Remove the expansion blanking panel from the back of the 4081 and also the lid.
- Remove the two M3 screws (as indicated by the two arrows, below) holding the 4081 motherboard to its chassis, and replace with the supplied mounting pillars, as shown below:



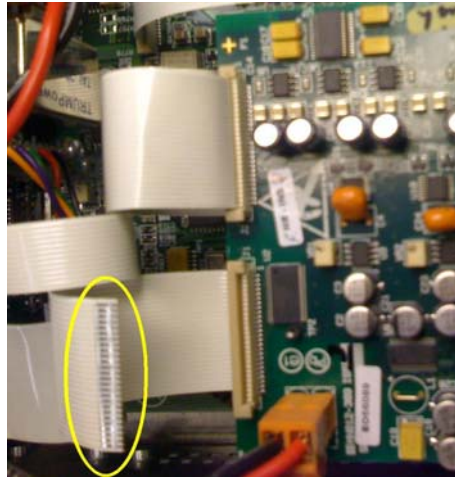
- Fit the two 26 way ribbons (as indicated) to the motherboard.

These are fitted by lifting the connector top, inserting the ribbon into the connector, and pushing the connector edges back into place.



- Place the FireWire expansion board into the 4081 chassis (from the back) where the blanking plate was fitted.

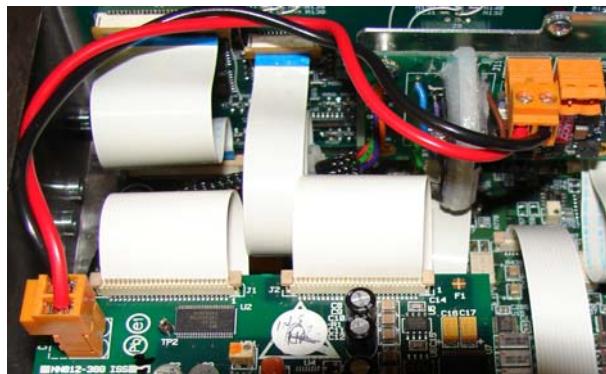
- Fit the other ends of the 26 way ribbon cables to the FireWire expansion board as indicated in the photograph below.



Please note that both 26-way ribbons need connecting. The photograph above shows the 2nd ribbon disconnected to show the orientation of both cables and the contacts.

- Screw the back panel of the expansion board to the 4081 chassis using the screws which were used to fit the original blanking plate, and re-use the M3 screws which were replaced by the mounting pillars to screw the FireWire board to the posts.
- Connect the 2 pin power cable between **J16** of the expansion board and the power distribution board mounted on the front panel of the unit, as shown below.

The power connector is polarised, so can only be fitted one way.



The FireWire expansion board is now fitted to your 4081.

Once the board has been fitted, please download the appropriate FireWire driver from our website. There are two drivers available, one for Mac and one for PC.

Mac:

http://www.ams-neve.com/Sites/8/Files/Documents/Outboard/FireWire_Installer.zip

PC:

http://www.ams-neve.com/Sites/8/Files/Documents/Outboard/FireWire_Installer.exe

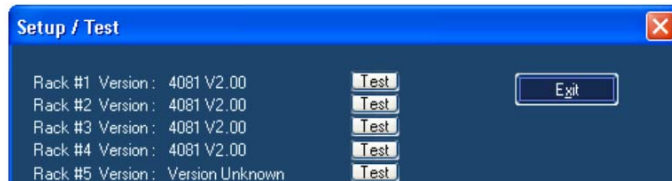
Install the relevant driver on the Mac or PC that is running the Neve remote control software.

Updating 4081 Firmware to Version 2.0

You only need to run this procedure if you do not have V2.0 firmware on your unit and the metering feature is not currently available.

Version 2.0 firmware was introduced mid 2010, so units manufactured after this date will not need this firmware update.

You can check the firmware version of each unit that is connected by clicking the **Setup** button and then checking the version against each unit.



Where you have more than one unit connected via the USB/RS485 chain, it is important that all units are running the same versions of firmware.

Upgrading the firmware is a two-stage process:

1. Upgrade the firmware on the 4081 unit
2. Upgrade the remote control software on your PC or Mac.

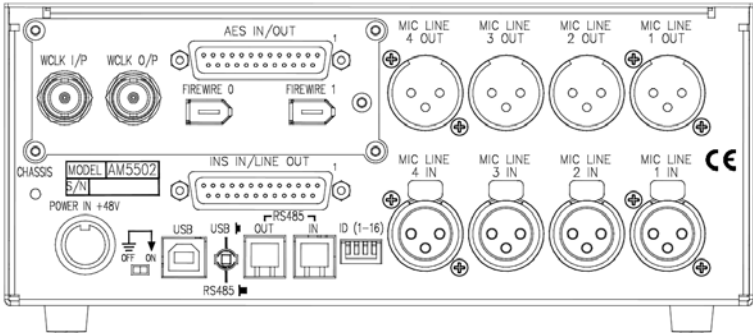
The necessary firmware, plus full instructions on how upgrade the 4081 are available here:

<http://www.ams-neve.info/community/4081-version-2-00-software-update/>

NB:

Please note that upgrading the 4081 firmware can only be done using a PC.

Rear Connectors / Pin-out information



Mic / Line Input XLRs

1	Screen
2	Hi
3	Lo

Mic / Line Output XLRs

These can either be used as Direct Outputs from the unit, or as Insert Sends.

The Output is Post- the Gain control.

Pin-outs as above.

Power input

48 volts, 8-pin connector.

This connector is polarised so can only be connected one way.

INS IN / LINE OUT

A 25-pin D-sub connector that contains the Insert Return signals and the Line outputs.

The **Line Out** part of this connector will have no function unless the optional AD/DA card is fitted (see below).

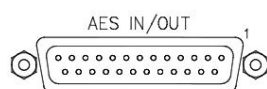
AES INs / OUTs

These signals are on a 25-way D-sub connector.

AES RECEIVE		
Pin	Signal name	Female XLR 1 pin:
12	AES RX 1+	2
24	AES RX 1-	3
25	screen	1
		Female XLR 2 pin:
23	AES RX 2+	2
10	AES RX 2-	3
11	screen	1

AES TRANSMIT		
Pin	Signal name	Male XLR 1 pin:
6	AES TX 1+	2
18	AES TX 1-	3
19	screen	1
		Male XLR 2 pin:
17	AES TX 2+	2
4	AES TX 2-	3
1	screen	1

- **AES 1** contains data for channels 1 (L) and 2 (R) from the 4081
- **AES 2** contains data for channels 3 (L) and 4 (R) from the 4081



On the **AES Ins/Outs** 25-way connector on the rear of the 4081, a number '1' printed next to the corner of the connector indicates the location of Pin 1.

NB:

Please note that analogue breakout cables will **not** be suitable for use with this connector.

Ensure you use a cable wired to the Tascam AES convention instead.

(An analogue cable is wired pin-to-pin, an AES cable has the pins crossed so pin 1 goes to pin 25 etc).

USB / RS 485

Standalone Mac / PC or DAW



USB cable

ID 1



RS485 cable

ID 2



RS485 cable

ID 3



RS485 cable
etc....

It is possible to 'daisy-chain' multiple units together so they are controlled via USB on a Mac or PC.

The first unit on the chain should be connected to the Mac or PC by a USB cable (not supplied).

The blue **USB/RS485** button on the rear of this first unit should be pushed in to select USB.

Subsequent units are connected from the RS 485 **OUT** of the 1st unit, to the **IN** on the 2nd, from the **OUT** of the 2nd to the **IN** of the 3rd and so on (these subsequent units should all have the blue **USB/RS485** button on the rear pushed out to select RS485 control).

The RS 485 communication protocol uses RJ9 connectors for connecting cables where multiple units can be chained together, going from **OUT** to **IN** as described above (cabling not supplied).

NB:

This cable should be wired pin-to-pin.

Please note that when connecting multiple units, each 4081 should have a unique ID as shown left.

The procedure for setting these IDs is described on page 29.

Cable Specification

The RS-422 specification recommends 24AWG twisted pair cable with a shunt capacitance of 16 pF per foot and 100 ohm characteristic impedance.

These recommendations should be used for RS485 systems as well.

We also recommend using shielded cable.

There are many cables available meeting the recommendations of RS-485 made specifically for this application. Another choice is the same cable commonly used in the twisted pair Ethernet cabling. This cable, commonly referred to as Category 5 cable, is defined by the EIA/TIA/ANSI 568 specification.

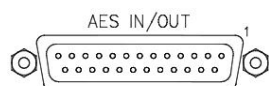
This cable has a maximum capacitance of 17 pF/ft (14.5 pF typical) and characteristic impedance of 100 ohms.

Category 5 cable is available as shielded twisted pair (STP) as well as unshielded twisted pair (UTP) and generally exceeds the recommendations for RS-422 making it an excellent choice for RS-422 and RS-485 systems.

INS IN / LINE OUT

These signals are on a 25-way D-sub connector.

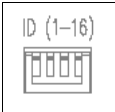
25-way Pin	Male XLR 1		Standard cable
6	Line Out 1 hot	2	5
18	Line Out 1 cold	3	
19	screen	1	
Male XLR 2			
17	Line Out 2 hot	2	6
4	Line Out 2 cold	3	
5	screen	1	
Male XLR 3			
3	Line Out 3 hot	2	7
15	Line Out 3 cold	3	
16	screen	1	
Male XLR 4			
14	Line Out 4 hot	2	8
1	Line Out 4 cold	3	
2	screen	1	
Female XLR 1			
12	Insert IN 1 hot	2	1
24	Insert IN 1 cold	3	
25	screen	1	
Female XLR 2			
23	Insert IN 2 hot	2	2
10	Insert IN 2 cold	3	
11	screen	1	
Female XLR 3			
9	Insert IN 3 hot	2	3
21	Insert IN 3 cold	3	
22	screen	1	
Female XLR 4			
20	Insert IN 4 hot	2	4
7	Insert IN 4 cold	3	
8	screen	1	



On the **AES Ins/Outs** 25-way connector on the rear of the 4081, a number '1' printed next to the corner of the connector indicates the location of Pin 1.

4081 unit ID dip switches

When remotely controlling more than one unit, the ID dip-switches on the rear of the unit need to be set so that each unit on the chain responds to the correct commands.



The first 3 switches from left to right are used to set the machine IDs from 1-8. These switches are On when in the **down** position (the right-most switch on this block puts the unit into 'Bootloader Mode' which allows the 4081 firmware to be updated. Please see page 24 for this procedure).

Unit ID	Switch 1	Switch 2	Switch 3
1	Off	Off	Off
2	On	Off	Off
3	Off	On	Off
4	On	On	Off
5	Off	Off	On
6	On	Off	On
7	Off	On	On
8	On	On	On



← Front of unit ←

The switch-block will be covered with a thin protective film which should be removed first.

Where there are more than 8 units on the RS 485 chain, the IDs for units greater than 8 are set using dip-switch 1 on the switch-block labelled **SW2** inside the unit (with the front of the unit to the left, this switch-block is just above a white programming connector).

- With this switch in the down position, the unit will have an ID between 1 & 8.
- With this switch in the up position, the unit will have an ID between 9 & 16.

NB:
Switch 1 is **On** when in the up position.

► Remove the lid to the unit, and set switch 1 to be **ON**, then set the switches on the rear of the unit to the following:
fp

Unit ID	Switch 1	Switch 2	Switch 3
9	Off	Off	Off
10	On	Off	Off
11	Off	On	Off
12	On	On	Off
13	Off	Off	On
14	On	Off	On
15	Off	On	On
16	On	On	On

If a unit's ID is changed, the 4081 must be switched off and on again for the remote control software to be aware of the new ID number.

If the ID number is set incorrectly, a unit will either fail to respond or multiple units will respond to a single command.

Technical / Physical Information

Dimensions

19" Rack Mount	Width mm (inches)	Height mm (inches)	Depth mm (inches)
2 units plus fixing brackets	218 (8½)	88.2 (3½)	267 (10½)

Power Requirements

External Power supply Rated Voltage	100 – 240V AC
External Power supply Rated Frequency	50 - 60 Hz
External Power supply Rated Current	1.9A Max
Fuse (inside the 4081):	
Input voltage	48V DC
Fuse rating / type	1A (20mm x 5mm)
Location	FS1

Mains Power

The power supply is universal input type and therefore no mains operating voltage setting is required.

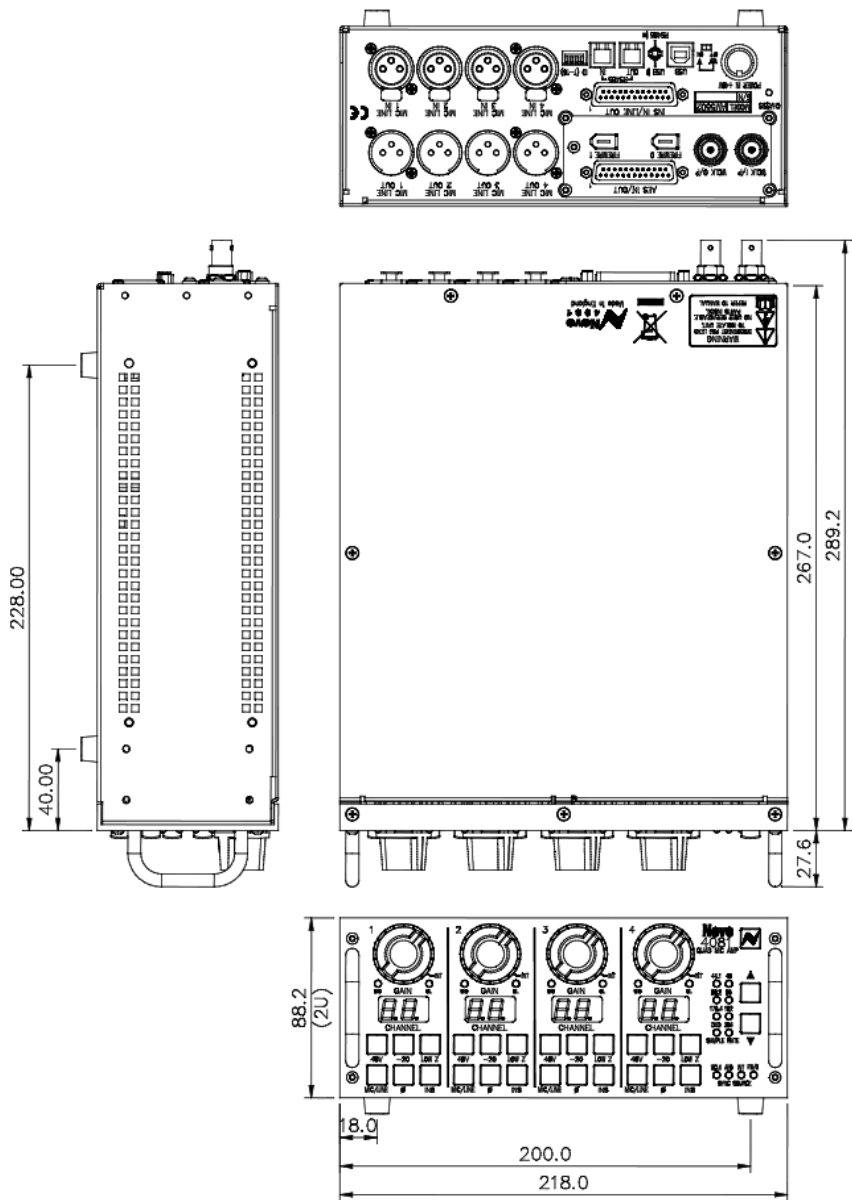
Technical Earth

When switched on, internally connects zero volts to the unit chassis.

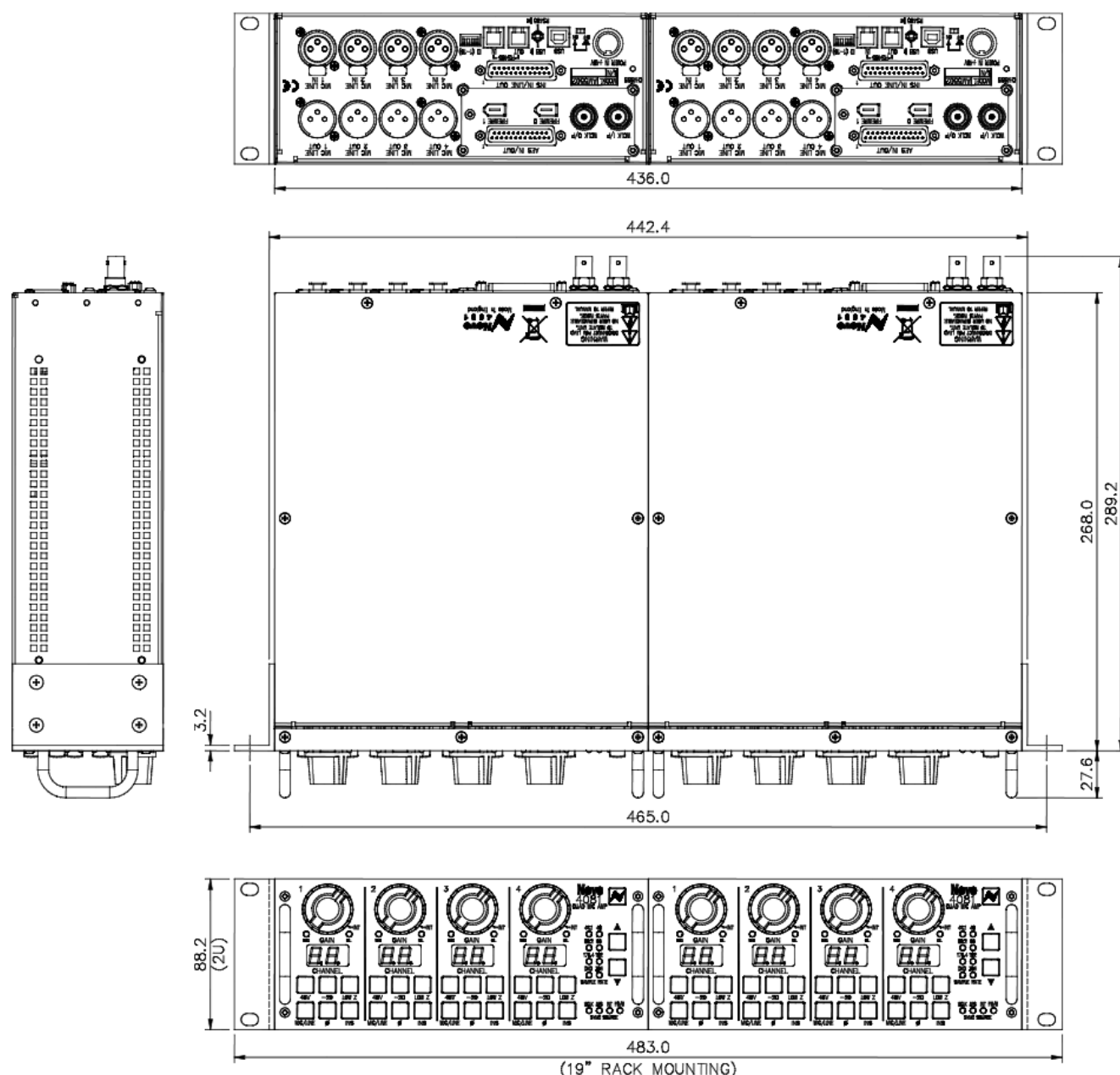
Audio Specification

Mic Input	XLR input, Z in 1Kohm @ 1kHz Gain +20 dB to +70 dB in 5dB steps
Maximum mic input level (with Pad)	+24dB
Outputs	Max +26dB into 600 ohms, Z out 50 ohms +/-5% @ 1kHz, balanced
Distortion	<0.07% for 20dBm output from 50Hz to 10kHz @ 60dB Gain
Equivalent Input Noise	>-123dBm 20Hz to 20kHz @60dB Gain
Line Input	Z in 50k ohm, unity gain, electronically balanced

Dimensions: single unit



Dimensions: 2 units for rack-mounting



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