



for Windows XP



Operator's Manual Software Version 8.40

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Thanks

Thank you for taking the time to find out what's new in the latest version of **AudioCore**. Please spend a little time reading through this manual, so that you obtain the best possible performance from the software.

All XTA products are carefully designed and engineered for cutting-edge performance and world-class reliability. If you would like further information about this software or any other XTA product, please contact us.

We look forward to hearing from you in the near future.



Introducing AudioCore Version 8.40

This version of **AudioCore** is a major advance on the last major release of the software, version 6.00. Many new features have been added, and it is the purpose of this document to introduce them and explain their use as clearly and simply as possible.

Please note the following points when using this software:

- Support for the DP100, DP200 and DP202 has been removed. The last version that offered full support of all units (excluding the 4 Series) is version 6.00 – this is still available on the website at www.xta.co.uk.
- The minimum screen resolution required is now 1024 x 768. The software will still run at lower resolutions but, due to the increased amount of information shown in this version, not everything will fit on screen at once and scrolling will be required.
- The 4 Series units will run at a baud rate of 115200, but the DP226, DP224 and DP6i will NOT. If you are running a mixed system (4 Series and older units), remember that the fastest available baud rate will have to be 38400.
- Make sure that all connected units have the latest firmware – check our website at www.xta.co.uk for the latest version numbers. Failure to update your units may result in erratic operation and possible loss of control.¹

What's new in this version?

- Inclusion of the new 4 Series audio management systems, and reintroduction of **Array Control**.
- Improved graphics, including larger screens, easier control and advanced curve drawing.
- Phase plots now available, along with shadow EQ curve displays.
- Cross-unit copy and pasting – copy EQ and settings to other channels on the system, or to complete units.²
- Individual memory control on a unit-by-unit basis and snapshot memory control for complete system scene store and recall.

¹ ...of the units, not the engineer.

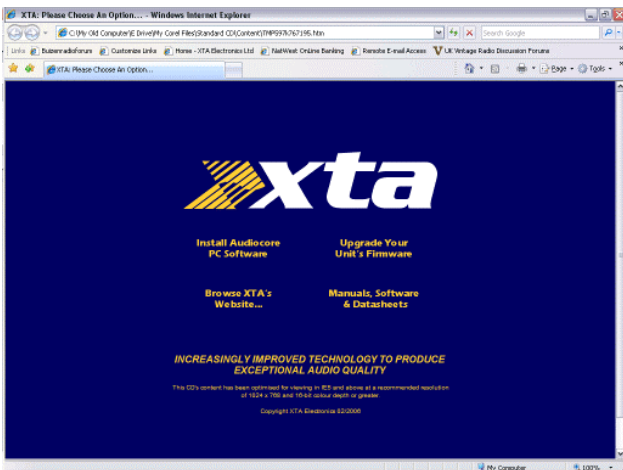
² Limitations apply across different types of units.

Installation

Please note that this software is designed for Windows XP. It will run on older machines under Windows 2000, or NT. It will also run under Windows 98 or ME, but the installation is a little more involved. Please contact us for more information.

Follow these steps to install **AudioCore** on your computer.

Insert the CD supplied in the front of all DP-Series manuals into your computer and close the CD drive. The CD will auto-run and you will see a screen like this:



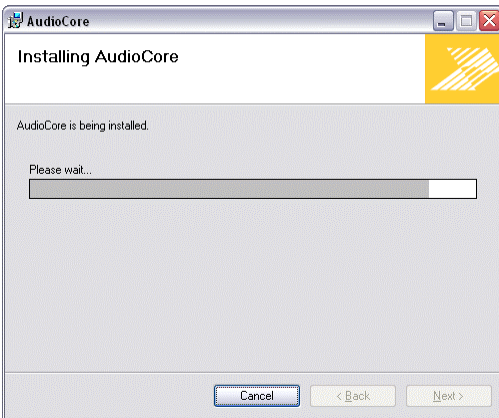
Click on the text "Install AudioCore PC Software" to begin the installation.

When you are asked to confirm the running of non-verified software, please click "Run".

The installer will then start...



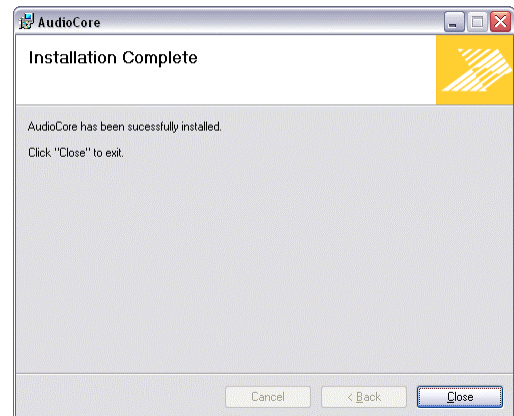
The wizard will guide you through the set-up of the program, which will only take a short time to complete.



It's worth knowing that you can run two copies of AudioCore at the same time on one computer. This might be useful when you need to support older units such as the DP200 or DP202 – these require version 6.00, still available at www.xta.co.uk, or www.xta.uk.com/software.

Once complete, you should not need to reboot your system and you should have an AudioCore link on your desktop and in your start menu.

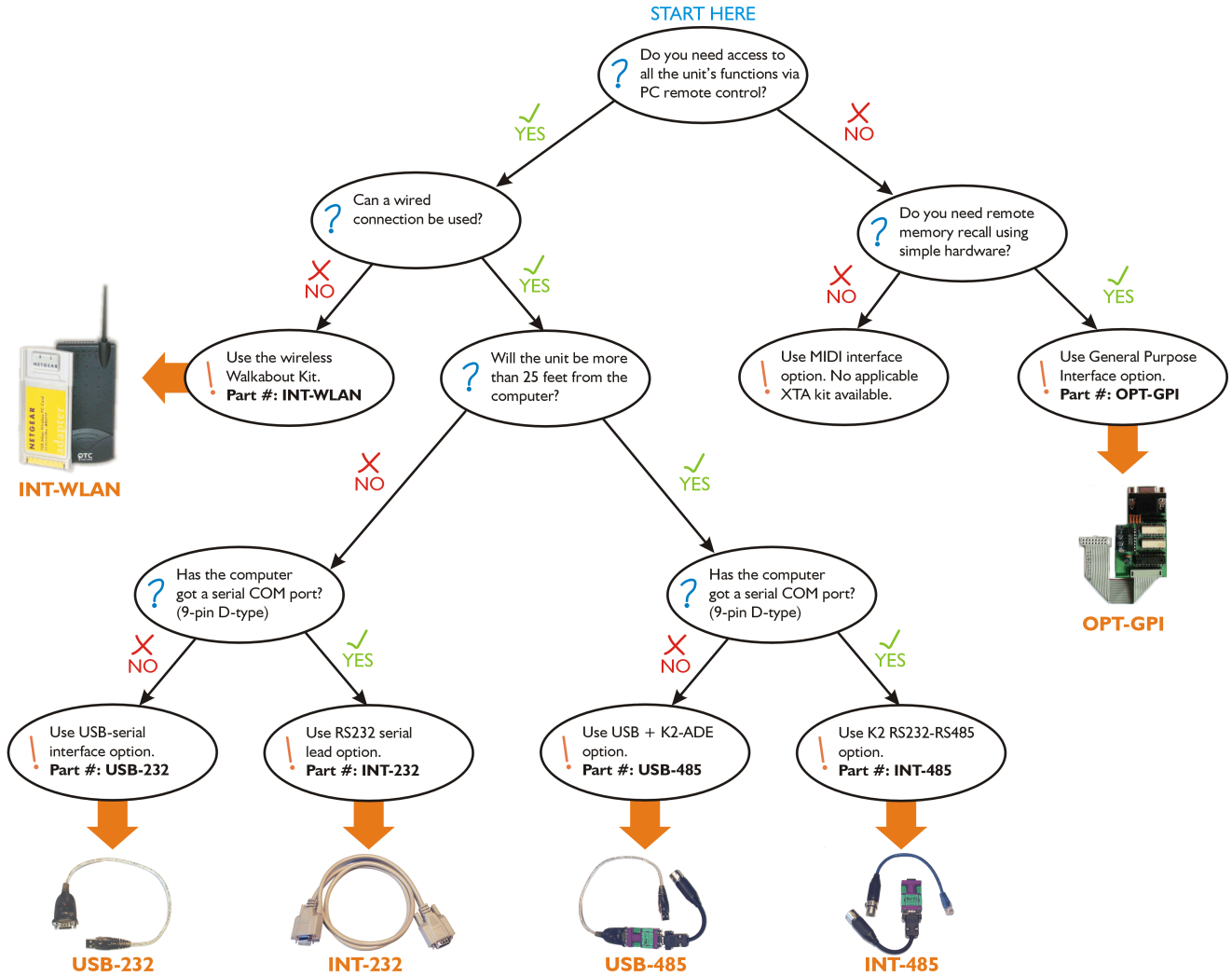
If you have downloaded the latest version from our website, just double click on the file "AudioCore.msi" to start the installation as above.



Connecting Units to the Computer

Choose the Interface Connection

There are several types of remote connection that may be used to connect your units to the computer. Choose the one best for you using the decision tree below.



Having decided on the best interface for your system, the following sections deal with the actual set-up and connection of both a single unit, and a network of units to your computer.

All the interface kits listed above are available from XTA – just ring your distributor and quote the part number given by the one you require...

RS232 Interface

This interface is fitted as standard to all units and is accessed via the 9-pin D-type connector on the rear of the unit. Note that to connect to a computer's COM (serial) port correctly, a one-to-one cable must be used, and NOT a 'null modem' cable. A 'null modem' cable has the 'transmit' and 'receive' wires swapped over and will not work.

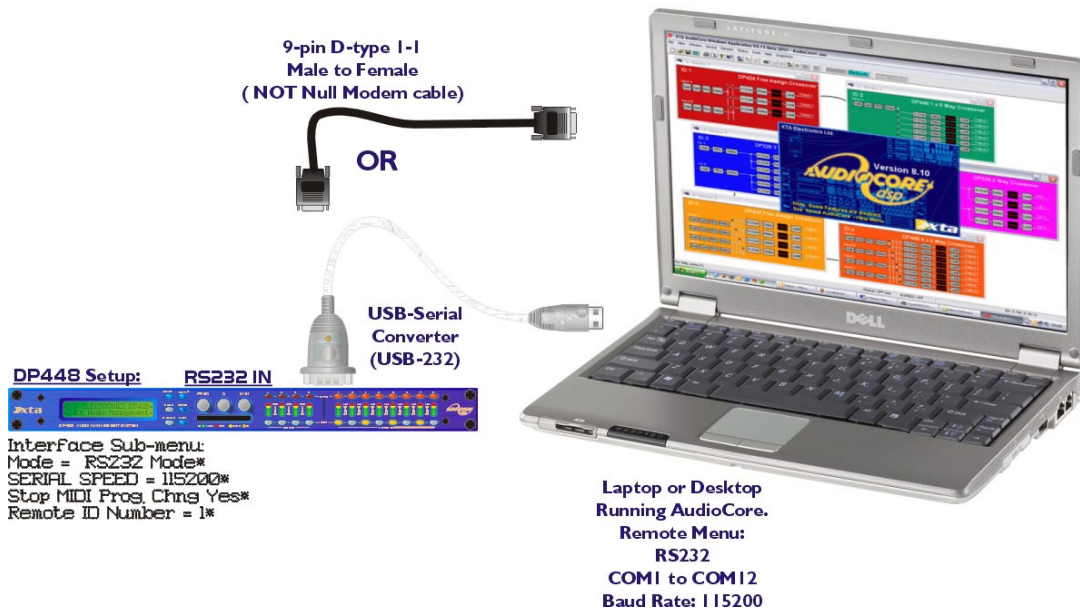
The RS232 connection is suitable for distances of about a maximum of 25 feet between the PC and the unit. If you experience problems with the connections, consider

- selecting a slower baud rate
- selecting the 'Use Acknowledge Cmd' option in **AudioCore** (see the Remote Menu ► RS232 Configuration window)
- running the unit via the RS485 interface

Note that only one unit at a time may be connected to the computer via this interface. Additional units may be 'daisy-chained' via the RS485 connections from the back of the first one (it acting as a converter for them), but their RS232 ports are not used.

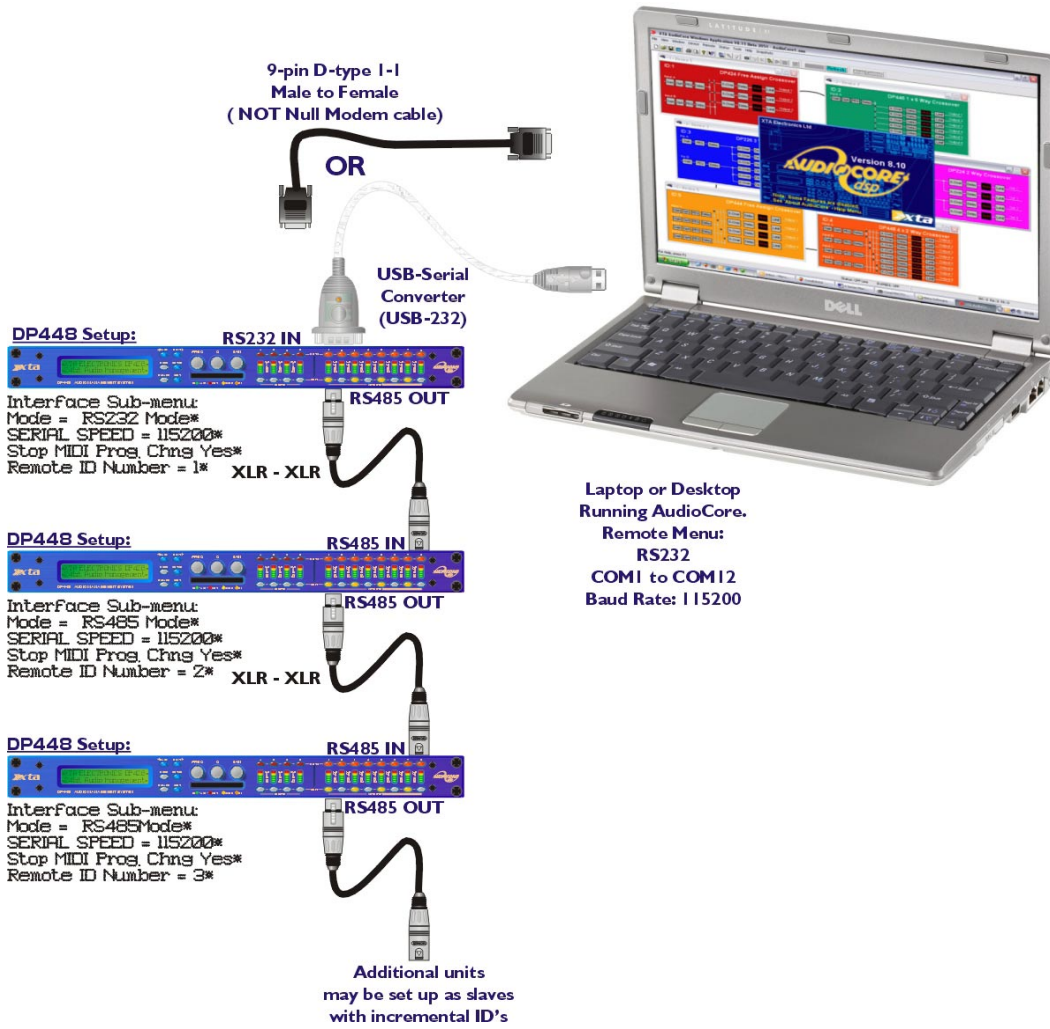
RS232 Connection (Single Unit)

A typical interface set-up might involve running an RS232 link from laptop or a desktop computer to a 4 Series unit set up as a master unit. The diagram below shows this method of connection, the required menu options are also given. Remember that the RS232 cable must be a 1-1 connection type, NOT a null modem cable (which has connections crossed internally).



RS232 Connection (Multiple Units)

If control over multiple units is required, typically the slaves will be set up to run from the RS485 ports on the master unit. Note the incremental 'ID NUMBER' setting in the unit's interface setup.



Shadow ID Numbers

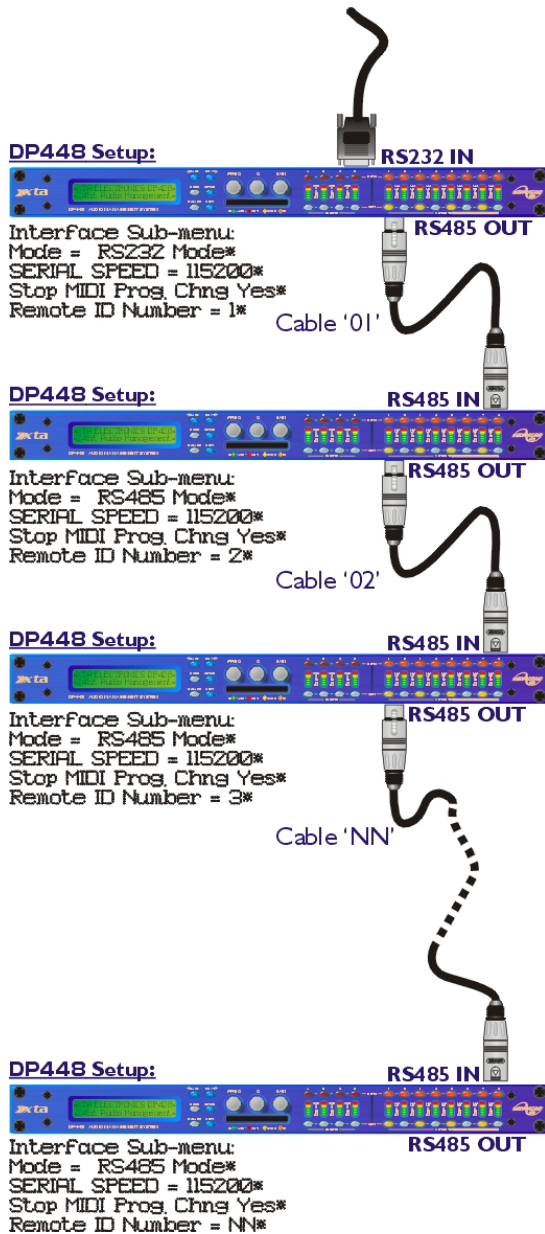
Shadow ID numbers allow extra units to share the same ID and follow the settings of the 'main' ID. This is useful for larger systems (for example anything above a 4-way stereo system) where it is only necessary to set up one side of the system, and allow the other unit to track it identically.

Using the shadow IDs in this way also reduces the apparent system complexity within **AudioCore**.

This is due to the fact that shadow ID's NEVER send back any settings to AudioCore and because of this will NOT appear in the list of connected units.

They can be thought of as listening to and acting upon all information addressed to them, but not replying. Up to 128 shadow units may be connected and assigned the same ID as the 'main' unit, but remember that the maximum total units on any one RS485 network is 128.

Shadow ID numbers are accessible when the unit's interface is configured, and will appear after ID number 128, starting from 1 again, but designated shadow IDs with an 's' after the number – 128s. Any ID can have multiple corresponding shadows.



RS485 Interface

This interface is fitted as standard to all units and is accessed via the 3-pin XLR sockets on the rear of the unit. Cables to connect units together or to an RS232-485 converter will need to be wired one-to-one. We recommend the use of standard shielded microphone cables, or a balanced feed from a multicore.

RS485 is a fully balanced system, capable of sending data over distances of up to one kilometre. Note, however, that this is the **total** length of connection. The RS485 output of each unit is purely hardwired from the input and so no electrical regeneration of the signal is provided. What this means is that the distance from the **first** RS485 output to the **last** RS485 input must not exceed 1km in total.

As this diagram illustrates –
The combined length of cables 01 + 02 + ...NN < 1000 metres.

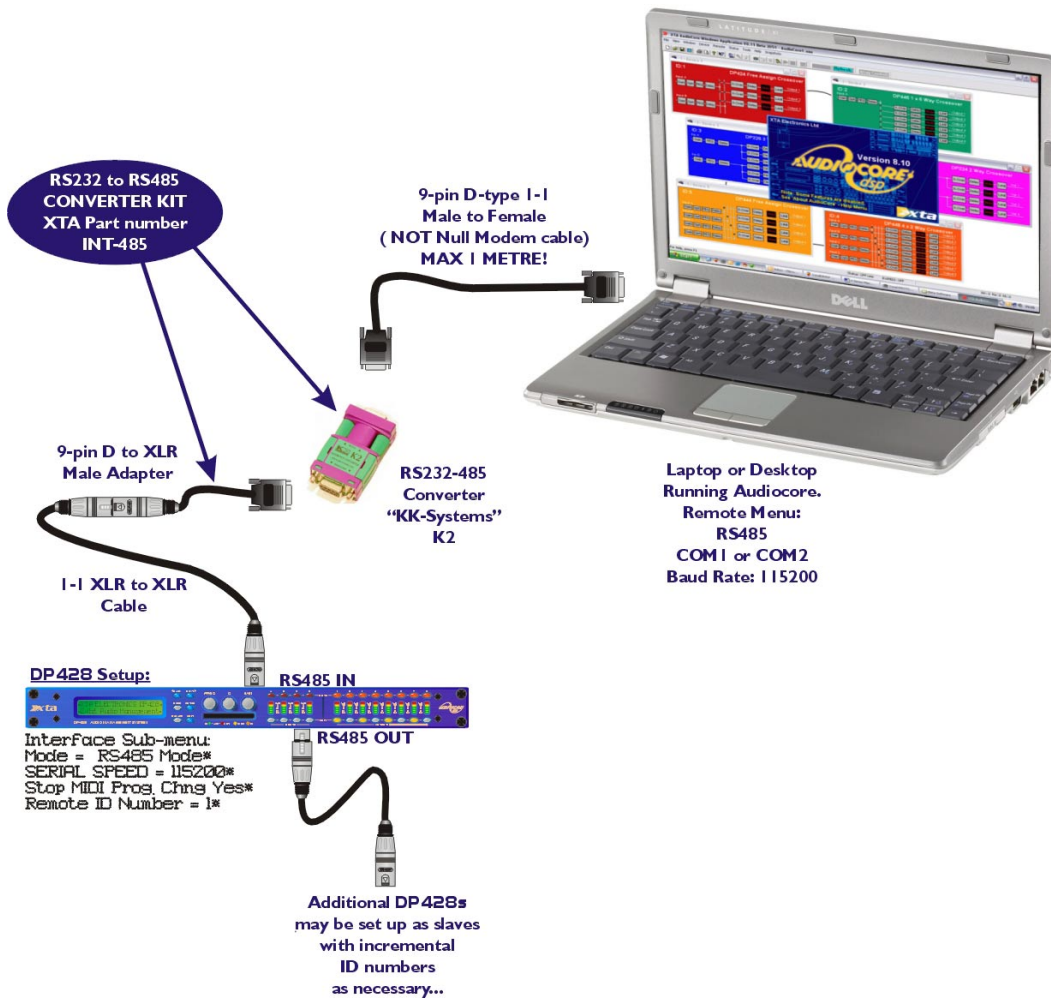
Note that this includes any units set up as shadow IDs.

Units may be connected in a star configuration if required, so a long cable may be used and then a hub formed with units all connected to this, but we do not recommend daisy chaining these configurations together.

XTA has a range of tried and tested interfaces, all of which are listed in the XTA Interface Guide, available from our website. We can supply all the interfaces described in this guide directly – please get in touch.

RS485 Connection

To use RS485 communication directly from a computer, a master unit must be configured to receive RS485. You must have a suitable RS485 port on your computer, or a converter connected to the serial port in use. This configuration is shown below, along with the required unit setup.

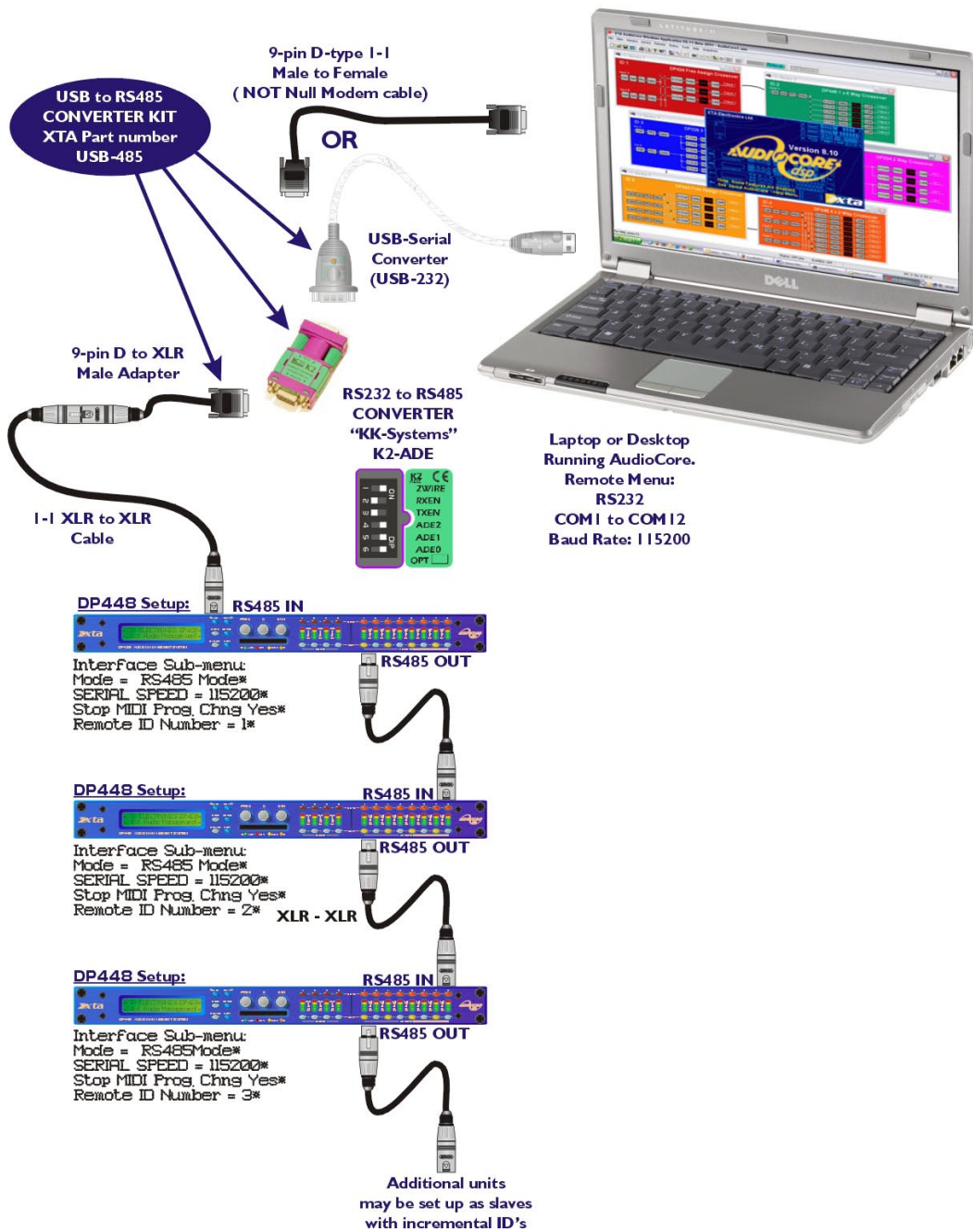


Both the converter and the required adapter cables are available from XTA. The adapter is available in a kit, which includes an RJ-45 adapter, the XLR to 9-pin adapter, and the converter itself. This complete kit is part number **INT-485**.

If you need to make up one of the XLR to 9-pin adapters, the pin-out is:

XLR	D-type
1	1
2	3
3	8

If your laptop or PC does not have a spare serial port (or any serial ports for that matter!), the RS485 converter must be connected through a USB – Serial converter. The RS485 converter that XTA recommend is available in two types – the standard K2, and the more advanced K2-ADE version. **Only K2-ADE version will work with USB-Serial converters,** as these converters do not support the extra handshake lines used with the standard converter.



Both the converters and the required adapter cables are available from XTA.

The adapter is available in a kit, which includes a USB-Serial converter, the XLR to 9-pin adapter, and the K2-ADE converter itself. This complete kit is part number **USB-485**. XTA has a range of tried and tested interfaces, including USB and wireless solutions, all of which are listed in the Appendix II. We can supply all the interfaces described in this guide directly – please get in touch.

If a DP224/6 receives a MIDI Start or Stop command (used to mute / unmute all outputs) it will relay this message on the RS485 port to any connected units. The 4 Series units will respond to this message even though they cannot directly receive MIDI commands, due to not having a MIDI interface ;)

AudioCore can relay MIDI messages through to a chain of 4 Series units - see the MIDI Relay section on page 45.

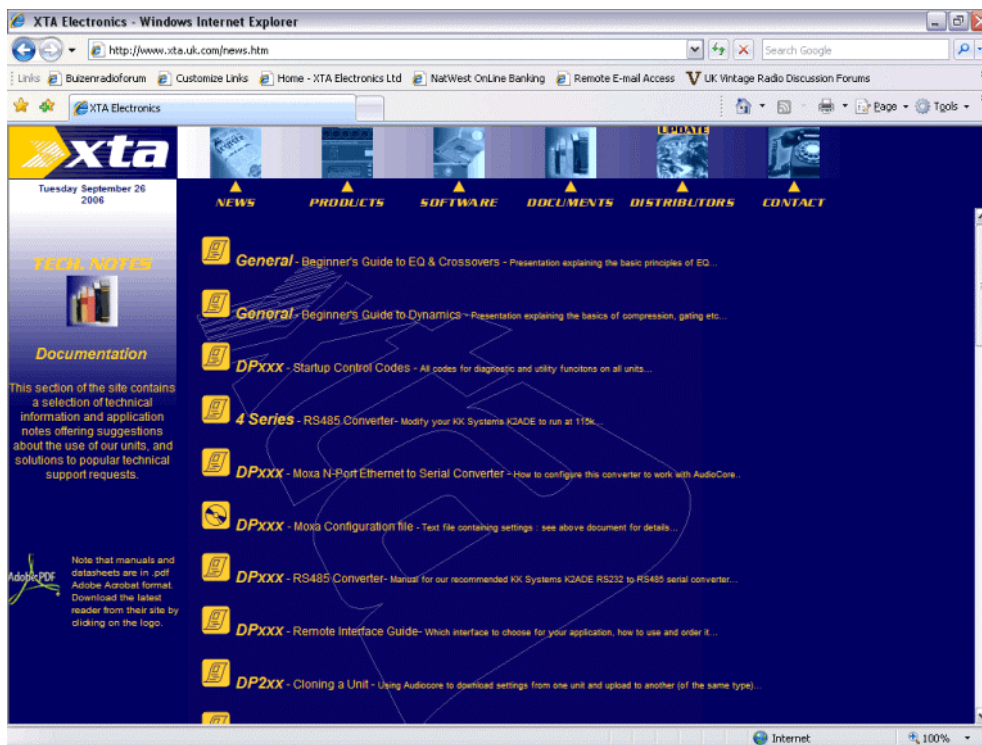
TCP/IP Connection

This interface option was added to allow wireless control of units using our Walkabout kit, which offers a complete WiFi solution using standard wireless networking hardware.

Please consult the operating instructions supplied with the Walkabout kit for details of how to set up a wireless connection. An abridged version of the Walkabout setup guide is included in Appendix N of this manual.

In addition to a wireless solution, this interface option may be used with an Ethernet to Serial converter. There are many of these on the market, and XTA recommend the Moxa N-Port device, having tested it and found it to be reliable. As the standard Ethernet TCP/IP protocol has been used, this connection method may be adapted to suit the user's requirements, allowing remote control over CAT5 cable networks.

Please browse the **TECH.NOTES** section of our website (through the documents section) for further application notes regarding interfaces and their set-up.



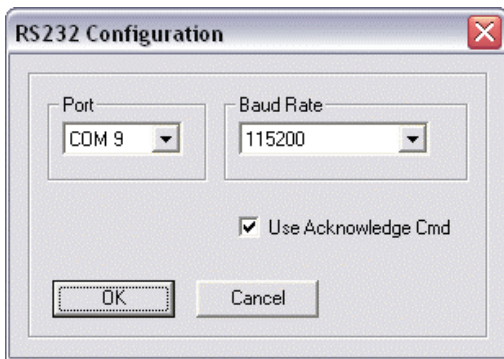
Setting Up Communications and Going On-line

Configuring the Units Themselves

For details as to the exact interface operation for each unit, please refer to the operator manual particular to that unit. All units have an interface menu – check that the correct interface has been selected for the type of computer connection to be utilised – RS232 or RS485. Ensure that, no two units are set to the same ID number. It is recommended that the first unit in the chain is assigned ID number 1, the second 2 etc. Also ensure that the baud rate of the unit is the same as that selected for the computer (described below).

Configuring the Computer and Software

After starting Audiocore, choose **Remote ▶ RS232/RS485/TCP-IP** as appropriate from the menu bar. A window will appear containing the configuration settings required for the interface.



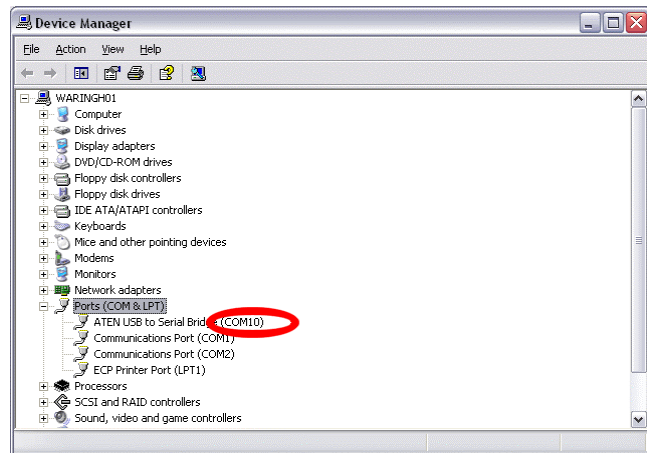
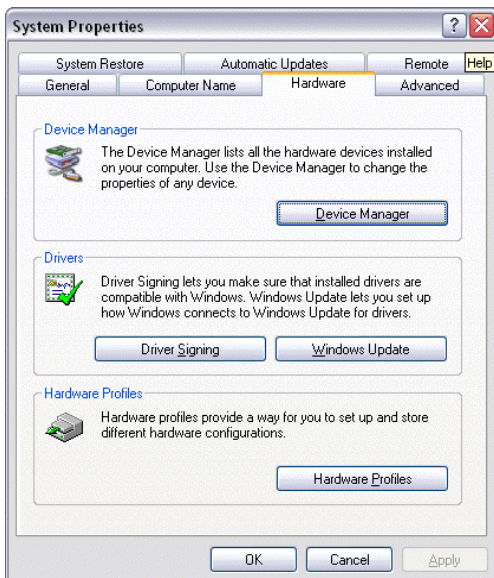
In the case of RS232, this is as shown here, with selectable options for the ‘Com’ (serial) port to use, the speed of this port and options for improving the robustness of the interface, if the port supports them.

‘Use Acknowledge Cmd’ ensures that every message sent from the software reaches its destination correctly, but at the slight expense of operational speed. Every message sent to a unit must be replied to, or the message will be re-sent, up to three times.

Remember that USB to Serial converters tend to install themselves as “Virtual COM Ports” numbered from about 4 upwards, depending on how many other USB devices are connected to the computer and to which physical USB socket the converter is plugged into.

The port the USB to Serial converter has been assigned to can be quickly checked through:

Control Panel ▶ System ▶ Hardware ▶ Device Manager, and then opening up the list of COM Ports in use – in our example the interface is installed on COM10.



Going 'On-line'



If the remote interfaces have been configured correctly at both the unit(s) end and the computer/software end, it will now be possible to go 'on-line'.

This is achieved simply either by choosing **Status ▶ On Line** from the menu bar or by pressing the **On/Off line** button on the tool bar. In either case, once the chain has been scanned (errors will be reported if units fail to respond), the system will become live, and a dialogue will appear offering the chance to download (transmit to) the units either the current settings, the current settings and all the memories, or just connect without changing anything.

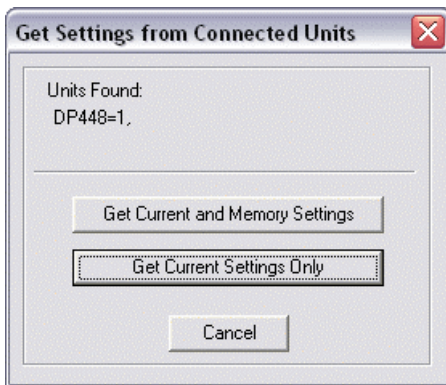
On Line

Refresh

Once successfully on-line, the indicator on the tool bar will illuminate.

Uploading Data from Connected Units

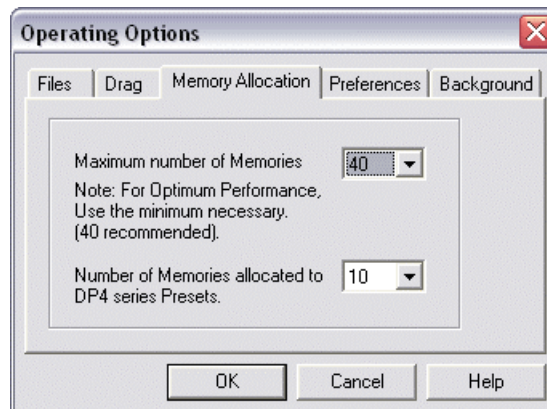
If a system has not already been configured, then starting a new system, by choosing **File ▶ New** from the menu bar will, after scanning to find out what is connected offer the choice of uploading from the units as they stand, or uploading all their memories as well.



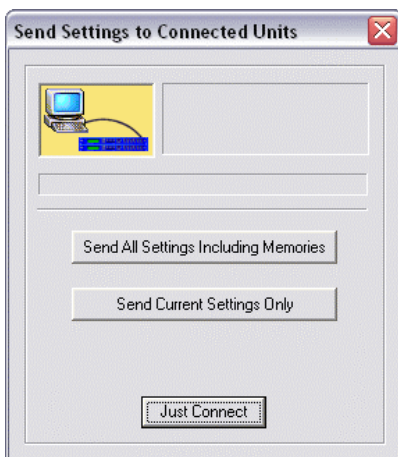
The buttons are self-explanatory. Note the panel above the button detailing the units detected by the software. The system will automatically configure itself based on the current setting received back from the units.

Note that the number of memories uploaded can be changed in **File ▶ Options ▶ Memory Allocation**

See page 35 for more information on this feature.



Working Off-line and Downloading Changes to the Units



If required the system may be configured off-line and, when connected to the units, downloaded to instantly make the settings 'live'. This is accomplished by setting the system up as required, and then, assuming the remote interface has been set up correctly, going on-line as described above.

Pressing the "Just Connect" button will put **AudioCore** on-line with no exchange of data between the computer and the connected unit(s).

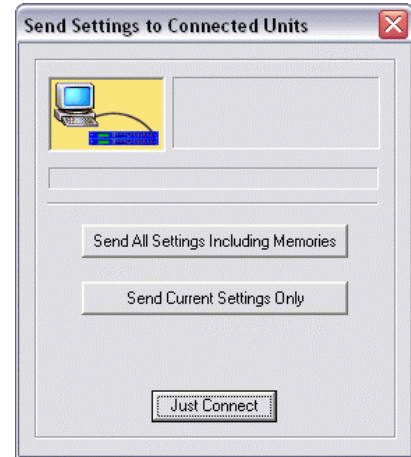
Saving and restoring your system's settings

If you want to store a copy of your system's current configuration, choose File ► Save As from the File menu.

This file will store all the current settings of all the units, all the memories uploaded, the units' names (inputs, output, device name), and the device window positions (including if they were minimised or not).

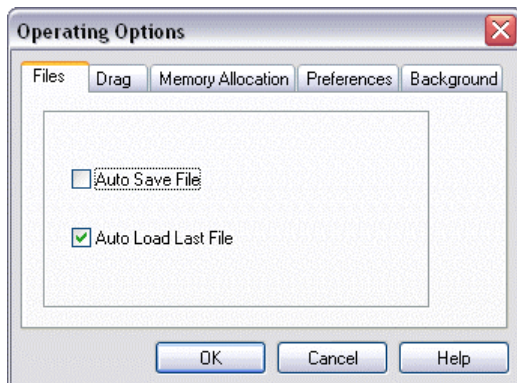
To send a pre-configured set-up to a chain of units, select File ► Open and choose the file you require.

Next, press the 'On-line' button and choose "Send All Settings Including Memories", or "Send Current Settings Only" if you just want to update the current audio paths.



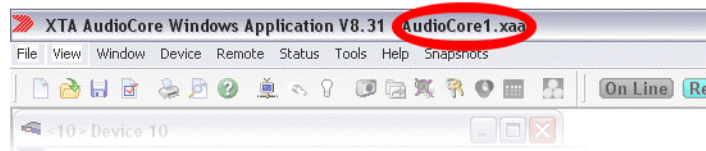
File Handling Options

AudioCore can be set to automatically save your settings to a file when the software is closed, in case you forget.



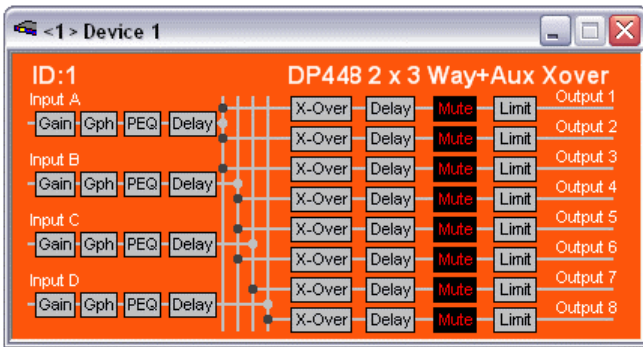
This is selected through File ► Options, and then choosing the "Files" tab so show the window shown to the left.

Checking the "Auto Save File" will save the current settings with the filename shown on the title bar



Checking the "Auto Load Last File" will ensure that the last file used will be automatically opened when the software is next started. The settings will NOT automatically be sent to the units – this has to be initiated manually by going on-line as normal.

The Device Window and Editing Blocks

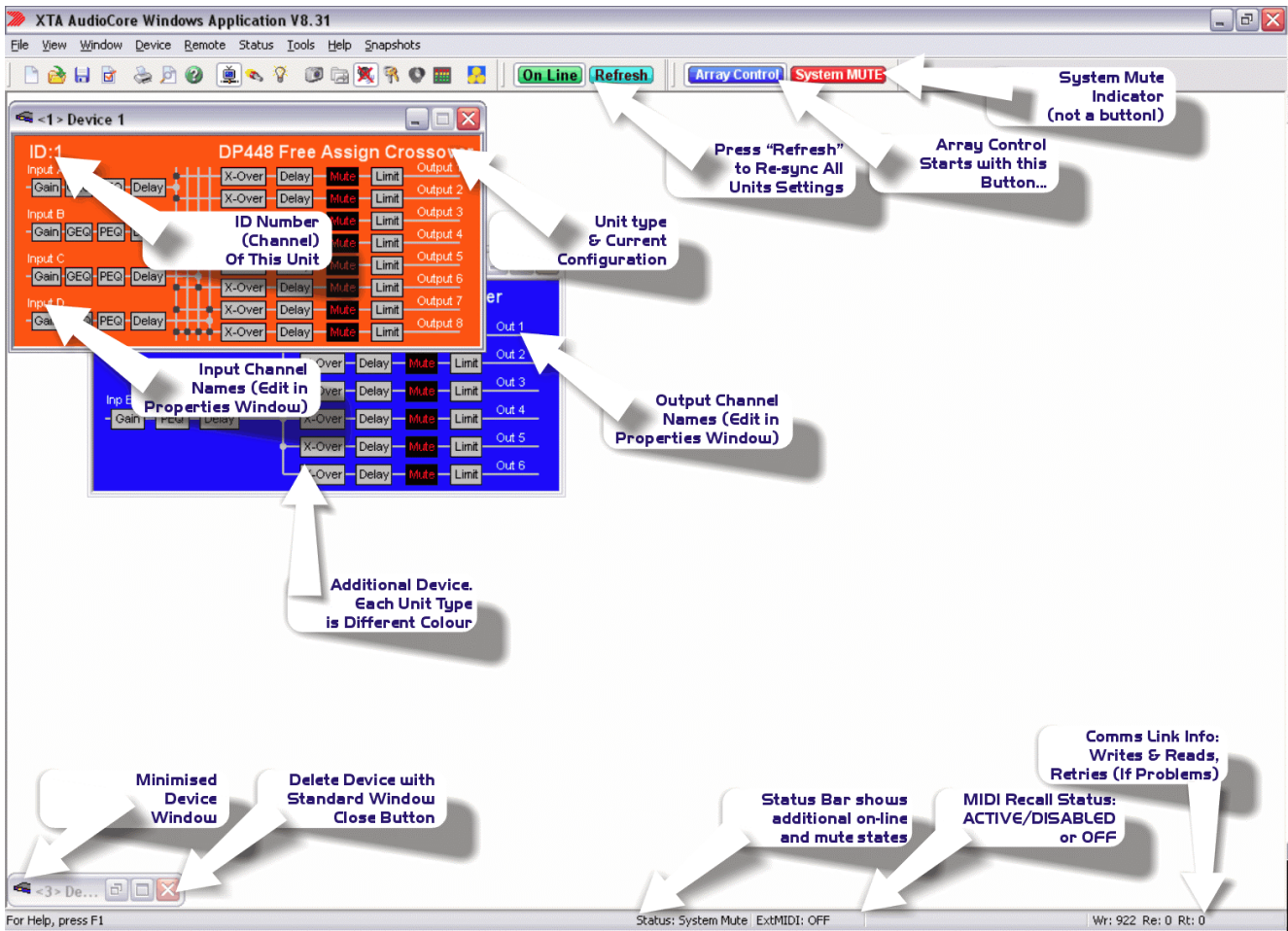


A window for each unit connected to the system will be available. All types of unit share the same format of window with the following common features.

The 'ID' number shown in the top left hand corner of the coloured window is the communication channel that the device is using, with the type of device shown opposite this.

The signal flow chart shows the processing blocks available for editing and is dependent on the type of device. To edit any block, simply click on it.

Devices may be minimised to reduce the complexity of the screen if many units are connected. **AudioCore** is capable of supporting up to 32 units on any one system.



The screen-shot above shows a typical system with three devices connected. Note that one device is minimised (bottom left) to reduce the complexity any devices that do not need to be adjusted regularly may be kept minimised in this way. This layout will be remembered when the file is saved, and will be preserved the next time the software is run.

Devices may be deleted from the system by clicking on the standard Windows red cross in the top right hand corner of the respective window – a confirmation warning message is displayed prior to the deletion.

Toolbar Guide

Working from left to right, the toolbar may be split into groups of related buttons:



New System
Open System
Save System
System Options



Print System
Print Preview
Software Version (About...)
"What's This" Help System



On/Off Line (Shown On Line)
Scan for Units
Flash Unit IDs



Store Snapshot (System-wide)
Recall Snapshot (System-wide)
System Mute – **All outputs on all units muted!**
Global Ganging Sets (not available in Version 8.30)
Open System Monitor



Switch to SiDD button (only active when SiDD Software running)



On Line Indicator (Not a button!)
Force Refresh (re-sync settings)



Enable Array Control (shown active)
System Mute Indicator (not a button!)

Menu Tree

File	<ul style="list-style-type: none"> ▶ New Open Save Save As Print... Print Preview Print Setup... Options ▶ <ul style="list-style-type: none"> Files Drag Memory Allocation Preferences Background Last file #1 Last file #2 Last file #3 Last file #4 Exit 	<p>Start a new system from scratch, or search for connected units</p> <p>Open a previously saved system configuration</p> <p>Save the current system configuration</p> <p>Save the current configuration with a different name</p> <p>Print tabular and or curve data for all or part of the system</p> <p>Check the layout of the printed output prior to printing</p> <p>Choose printer and set printer options</p> <p>Auto open last file and auto save on exit</p> <p>Curve dragging options when editing</p> <p>Choose number of memories to upload</p> <p>'Q'/BW readout, Full Filter control, Smart Tips</p> <p>Set wallpaper/colour of main window</p> <p>Up to the last four files opened will appear here, although initially this section will be empty</p> <p>Close the software</p>
<hr/>		
Device	<ul style="list-style-type: none"> ▶ New Modify 	<p>Add a device from the list to the current system.</p> <p>Change current existing device properties (labels/routing/ganging)</p>
<hr/>		
Remote	<ul style="list-style-type: none"> ▶ No Connection RS232 RS485 TCP/IP 	<p>Off-line mode</p> <p>Connect to first unit via standard serial lead (or virtual COM USB lead)</p> <p>Connect to first unit via an RS232-485 adapter</p> <p>Connect to system via Ethernet (or Wi-Fi) adapter</p>
<hr/>		
Status	<ul style="list-style-type: none"> ▶ On-Line Scan System Flash ID's 	<p>Toggle system on/off-line</p> <p>Check for all types of units on all ID numbers (up to 32)</p> <p>Show unit names on individual unit's LCD screens³</p>
<hr/>		
Tools	<ul style="list-style-type: none"> ▶ Cycle Outputs Temperature Check 	<p>Perform system check by sequentially soloing each units' outputs</p> <p>Return internal temperature readings of each unit</p>
<hr/>		
Snapshots	<ul style="list-style-type: none"> ▶ Store a Snapshot Recall a Snapshot Rename a Snapshot Erase a Snapshot External MIDI Recall 	<p>Store each unit's settings across the system at memory number N</p> <p>Recall new settings from each unit at memory number N</p> <p>Change the name of a memory in all units at memory number N</p> <p>Erase all settings stored at memory number N in all units</p> <p>Enable MIDI program change relay via PC MIDI Device</p>

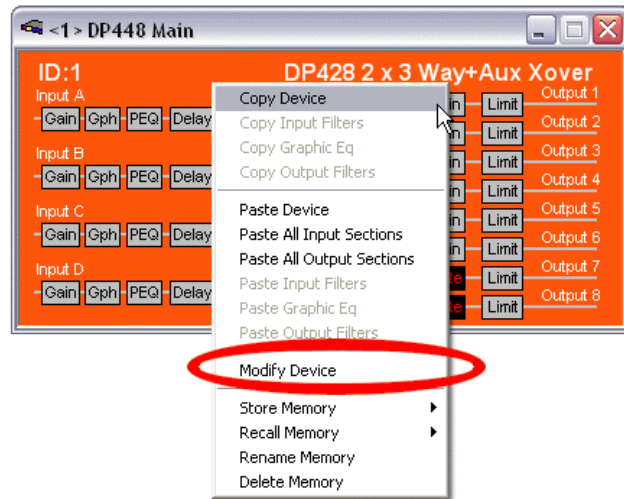
³ DP6i flashes a decimal point when this function is selected

Configuring a Unit

The configurations available will depend on the type of unit selected. In the case of a DP448 this screen is equivalent to the 'Design a Xover' menu within the unit itself, choosing the type of crossover to implement, and various basic options relating to this.

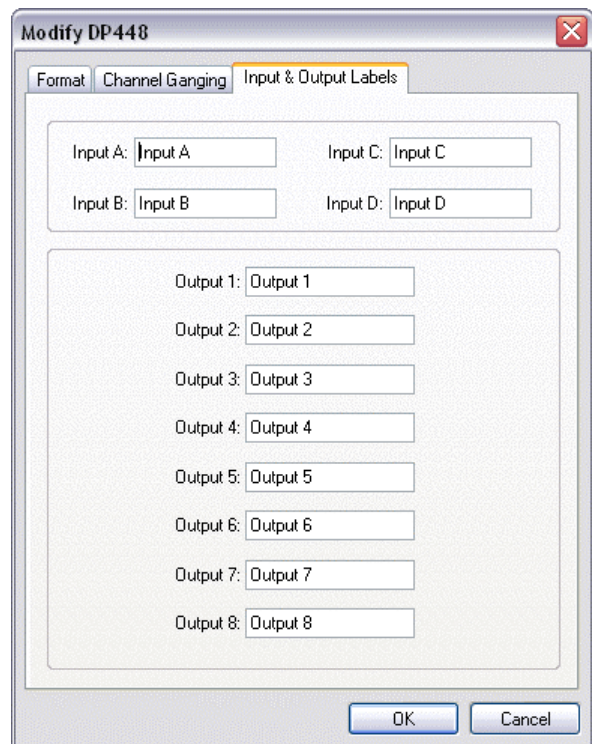


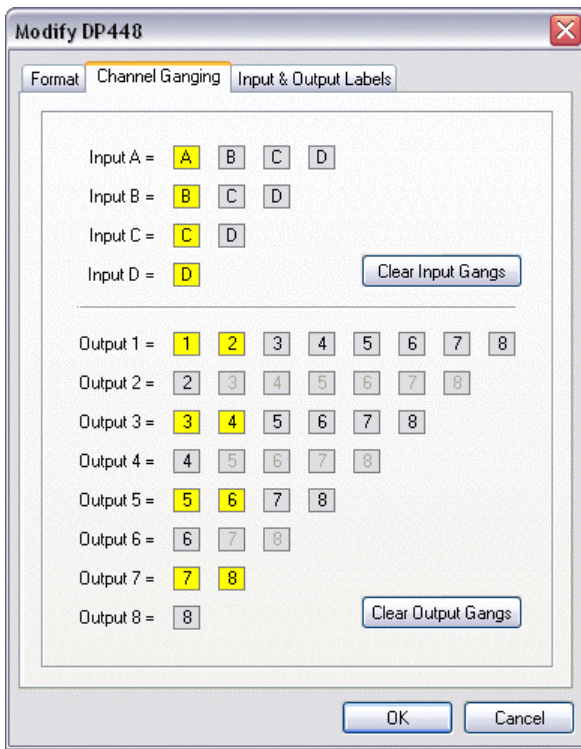
These names and the device configuration may be changed at any time by selecting the device in question (click on it's device window) and then Device ► Modify from the menu bar, or by right clicking on the selected devices window and choosing "Modify".



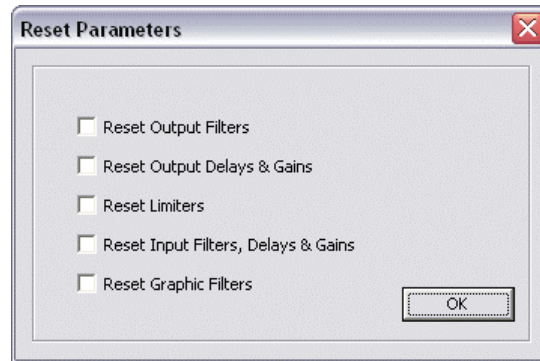
This window also allows the device itself, and all the inputs and outputs on that device, to be named. These are used throughout the software – on the actual device window (which appears after clicking 'OK') and on the editing screens. It is accessed by clicking on the 'Names' tab at the top of the window in the case of 4 Series units, or the "Input & Output Labels" tab for DP224/6/6i.

Note that, although the text boxes are limited to 8 characters to ensure that they are to be completely visible on all screens of the unit during editing. Try to include identifiers such as 'L' or 'R' or numbers at the start rather than the end of the name.





Channel ganging links controls together so any input or output combination track with the same parameters. Remember that changing the ganging will copy the settings from the lowest channel in any gang to all the others immediately on pressing OK, so be careful when changing this after you have configured your unit!



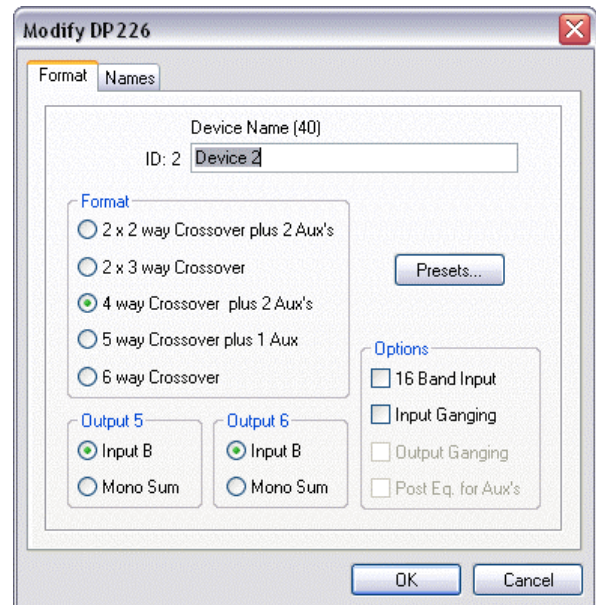
On all 4 Series units, there is an additional function on the Format tab – Clear Settings – this allows various parts of the configuration to be reset to default values. This screen is invoked automatically if the routing is changed.

For the DP224/6/6i, the properties are limited to two tabs – the format tab (including ganging) and the names tab – as the DP226 example here demonstrates.

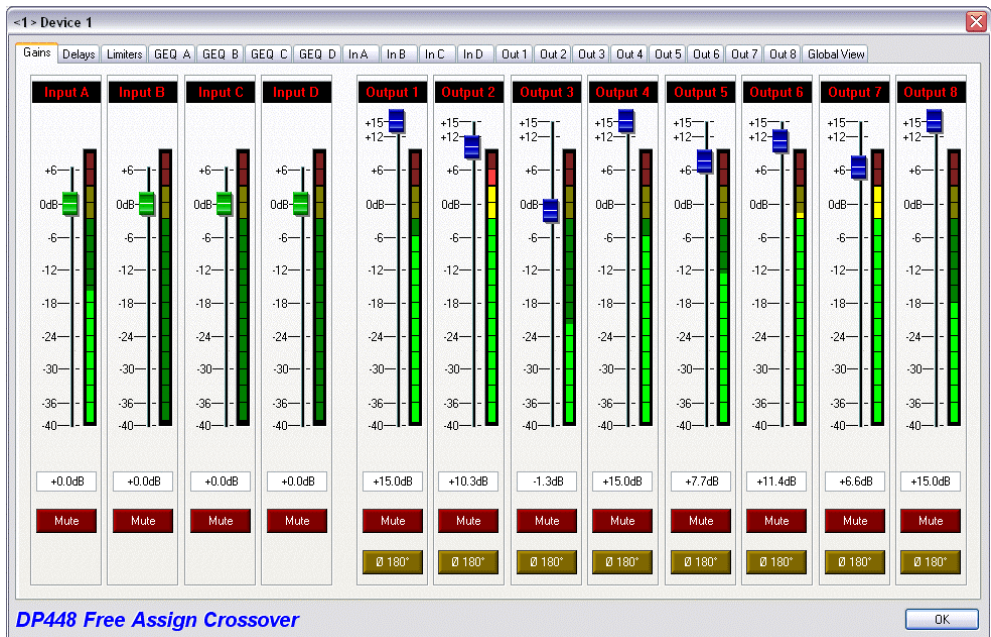
Due to the fixed format DSP configurations, there is no “Free Assign” mode for these units, and ganging is automatically enabled as appropriate, depending on the format chosen.

For example, if output ganging is enabled with a 2 x 3 way format, outputs will be ganged as 1&4, 2&5, 3&6.

In a “2 x 2 way plus 2 Aux’s” format, the output ganging (if enabled) will link 1&3, 2&4, and leave 5 and 6 independent.



Editing Input and Output Gains



The inputs and outputs on the selected devices are all simultaneously available for editing where gains are concerned. The inputs have mute buttons (active when the button is red), whilst the outputs additionally feature phase reverse buttons.

Note that if there are inputs that have not been routed to any outputs their respective gain controls and meters will be hidden.

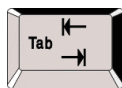
Points to note about the operation of this screen are:

Clicking on the slider track, rather than the knob will change the gain in 1dB steps.

Clicking on the text box below the slider allows direct numerical entry. Press ENTER to accept the new value. To reject a value typed in accidentally, delete all text from the box and click on any other box. The gain will revert to that shown by the slider.

Mutes and output phase reverse switches remain un-ganged regardless of the ganging of the gain controls. The ganging may be switched off/on by selecting the device in question (click on its device window) and then Device ► Modify from the menu bar or right clicking on the background of the device window.

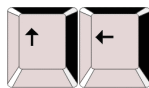
The keyboard may also be used to navigate around this screen.



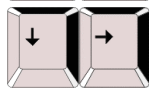
Accesses gain sliders/mutes/phase reverse in turn per channel.



Toggles any selection (mute or phase reverse).



Either adjusts **gain up** in 0.1dB steps.



Either adjusts **gain down** in 0.1dB steps.

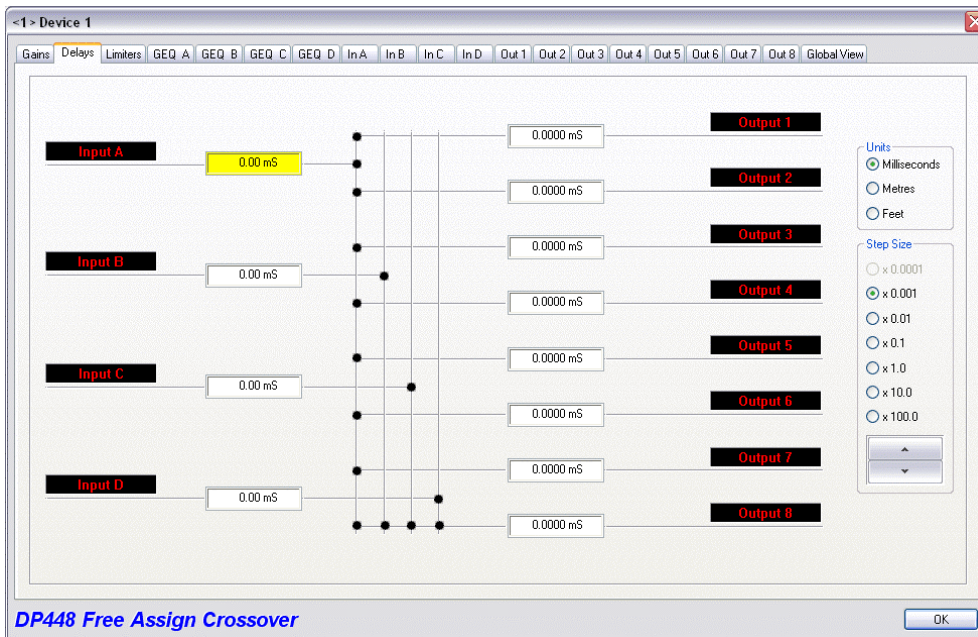


Adjusts **gain up** in 1dB steps.



Adjusts **gain down** in 1dB steps.

Editing Delay Settings



The delay adjustment tab allows adjustment of the input (base) delays, as well as the output (driver/zone alignment) delays.

All input and output delays for the device are shown as text boxes, allowing numerical values to be directly entered.

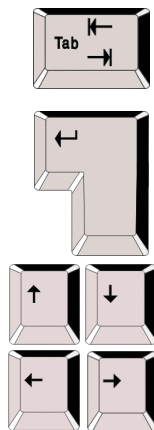
Additionally the values may be nudged, using the spin buttons below the Step Size pane.

The smallest step size will depend on the unit type – for DP224/6/6i it is 2.6uS, and for 4 Series units it is 100nS!

Note that, dependant on the type of device selected, and configuration of that device, delays may be ganged, if required. Device configuration is accessible from the menu bar on the main screen – choose Device ► Modify or right clicking on the background of the device window.

The delay time available works on a “pool” principle – the maximum delay from any input to output cannot exceed 650.00 mS, so a long delay on the input will restrict the maximum available on any output routed from that input.

There is limited keyboard control on this screen:



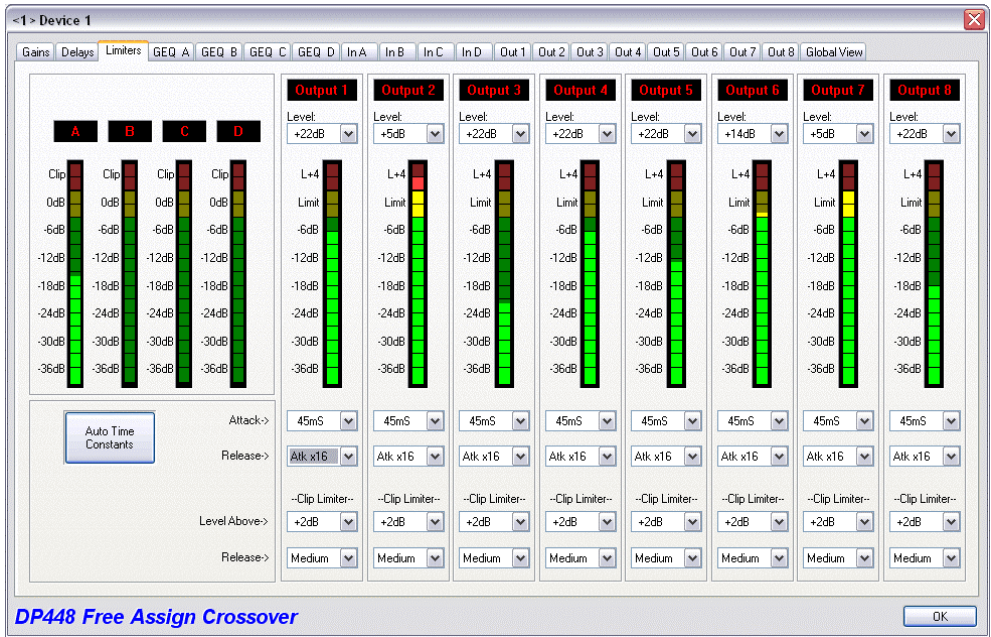
Accesses each delay setting in turn (and tabs along top of edit window).

Accesses each delay setting in turn without selecting other features in window.

Adjust delay in current step size.

Having selected either “Step Size” or “Units”, change the selection.

Editing Limiter Settings



The limiter screen permits access to all the output limiters at once, along with real time metering of all input and output channels on the selected device.

The threshold above which limiting may take place is set in the appropriate 'Level' text box at the top of the output channel section.

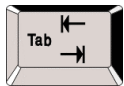
Note that only 4 Series units have the additional Clip Limiter settings, and have higher resolution metering.

If the 'Attack' and 'Release' text boxes are greyed out, it is because the 'Automatic Time Constants' function box is enabled. This sets the attack time of the channels limiter dependant on the high pass filter frequency – the lower the frequency, the slower the attack time of the limiter. Release times become fixed at sixteen times the attack time.

The drop-down lists display the set of available times for the limiter attack and release times as explained below.

The meters time constants will automatically assume the same behaviour as those of the limiter envelope to provide the best representation of the power usage for that channel. Please consult the respective unit's manual for details of the 'Auto' time constants.

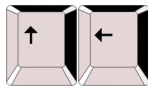
The keyboard control options for this window are:



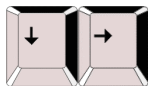
Accesses all level/attack/release parameters in turn per channel.



Toggles Auto Time Constants button (when selected).



Either adjusts **level up** in 1dB steps, or adjusts attack/release when selected.



Either adjusts **level down** in 1dB steps, or adjusts attack/release when selected.

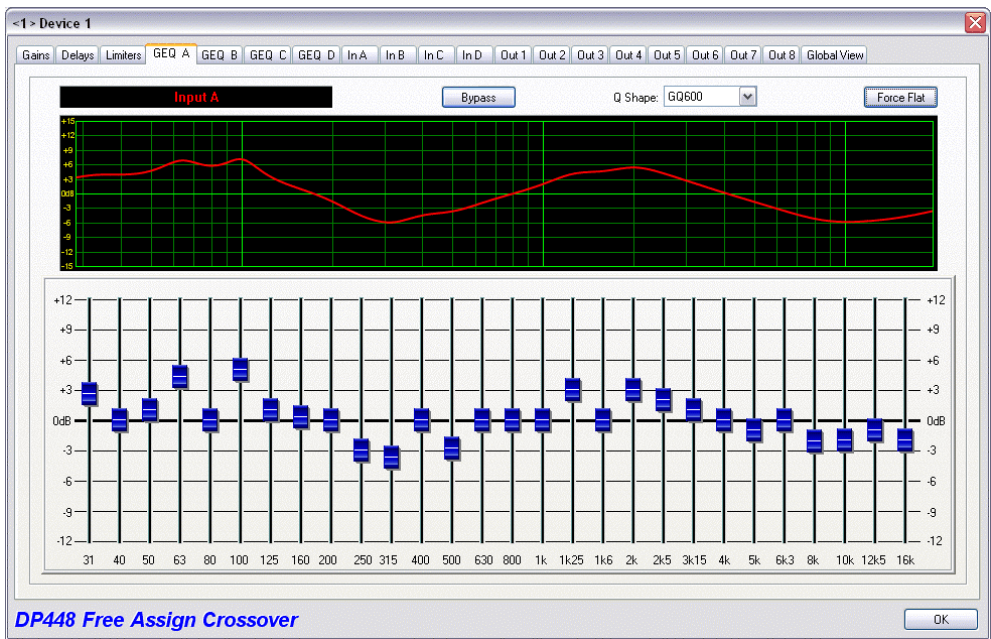


Select **MAX** value for Level/Attack/Release.



Select **MIN** value for Level/Attack/Release.

Editing Graphic Equaliser Settings

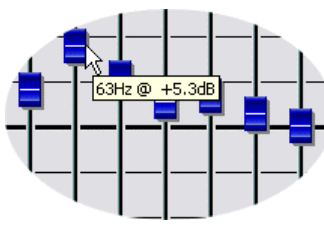


Each input channel's graphic equaliser is displayed with a response curve that shows just its contribution to the signal path.

Changing the response type, or 'Q' shape will be reflected in the response shown.

The 'GQ600' response has a 'Q' that varies with cut/boost applied – wider 'Q' at lower values of cut/boost, resulting in a smoother response when smaller amounts of EQ are added.

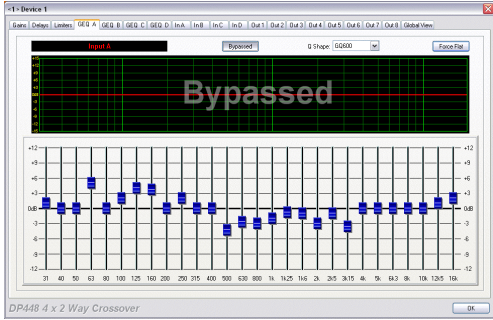
The 'Special' response has a fixed 'Q', giving more precise control, and offers the flattest response when boosting groups of adjacent faders. Try swapping between them to see and hear the result.



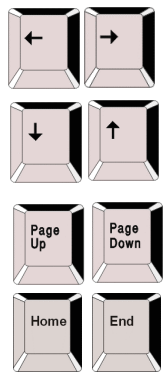
Moving the mouse over the different frequency knobs will display tool tip text with the exact level shown like this.

Clicking above and below any selected fader will adjust the level in 1 dB steps, and **right** clicking will adjust the level in 0.1 dB steps.

Bypassing the channel will still allow the faders to be adjusted by the screen will show "Bypassed" across the response curve.



The keyboard control options for this window are:



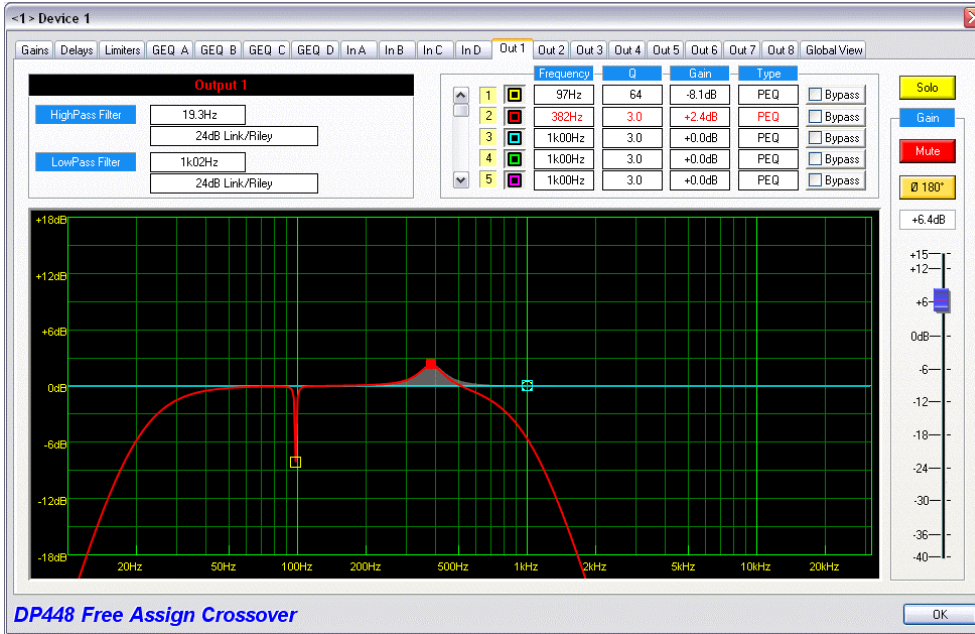
Move the selected fader **left** and **right** one **frequency band**. Default band when the tab is first selected is 1kHz.

Adjust the **level** of the selected **band up** or **down** by **0.1dB**.

Adjust the **level** of the selected **band up** or **down** by **1.0dB**.

Reset selected **band** back to **0dB**.

Editing EQ and Crossover Settings



The equalisation and crossover screen will vary slightly dependant on the device that is currently selected. However, the principles of operation are identical in all cases.

The most important areas of the screen are the frequency response curve which may be edited simply by dragging portions of the curve to produce the desired response, and the direct filter control section just above this.

Editing with Curve Drag Features

Depending on the complexity of the current device and its configuration, there will be anywhere between 5 and 16 bands of equalisation available for editing. These appear on the curve as nodes marked by coloured squares or circles, denoting the centre frequency of any particular band.

Points to note about the operation of the curve dragging are:

To move a parametric band, click and hold the left mouse button over the appropriate node to select it. The mouse pointer will change to a cross to show correct positioning over a node.

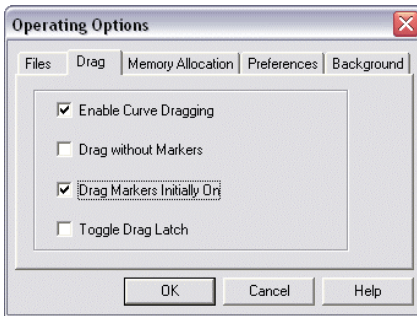
When selected the pointer changes to a pair of crossed arrows. The centre frequency and the gain may now be adjusted simply by dragging the node to the desired position and releasing the mouse button.

Whilst a filter is selected, its entries in the direct filter control section will highlight in red.

The 'Q' of the filter may be adjusted using the scroll wheel (on Intellimouse devices only) – whilst the node is selected (left button pressed) turning the scroll wheel adjusts the 'Q'.

Modifying Curve Dragging Behaviour

Several options exist to adapt the way the curve dragging feature operates. These are accessed by selecting File ► Options from the menu bar or by pressing the Options button on the toolbar. The four options are:



Enable Curve Dragging – if unticked the curve appears just as a frequency response representation, and is not interactive.

Drag without Markers – if ticked then the action of switching off a filter's marker does just that – the filter is still accessible to drag on the curve, even though the marker is invisible.

Drag Markers Initially On - if ticked, then selecting any EQ screen will automatically display all the filter markers, even if they had been previously switched off. (The choice of which markers are on or not is preserved for the duration of the editing window session; so if closed and opened again by clicking on the device window, all the markers will be restored.)

Toggle Drag Latch – if ticked then a single click on a marker will latch it under the mouse pointer. Clicking on the marker again will release it. This feature is useful for users with laptops utilising GlidePad™ and Intellipoint™ pointing devices.

Improved Node Dragging Behaviour

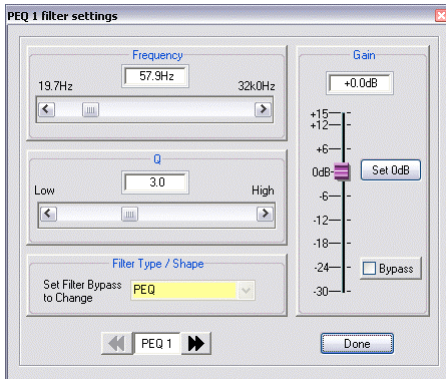
Nodes may be clicked and dragged as with previous versions of **AudioCore** but, to enable easier use with tablet PCs, nodes may now be selected with a single click, either on the graph, or the table. Confirmation is shown by the node turning solid and text turning red. Nodes remain selected when the mouse button is released.

The filter may then be adjusted by moving to the edge of the response pane and dragging the mouse along as shown below. Note that once the node has been selected and dragging the chosen parameter has begun, you may move out of this area to anywhere on the screen, whilst holding down the appropriate mouse button. Left (normal) clicking and dragging along the frequency axis will adjust the frequency, and along the level axis will adjust the gain. A right click and drag along the frequency axis will adjust the 'Q' or slope of the filter. A left click and adjustment of the scroll wheel on the mouse will also adjust the 'Q' or slope of the selected filter.

	Frequency	Q	Gain	Type	Bypass
1	41.7Hz	1.12	+1.6dB	PEQ	<input type="checkbox"/>
2	245Hz	13.5	-4.4dB	PEQ	<input type="checkbox"/>
3	157Hz	3.0	+1.5dB	PEQ	<input type="checkbox"/>
4	8k.31Hz	0.40	+1.2dB	PEQ	<input type="checkbox"/>
5	19.7Hz	0.71	+4.5dB	Low Shelf	<input type="checkbox"/>

Editing with Direct Filter Control

The direct filter control allows precise details to be entered via the filter list. Double clicking on any filter parameter will display a small window with all the parameters for that filter available for editing.



Remember that the filter has to be bypassed before its type can be adjusted – the drop down list will remain yellow until this is done. It is possible to directly step through each band in turn by using the double arrow buttons at the bottom of the window.

Numbers may be directly entered into the text box – in the case of the frequency, either in Hertz (1000 for 1kHz), or as an abbreviation such as '1k' or '1.00k'. The closest available value will be chosen. The scroll bar allows the frequency to be nudged, either in 1/36th octave steps with the arrows, or in 1 octave steps by clicking to the left or right of the current position.

The filter types available will depend on the device currently being edited – DP224/6/6i choices are limited to parametric, high shelf and low shelf only.

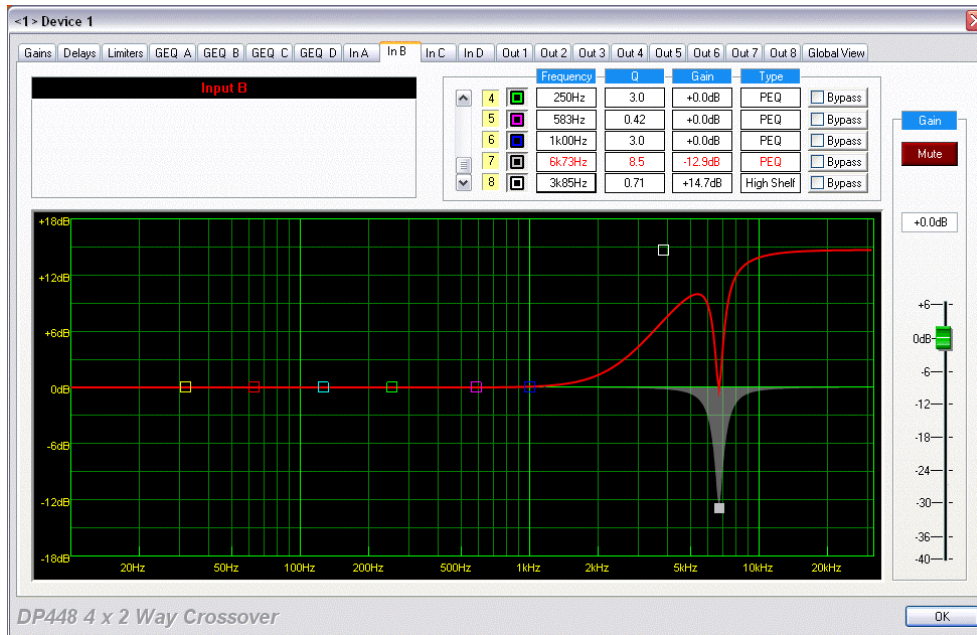
Note that if bands appear in the frequency table with “NU” in their parameter readouts, crossover slopes greater than 24dB are being used on that output. The low pass filter disables PEQ bands 6 & 7, whilst the high pass disables bands 8 & 9. The settings of these filters will be reintroduced if the crossover slope is set to 24dB or lower. If crossover slopes greater than 24dB are greyed out, this will be because the parametric bands are already in use. Bypass these bands to gain access to the higher order crossover slopes. This applies to 4 Series units only.



The set of buttons showing the filter markers for the curve view may be toggled on or off – this does not bypass the filter (its contribution to the overall response remains part of the curve) – it merely stops it being editable via curve dragging.

Shadow EQ Curves

A further enhancement to the response curves available on the input and output EQ tabs is the addition of the shadow EQ display. When a filter is selected for adjustment, its contribution to the overall response for that output is shown as a grey shadow fill on the background. This is useful for indicating when a band's contribution to the output will be inaudible, for example when a parametric is set to a frequency above the crossover point on that output.



In this example, the notch filter on this input has been selected and the grey shadow shows its symmetrical bandwidth clearly, compared to the red overall response curve.

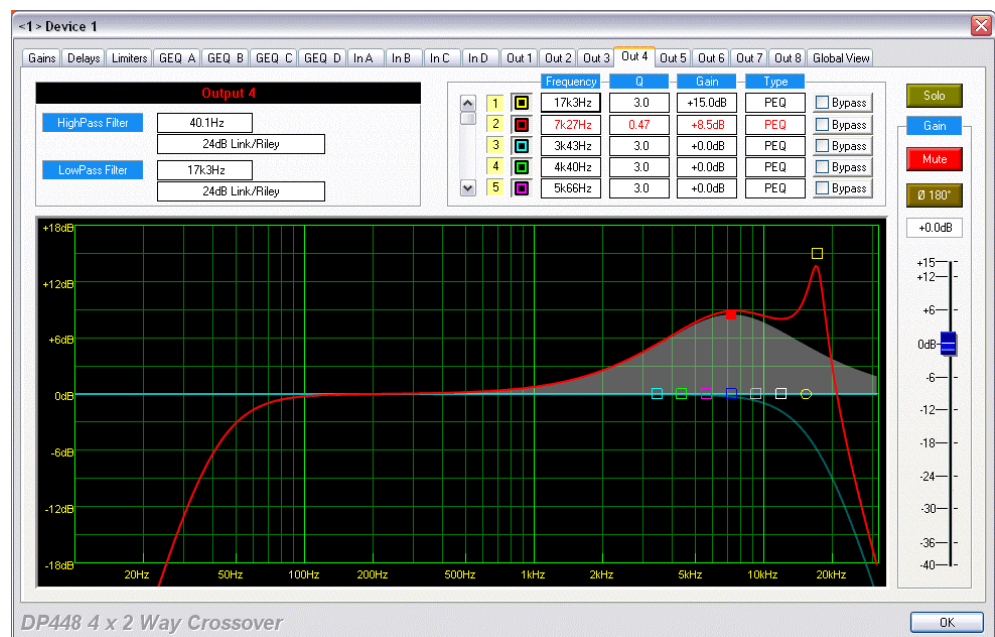
In the example below the selected parametric's response can be seen, and it should be noted that a lot of its power is outside the actual useful range for that output, due to the setting of the low pass filter. The crossover filters responses are shown as separate blue lines.

Note that selecting the high or low pass filter will show the frequency range that they are cutting, as this is their purpose.

Phase and all pass filters have no shadow EQ curve displays.

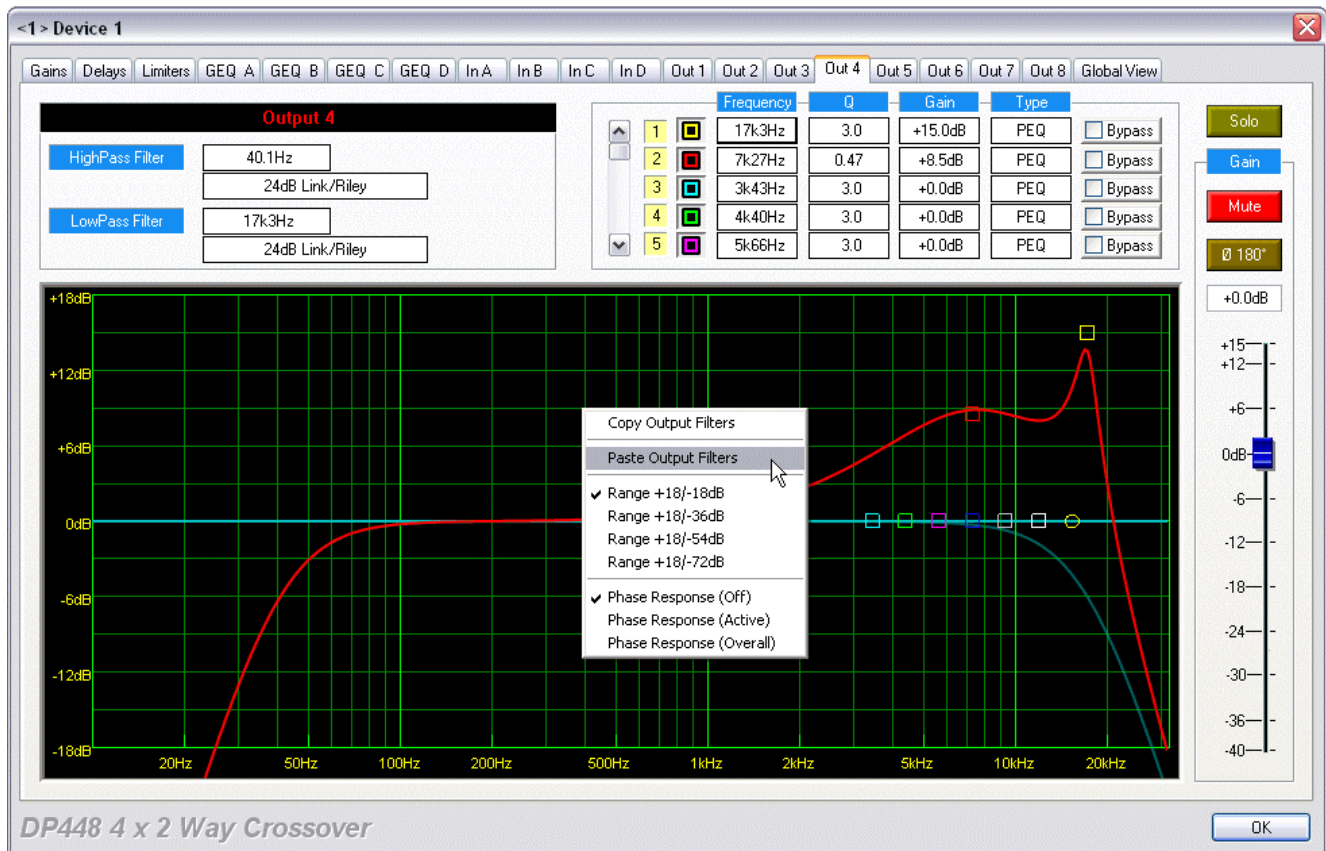
If a filter is set to "Flat", its shadow EQ will disappear, as will its contribution to the overall red response curve.

Its node is still fully adjustable and it may be set to new parameters.

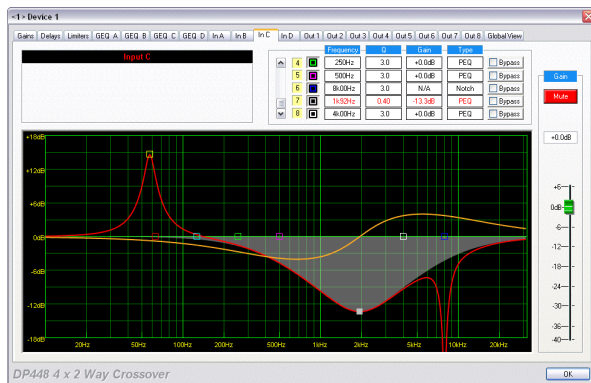


Phase Response

Due to the enhanced filter set available in the 4 Series, including phase and all pass filters, a phase response has been added to the filter adjustment tabs in this version of **AudioCore**. The +18dB line on the level axis represents a phase shift of +180°, with -18dB being -180°. It is selectable by right clicking on the frequency response curve as below.

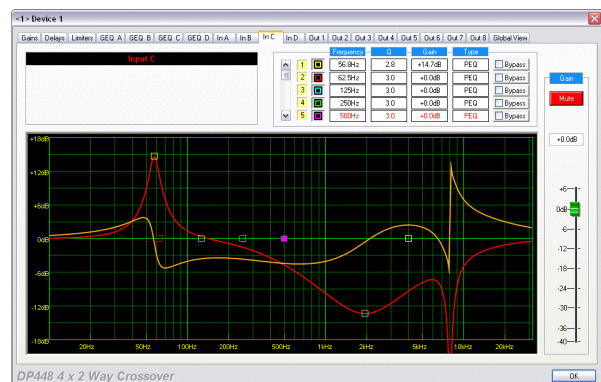


There are three settings: Off – no phase response shown;



Active – only the currently selected filter's phase response is shown. This example shows the phase response of a single boosted parametric section. Selecting any other filter, or the high and low pass filters will show their individual contributions to the overall channel's response.

Overall – all filtering is combined to show channel's composite phase response, including crossover filters. This example shows an input channel's overall phase response. Note that the response does not contain the graphic EQ filters' contribution, and that the global view does not show phase response.

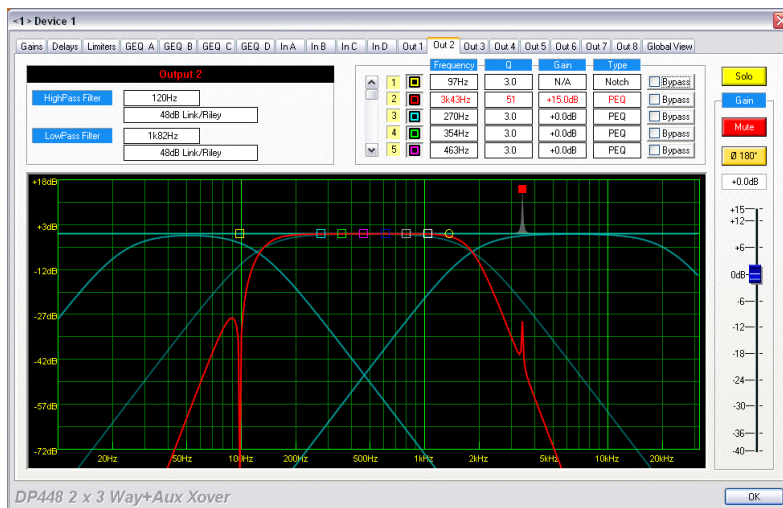
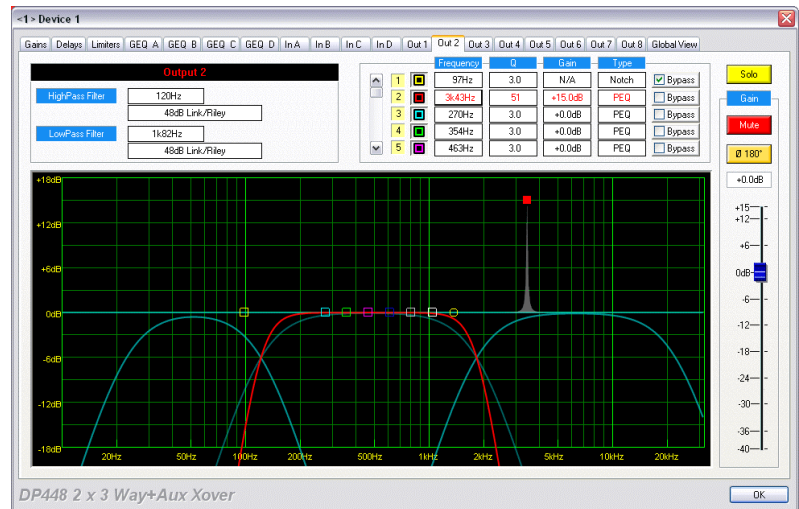


Response View Range Adjustment

It is now possible to select a “zoomed out” level scale to show the roll-off of crossover filters more clearly, as the 4 Series units can provide much sharper slopes than were previously possible with the DP224/6/6i. Roll-offs well above 48dB are achievable - please see the section entitled “Enhanced Filter Set Usage” on page on page 48 for details of this.

The range is adjusted by right clicking on a frequency response window (in the same way as selecting the phase response, as shown on the previous page), where the range can be chosen. For example – if the standard range of $\pm 18\text{dB}$ is chosen, the contribution of some filters placed on the edges of the crossover regions may not be seen, especially in the case of 48dB high and low pass filters.

In this case, there is a notch filter set to just below 100Hz, and a parametric band boosted but apparently above the low pass crossover (shadow EQ shows this parametric’s response).

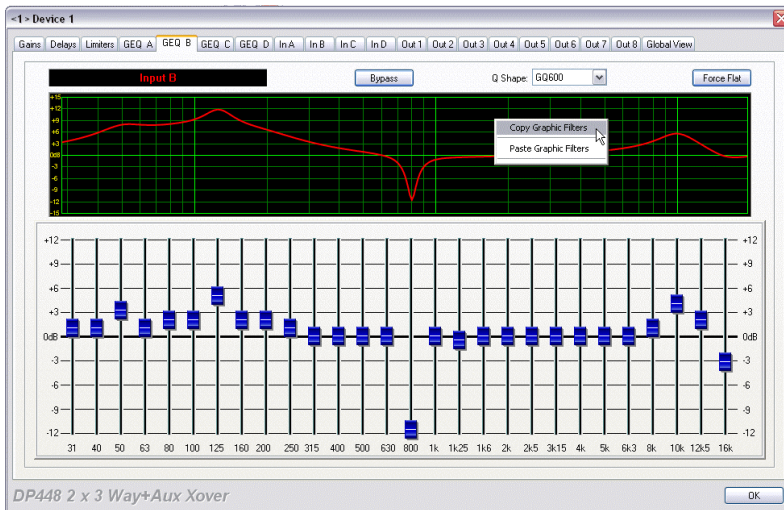


Changing the scaling to show a 72dB range, the notch and PEQ’s response can be easily seen, and their effect on the overall output better judged.

This scaling is also now used on the Global View display, but can be changed at will by a right click on this screen.

Copying and Pasting Features

Graphic EQ settings and many other parts of a unit or channel's data may be copied and pasted into other parts of the system, subject to certain restrictions.



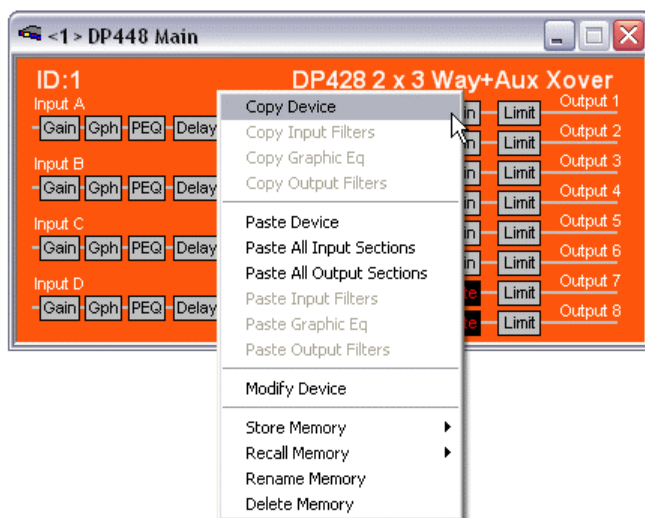
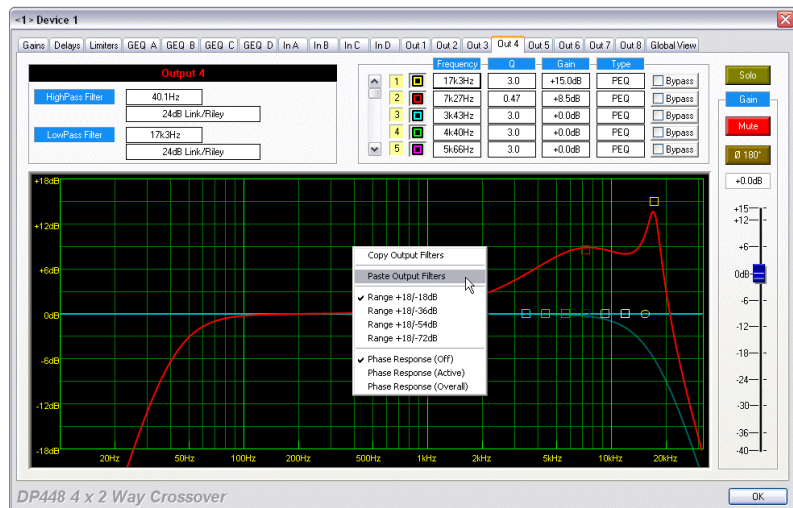
Starting with the graphic EQ settings, a right click on the **response curve** will bring up a floating menu allowing the fader settings (and response/bypass state) to be copied.

Pasting into another channel (or another unit's channel) is simply a case of selecting the channel, and right clicking again **over the response curve**, then selecting "Paste Graphic Filters". Channels that have been ganged together will all be updated together.

Complimentary features exist for input and output EQ adjustment screens. A right click on the response curve will allow the filters to be copied and pasted into another channel. Note that gain and phase reverse are NOT copied.

Entire device settings (current settings, not memories) may be copied and pasted into another unit by right clicking on the block diagram for the particular unit.

Note the other copy and paste options available here. Depending on where you click on the device window, different options are available. Right clicking over a channel's input PEQ, for example, will allow the input EQ filters to be copied on their own, and pasted into another channel's input section. This holds true for the graphic EQ section, and the output EQ/crossover sections.



To copy the entire device, make sure the mouse pointer is over the coloured background of the window.

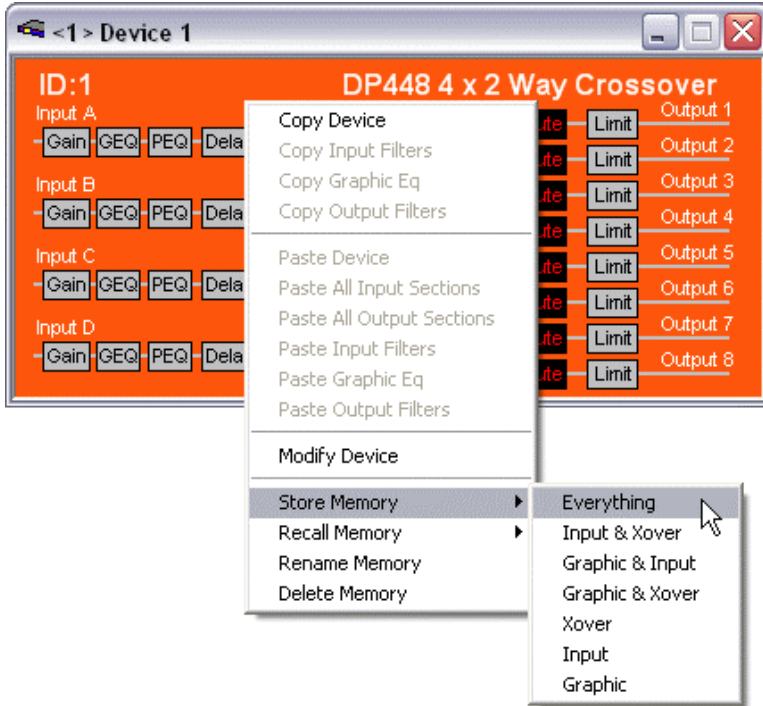
Pasting devices is only possible between units of the same model number.

Cross device EQ copying is possible from DP226s and DP224s INTO 4 Series units, but not vice versa. This is because, whilst all the EQ in a DP224 or DP226 can be replicated in the 4 Series, there are many types of filters not available in the older units, and the 4 Series units have more physical bands of EQ, which cannot be duplicated. Copying between 4 Series units is possible with no restrictions.

Memory management and access

The memory management and access features in this version of **AudioCore** have been completely revised to allow individual unit memory store and recall, as well as snapshot store and recall across the entire system.

In addition, the handling of the different memory types (Input and Crossover in DP224/6/6i, with additional Graphic memories in the 4 Series) has been improved to make it much simpler and easier to understand.



A right click on any device will display a floating menu than includes the memory store/recall and rename/delete functions.

These relate only to this particular device and will not recall memories on any other units.

Depending on the type of device, choosing to store or recall will display a further list of choices detailing what can be stored.

In this example for a DP448, it can be seen that the three possible memory types and all their combinations are listed.

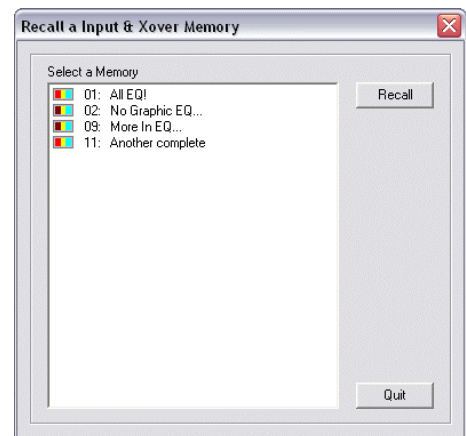
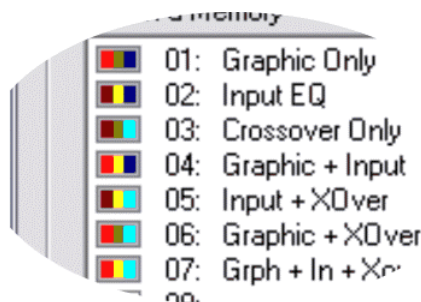
Choosing a particular type will then bring up a window with just that type of memory listed as appropriate. In this case, a window of the form shown below would appear.

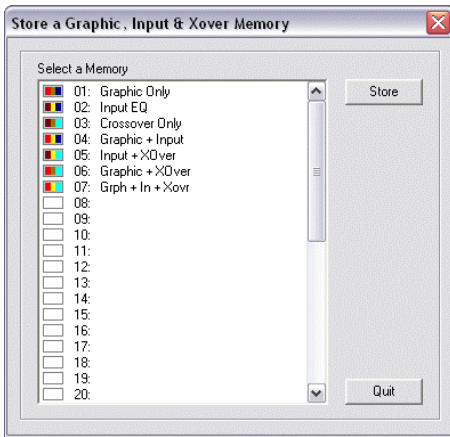
Note the tri-coloured icons to the left of the memory names – these show the current contents of each used memory location.

RED = Graphic EQ [graphic eq, type, bypass state]

YELLOW = Input settings [parametrics, gain delay, mute]

CYAN = Crossover settings [all output eq, dynamics, delay, mute, polarity]





When storing any EQ combination, all memories are shown; when recalling, only those of that particular type, or memories containing at least those elements will be listed. In this example, choosing to recall memories of type “Input and Xover” will show numbers 01 and 11 in addition to 02 and 09 which contain just Input and Xover settings as it is possible to recall just these parts out of another combination memory.

Snapshot memories are accessed from the menu bar under Snapshots heading, or directly for store and recall using the buttons on the toolbar:

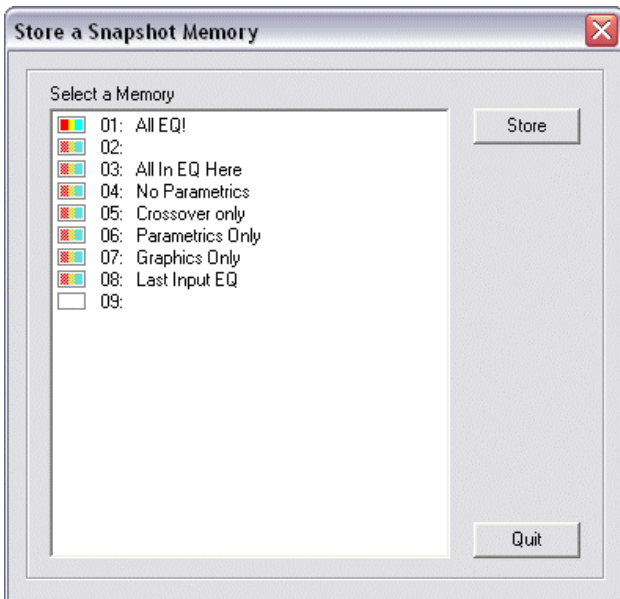


Store a snapshot.



Recall a snapshot.

What actually happens when a snapshot is taken or recalled, is that the entire settings for each unit (for example Input, Graphic AND Crossover settings on a 4 Series unit, or Input AND Crossover on a DP224/6/6i) are stored into a memory, **at the same location on each unit, and with the same name.**



Selecting “Store” will display a window with the names listed from the first device in the system. This assumes that snapshots have been the method of storage used before, and so the names on all units should be the same. Indication is however given as to whether any units contain settings (not complete snapshots necessarily) at certain locations.

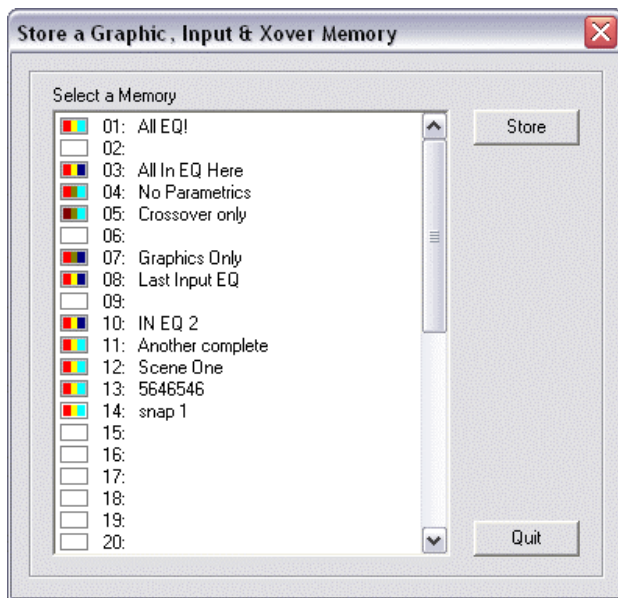
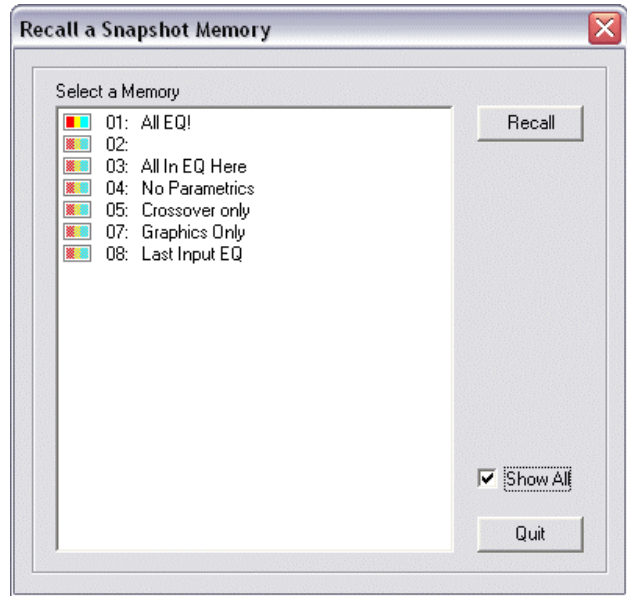
Note that only location 01 has a system-wide snapshot stored, indicated by all three bars being present.

Locations 02 – 08 have some memories stored in them on some units in the system, but not all (greyed out).

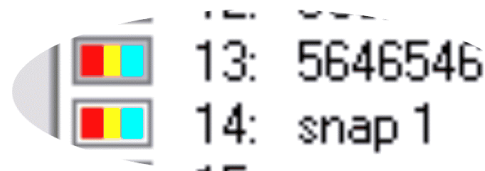
Location 09 is completely empty in all units on the system.

Recalling a snapshot will perform a system-wide memory recall. Initially, only complete snapshot memories will be shown in the list of available locations, but ticking “Show All” will show the locations of all memories that have something stored in them somewhere on the system.

In this example, only location 01 would be shown initially, as it is the only location with a full snapshot stored. If “Show All” is ticked, the other locations are displayed, but greyed out.

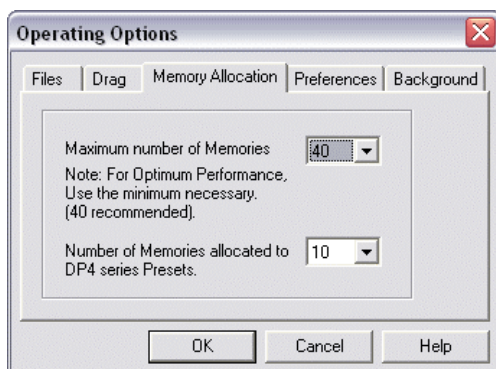


Note that when storing a complete unit memory (as would be stored in a snapshot), system-wide snapshot memories are shown in the store window by having a white border, as opposed to a grey border for normal unit memories.



In this example, memory 13 is a unit memory, whilst memory 14 (containing a complete unit setup as well) is also part of a snapshot memory.

Setting a limit on memories uploaded when going on-line



If you only have a small number of memories stored in each unit on the system, the time to connect can be significantly shortened by selecting the lowest number of memories to be scanned and uploaded.

This is chosen through File ► Options ► Memory Allocation.

If it is required to upload presets from 4 Series units, the number of these requested can also be set here, starting with “None” through to a maximum of 60. These will appear in the memory recall list numbered from 256 upwards.

Security Features and Password Lockout

The software supports two levels of password-protected security – User and Supervisor. Supervisor is the higher access level, allowing all parameters to be locked, whilst User level permits any parameters not locked by the supervisor to be locked. The supervisor also has the ability to clear the users password.

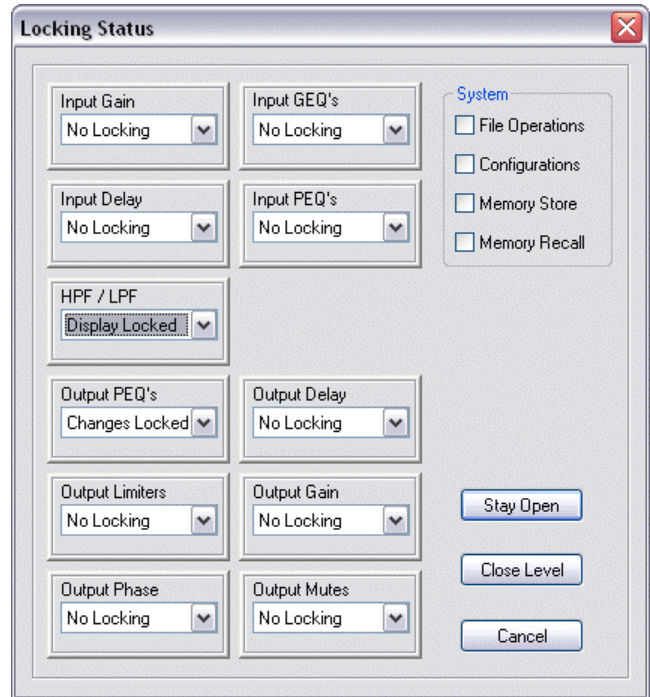


To begin the locking process, press the button on the toolbar. This will display a dialogue prompting for a password. Selection of which lock level is to be enforced is also available.

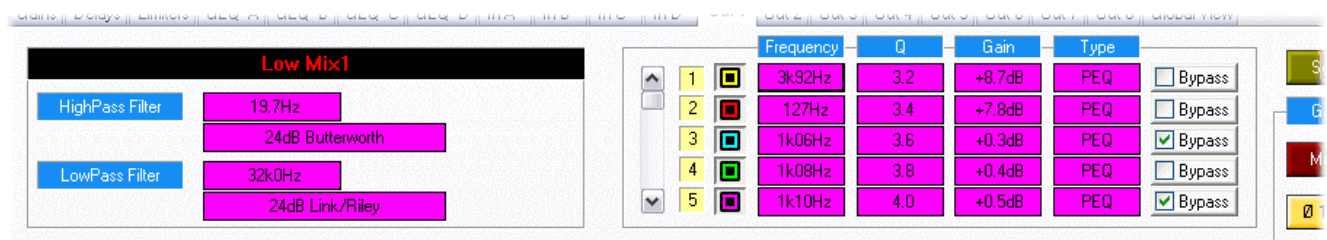


Enter a password of up to four characters. It is advisable that the user and supervisor have different passwords. Remember that the supervisor has the ability to clear (and overwrite) the user's password. Pressing 'OK' will then display the actual screen where locking decisions are made.

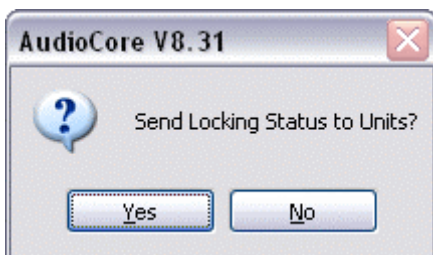
Each category has a choice of either 'No Locking', 'Changes Locked' where the parameter is still viewable but cannot be adjusted, or 'Display Locked' where the parameter cannot be accessed, its entry being replaced by a 'Locked!' message. It is also possible to secure parts of the system software to prevent, for example, memory recalls or updates to the stored system configurations.



Once the locks have been set up, there are two possible courses of action. If 'Stay Open' is pressed then the system will remain unlocked, but a previews of the locks will be in evidence in the relevant places. Parameters which will lock when the lockout level is 'closed' (using the 'Close Level' button) appear highlighted in pink.



Note that, even if the locks are selected to stay open, there will be a prompt to confirm whether the lock states are to be transmitted to the units.



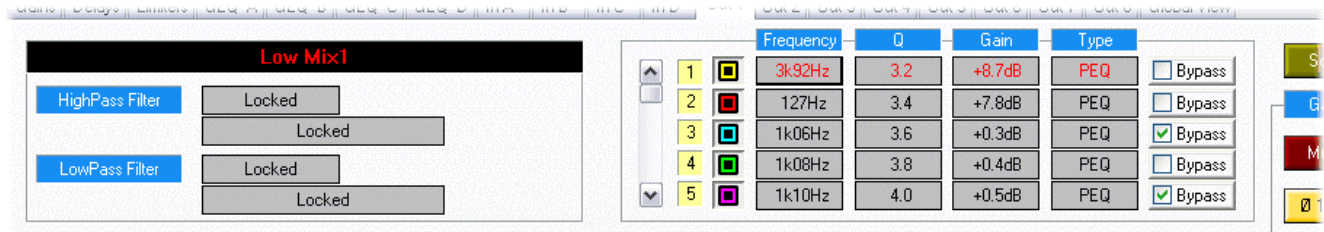
If 'Yes' is selected, all the units will become locked with the password chosen. If subsequently the lock level is 'closed', the software will ask for confirmation of the password once more, and then the dialogue shown on the left will appear as before.

Note that unless the system is on-line, no prompt to send lock status to units will appear.



Once locked, each unit will display a confirmation message on the bottom line of its display, and the software will change all locked parameters to grey text boxes.

Considering the output equalisation screen previewed earlier, it will change to be displayed as shown below.



This demonstrates both levels of lock - the high and low pass filters are locked at the 'Display Locked' level, whilst the parametric filters are locked at the 'Changes Locked' level.

Remember that it is not possible to lock the units after the software has been locked.

As mentioned earlier, the supervisor ultimately has control - only those parameters not locked by the supervisor are available to the user.

Making the Security More Secure...

Some points worth remembering when locking your units to make them as secure as possible:

Firstly, remember that even when the units are locked from the front panel, they may still be accessible through their remote interface and **AudioCore**. When connected units are scanned, all locking stored in the unit(s) is ignored, although they will remain locked when disconnected again. If you want to make the unit completely secure, make sure you set the interface to "off" before locking the unit via the front panel.

If you want the unit to not be lockable via the front panel, simply press the lock button and leave all sections set to "No Locking". Then press "Close Level" and, when asked, choose to send the locking status to the units. In this way, all the functions will be accessible, but if someone tries to access the security menu from the unit's front panel, it will ask for a password, before allowing access to any locking features.

The password set in **AudioCore** is stored in the file when this is saved on the computer.

If you forget this password, your file cannot be unlocked with a master password!

The file will have to be cracked by us, so you will need to get in touch and send us a copy...

Array Control



Due to the powerful features available within Array Control, it is advisable to read this section carefully before attempting to use this feature, especially in a live situation.

Array Control opens up the power of addressable zones for the control of large systems, configured exactly as the user requires. Outputs may be included in as many zones as required allowing effective sub-zones to be created along with more 'global' zone configurations. Real-time metering of each zone is available, along with output gain control, muting, 0dB levelling, and soloing.

Starting Array Control

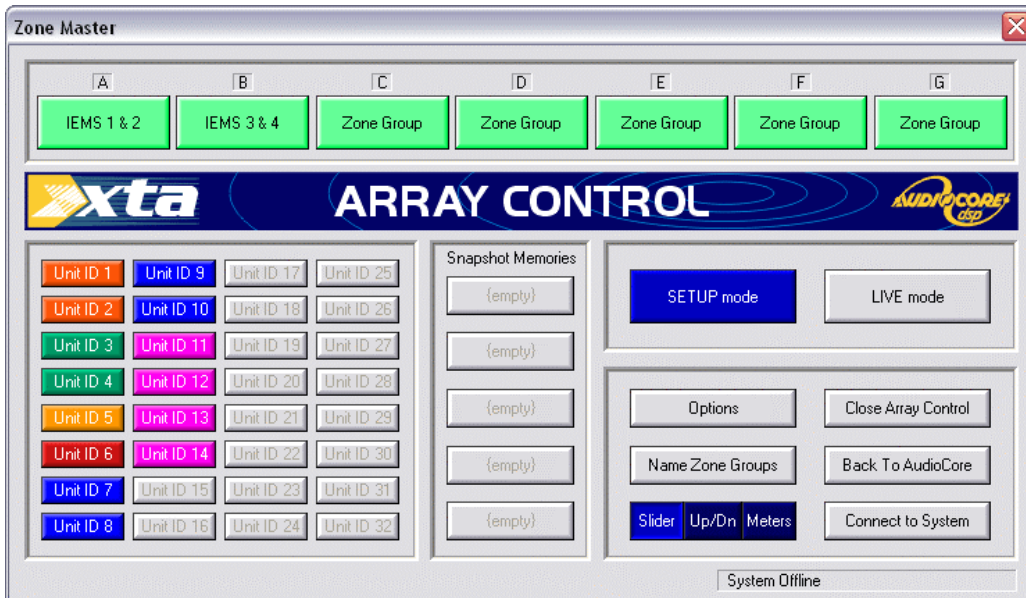
The Array Control main window is invoked by pressing the button beside the system mute status indicator on the tool bar.



Note that whilst the button appears greyed out until the zones within Array Control have been configured it is still accessible.

This will display a window – the Zone Master window – where zones may be selected, outputs of units individually assigned to zones, and various operational options defined.





For the purposes of this description, 14 units are connected to the system, and are identified above by the colour-coded available unit buttons, with ID numbers as shown.

Hovering over the buttons will display the respective unit's name.

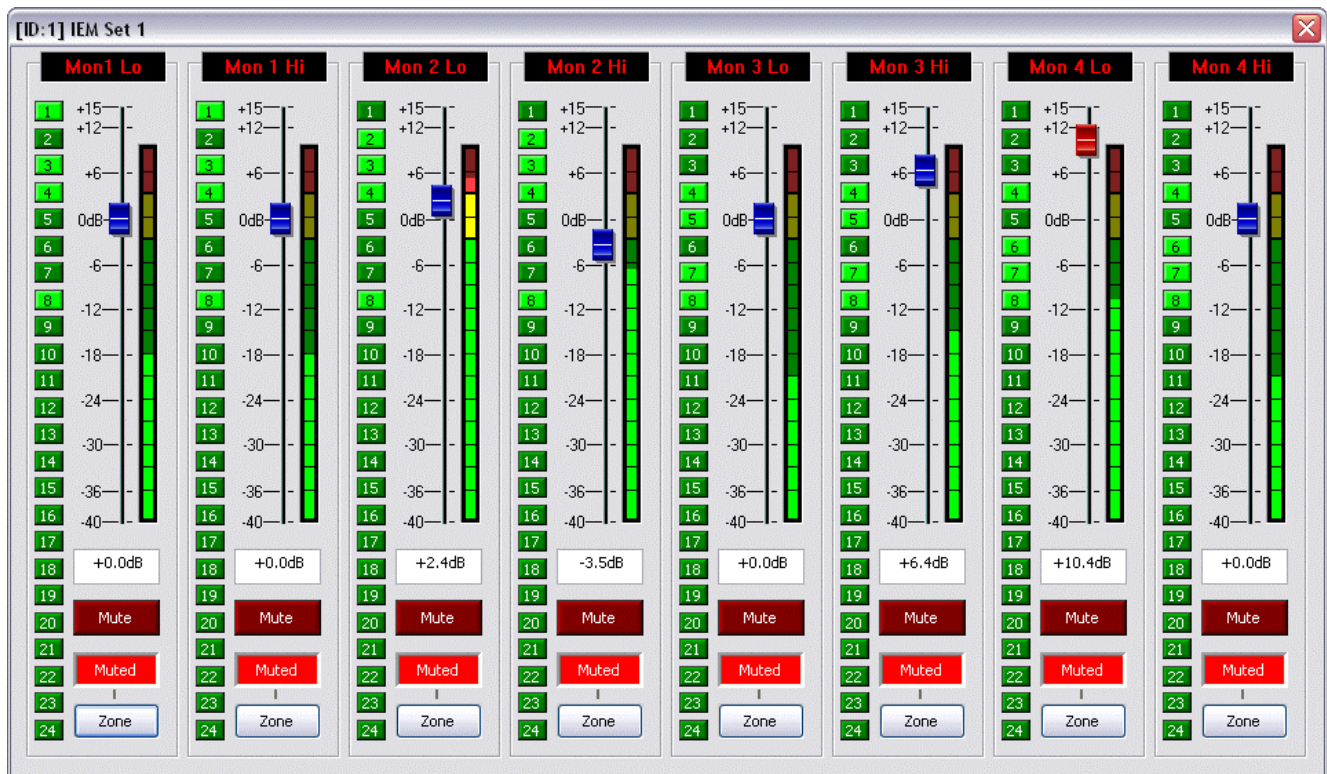
Note the pair of large buttons on the right hand side – currently the 'SETUP' mode is active. The other mode, 'LIVE' mode, is

designed to be used during a show. Swapping between the two modes is a password protected operation, with the options available in 'LIVE' mode being decided whilst in 'SETUP' mode. These two modes may be thought of as equivalent to user ('LIVE') and supervisor ('SETUP') modes in the normal AudioCore software.

It is possible to recall five snapshots across the entire system, the names of which appear in the 'Snapshot Memories' pane in the middle of the window. These names are not downloaded from a unit – they will be the names last stored to any unit connected to the system.

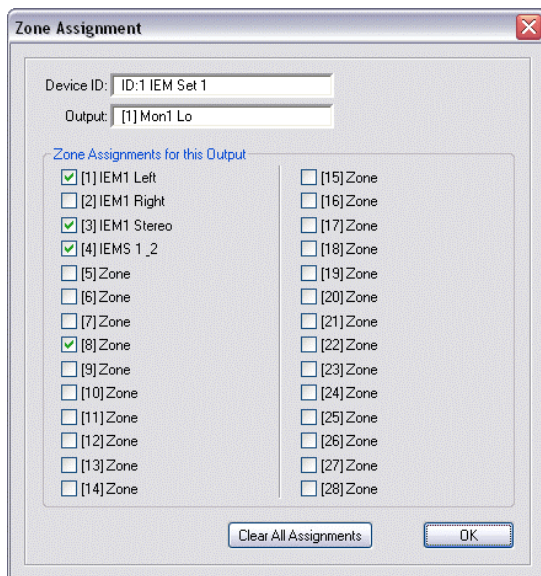
Setting up Zones

A total of 28 zones are available, arranged in groups of four, accessible using the green 'Zone Group' buttons. Zone groups may be named by pressing the 'Name Zone Groups' button. To set up a zone, start by assigning the required outputs from any unit to the zone. This is achieved by selecting the unit by pressing its button. This will display the device zone assign window shown below.



In this example the eight outputs on the selected DP448 are displayed. The slider displayed is the output gain control for that individual channel. The window directly beneath this is the actual gain of that channel. Directly below the mute button is another window showing the effective gain of that channel with respect to all zones that it is included in. So, for example if the channel is included in three zones with gains of +6dB, -12dB and +3dB, the effective gain window would show -3dB (sum of 6 - 12 + 3).

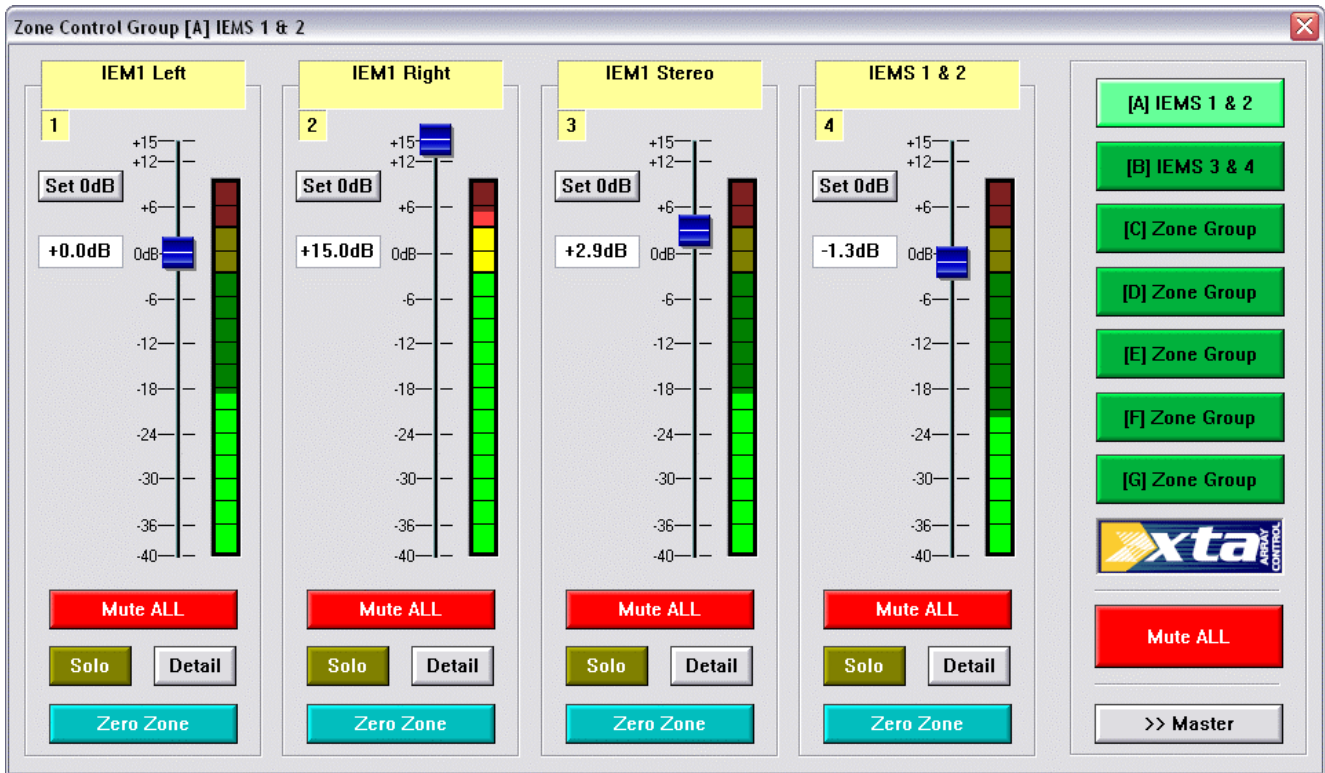
The small panels in a column down the left of each slider are the zone assignment shortcuts – pressing on one of these will include/exclude it from a zone. Inclusion is marked by a green number. These shortcuts may be thought of as operating in a similar manner to VCA group assignment buttons on a mixing desk.



This is a shortcut area to the first twenty-four zones – the entire set of twenty-eight zones is accessible by pressing the 'Zone' button below the effective gain window.

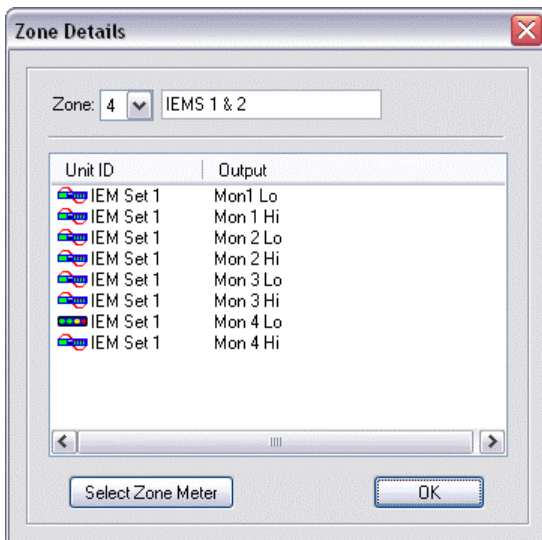
Control and Details of Zones

Referring to the master window, pressing one of the zone group buttons will display a zone control window with four zones available at any time.






The name of the zone appears at the top of the strip, followed by its gain control and “Set 0dB” button, gain readout, mute button, and zone solo button.

Additionally there is a 'Zero Zone' function which temporarily removes Array Control's contribution to all the outputs in the zone. Toggling this button will restore the original gain setting. The MUTE ALL button, due to its possibly dangerous function, has a 'press and hold' function associated with it. It will illuminate if briefly pressed as a warning, and then permanently after about two seconds. The toggling off of this function also has a slight delay for safety purposes.



Beside the solo button is the 'Detail' button. Pressing this allows access to some setup parameters for the zone, including the name displayed at the top of the zone's channel strip.

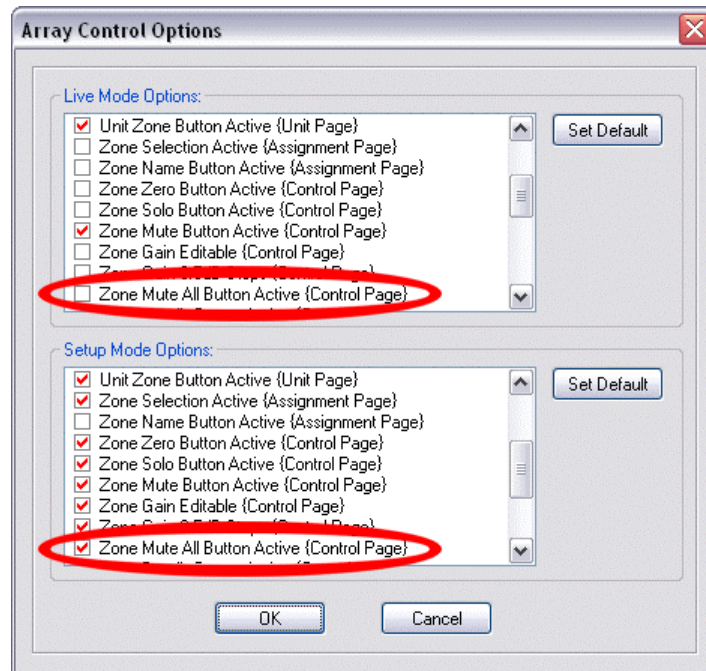
The list shown details all the outputs included in this zone, alongside icons that are used to denote the metering point.

-  This icon means normal assignment of the output
-  This means the channel is the selected metering point for the zone and is actually in the zone
-  This means the channel is selected for the zones metering point but is not actually in the zone.

Changing the metering point is achieved by pressing the 'Select Zone Meter' button and choosing the point required.

Array Control Options

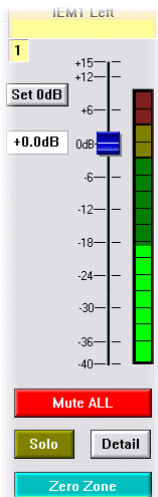
As mentioned earlier, 'SETUP' and 'LIVE' modes may be thought of as equivalent to supervisor and user lock levels in the normal Audiocore software.



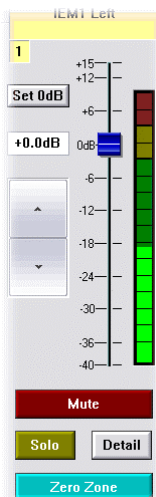
The options screen above, displayed by pressing the 'Options' button on the master window, allows different access rights to be granted to the 'LIVE' and 'SETUP' modes so that, for example, once the system is running in a show situation, it is not possible to access the 'MUTE ALL' button on the zone control window ('Zone Mute All Button Active {Control Page}') in the Live Mode Options section.



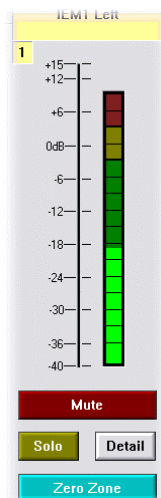
Also on the master window are three buttons which affect the presentation of the zone control windows. These are the row of three labelled 'Slider', 'Up/Dn' and 'Meters' respectively. Their purpose is to allow the zone gain and metering to be presented in different ways, according to the application and computer controlling the system.



The 'Slider' option displays sliders and smaller meters on the zone control screen, as previously seen.



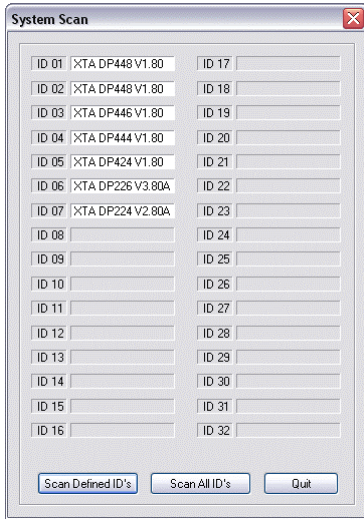
The 'Up/Dn' option replaces the slider with a pair of spin buttons. This might be the best option if the computer has a touch screen, or is operating without a mouse.



Finally, the 'Meters' option dispenses with the gain controls entirely, displaying just a meter. The scale of the fader has been deliberately left visible, as it is also the scaling for the metering level.

Miscellaneous Tools and Functions

Scan System



This is available under the 'Status' menu. When selected a window will appear allowing all possible addresses on the system to be scanned for the presence of any units. Any found will be reported with their model number and current software version. The example here shows that the first seven IDs are present.

Note that only the first 32 ID numbers are scanned, even though 4 Series units support ID numbers up to 128.

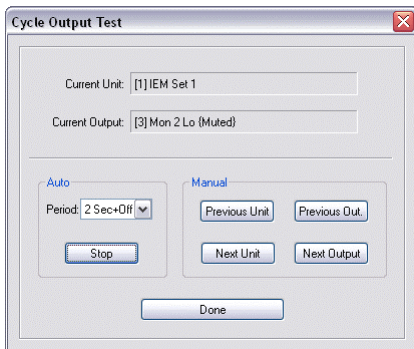
The options given are to scan only those units that are currently defined which will limit the search to the ID's that are being used already, or to try and find any connected units. The second option is useful if the ID numbers of the units are not known.

Flash ID's

Again available under the 'Status' menu, this function is useful for finding out 'which units are where' by actually making all units show their device names on their respective LCD screens. The device name is set when the unit is added to the system, but may be modified at any time by selecting Device ► Modify from the menu bar. The unit will additionally identify itself by showing its ID number.

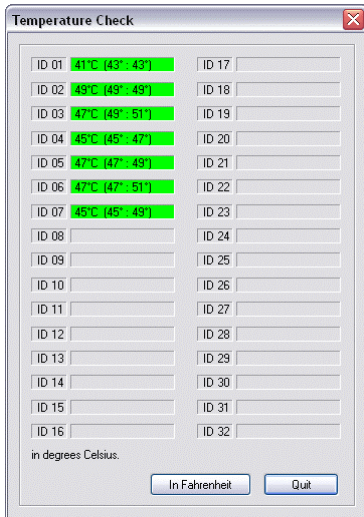
Cycle Outputs

Available under the 'Tools' menu, this may be thought of an automated solo function where each output of every device on the system is solo'ed in turn for a fixed period of time, allowing all parts of the system to be validated as working correctly.



The automated behaviour may be selected from the list with control over both the speed and method of soloing. A time on its own means the next output will un-mute immediately following the last at the period set. The 'Time + Off' selections un-mute for the period selected, followed by a pause for the period selected – the net effect being signal and silence in equal measures.

Temperature Check



Selecting this from the 'Tools' menu will display a window similar to the 'Scan System' function described on the previous page.

The units on the system report back three readings – the first is the current temperature, the second (in brackets) is the maximum this session, with the third being the maximum temperature ever reached. As the temperature of the unit increases, the colour on the background will change, switching to yellow to warn that the unit is beginning to get hot (acceptable for short periods of time), and turning red when dangerous temperatures are experienced.

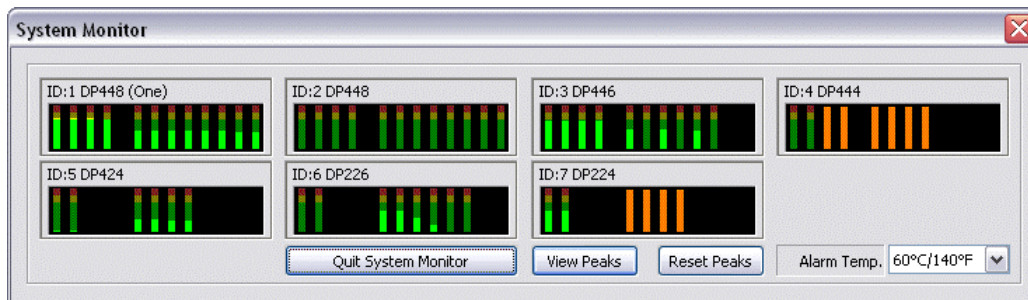
Note that this monitor does not update in real time – the window must be closed and reopened to refresh the temperature readings. If real time monitoring is required, use the System Monitor as explained below.

Units displaying the red warning are susceptible to failure (and therefore muting) – do not take this to be a sustainable condition!

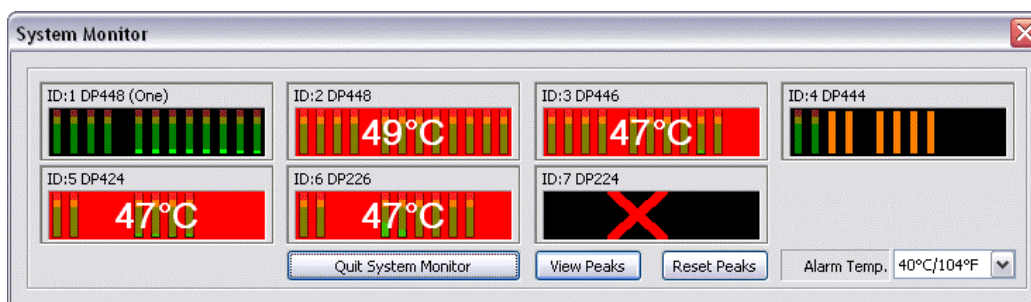
System Monitor



Pressing the button shown on the toolbar will display the system monitor window. This will show a small pane for each connected device, giving feedback on metering, temperature and correct connection.

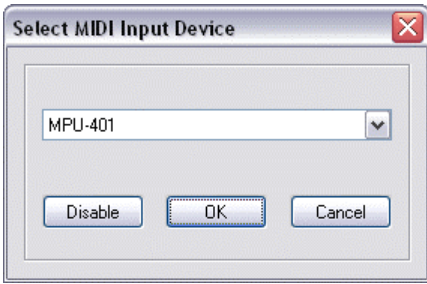


Each unit's input and output metering is shown if all is well with its connection. This will be replaced by a large red cross (as shown in the screen-shot below for unit ID7) if the unit is not responding. Orange metering bars correspond to muted outputs, and the entire bar will go red when that channel clips/limits. The monitor may be set to read temperature in Celsius or Fahrenheit. If a unit's temperature exceeds the threshold set for the alarm temperature, the metering for that unit will turn red and the current temperature will be displayed across the meters as shown.



Pressing the "View Peaks" button will freeze all metering, only updating the display on the peak levels. In this way a check can be made on how hard the system has been working. Clicking on any unit's metering pane will open editing for that unit, and jump straight to the Gains tab, allowing quick adjustments to be made if there are signs of clipping and/or limiting.

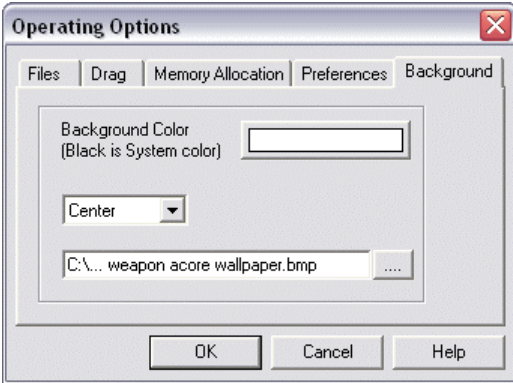
External MIDI Recall



Audiocore can be configured to respond to externally generated MIDI 'program change' messages received on a MIDI port, selected from the Snapshots ► External MIDI Recall option.

Any program change message received will trigger a snapshot memory recall to the whole system, as long as the program change data is within range.

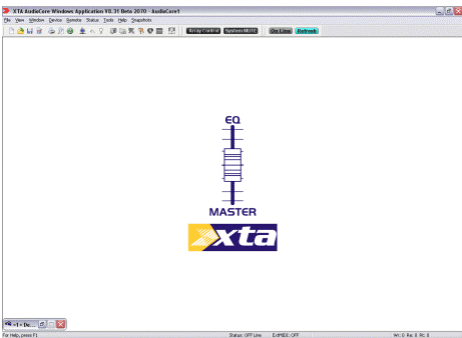
Background Image Option



Selecting File ► Options and the 'Background' tab allows selection of a 'wallpaper' image for the parent window of Audiocore.

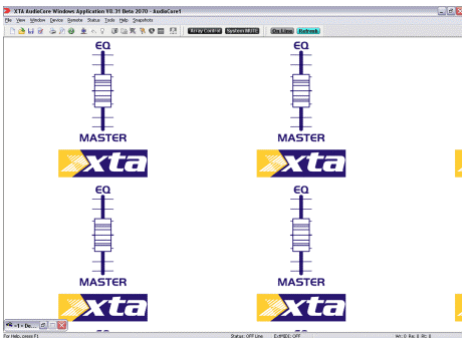
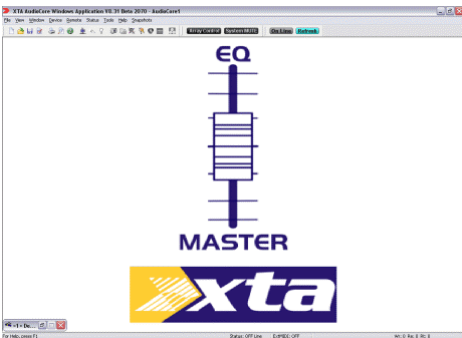
The colour of the background may be selected, and an image placed on it. This image must be a bitmap file (*.bmp) and can be formatted in a number of ways. Note that the drop-down box also allow selection of 'None' if no image is required, giving a flat background colour only.

The image here is centered against a white background.



The examples below show the effect of stretching to fit, on the left, and tiling, on the right.

With the "Stretch to fit" option, the image will always resize to fill the background window. If you are using an older computer, or have a lot of applications running at the same time, and limited memory, this option should not be used as it consumes a lot of processing resources.



Refresh Button

The refresh button, found on the toolbar at the top of the screen, allows the software to pull in all the current settings of the connected settings at any time, without having to go off-line and on-line again.



Pressing this button (which will be greyed out until the system is on-line) will display a window showing the brief process of re-synchronising the system. This is useful when there may have been local changes, made via a front panel, whilst the system was being controlled from the PC, ensuring the computer knows exactly how the units are set up at all times.

SiDD Access Button

If you are concurrently running SiDD PC control software at the same time as **AudioCore**, the two packages can share COM port, which will automatically be assigned when the appropriate software is brought into focus.



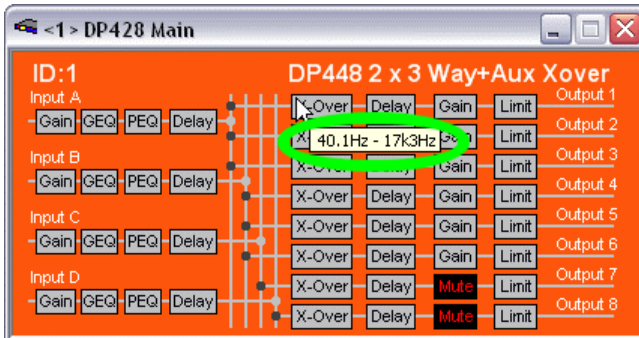
Pressing this button will automatically switch over to the SiDD software and reassign the COM port.

The complementary button exists in SiDD's software.

These buttons will not be available unless both packages are actually running at the same time, not just installed.

Smart Tips

Smart Tips display pertinent information about any processing block as displayed in the device window, without the need to click and open any additional windows. Just hovering the mouse pointer over the block will bring up the smart tip, as shown below.



This is the smart tip for the crossover section of a DP448, showing the crossover frequencies currently in place.

Other smart tips include...

Which details settings of the limiter;

+12dB 45mS x16

225.441mS The delay time for that input or output;

The gain of that output/input or

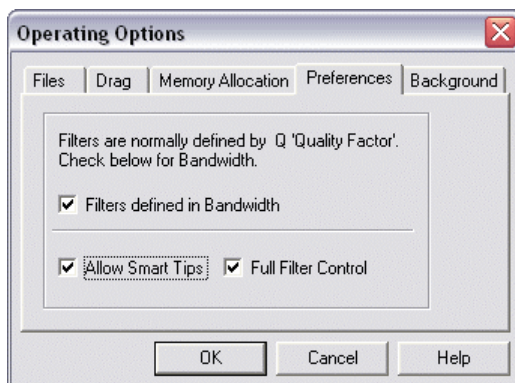
+13.2dB

Muted

The parametric/shelving EQ settings – 'Flat' if all sections are flat, or

Flat

if any section is contributing.

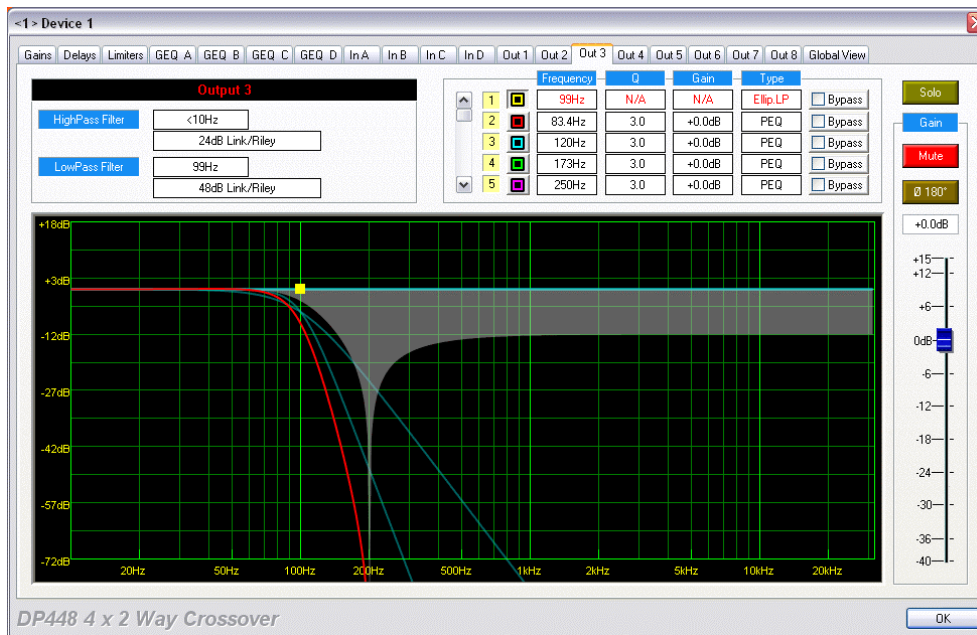


Select File ► Options and then the 'Preferences' tab to enable or disable the Smart Tips feature.

Enhanced Filter Set Usage

Producing steeper crossover roll-offs than 48dB

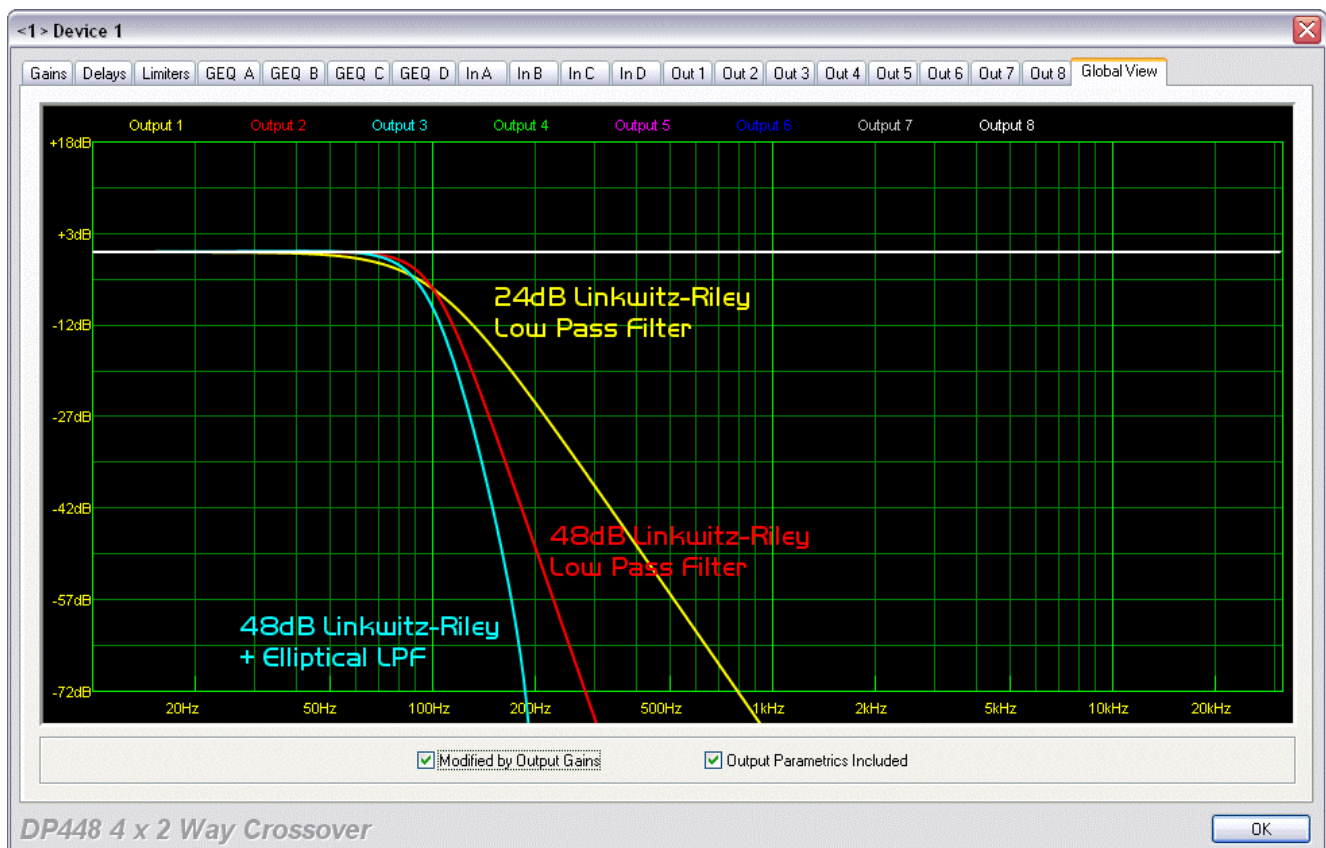
Using a combination of the high or low pass filters and the elliptical parametric filters, much steeper crossover slopes can be realised than ever before. The following example shows how to produce a low pass filter with a roll-off in excess of 70dB/Octave. This technique can be used with high pass crossover filters as well.



Select a 48dB low pass filter, and set the frequency as required. Next, turn one of the parametric sections on that channel into a low pass elliptical filter, and set its frequency to exactly the same as the low pass. Make sure the filter is active, and the response should be as shown below.

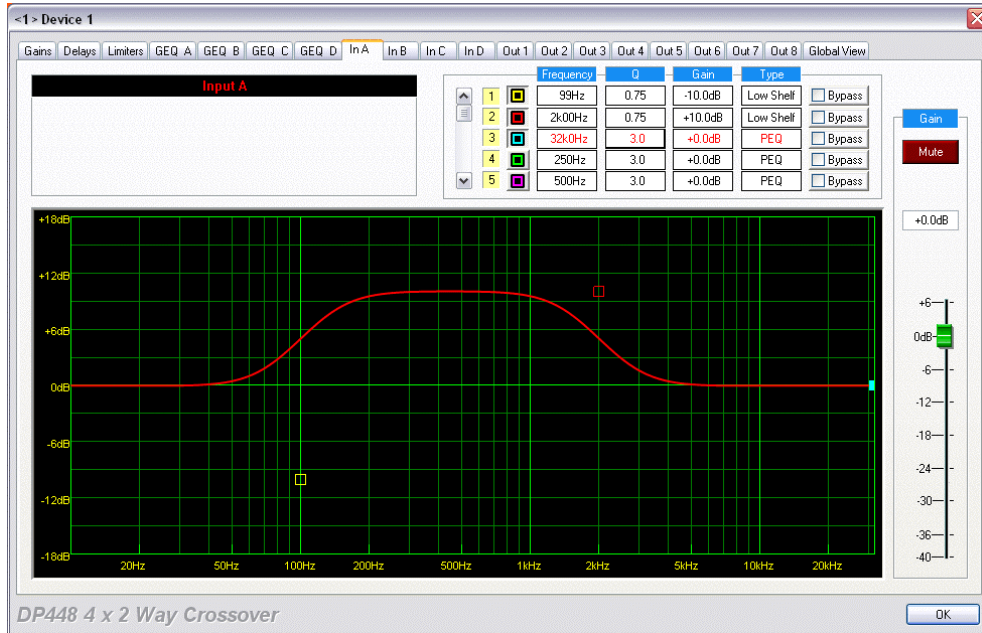
To demonstrate the extended roll-off this has not introduced, outputs 1 and 2 have been set as standard 24dB and 48dB Linkwitz-Riley crossovers respectively.

The "Global View" clearly shows how much steeper the roll-off is on output 3.



Producing a flat-topped filter response.

To create a flat-topped EQ filter response such as that shown to the left, use two EQ bands, BOTH configured as low shelves. For an overall BOOST, set the Lower frequency filter to BOOST the desired amount, and the Upper frequency filter to CUT by the same amount.

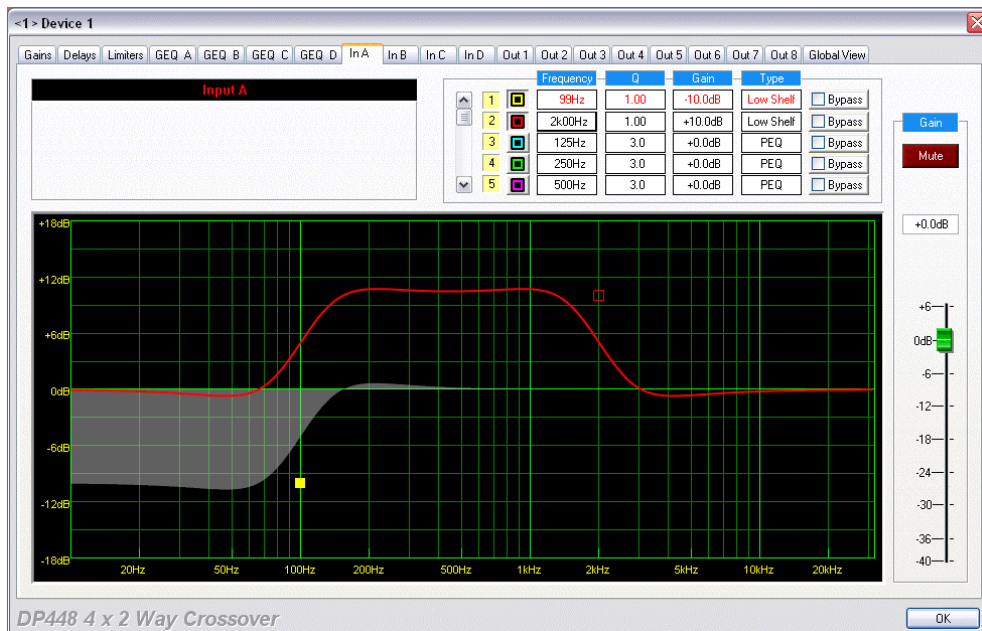


The example has the filters set at:

PEQ1: Low Pass 99Hz @ -10dB, Q = 0.75

PEQ2: Low Pass 2kHz @ +10dB, Q = 0.75

Varying the 'Q' affects the slope of the response – higher values will cause overshoot. Note that as both ends of the flat-topped filter shape are individually adjustable, the slopes and gains of each end allow asymmetric filter shapes to be easily realised.

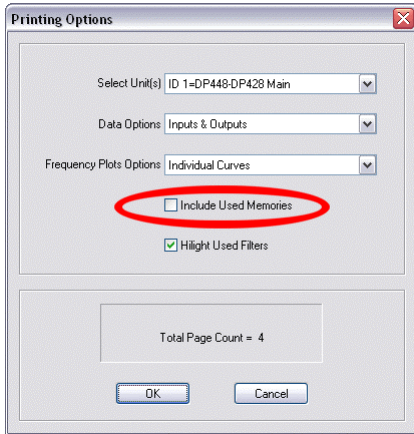


Printing from AudioCore

AudioCore can produce a tabular and graphical printout of any part of your system.

This is set up via File ► Print... from the menu, or with the shortcut button on the toolbar. Either will display the options window shown here.

The options available allow the unit (or all units) to be chosen for printing and whether to print all the uploaded memory settings. The information shown in the graphical representations may be adapted as follows:



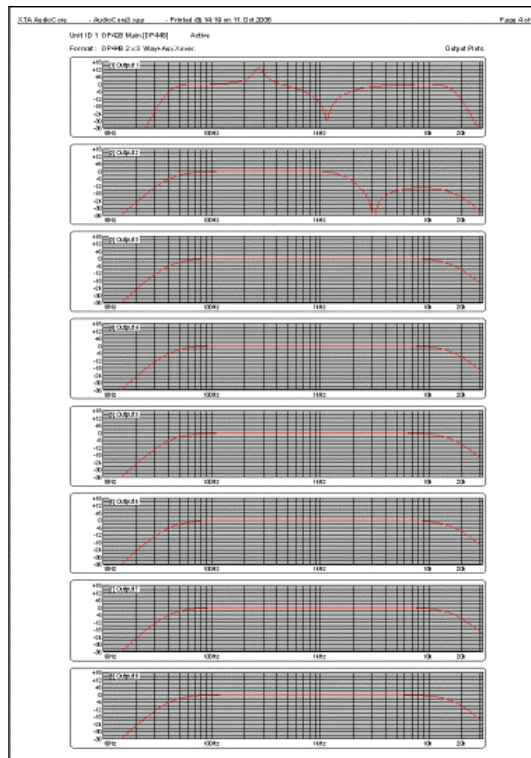
No Curves - only tabular data is printed

Individual Curves - Each output will generate a separate graph showing just the crossover filters' frequency response.

Combined Xover Curve - One graph is drawn for output crossover filters, with colour coding for each output, like the "Global View" on the editing screens.

Combined Xover Curves & Output EQ - One graph is drawn for output crossover filters including the effect of the output EQ on each channel, with colour coding for each output.

A typical printout for the "Individual Curves" option might look like this:



The tabular format is shown on the left and the eight response curves (individual outputs on a DP448) is on the right. If you only require information on the current (i.e. audible) configurations of the system, make sure the 'Include Memories' check box in the options is **NOT** checked. Otherwise, **six pages** of information will be printed for **every memory** of **every unit**, which might accumulate to many pages.

The "Highlight Used Filters" option prints all filter settings that are active on the tabular layout in red so it can be easily seen which bands of EQ are being used.

Appendix I: Walkabout Kit and WiFi Set-up Guide

Introduction

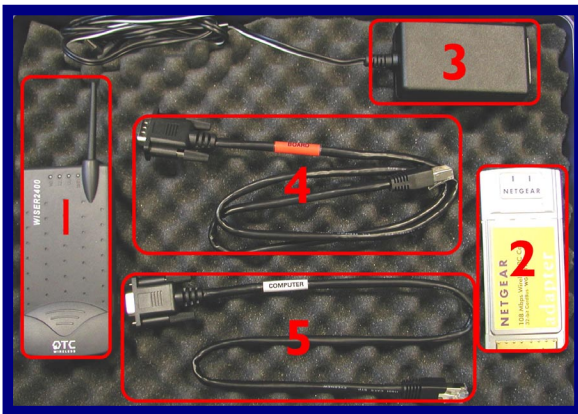
XTA have spent a considerable period of time searching for a reliable, straightforward solution to creating a wireless system that can interface with our units. The obvious choice of standard network is to utilise the 'Ethernet' system as utilised by computer and control systems worldwide.

We have developed a new version of **AudioCore** to work with local area networks (LANs) and wireless local area networks (WLANs) using the TCP/IP protocol. This system means there is no need for COM port redirection software or to use external USB to serial converters. These can prove troublesome, especially with laptops.

We have found that the Netgear WG511T Wi-Fi card provides greatly extended range and improved stability, over and above any WLAN systems built into laptops or tablet PCs (such as those featuring 'Centrino' processors).

The solution for the connection to the serial port on our processors is catered for by the Wiser WLAN to Serial converter. This device is small, stable, and easy to set up. New software has been developed for the 4 Series and DP224/6 so that they may reprogram the Wiser's basic features and required settings for hassle free configuration. We also have a utility program that allows more comprehensive setup of the device via a PC, if the default settings are not suitable.

Contents of the kit



- 1: Wiser Wi-Fi to Serial Converter;
- 2: Netgear Wi-Fi card;
- 3: Power supply for Wiser;
- 4: Cable with RED band to connect to XTA⁴;
(this may be a light brown cable in some kits)
- 5: Cable with WHITE band for PC connection.

Also included, but not shown:
Netgear driver disk;
XTA Wiser PC Set-up disk;

Important Note

Before you begin installing the Netgear wireless card or the Wiser interface, please make sure you have the latest version of software in your unit(s).

Unit Type/Program Name	Earliest Compatible Version
4 Series	V1.50
DP226	V3.60
DP224	V2.60
DP6i	V2.3
AudioCore	V8.00

This software and the loader program are available from our website at www.xta.co.uk and is also included on the XTA Wiser set-up disk supplied with this kit.

Note: This system, operating on TCP/IP, is only designed to control the 4 Series, DP226, DP224, and DP6i. Inclusion of older units (DP100/200/202) will impair performance and is not recommended.

⁴ Some kits may be supplied with a light brown cable in place of the black with red band type.

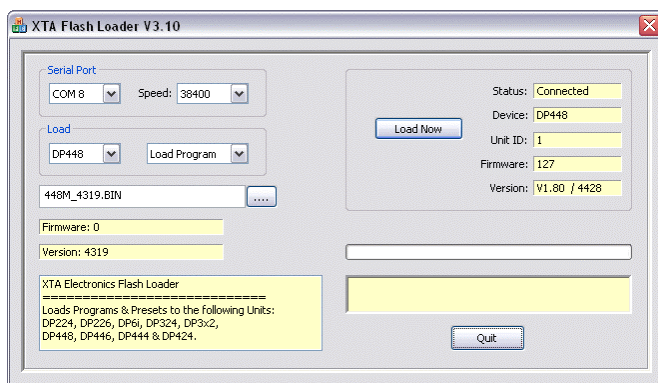
Upgrading unit software

Note that this procedure can only be done one unit at a time – it is recommended that the unit being updated is disconnected from any RS485 network until the procedure is complete.

Connect the unit to upgrade to a spare COM (serial) port on your PC or laptop. The serial cable must be a “one-to-one” cable and NOT a null modem cable. This is because a null modem cable has “transmit” and “receive” wires swapped, and so will not work. It is also possible to upgrade through an appropriate USB to RS232 converter, if your computer does not have serial ports. The software cannot be updated via RS485.

Make sure the unit’s interface is set up as Master⁵ on RS232 and ID1, and that the baud rate is the same as that chosen in the loader program (default is 38400). In the case of a **DP6i**, set the interface to **00**. Plug the other end of the serial lead into the RS232 port on the unit.

Run the loader program from the ‘Software’ folder on the CD called “Load226.exe”.



Select the correct COM port and baud rate, and press the ‘CONNECT’ button. If all is well, the loader will display details of the connected unit.

At this point, press the “...” button beside the “File” text box, and choose the correct bin file (selection will have been automatically limited to software for the unit type detected).

Do not switch off the unit during this procedure or attempt to run other software on the computer. If the upgrade is interrupted, the unit will become inoperable and may have to be returned to the factory.

Finally press the ‘Load Now’ button (which previously said ‘CONNECT’), and the unit will display

```
REMOTE LOAD
Block nnnn of 2048
```

The number nnnn will count up in sync with the number on the loader software and, when complete, the unit will reboot and display the new version number and the message

```
New Software Loaded
```

In the case of the **DP6i**, the unit will reboot and flash **n5** (“new software”) to show that the update has been successful.

The entire process will take less than two minutes.

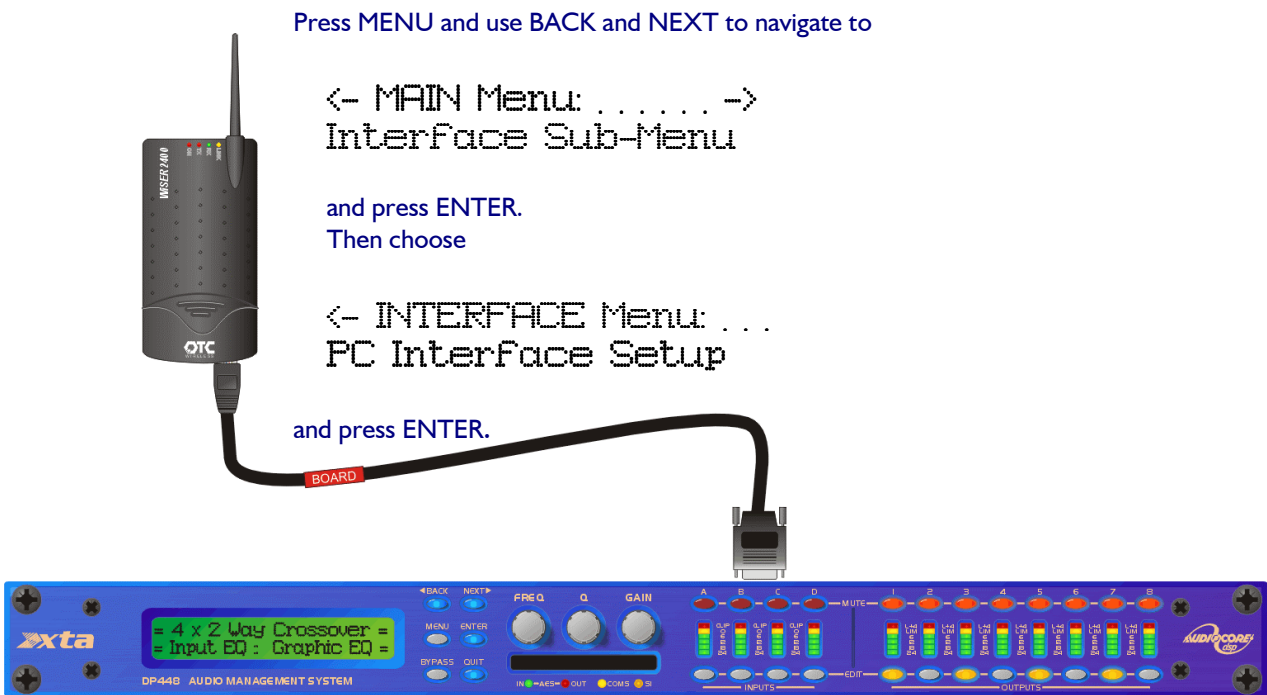
⁵ “Master” setting only on DP224/6/6i

Set up the Netgear card first: Install the Netgear driver for the WG511T using the supplied Netgear driver disk **BEFORE** plugging the card into your PC or laptop. Follow the instructions on screen. Now plug the card in – Windows should recognise it and load the drivers as required. If, after installation, Windows then asks to load drivers itself, or reports new hardware found, it is now safe to follow these instructions. If a warning is displayed select 'Continue Anyway'.

Set up the Wiser converter: There are no drivers required for the Wiser. All that needs to be done is to plug it into your 4 Series, DP226, DP224, or **DP6i**, using the lead with the RED band, plug in the power supply, and check the settings as described below.

These settings are already programmed into the Wiser for you.

Set up the Master unit: The Master unit is the first one in the chain, and has the Wiser directly connected to it This unit will need to have the Wiser enabled, as explained below.



Follow the wizard and ensure that the unit is set up as:

RS232 Mode, 38400 baud, ID1, Stop Prg Change: Yes, and Wiser Wireless is selected as Yes.

[4 Series Interface Menu]

Or...

Master, RS232, 38400 baud, ID1, Midi Relay : No, Stop Prg Change: Yes, and Wiser Wireless is selected as Yes.

[DP224/6 Interface Menu]

Other units on the network should be set up as

Slave, RS485, 38400 baud, ID2 (increment ID for each connected unit).

[4 Series Interface Menu]

Or...

Slave, RS485, 38400 baud, ID2 (increment ID for each connected unit).

[DP224/6 Interface Menu]

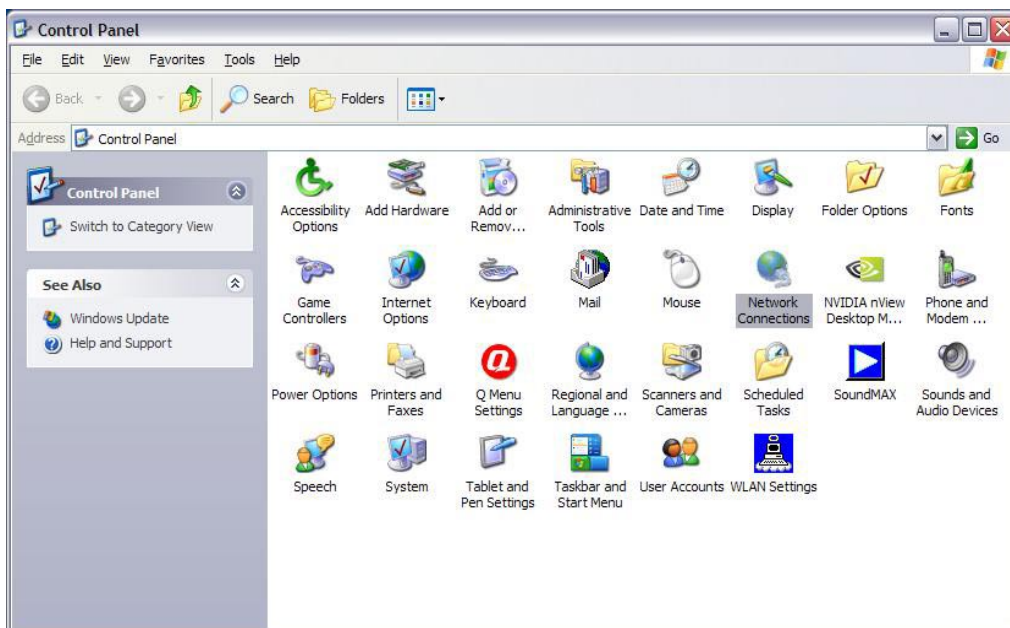
In the case of a **DP6i**, set the interface to **09**, which is the same as Master on RS232 at 38400 baud. The **DP6i** does not have the facility to adjust the settings of Wiser. Further DP6i units should be set to interface **06** with incremental IDs.

Warning: The 4 Series by default are set to 115200 baud and this must be changed to 38400 for the system to work.

Set the Netgear Card IP Address

Whilst Windows will automatically assign the Wi-Fi card an IP address, our experience has shown that this must be changed manually to ensure correct operation. Here's what to do...

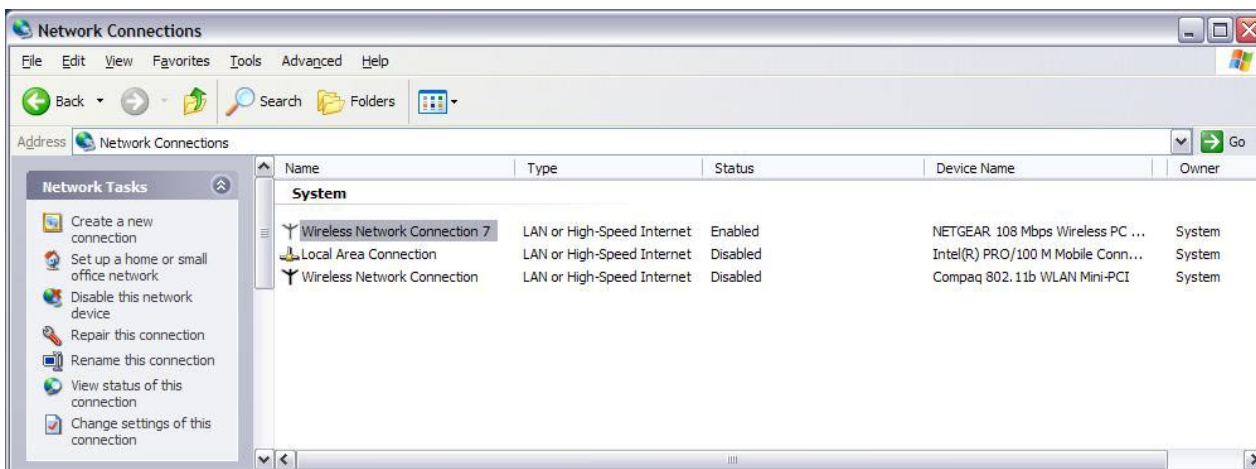
From your Windows desktop, click **start**, then 'Control Panel' to display...



The 'Network Connections' icon is already highlighted here.

Double click on the 'Network Connections' icon to display the list of network connections in place on the computer.

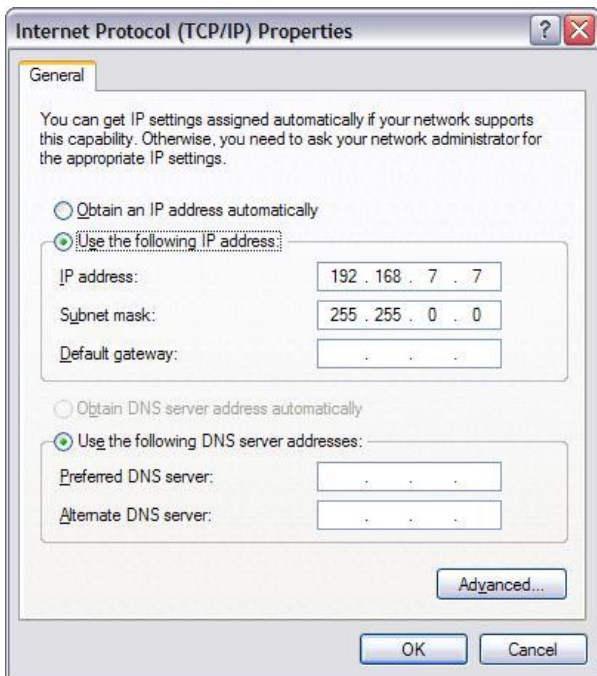
In this list should be the network associated with the Netgear wireless card – it is highlighted here.



Make sure you change the settings on the Netgear Card – check the "Device Name" column for "Netgear 108 Mbps Wireless PC Card" as shown above. Right click on this and select 'Properties' to see how the card is set up – as shown on the next page...



The item listed (and highlighted) here that needs to be checked is the 'Internet Protocol' item – select it and then click on the 'Properties' button to reveal the window shown below, which gives access to the actual IP address etc. used by the Wi-Fi card.



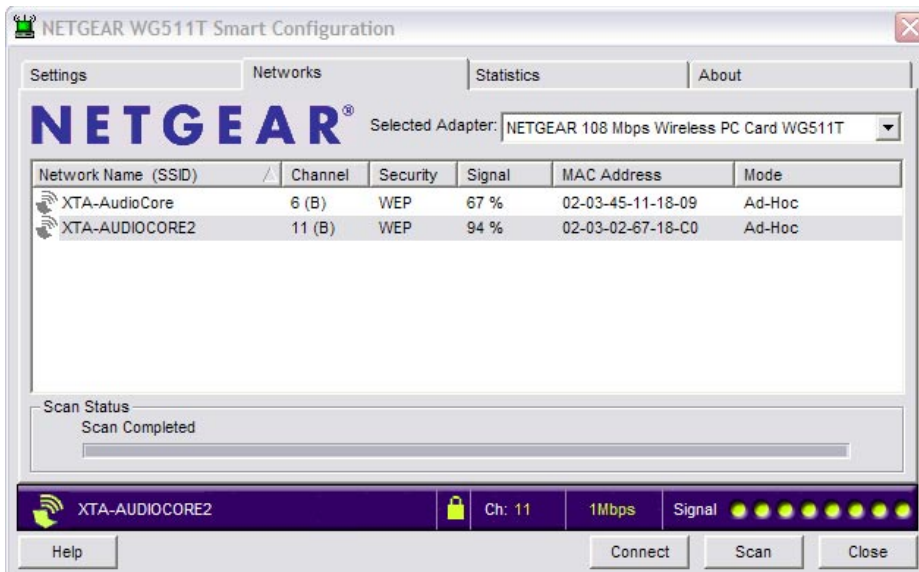
Make sure that 'Use the following IP address' is selected and the IP address is similar to that shown (i.e. starting with 192.168.). If it is an auto-allocated address (typically of the format 169.202.x.x), change it to one beginning 192.168, but NOT ending with 224.226 as that's the ADDRESS of the Wiser!

Set the 'Subnet Mask' to 255.255.0.0.

Do NOT change the Default Gateway setting (normally blank)!

Search for and Establish a Wireless Link to the Wiser

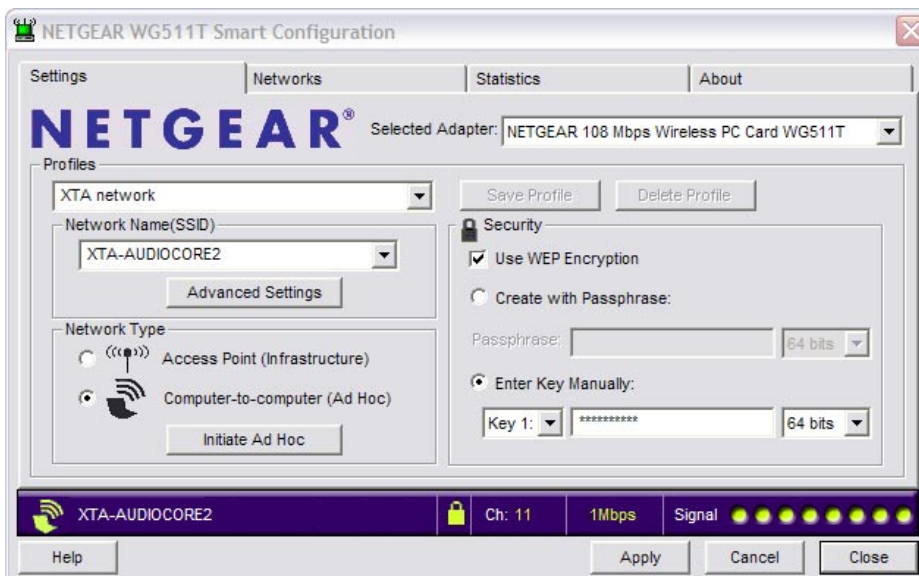
On your Windows desktop, double click on the Netgear Wi-Fi icon in the system tray beside the clock. This will display a window as below. Click onto the second tab on this window, 'Networks', to display...



Press the 'Scan' button and the card will try to find any available Wi-Fi networks in range.

If all is working, the name of the network with the Wiser connected should appear – this name is the one set on the DP226 connected directly to the Wiser – default is "XTA-AUDIOCORE", and the correct channel should also appear.

Assuming the network has now been found, click on it in the list (for example the one highlighted in grey in the above screen shot) and then the 'Connect' button. The first tab will be selected again automatically, with the blue bar at the bottom showing the signal strength, connection speed and network name.



Make sure the following parameters are set up:

Network Type is set to 'Adhoc';

Security settings are set with 'WEP Encryption' ticked, and the 'KEY1' is the same key as entered on the unit – default is 0123456789, with '64 bit' encryption selected.

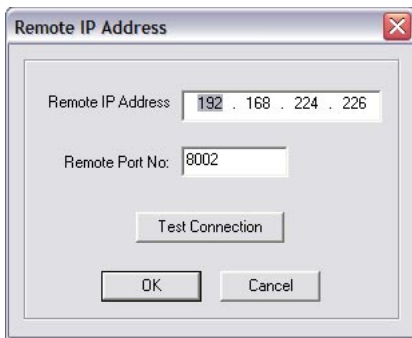
Please see page 59 for details of how to check these settings on the unit.

If this has been established, but **AudioCore** still says it cannot connect to the port, check the WEP encryption and the KEY1 value entered – if these settings are incorrect, the connection can still be established (so the network name may appear), but no data can be exchanged (hence **AudioCore** cannot use the network).

Setting up AudioCORE to work with the Wiser

You will need to install **AudioCORE** version 8.00 or greater on the PC to be used with the wireless system.

Start **AudioCORE** as normal and then choose the menu Remote ► TCP/IP. The window below will be displayed.



Pressing the “Test Connection” button should display a message saying “Connected to TCP/IP!” and the address/port number.

Assuming this works, you should now be able to go on-line, and use AudioCORE as normal. Nothing concerned with the operation of AudioCORE has changed – you will be able to upload and download as normal, and the real-time metering and status monitor will be working as before.

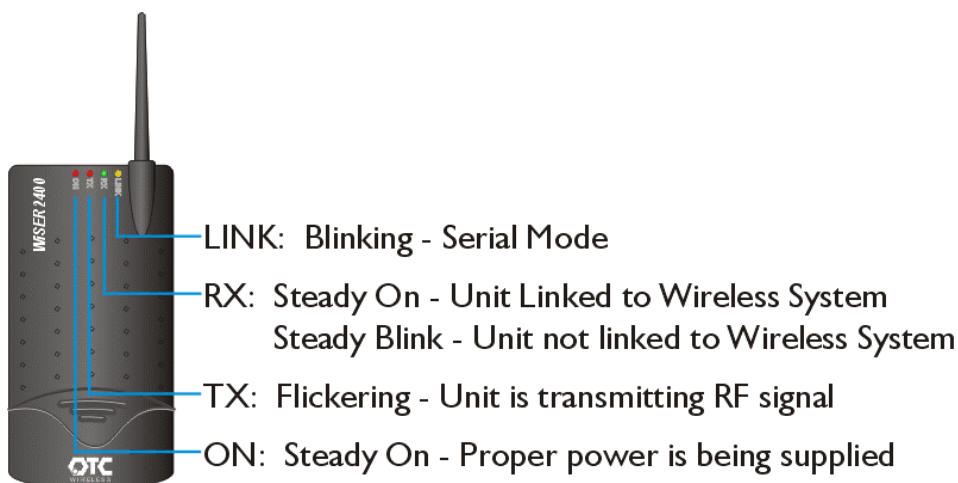
If things don’t appear to be working, or an error message saying “Cannot connect to port...” appears, please refer to the trouble shooting section on page 62.

It may take a up to a couple of minutes for the WLAN card to associate with the Wiser after booting up the PC/Laptop. This is normal – the two LEDs on the Netgear card will flash independently until a connection is made, then they will begin to flash together. Similarly, the green RX LED on the Wiser will flash until a wireless link is made; from which point it will be permanently illuminated.

The preprogrammed Wiser setting are given below – note the IP Address must match the IP Address in **AudioCORE**.

Parameter	Value
SSID	XTA-AUDIOCORE
TCP/IP Address	192.168.224.226
Subnet Mask	255.255.0.0
WEP Encryption	Yes (64 Bit)
WEP KEY1	0123456789
Default Channel	6

The LEDs on the front of the Wiser unit give feedback on its current state as shown below.



Tablet Features:

Some tablet PCs will have a feature whereby holding down the stylus acts like a right mouse click. You may want to turn this feature off, as scrolling can be difficult. Please refer to your specific tablet PC operating manual for details.

Connection Problems:

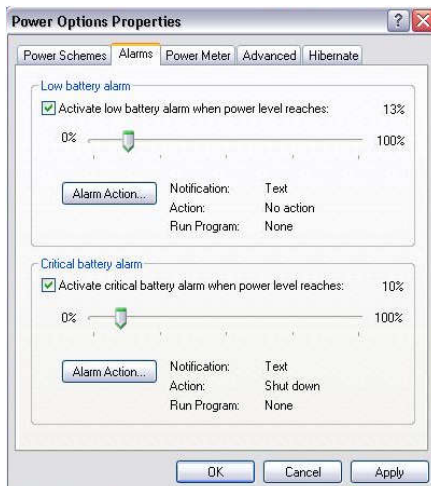
Try experimenting with the location of the PC relative to the Wiser – sometimes the case of the computer can shield the radio link. Also, try to ensure that the Wiser is not too close to the computer, or the radio link may saturate (overload). 6 feet (~2m) is a recommended minimum.

Check the Netgear and Windows Network icons in the system tray on the task bar – if there appears to be a problem, double click on the Netgear icon to display the Netgear Wireless interface. Please refer to page 56 for detailed instructions of how to check/re-establish a connection. Note that it can take anywhere between 1 to 3 minutes for a network link to become available again. This is outside XTA's control, so please be patient!

Moving radio links are more likely to lose connections than stationary ones, so if the link appears to be dropping out, try to minimise movement until the link is re-established.

Computer Problems:

Please ensure all power-saving features are disabled on your computer.



Access this via **start** ► Settings ► Control Panel ► Power Options. Depending on the version of Windows you are using, select power as 'Always On', ensuring that the system never goes into stand-by.

Note that stand-by operation can also be enabled through the 'Alarms' tab (on a laptop/tablet, used for low battery situations). Set the 'Actions' to be either 'Do Nothing' or 'Shut Down'. There is a known problem with Windows concerning computers coming out of stand-by and subsequent communication with peripheral devices (i.e. the Netgear card).

The latest driver for the Netgear card is always available from www.netgear.com

AudioCore:

AudioCore will warn you if the radio link is lost during editing – this is to prevent accidental continuation of editing. The quickest way to go back on-line after this is to press the 'Refresh' button - this bypasses the need to scan for connected units etc.

Any changes to network or wireless settings may require **AudioCore** or even Windows to be restarted.

Setting up the Wiser...using a unit (4 Series/226/224 only)

It may be necessary to change or check the settings stored in the Wiser to aid trouble shooting. This section explains how to access and adjust the various parameters.

From the default screen press MENU and use BACK and NEXT to navigate to



```
<- MAIN Menu: . . . . . ->
InterFace Sub-Menu
```

and press ENTER then NEXT to display

```
<- INTERFACE Menu: . . .
Wiser 2400 Setup
```

Pressing ENTER now will start the setup wizard with the following **DEFAULT PARAMETERS DISPLAYED...**



Radio Channel 6*

This can be changed with the FREQ rotary control, or the BACK and NEXT keys.

The radio channel is used by the system to jump frequencies in case there is a clash in mid-air, so to speak. This should not need changing as the jumping of frequencies will be handled at the PC end automatically.

IP Port No: 8002*

This can be changed with the FREQ rotary control, or the BACK and NEXT keys.

The IP port is part of the information that uniquely identifies the Wiser on the wireless network. This setting is unlikely to clash with anything and should not need adjusting.

IP=192.168.224.226

'Q' will change 3rd Field (the '224' part), GAIN the 4th Field (the '226' part). (the '192.168' part is fixed).

The IP (address) is the lowest level part of the info required for unique identification of the Wiser on the WLAN – if another device on the WLAN has this address, there will be a clash, but this can be checked if there are problems – see the troubleshooting section later on in this document.

SSID: XTA-AUDIOCORE

FREQ will scroll through characters to adjust the flashing one on screen, with BACK and NEXT stepping along the name.

The SSID (or Service Set Identifier) is the public name of the wireless network. If multiple wireless networks are found, then the Netgear card must be associated with the one bearing the SSID 'XTA-AUDIOCORE'.

Wireless MD: Adhoc*

Choose between 'Adhoc' and 'Infrast' using the FREQ control.

'Adhoc' means 'computer to computer' - all devices on the WLAN are 'on the same level' and there is no system of privileges involved in what can access what. 'Infrast' means there is an infrastructure of levels, possibly using passwords to set privilege levels and access. This must match at the PC end and is best left on 'Adhoc' for normal circumstances.

WEP Encrypt: 64Bit*

Choose between 'None', '64 Bit', and '128 Bit' using the FREQ control.

"Wired Equivalent Privacy" or WEP encryption is a method of making a wireless network more secure by encrypting the data transmitted using a 'Key' that both ends of the system must know to access the data. Working out what IP addresses are available on a WLAN is relatively simple, so allowing anyone in the vicinity to potentially gain control over any connected devices. Using encryption, this become much more unlikely to happen as decoding the 'Key' is very difficult. We would recommend using 64 or 128 bit (128 being more secure) encryption. If you have the encryption enabled, then the next option will be to choose the 'Key', otherwise the Wizard will finish.

KEY1: 0123456789

FREQ will scroll through characters to adjust the flashing one on screen, with BACK and NEXT stepping along the key.

The 'Key' can be any hex number you like (i.e. characters 0-9 and then letters A-F), but it must match the 'Key' on the PC end. With 128 bit encryption, the 'Key' is correspondingly bigger.

And that's the end of the set-up wizard. Pressing ENTER after the KEY1 parameter will display

Wiser Data Changed

[ENTER] to Confirm

and pressing ENTER will then send the new settings to the Wiser and exit the wizard.

Wiser 2400 Setup

Updating Wiser Data

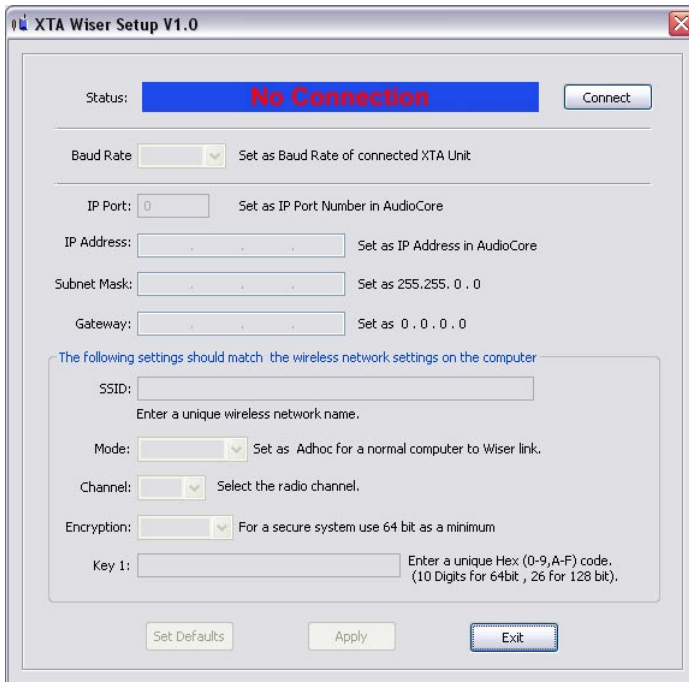
followed by

Wiser 2400 Setup

Wiser Data Updated

Setting up the Wiser...using a PC

This section explains how to configure the Wiser using a PC, instead of plugging it directly into an XTA processor. This might be useful if you don't have a unit available, but need to confirm the network and communication settings of the Wiser.



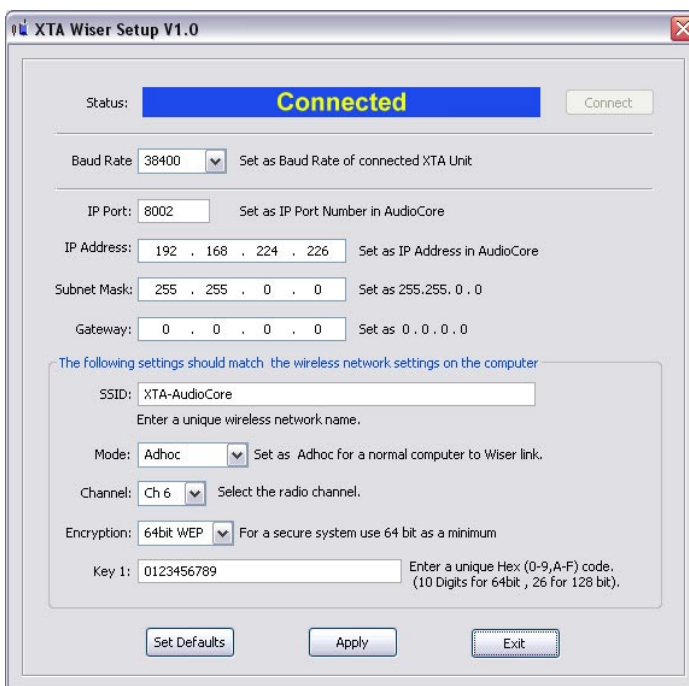
The screenshot shows the 'XTA Wiser Setup V1.0' window with a status bar at the top indicating 'No Connection'. The window contains several configuration fields: Baud Rate (set to 38400), IP Port (8002), IP Address (192.168.224.226), Subnet Mask (255.255.0.0), and Gateway (0.0.0.0). Below these are wireless network settings: SSID (XTA-AudioCore), Mode (Adhoc), Channel (Ch 6), Encryption (64bit WEP), and Key 1 (0123456789). Buttons for 'Set Defaults', 'Apply', and 'Exit' are at the bottom.

If you need to change more than the default IP address that AudioCore uses to communicate with the unit, it will be necessary to plug the Wiser into a computer with a serial port (or USB to serial converter) and run the setup program supplied on the XTA CD which accompanies this kit.

Note that the computer will check all COM ports (and any USB – Serial devices being used in the absence of 'real' serial ports), so it doesn't matter what port it is plugged into.

Connect the Wiser to the computer using the cable with the WHITE band (it has 'computer' written on the band) and run the program called 'wisersetup.exe'. The screen shown to the left will be displayed.

Press the 'Connect' button at the top of the window to make the computer search for the Wiser, and get the settings from it. This will fill in the boxes with the current parameter values as stored in the Wiser.



The screenshot shows the 'XTA Wiser Setup V1.0' window with a status bar at the top indicating 'Connected'. The configuration fields are the same as in the previous screenshot, but the values are now populated: Baud Rate (38400), IP Port (8002), IP Address (192.168.224.226), Subnet Mask (255.255.0.0), Gateway (0.0.0.0), SSID (XTA-AudioCore), Mode (Adhoc), Channel (Ch 6), Encryption (64bit WEP), and Key 1 (0123456789). Buttons for 'Set Defaults', 'Apply', and 'Exit' are at the bottom.

If any of these values need to be changed (such as the IP address due to a clash with another device on the system), simply type in the new value in the appropriate box and press 'Apply' to send this information back to the Wiser.

The Status display will show "Data sent" once this process is complete.

If you wish to go back to the default values as the device leaves XTA, press the 'Set Defaults' button and then 'Apply'.

It should be noted that the Baud Rate must match the Baud rate set in the unit (in the same way as it would have to match in AudioCore, if a normal serial lead was going to be used).

We recommend leaving the baud rate at 38400.

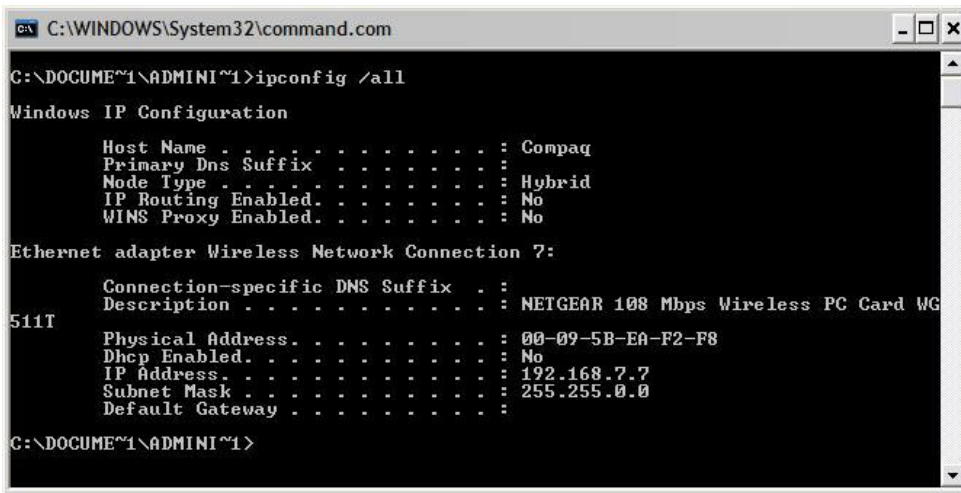
Please note that you cannot change the radio channel (either through this software or via the Wiser setup wizard on a unit) while associated with the Wiser on a network – please disable the wireless network card in Control Panel, THEN change the channel and re-enable the network.

Please ensure that any changes to your computer's network settings, the Wiser settings, or the connected XTA processors' interface setting take place with AudioCore **OFF-LINE**.

Firstly, check again to see if the Netgear card has been able to find anything – see page 56 for details.

If there are still connection problems, it might be worth checking to see what IP addresses are being used by any Ethernet devices connected to the computer. This is done through a 'DOS Prompt' window: Click Start, then 'Run' and type 'Command' in the list box.

This will open a 'DOS Prompt' window.



Within this window, type in

ipconfig /all

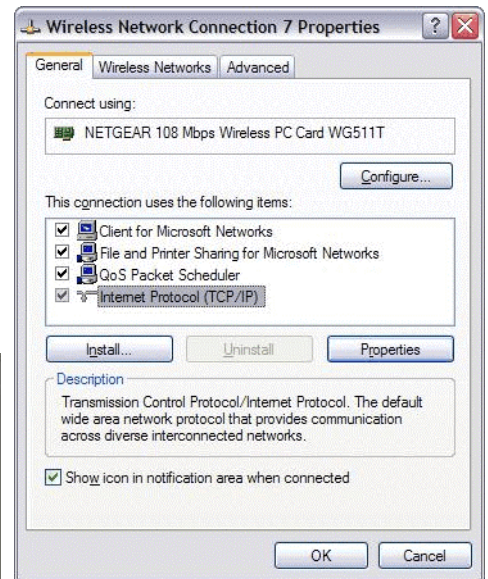
(with a space after the 'ipconfig' command). This will display information similar to that shown below:

As can be seen in this example, the Netgear card is set up on IP Address 192.168.7.7 and the Subnet Mask is set to 255.255.0.0

If this does not correspond to the settings input as described earlier in this section, review the settings and make sure that the check box labelled 'Use Windows to configure my wireless network settings' is **UNCHECKED**.

This is the second tab available after clicking on the 'Properties' button as explained at the start of this section.

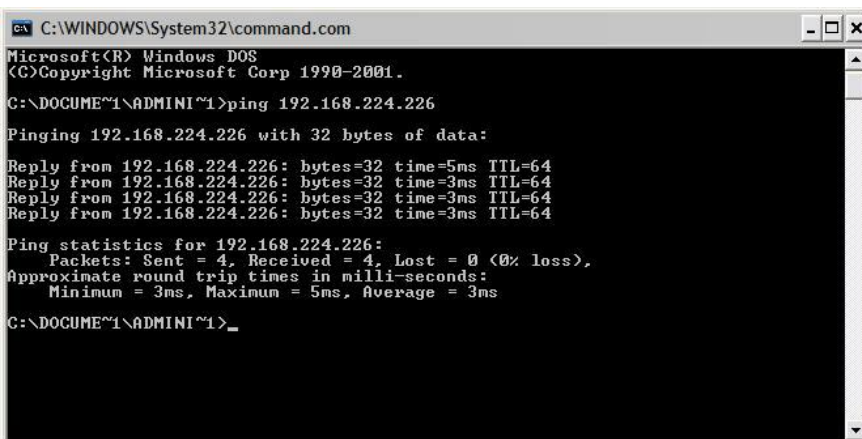
If this all seems OK, and the IP address is what it should be, it is worth checking at a low level to see if the Wiser can be located.



Open a 'DOS Prompt' window as before and type in

ping 192.168.224.226

(with a space after the 'ping' command) and press Enter.



This will try to find the device in the network by sending a series of small bursts (or packets) of information addressed directly to the device, and will display the reply (if any). A typical outcome is shown here.

Walkabout Kit Frequently Asked Questions

My laptop has Wi-Fi built in – can I use this?

The XTA Walkabout pack has been specifically designed for use with the supplied Netgear Wireless card. It is possible to configure an internal Wi-Fi system to communicate with the Wiser. XTA does not recommend this approach, and we cannot guarantee correct operation. However, if you wish to use the internal Wi-Fi, the required settings are on page 55 of this manual.

What sort of range can I expect with the system?

The standard 802.11b WLAN specification states that the approximate range available is 100m, in open space conditions, assuming good line of sight is available. This distance will be reduced by using the system indoors (through walls), and if there are large objects in the path.

Some of my units have not been updated to the latest software version – how will this affect the operation?

XTA strongly recommend that you perform the update as soon as possible – the system may work, but the speed of operation will be greatly reduced and, in some circumstances, the system may not work at all.

Can I control my XTA units with SIA's SMAART software, via the Wiser?

No. We believe that SIA's SMAART does not currently support communication to XTA units via TCP/IP protocol. Control can only be achieved via a hard-wired link using COM1 or 2, or a suitable MIDI interface.

However, it is possible to run SMAART and Audiocore at the same time, and resize the windows to allow the analysis to be viewed, while also adjusting parameters wirelessly through AudioCore.

How can I extend the range of my wireless connection?

A discussion about improving the available range of a wireless network is beyond the scope of this document. However, information on this topic can be found on Netgear's website at www.netgear.com in the 'Support' section.

I can't make my laptop recognise when I change channel on my Wiser, even though the unit it is connected to says it has been changed – what is wrong?

You cannot change the radio channel (either through this software or via the Wiser setup wizard on a unit) while associated with the Wiser on a network – please disable the wireless network card in Control Panel, THEN change the channel and re-enable the network.

Do you sell the Wiser unit separately?

XTA only sells the Wiser Wireless adapter as part of the Walkabout kit as this is the only way we can guarantee correct configuration. We cannot support technical enquiries regarding wireless operation unless we have first hand knowledge of the system.

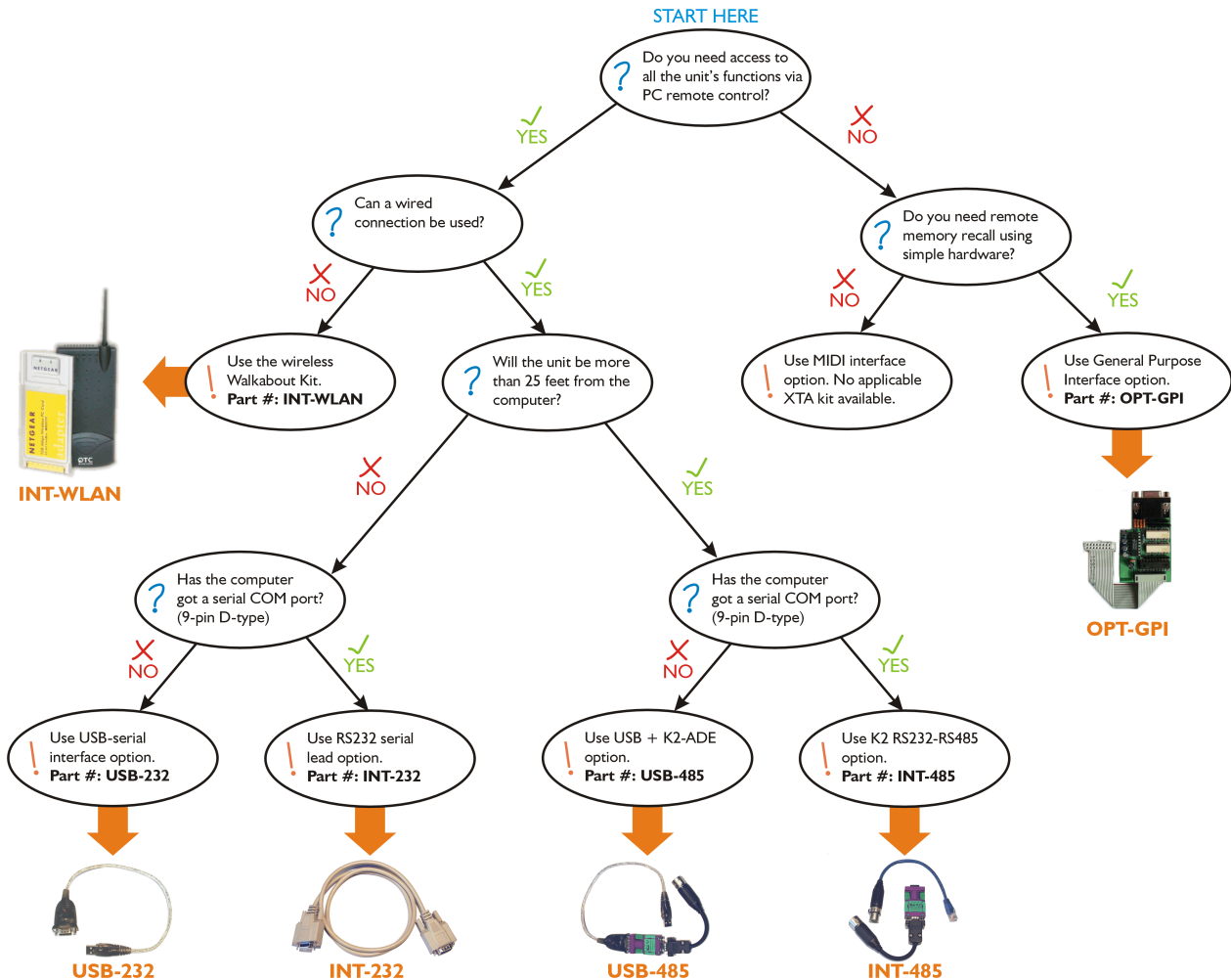
What's your favourite colour?

XTA recommend blue, but this is at the user's discretion.

Appendix II: Remote Interface Guide

This document outlines all the currently available interface combinations and options available for remote control of DP series processors.

Please use the decision tree to help you choose the correct interface for your application. If you would like to discuss the options with us, please feel free to email us.





What is it?

It is a lead to connect directly from the “External” port on the back of a unit to a 9-pin (Serial) port on a PC or laptop.

What is included?

One 9-pin male to female serial lead, approximately 2 metres long.

When should I use this?

If your first unit is no more than 25 feet (approx 7.5m) from the computer, and you have a spare 9-pin COM port available, this is the simplest and cheapest way to get connected.

What else should I know?

The maximum cable length we recommend for RS232 is 25 feet (7.5 metres) running at 38400 baud.

This cable **MUST** be a I-I serial connection – i.e. pin 1 to pin 1, 2 to 2 etc. A null modem cable will **NOT** work, as the “transmit” and “receive” connections are swapped.

Units may be cascaded from this first one, using the RS485 ports on the rear of the unit and standard XLR mic leads.

Where do I get one?

This type of cable is generally available in most computer hardware stores, but do be sure to get a **one to one** cable as explained above. Alternatively, it can be purchased from your local XTA supplier or directly from XTA by credit card. See the end of this document for details.

XTA Part Number: INT-232

For technical support on this product please email tech@xta.co.uk.



What is it?

A kit to convert the standard 9-pin RS232 serial connection from a COM port on a PC into a balanced 2-wire + shield connection on male XLR.

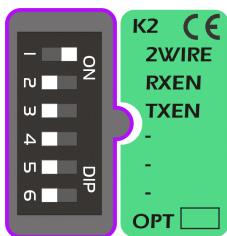
What is included?

- 1 x KK Systems “K2” RS232-RS485 converter;
- 1 x 9 pin D-type male to 3 pin XLR male adapter;
- 1 x 3 pin female XLR to RJ45 adapter cable.

When should I use this?

If the first unit in the system cannot be placed closer than 25 feet from the PC/Laptop, it becomes necessary to use an RS485 serial connection. As this is a balanced system and uses higher voltages for signalling, it is more robust and can travel distances up to 1000 metres down simple balanced mic cables , or a multicore channel.

What else should I know?



The standard “K2” converter has a set of DIP switches to adapt the system for various uses. These are set correctly by XTA when leaving the factory and should not be adjusted. If for any reason they are different, the correct settings are shown in the diagram to the left.

The wiring for the 9 pin D-type to 3 pin XLR is as follows:

D-type	XLR
1	1
3	2
8	3

The wiring for the 3 pin XLR to RJ45 is as follows:

RJ45	XLR
1	1
2	2
3	3

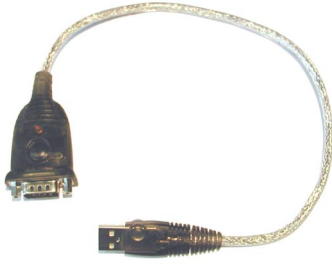
The converter requires no external power and no drivers need to be installed.

Where do I get one?

This kit can be purchased from your local XTA supplier or directly from XTA by credit card. See the end of this document for details.

XTA Part Number: INT-485

For technical support on this product please email tech@xta.co.uk.



What is it?

An electronic adapter that intelligently converts a USB interface into a standard 9-pin serial COM port.

What is included?

- 1 x Aten “UC232a” USB to Serial adapter;
- 1 x INT-232 Serial Cable;
- 1 x Driver disk;
- 1 x Manual.

When should I use this?

Newer PCs and laptops tend to not include traditional 9 pin serial connections any longer, and AudioCore works through a serial port. Therefore one of these converters may be plugged in to provide a “virtual COM port” and RS232 serial output.

What else should I know?

The converter requires no external power, but does require a driver to be installed from the disk supplied. It is compatible with Windows 98 onwards.

The XTA Interface system has been optimised for use with this converter. It generally installs itself as a virtual COM port on the next available port number on your system. The easy way to check which COM port it is on is through Control Panel ► System ► Hardware ► Device Manager ► Ports.

As this is a USB device designed for “hot swapping”, remember that if the device is unplugged the virtual COM port will disappear, and depends on which USB port the device is plugged into. A different USB port may well install it on a different COM port.

The maximum cable length from the output of the converter is 25 feet or approximately 7.5 metres.

Where do I get one?

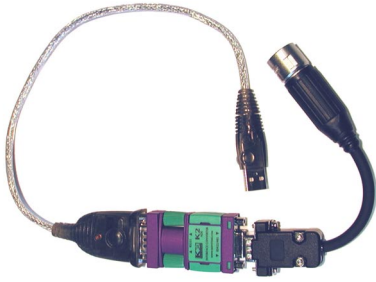
There is a multitude of very similar looking USB to serial devices available in most computer stores but in our experience, they can prove unreliable due to timing of data through the converter, and inconsistencies between manufacturers.

It is highly recommended that the XTA converter be used!

The converter can be purchased from your local XTA supplier or directly from XTA by credit card. See the end of this document for details.

XTA Part Number: USB-232

For technical support on this product please email tech@xta.co.uk.



What is it?

A combination of a USB to serial interface and RS232 to RS485 converter to provide direct balanced 2 wire + shield connection.

What is included?

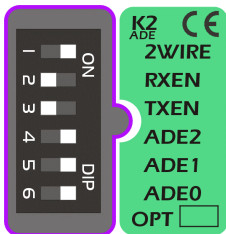
- 1 x Aten “UC232a” USB- Serial adapter with driver disk & manual;
- 1 x KK Systems “K2-ADE” RS232-RS485 converter;
- 1 x 9 pin D-type male to 3 pin XLR male adapter cable.

When should I use this?

When the (first) unit to be controlled is more than 25 feet from the PC/laptop AND the computer doesn't have a standard 9-pin COM port (but does have a spare USB port!).

What else should I know?

The KK systems “K2-ADE” RS232-RS485 interface supplied in this kit is NOT the same as the one in the standard 232-485 kit – note the “ADE” suffix which stands for Automatic Device Enable. **The non-ADE version will not work reliably!**



The “K2-ADE” converter has a set of DIP switches to adapt the system for various uses. These are set correctly by XTA when leaving the factory and should not be adjusted. If for any reason they are different, the correct settings are shown in the diagram to the left.

The wiring for the 9 pin D-type to 3 pin XLR is as follows:

D-type	XLR
1	1
3	2
8	3

Maximum cable length from the output of the converter is 1000 metres.

Where do I get one?

There is a multitude of very similar looking USB to serial devices available in most computer stores but in our experience, they can prove unreliable due to timing of data through the converter, and inconsistencies between manufacturers.

It is highly recommended that the XTA converter be used!

Similarly, many RS232 to RS485 converters are available through specialist suppliers, but the KK systems converter has been proven by XTA to work reliably in all cases and we recommend you use this device. The kit can be purchased from your local XTA supplier or directly from XTA by credit card. See the end of this document for details.

XTA Part Number: USB-485

For technical support on this product please email tech@xta.co.uk.



What is it?

A combination of a WLAN to serial interface and a high power wireless PCMCIA card to provide a remote connection using standard WiFi/WLAN 802.11b technology.

What is included?

- 1 x OTC Wiser 2400 WLAN / WiFi to serial converter;
- Serial cables to connect Wiser to unit or PC for programming;
- Power supply for Wiser;
- Netgear WG511T WLAN Card;
- All required setup software and manuals supplied on custom CD.

When should I use this?

If it is impossible to get a wired connection to the unit(s) for remote control or there is a requirement to be able to move around a venue whilst controlling the unit(s). This provides a cost-effective solution. Only one kit is required per system, as the Wiser WiFi to serial converter connects to the standard RS232 port on the first unit in the system. All other units are cascaded via the RS485 as with a normal wired connection.

What else should I know?

A free PCMCIA slot will be required on the laptop or PC for the Netgear card. Whilst built-in WiFi (as with Intel “Centrino” processors) will work, the range will be limited in comparison to the external card, and we recommend using the card wherever possible. XTA is unable to support technical queries about problems using built-in WiFi devices, or those involving other WiFi components such as not included in the kit.

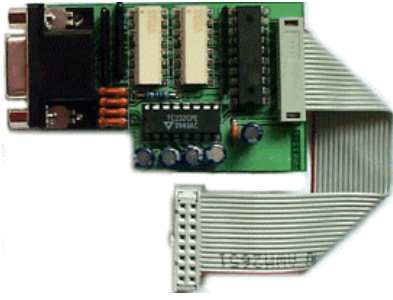
The range of the system is approximately 100 metres in free space with line of sight between the computer and the Wiser. This range will be affected by environmental and structural conditions – this is standard for the 802.11b WiFi specifications. For more details about the kit, please download the Walkabout Kit manual from the XTA website. No hardware upgrades are required on the units, but the software will need to be upgraded to the version supplied on the CD (or higher). Currently, SiDD (DP324) is not supported.

Where do I get one?

This kit can be purchased from your local XTA supplier or directly from XTA by credit card. See the end of this document for details. Please note we will only supply this kit in full – components cannot be supplied separately.

XTA Part Number: INT-WLAN

For technical support on this product please email tech@xta.co.uk.



What is it?

An interface card that replaces the standard RS232 card for the DP224/6/6i to add closed contact memory recall facilities.

What is included?

- 1 x RS232/GPI interface card;
- 1 x 15 way D-type to 9 way D-type adapter;
- 1 x 15 way D-type plug & shell;
- Manual and fitting instructions.

When should I use this?

If remote change of memories is required, without involving a PC or other electronic device. This interface allows memories to be recalled (input, crossover or both) via simple switch closure.

What else should I know?

The kit does not contain any external hardware for actually selecting and recalling memories – the switch arrangement has to be built by the user. Full instructions are supplied giving examples and details of how to connect a suitable device. An RS232 interface is included on the GPI interface, so remote PC access and software updates are still possible via the supplied adapter cable.

Any connected slave units (on the RS485 bus) will also recall memories when the master unit is triggered, so only one GPI kit has to be fitted to the master unit.

This interface is currently unavailable for the DP324 (SiDD).

Where do I get one?

This kit can be purchased from your local XTA supplier or directly from XTA by credit card. See the end of this document for details.

XTA Part Number: OPT-GPI

For technical support on this product please email tech@xta.co.uk.

Hints and tips about using external interfaces

Always read the manual supplied with the unit for the most detailed information regarding the setup and use of external remote interfaces.

In the case of special or older interfaces such as MIDI or LAN to serial converters (for example the MOXA N-port Express) please feel free to email tech@xta.co.uk.

A few things worth remembering about using the RS232 and RS485 interfaces in general:

Maximum recommended cable length for RS232 is 25 feet or 7.5 metres.

Maximum recommended cable length for RS485 is 1000 metres – from the PC to the FINAL device – NOT in between devices.

If a unit is at FOH or close to the computer, it can be used to perform the RS232 to RS485 conversion for you. The RS485 port from this local unit can then be used to connect to the other units that are not nearby.

If a Wiser wireless link is being used and it sometimes makes more sense for the receiver to be placed at FOH or somewhere other than the remote units location due to signal strength / line of sight problems.

Purchasing any of these interfaces...

All of the interfaces can be ordered through your local distributor. If you're not sure who that is, go to <http://www.xta.co.uk/distributors.htm>

to find the one nearest you. Alternatively, you can buy one directly from us with a credit card. Just call us and we can arrange it all over the phone. You will then be sent receipt of purchase and credit card receipt with the interface and emailed the tracking number of the courier for the package.

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