

U-Hub

Ethernet to U-NET™ Bridge

User Guide



U-Hub



Martin Audio U-Hub User Guide

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IMPORTANT SAFETY INSTRUCTIONS



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

DO NOT EXPOSE TO
RAIN OR MOISTURE

ATTENTION

RISQUE DE CHOC ELECTRIQUE
NE PAS ENLEVER

NE PAS EXPOSER A LA
PLUIE NI A L'HUMIDITE



1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water. Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including U-Hubs) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cable from being walked on or pinched particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
11. Only use attachments / accessories specified by the manufacturer.
12. Use only with the cart, tripod, bracket or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart / apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Service is required when the apparatus has been damaged in any way, such as power-supply cable or plug damaged, liquid has been spilled or objects have fallen into the apparatus, this apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

SAFETY WARNING

Do not remove any covers, loosen any fixings or allow items to enter any aperture.

SAFETY WARNING

The rear of the product may get hot. Avoid direct skin contact during operation and for at least 5 minutes after power has been isolated.

SAFETY WARNING

The product must only be positioned at floor level when operated in a horizontal position.

CONSIGNES DE SÉCURITÉ IMPORTANTES



CAUTION

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ATTENTION

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PLUIE NI A L'HUMIDITE



1. Lisez ces instructions.
2. Conservez ces instructions.
3. Respectez tous les avertissements.
4. Suivez toutes les instructions.
5. Ne pas utiliser cet appareil près de l'eau. L'appareil ne doit pas être exposé à des gouttes ou des éclaboussures et aucun objet contenant des liquides, tels que des vases, ne doit être placé sur l'appareil.
6. Nettoyer uniquement avec un chiffon sec.
7. Ne pas bloquer les ouvertures de ventilation. Installer conformément aux instructions du fabricant.
8. Ne pas installer près de sources de chaleur telles que radiateurs, registres de chaleur, poêles ou autres appareils (y compris les amplificateurs) qui produisent de la chaleur.
9. Ne supprimez pas le dispositif de sécurité de la fiche polarisée ou mise à la terre. Une fiche polarisée possède deux lames dont l'une est plus large que l'autre. Une prise de terre a eu deux lames et une troisième broche de terre. La lame large ou la troisième broche sont fournies pour votre sécurité. Si la fiche fournie ne rentre pas dans votre prise, consultez un électricien pour remplacer la prise obsolète.
10. Protéger le cordon d'alimentation soit écrasé ou pincé, particulièrement au niveau des fiches, des prises et le point où ils sortent de l'appareil.
11. Utilisez uniquement les accessoires spécifiés par le fabricant.
12. Utilisez uniquement le chariot, le trépied, le support ou la table spécifiés par le fabricant, ou vendu avec l'appareil. Quand un chariot est utilisé, soyez prudent lorsque vous déplacez l'ensemble chariot / appareil afin d'éviter toute blessure en cas de chute.
13. Débranchez cet appareil pendant les orages ou lorsqu'il n'est pas utilisé pendant de longues périodes de temps.
14. Adressez-vous à un personnel qualifié. Une réparation est requise lorsque l'appareil a été endommagé de quelque façon que ce soit le cordon d'alimentation ou la fiche endommagé, du liquide a été renversé ou des objets sont tombés dans l'appareil, cet appareil a été exposé à la pluie ou à l'humidité, ne fonctionne pas normalement, ou s'il est tombé.
15. Le dispositif ne doit pas être exposé à des gouttes ou des éclaboussures et aucun objet rempli de liquides, tels que des vases, doit être placé sur l'appareil.
16. Déconnexion permanente de l'alimentation secteur doit être atteint en supprimant le connecteur du cordon fourni à l'arrière de l'unité. Ce connecteur doit être facilement utilisable.

AVERTISSEMENT DE SECURITE

Ne retirez pas les couvercles, ne desserrez pas les fixations et ne laissez aucune pièce s'introduire dans les ouvertures.

AVERTISSEMENT DE SECURITE

Le radiateur arrière de cet appareil devient chaud. Evitez tout contact direct avec la peau pendant le fonctionnement et au moins 5 minutes après la mise hors tension de l'appareil.

AVERTISSEMENT DE SECURITE

Le produit ne doit être positionné au niveau du sol lorsqu'il est utilisé en position horizontale.

COMPLIANCE

FOR CUSTOMERS IN EUROPE

This product complies with both the LVD (electrical safety) 73/23/EEC and EMC (electromagnetic compatibility) 89/336/EEC directives issued by the commission of the European community.

Compliance with these directives implies conformity with the following European standards:

EN60065 Product safety

EN55103-1 EMC emissions

EN55103-2 EMC immunity

This product is intended for the following electromagnetic environments: E1, E2; E3 & E4.

THIS PRODUCT MUST BE EARTHED. Use only a flexible cable or cord with a green and yellow core which must be connected to the protective earthing terminal of a suitable mains plug or the earthing terminal of the installation. The cord must be a maximum of 2m long, have a 2.5mm² CSA, a 300/500V rating and comply with EN50525-2-11 / H05W-F.

THIS PRODUCT IS DESIGNED FOR PERMANENT INSTALLATION. It must be fitted in to a 19" rack enclosure and not operated unless so installed. The rack enclosure should be open at the front and back to allow free ventilation and movement of air through the product.

FOR CUSTOMERS IN THE USA

This product complies with UL60065 7th edition.

THIS PRODUCT MUST BE EARTHED. Use only a flexible cable or cord with a green or green / yellow core which must be connected to the protective earthing terminal of a suitable mains plug or the earthing terminal of the installation. The cord must be a maximum of 6' long, be 14AWG, have a rating SJ, SJT, SJE or 300/500V H05W-F and be marked VW-1.

THIS PRODUCT IS DESIGNED FOR PERMANENT INSTALLATION. It must be fitted in to a 19" rack enclosure and not operated unless so installed. The rack enclosure should be open at the front and back to allow free ventilation and movement of air through the product.

DECLARATION OF CONFORMITY WITH FCC RULES

We, Martin Audio Ltd. of Century Point, Halifax Road, Cressex Business Park, High Wycombe, HP12 3SL, England, declare under our sole responsibility that this family of devices, complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FEDERAL COMMUNICATIONS COMMISSION NOTICE

An example of this equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential and commercial installation.

This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

FOR CUSTOMERS IN CANADA

This product complies with CA /CSA C22.2 No.60065-03

Ce produit est conforme avec CA /CSA C22.2 No.60065-03

THIS PRODUCT MUST BE EARTHED. Use only a flexible cable or cord with a green or green / yellow core which must be connected to the protective earthing terminal of a suitable mains plug or the earthing terminal of the installation. The cord must be a maximum of 6' long, be 14AWG, have a rating SJ, SJT, SJE or 300/500V H05W-F and be marked VW-1.

CE PRODUIT DOIT ÊTRE MIS À LA TERRE. Utilisez uniquement un câble souple avec un noyau vert ou vert / jaune qui doit être relié à la borne de terre de connecteur d'alimentation ou la borne de terre de l'installation. Le cordon doit être un maximum de 6' (2m) de long, 14 AWG (2.5mm² CSA), être classé SJ, SJT, SJE ou 300/500V H05W-F et être marquée VW-1

THIS PRODUCT IS DESIGNED FOR PERMANENT INSTALLATION. It must be fitted in to a 19" rack enclosure and not operated unless so installed. The rack enclosure should be open at the front and back to allow free ventilation and movement of air through the product.

CE PRODUIT EST CONÇU POUR UNE INSTALLATION PERMANENTE. Il doit être installé dans un boîtier rack 19 ". Le rack devrait être ouvert à l'avant et l'arrière pour permettre la ventilation et le mouvement d'air libre à travers le produit.

DECLARATION OF CONFORMITY WITH CANADIAN ICES-003

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Thanks and Unpacking

Thank you for choosing a Martin Audio U-Hub Ethernet to U-Net bridge for your application. Please spare a little time to study the contents of this manual, so that you obtain the best possible performance from this unit.

All Martin Audio products are carefully engineered for world-class performance and reliability.

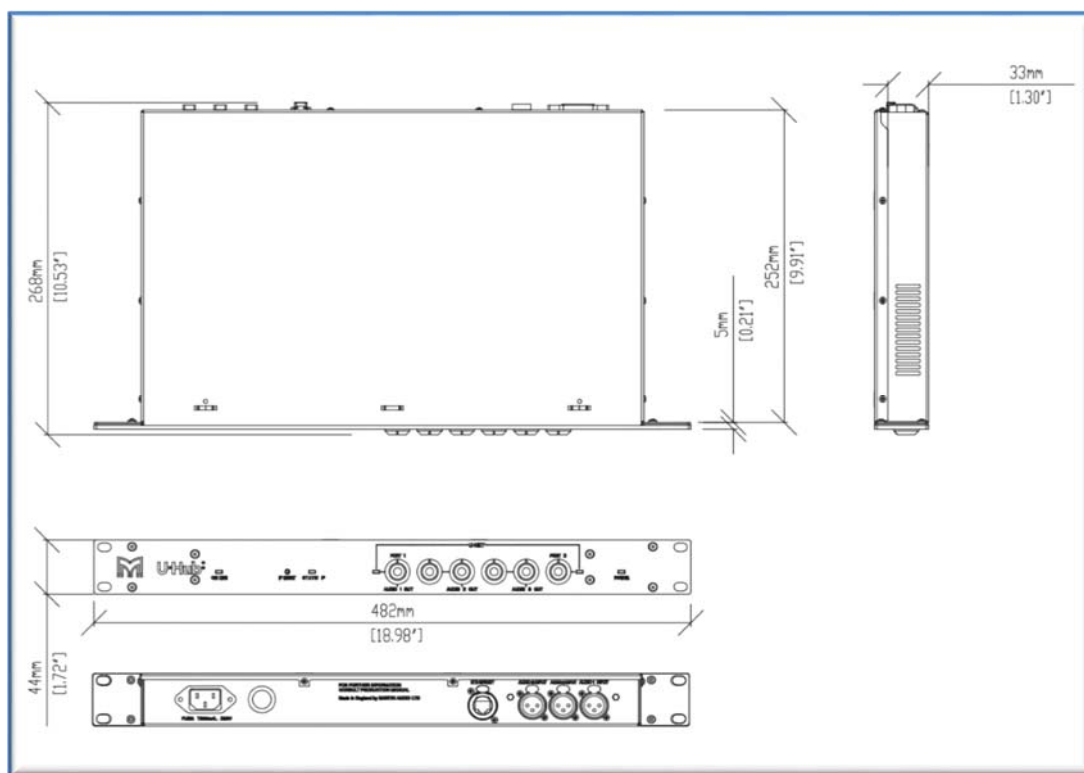
If you would like further information about this or any other Martin Audio product, please contact us. We look forward to helping you in the near future.

Unpacking the Martin Audio U-Hub

After unpacking the unit please check carefully for damage. If damage is found, please notify the carrier concerned at once. You, the consignee, must instigate any claim. Please retain all packaging in case of future re-shipment.

INSTALLATION INSTRUCTIONS

Mechanical Installation



The U-Hub is designed to be mounted in a standard 19" rack enclosure.

Where the processor is used in a fixed installation, as long as the bottom unit is supported and there are no gaps between units, it is acceptable to use only the front panel 19" rack holes when fitting it in a standard rack enclosure. If the U-Hub is mounted in a mobile rack it is important that the rear or sides are supported with a suitable rack support bracket. Damage caused by insufficient support is not covered by the warranty.

To prevent damage to the front panel it is recommended that plastic cups or washers are fitted underneath the rack mounting bolt heads.

It is possible to use the U-Hub without ventilation gaps between other rack products as long as there are no products which generate extreme high temperatures, Amplifiers for example. If U-Hubs are in the same rack it is essential that adequate measures for cooling are provided in accordance with the Amplifier manufacturers guidelines. This should ensure a minimum of heat transfer to the U-Hub.

The U-Hub should never be exposed to rain or moisture during operation or storage. If the unit does come into contact with moisture, remove the AC power cable immediately and leave it in a dry and warm location to dry out.

Note that when any equipment is taken from a cold location into a hot humid one, condensation may occur inside the device. Always allow time for the equipment to attain the same temperature as its surrounding environment before connecting the AC power cable.

IMPORTANT

It is the responsibility of the user to ensure that dirt, liquids and vapour from oil-based theatrical smoke, haze or fog machines is not ingested by the U-Hub. Damage so caused is not covered by the manufacturer's warranty.

AC Power Connection

The U-Hub utilises a standard IEC AC power connector fitted with a retaining clip. Use only an AC power cable with a correctly wired IEC connector to make the connection to the mains power supply. This should be compatible with the retaining clip ensure that the connector doesn't accidentally disconnect.

The U-Hub is designed to operate on 50/60 Hz AC power. The power supply section automatically configures for either 115V or 230V nominal voltage at turn on. The U-Hub will operate over an extended range of supply voltages (please refer to the technical specifications).



The User Guide

This user manual gives a progressively more detailed description of the functions of the Martin Audio U-Hub. A detailed explanation of the front and rear panel controls and indicators is contained in the next section.

The final section describes use of the U-Hub within Martin Audio Vu-Net software. This is an abridged guide covering essential U-Hub functionality, for full details of Vu-Net please refer to the Vu-Net User guide which can be downloaded from the Martin Audio website.

Introduction and Key Features

Introduction

The Martin Audio U-Hub is an Ethernet to U-NET bridge equipped with analogue and AES3 digital audio transport. It facilitates PC connection and VU-NET™ software control of MLA Series arrays and subwoofers via their inbuilt proprietary U-NET network.

Key Features

- Ethernet to U-Net™ bridge
- IP addressable (static and dynamic)
- Analogue and digital audio transport
- Designed to work with DX4.0 loudspeaker processor for Dante™ digital audio distribution

Converting TCP/IP to U-NET protocol, U-Hub allows MLA Series enclosures to self-address and identify their position within an array, as well as supporting a simple-to-use redundant loop. With U-Hub, an MLA Series system with onboard U-NET can be seamlessly integrated into a TCP/IP network and controlled via VU-NET software.

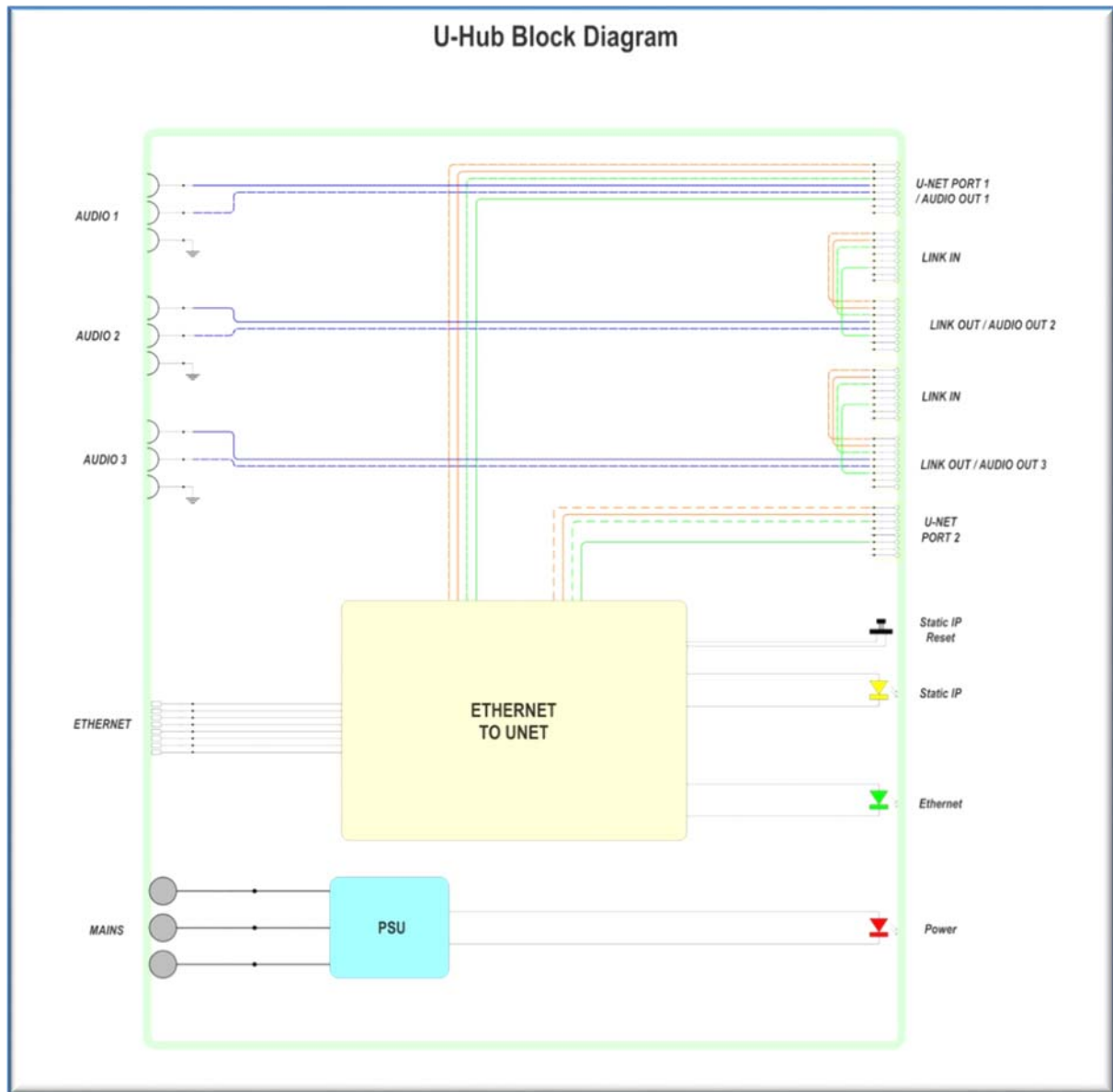
When used in conjunction with the Martin Audio DX4.0 networked system controller, U-Hub can connect audio and network to an MLA Series system with a single cable via a Dante™ digital audio network.

U-Net Connections

The U-Hub features two U-Net ports and two pairs of parallel links to enable neatly loomed network cables to be used going to and from several arrays. The U-Net connections are available on 8-pin ODU connectors. In common with standard Ethernet data, U-Net only uses four of the available 8 pins allowing balanced analogue or AES audio to be fed down two or the 'spare' cores thus greatly simplifying system wiring as an independent audio cable is no longer required.

Block Diagram

This diagram shows the essential features of the U-Hub, highlighting how the audio feed from the rear panel inputs is combined onto three of the U-Net connections.

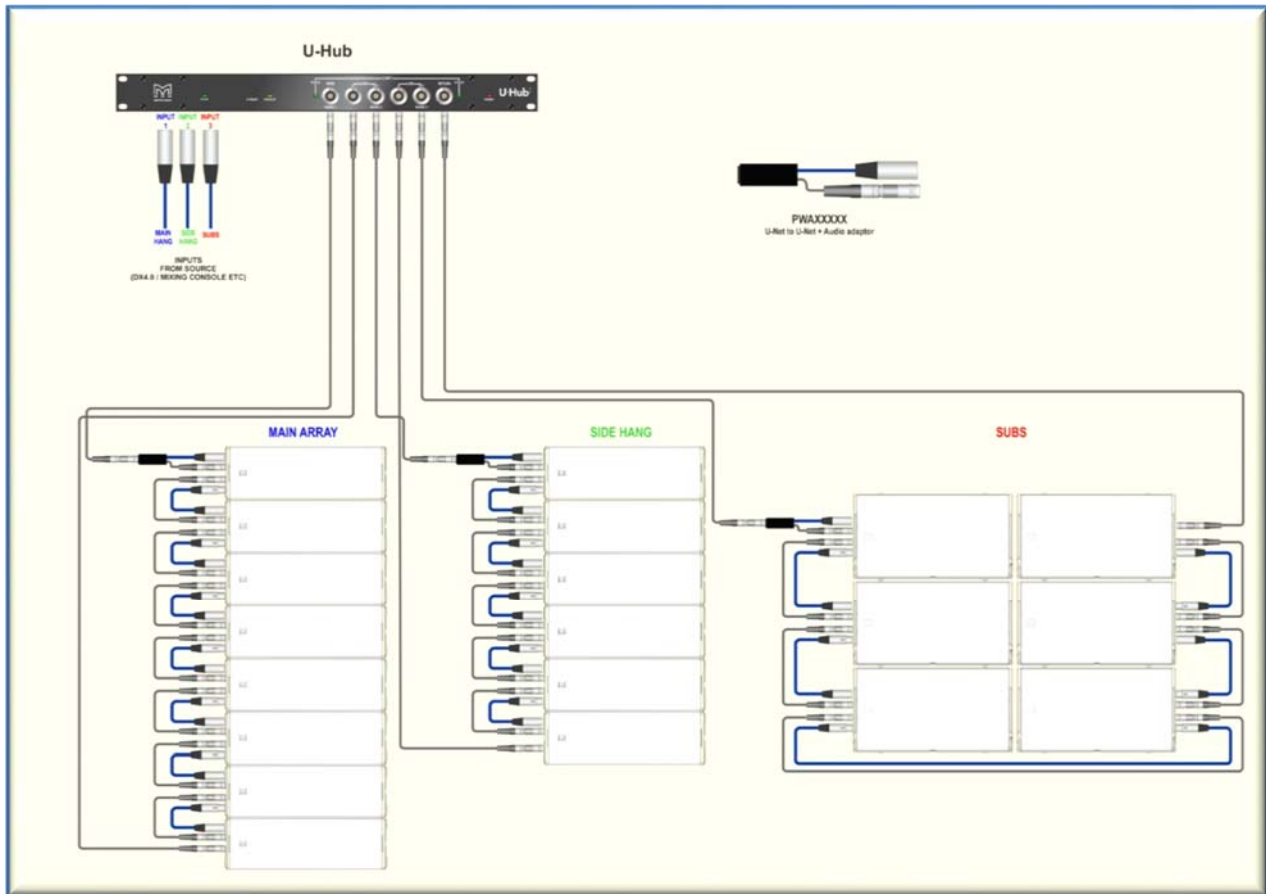


U-Net is run as a redundant loop, all U-Net enabled products have two ports. Port 1 on the U-Hub would be connected to port 1 on the first device, port 2 on this device would link out to the next device and so on with a final link back to port 2 on the U-Hub to complete the loop. This allows the system to continue working seamlessly in the event of a cable being damaged or inadvertently disconnected. Data will simply flow in the opposite direction to allow continuous communication.

Audio connections are combined with the network feeds. Audio input 1 is connected to a pair of spare connections in the U-Net port 1 ODU. This would usually be used as the "send" to the first array. A return from the array would be connected to the first link in connection. Audio 2 is combined with the second ODU in the linked pair allowing audio to be fed to a second array, a side hang for example. The network return from this array comes back to the second link in. Audio 3 is connected to the link out of this pair and can be used to route out to a third array such as the sub-woofer stack. Finally, the U-Net return from the subs is connected to U-Net port 2 on the U-Hub to complete the loop.

System Example

This diagram illustrates the wiring to the array for a system as described above (note that mains connections have been omitted for clarity); -



Audio input can be direct from a console or from a DX4.0 processor used as a matrix. Three audio feeds – each either balanced analogue or AES EBU digital- are connected to the three audio inputs on the rear of the U-Hub.

The first of these is combined onto the U-Net Port 1 which is connected to the first cabinet of the main array via a PWAXXXX U-Net to U-Net + Audio adaptor which splits the feed from the U-Net cable to a U-Net only cable and an AES spec audio cable terminated in a standard 3-pin XLR. The XLR is connected to the audio input. The audio is daisy chained between cabinets using standard audio link cables.

When the final network cable is routed back to the U-Hub it is terminated using the first of the link pairs. The link pairs link the network connections (first two twisted pairs) but NOT the audio meaning that the link out can be used to route a completely independent audio feed connected to the Audio 2 input up to the side hang in the same way.

The return from the side hang goes to the second link pair input with the output also carrying audio input 3 to feed the sub array.

Finally, the last network connection goes from the final sub back to port 2 on the U-Hub to close the U-Net loop.

Audio Connections

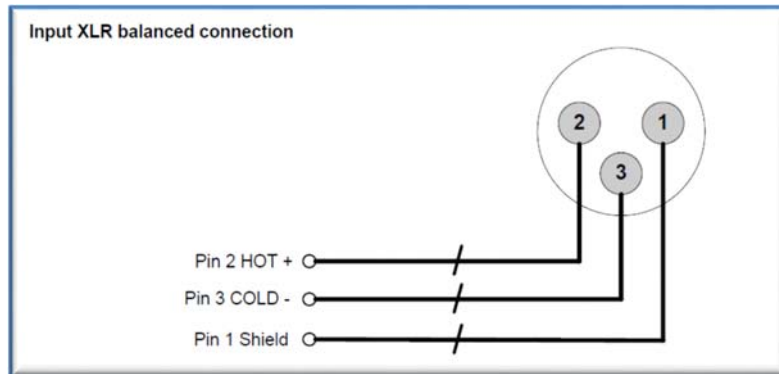
Input Connections

For each audio input there is a female XLR connector for analogue or AES signals.

The HOT, + or 'in phase' connection should be made to pin 2 of the XLR connector.

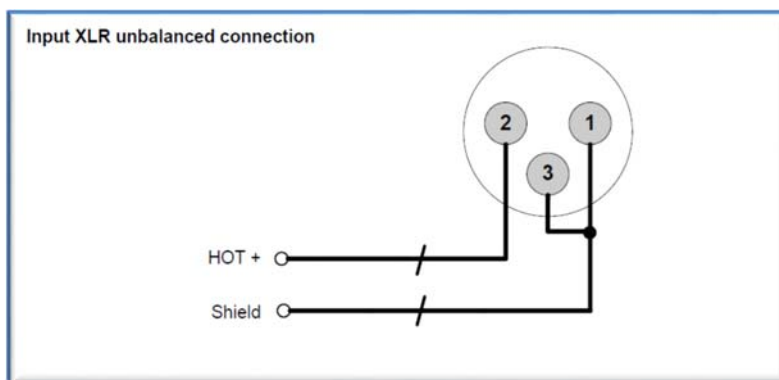
The COLD, - or 'out of phase' connection should be made to pin 3 of the XLR connector.

Pin 1 of the XLR connectors is internally connected to the chassis. The shield of the input cable should always be connected Pin 1 of the XLR to ensure that EMC performance and regulations are met.



Using unbalanced connections

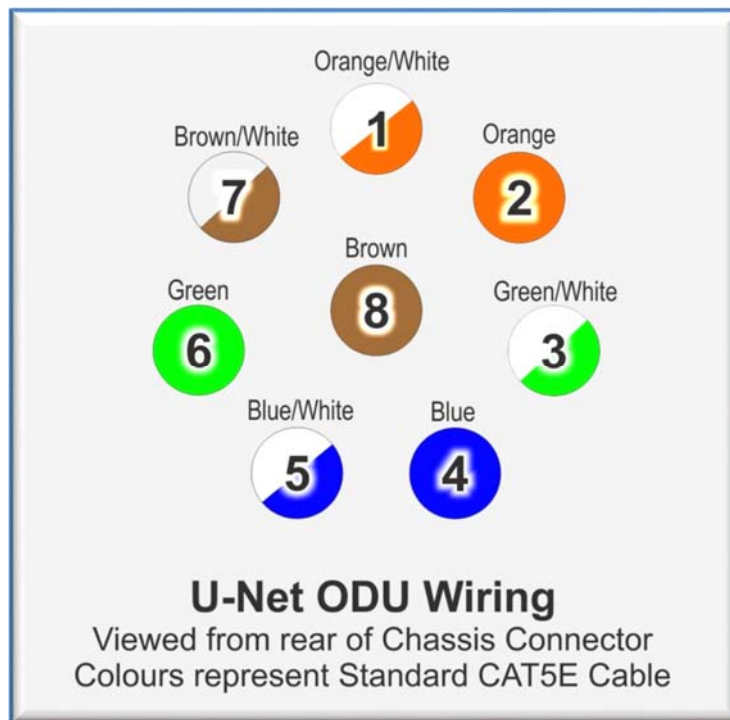
Please note that the use of unbalanced connections is not recommended, however when connecting the U-Hub to an unbalanced audio source, the signal conductor should be connected to XLR pin 2. The 'Cold' conductor or cable screen should be connected to XLR pin 1 with a short connection made between pin 1 and pin 3.



U-Hub Network Connections

U-Hub features a standard RJ45 Ethernet port on the rear panel using a Neutrik Ethercon connector. This is wired using the standard Ethernet wiring protocol so any off the shelf CAT5E or better network cable can be used to connect the U-Hub to your Ethernet network.

There are two front panel mounted U-Net ports for connection to the U-Net enabled devices in your system. These use ODU connectors to the LEMO high speed data series pattern. Wiring configuration is as follows; -

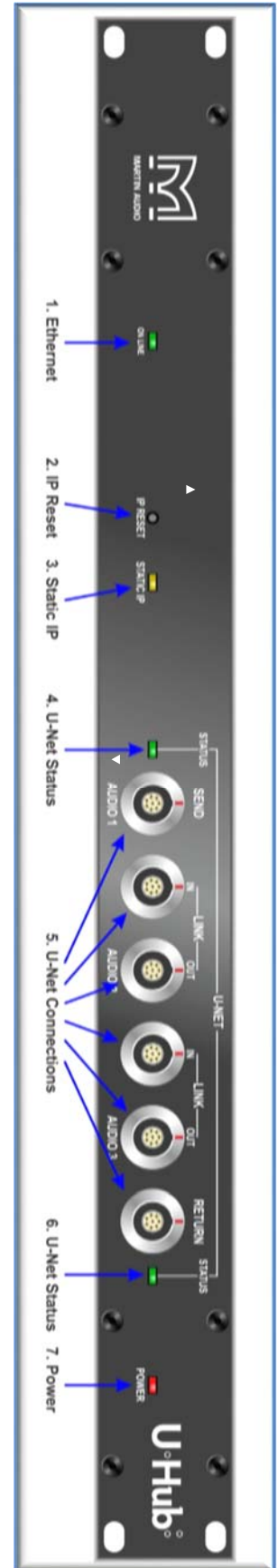


The two pairs of linked ODU connectors are wired as shown in the block diagram. Pins 1, 2, 3 & 6 are linked together, pins 4 and 5 on the link out connectors have the audio signal from the corresponding audio input.

The same cable wiring configuration should be used for all network connections.

Panel Layouts

- 1. On Line Indicator-** Illuminates to show that the U-Hub is connected to an Ethernet network
- 2. IP Reset-** Resets a U-Hub that has been configured for static IP back to dynamic
- 3. Static IP-** Indicates that the U-Hub has been configured for static IP
- 4. U-Net Status-** The U-Net LED will illuminate green when a good connection is made to a U-Net enabled device connected to port 1
- 5. U-Net Connections-** Six ODU connectors provide U-Net connectivity consisting of Port 1, port 2 and two linked pairs. Port 1 and the 'Out' connection of each linked pair also carry audio routed from the input connectors on the rear panel.
- 6. U-Net Status-** The U-Net LED will illuminate green when a good connection is made to a U-Net enabled device connected to port 2
- 7. Power Indicator-** This red indicator is lit when power is applied



Rear Panel

1. Power Inlet- The unit should be connected to a suitable mains electricity supply using a standard IEC power lead. The device has a switch mode power supply that is capable of operating with a nominal mains voltage of 100V to 230V, 50/60Hz without re-configuration. The IEC connector should be compatible with the retention clip so it can be secured with the clip to ensure the connector cannot accidentally disconnect.
2. Main Fuse- This should be fitted with an anti-surge (T)fuse rated at 1 amp.
3. Ethernet- Neutrik Ethercon allowing an ethernet connection using wither a standard CAT5E connector or an Ethercon cable.
4. Analogue / AES EBU Audio Inputs- Carries audio feed to the three ODU audio outputs combined with the U-Net network.



Introduction

Connect Power to the U-Hub

Connect a power source to the U-Hub using an IEC cable and secure using the retaining clip.

Connect all input and Network cables.

Input cables should be balanced XLR using 3-core cable with a shield. Most signal processing and mixing products also use XLR connections, so the cable can be a male to female XLR or “microphone” cable.

Network Connections should be made using ODU U-Net cables or adaptors available as accessories from Martin Audio.

IP Selection

The U-Hub can communicate over the ethernet network which has been configured for static or dynamic IP. The default is dynamic IP where the network has a DHCP server to assign individual IP addresses to all nodes detected on the network. This is extremely straightforward for a plug and play system which is why Domestic routers are configured to act as a DHCP server by default. Static IP removes the requirement for a DHCP server on the network so is frequently the choice for more advanced systems.

The U-Hub can be configured for Static IP, there are two methods to enable this. You will need to know the range for all other products on the network and assign an IP address writhing the same range but with an address unique to the U-Hub.

You can select the default Static IP address by using the IP Reset switch on the front panel. Press and hold the switch for approximately 3 seconds and the U-Hub will be set to Static IP with an address of 169.254.19.71. The default address gives you the flexibility to connect to the U-Hub without having to adjust your PC LAN settings, if the PC is in dynamic mode it will self-assign a link local address in the 169.254.xxx.xxx domain. If your network is configured for static mode, the U-Hub will be immediately discoverable as long as your network is in the 169.254.xxx.xxx range and as long as there isn't another device with the same IP. The principal intention of this mode is to give you immediate connection to the U-Hub, so you can change the IP to a number of your choice

You can also change the IP mode via Vu-Net (See the Vu-Net chapter) using the right-click menu. Note that if you are in the default dynamic mode and you change to a static IP address outside the 169.254.xxx.xxx range you will lose connection with the U-Hub until you reconfigure your PC to static mode in the same range.

When the U-Hub has been set to static IP, either manually or using the default static IP mode, the Static IP front panel LED will illuminate yellow.

IP Reset

If a U-Hub has been previously configured for static IP it can quickly be set to dynamic using the IP reset switch. The reset is a recessed front panel switch a short press will return the U-Hub to dynamic IP configuration. It can then be discovered via Vu-Net using Device Discovery, see the Vu-Net chapter for more details.

Accessories

Cables

A full range of U-Net cables in various lengths are available for connections within an MLA series system; -



All cables use Belden 1305A tour grade CAT5E cable and feature the 8-pin ODU connector which is fitted with a unique over-moulded strain relief making them incredibly robust. The part numbers are as follows; -

800mm	PWA00038	Used to link between MLA or MLA Cabinets in an array
3m	PWA00039	User to link MLX, DSX or MSX Subwoofers
5m	PWA00051	General purpose cable, often used to link from a U-Hub to the first subwoofer where the racks are in close proximity to the subs
15m	PWA00063	General purpose cable, often used to link from a U-Hub to the first subwoofer in an array.
35m	PWA00040	Most commonly used as part of an array loom to go from a rack up to a flown array and back and as cross-stage Ethernet links
50m	PWA00077	Extra-long Array looms.
75m	PWA00052	Supplied on a cable drum, used for Ethernet connection to Front of house or extra-long cross stage Ethernet links on large festival stages.
125m	PWA00041	Supplied on a cable drum. 125m is the maximum cable length between nodes on a U-Net network so can be used for the ultimate array loom in situations where the cable pick has to be virtually invisible and therefore is likely to be particularly long.

Adaptors

There are several adaptors available to assist with cabling up a system; -



PCX00048 This is a U-Net coupler for extending cables. It is housed in a Neutrik D shell Barrell and has an ODU connector at each end wired together.

PCX00043 This is housed in an identical Neutrik housing to the U-Net coupler but has an EtherCon connector at one end and ODU connector at the other. This allows to mix the cable infrastructure between ODU cables and low cost CAT5E cable which would be a more cost-effective solution for installed systems.

PWA00056 This is a 10m CAT5E cable terminated one end in an ODU connector and the other in an RJ45 connector. As above this offers a cost-effective solution for certain applications.

Audio/U-Net Splitter

The U-Hub audio integration features will allow audio and network signals to be fed to an array using a single cable. To split the combined U-Net and audio signals the dedicated adaptor assembly part number **PWAxxxxx** is used.



This receives the combined U-Net and audio feed from the U-Hub and splits it into independent ODU and XLR cables to connect to the U-Net port and audio input on all MLA series products.

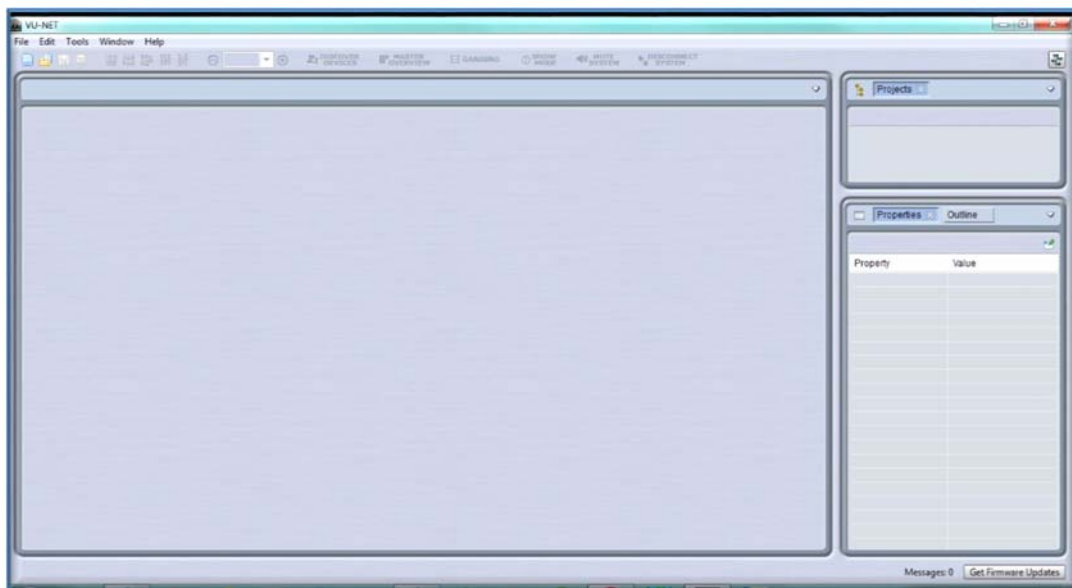
Vu-Net

Introduction

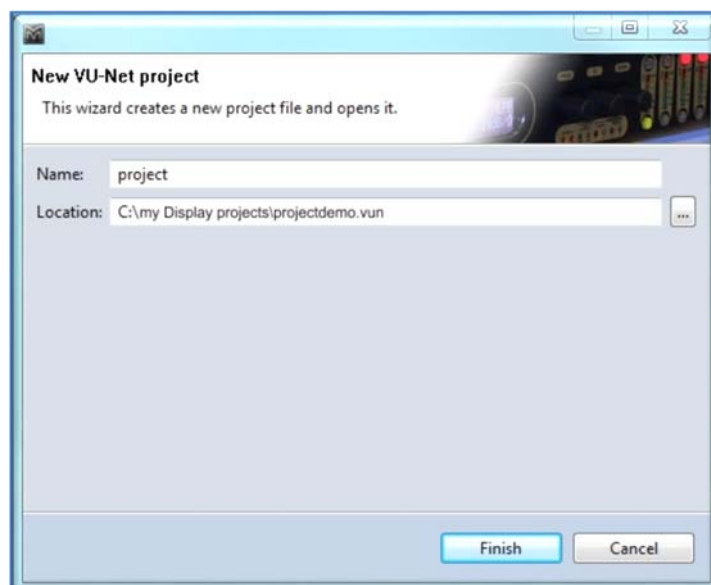
Vu-Net is the application used to connect to a U-Net enabled device such as the Multicellular family of products, the DD12, PSX, CDD Live, iKon amplifiers or Merlin processor. Connection to the cabinets and processors is achieved using the U-Net network protocol. Vu-Net is used to monitor and control the system, EQ optimisations for multicellular arrays are uploaded from the program and cabinet firmware is checked and updated. Vu-Net is supplied ready installed on the Panasonic tablet PC supplied with MLA and MLA Compact systems. It is an optional method of control for full use of MLA Mini, DD12, PSX and CDD Live.

Menus

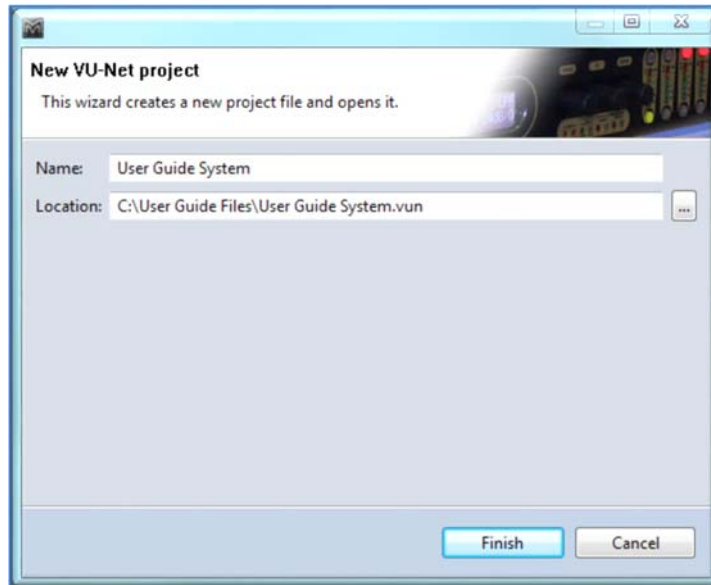
Before we look at the design process that is used with a system it is worth taking a look at the file structure which we will refer back to throughout the chapter. When you run Vu-Net you will see the following Window; -



This is a blank screen with only 'New Project' and 'Open Project' active prompting you to start by using one or the other. Start by clicking on 'New Vu-Net project'. You will see the following window; -



Type a name for your project and select a suitable file location. As with Display 2.1 we would recommend creating one folder for all related files for a given event.



Once you have selected an appropriate name and file location click finish and a new project will be created; -



You will notice that the top left of the main window has your project name and a number of options on the toolbar are now available.

Window components

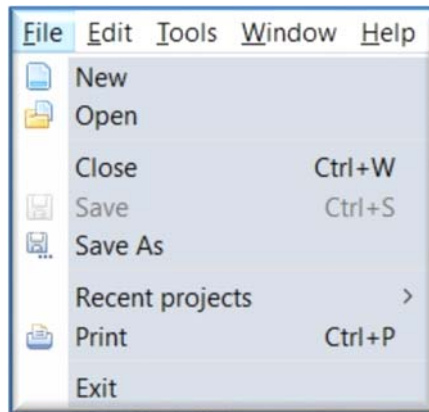
The window has a number of distinct sections with their own function; -

Menu and Toolbar

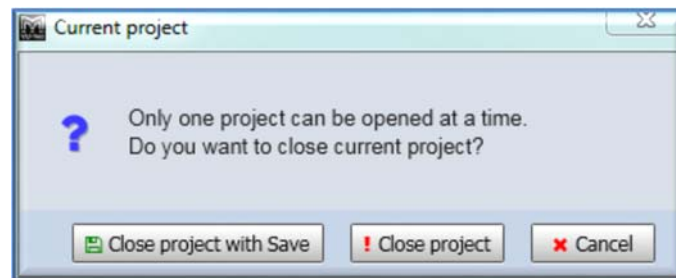


Along the top of the window is a standard file menu and tool bar which gives quick access to a number of functions; -

File



The File menu controls all file management tools. The 'New' duplicates this function on the tool bar and is how you create a new project. Note that you cannot have several projects open simultaneously. If you select 'New' with another project already open you will see the following Window; -



'Open' enables you to open a project you have previously created and saved. As Vu-Net does not have an auto-save function it is wise to save your work at every step as is good practice for any application.

'Close' closes the presently active project.

'Save' is the standard Windows function to save the project, if it is the first time you have saved the project a window will appear giving you the opportunity to give the project a name and to choose a convenient file location. As with Display 2.1 it is sensible practice to save the file in a folder dedicated to a specific event. All subsequent Saves will overwrite the existing file. As shown, the keyboard shortcut Ctrl+S can be used to save a project. It is a good idea to frequently save your work. Vu-Net files are saved with a .vup file extension.

'Save As' gives you the facility to save your project with a different file name, retaining the original project. This could be useful if you wanted to try something but still have the option of returning to your original project file.

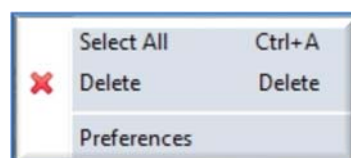
'Recent Projects' lists all VU-NET projects recently opened making it easy to find a project you may need to re-open.

'Print' will print the system layout in the main system overview window.

'Exit' will close the application

Edit

The Edit menu has a number of functions available; -

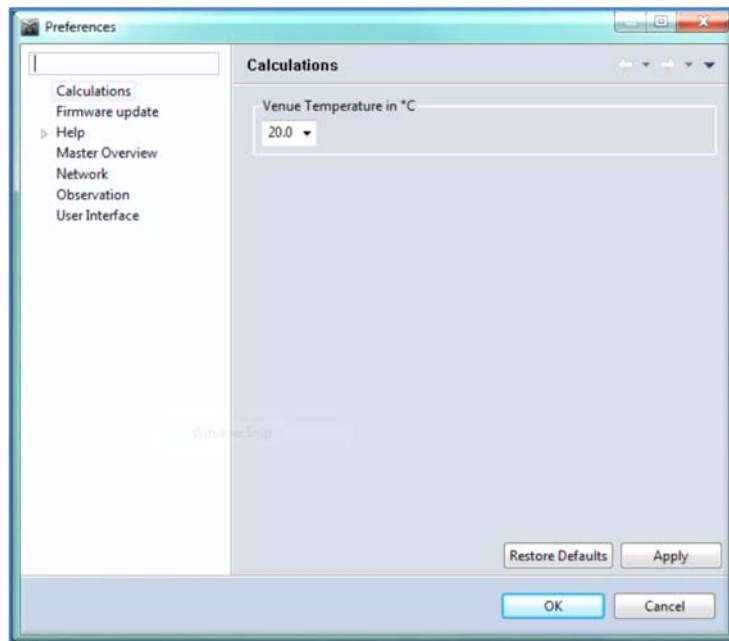


Note that additional edit menu items are displayed depending on which active devices have been selected in the System diagram overview, Product such as MLA and MLA Compact have Presets that can be loaded or saved and zones that can be defined, other devices such as DD12 or CDD-Live have Snapshots for loading or saving.

‘Select All’ selects every item on the main project window. All selected items will show four square black dots in the corners around the object or objects.

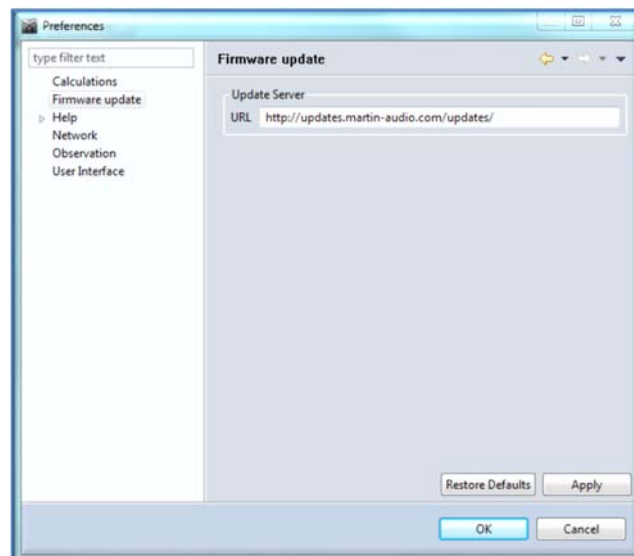
Preferences

Preferences have some important options for how Vu-Net operates; -



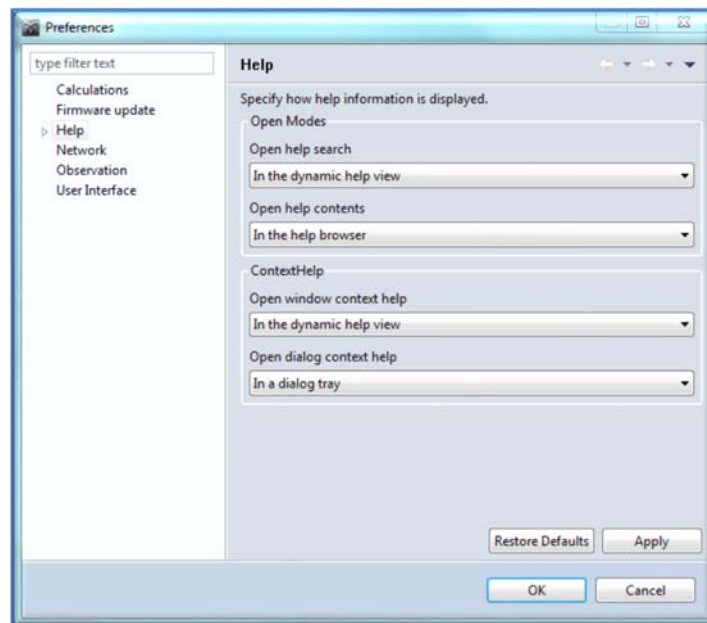
Calculations: The first option is labelled ‘Calculations’ and allows you to select the venue temperature in steps of 5°. This is used when the option is selected in the Merlin Controller to read delay figures as a distance as opposed to time. The temperature adjustment calculates the delay time according to the speed of sound at that temperature. Select the desired temperature using the drop-down box or an exact value may be typed directly into the box and click ‘Apply’. Note that if you have a Merlin open in the project window the change will not be visible until you close it and reopen.

Firmware update: The next option is Firmware update; -



This shows the web URL for the system to search for firmware updates which will be covered in the Firmware chapter. ***This should not be changed unless notification is received from Martin Audio to do so.*** If, however it accidentally gets changed or deleted it is possible to reset all Default parameters by clicking on the Restore Defaults button. Note that this restores ALL Preferences so any that you wish to retain will have to be re-entered.

Help: Next are options for how the Help menu is displayed; -

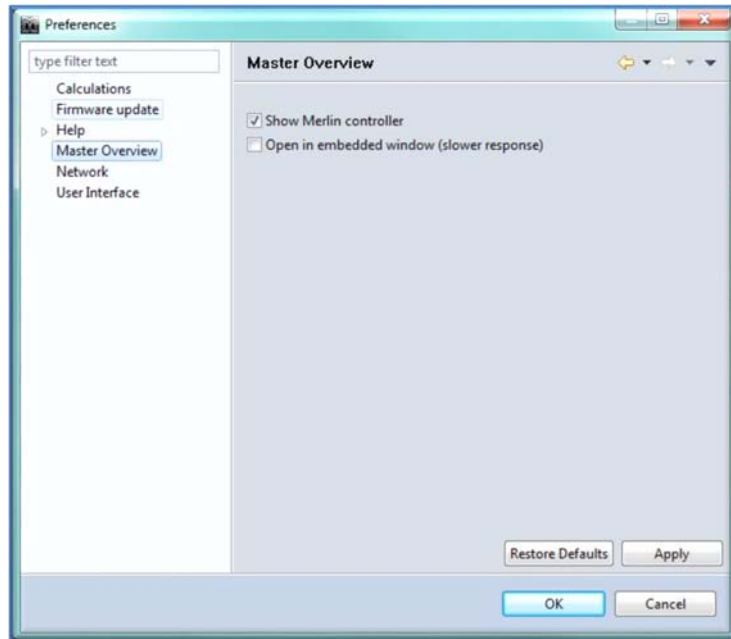


By default, the help window is displayed in a dedicated help browser, but you can select it to open in your default Internet Browser. Context help which responds dynamically to objects selected can be displayed as a window on the application or as an “Infopop”

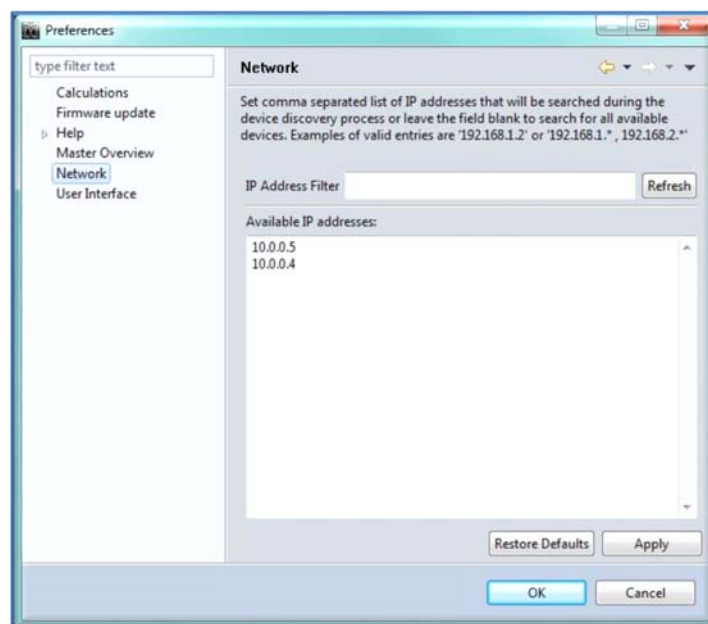
Help includes a sub-menu for accessing help from remote infocenters. This is not currently operational and will be a future upgrade.

Master Overview: There is an option within Master Overview to show the Merlin Controllers in the system in the Overview tab. This is for systems where Merlins are used purely as a network interface with no audio passing through them which would make it unnecessary to monitor them in the Master Overview screen

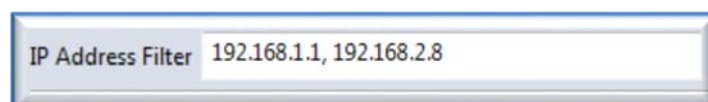
By default, the Master Overview opens in a secondary floating window, particularly useful when monitoring large systems with your PC connected to two or more screens. You can select the option to display the Master Overview as an embedded window within Vu-Net- it will appear as another tab in the same way as double clicking on any of the devices; -



Network: The Network option is an important section for determining how devices are found on the Ethernet network; -



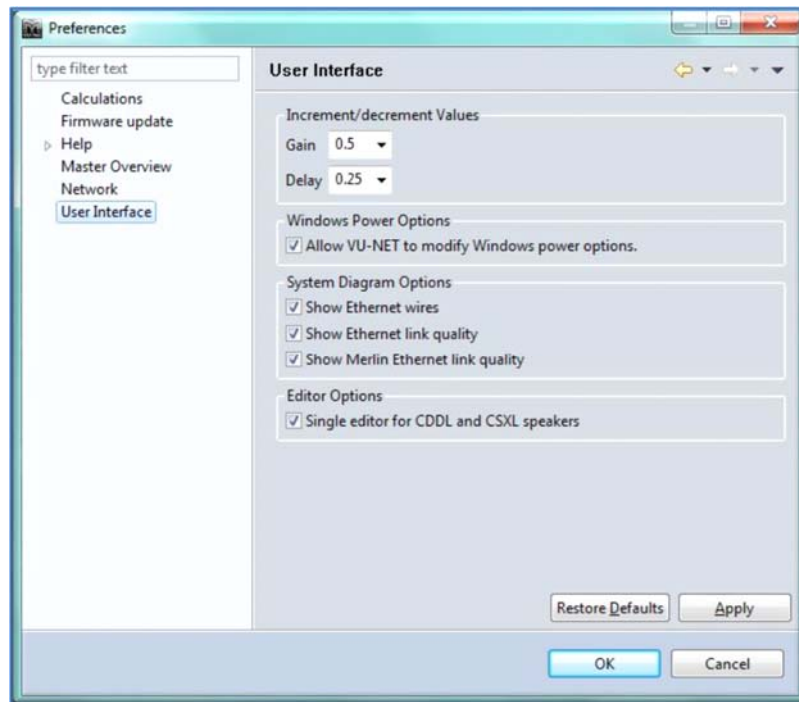
Running the application off line will display a blank window. When you have one or more U-Hubs connected (usually at least two for MLA and MLA Compact systems) their unique IP address will appear listed in the bottom 'Available IP addresses'. You can set an IP address Filter in the smaller window which will search only for IP addresses within the range of values between the two entered which should be separated with a comma; -



This could be used if you have two systems running on the same Ethernet network and need to control them independently. Only devices with their IP address set to values within the filter range will be found and the system will work completely independently as if there were no other devices on the network.

Note that if you are connecting to MLA Mini, DD12 or PSX via their integral USB port, no IP address will be visible. This function is only applicable to networks supported by U-Hubs, Merlins or Ethernet connected devices such as the CDD Live range.

User Interface: The final option in the Preferences window is User interface; -



This allows customisation of certain functions within the application.

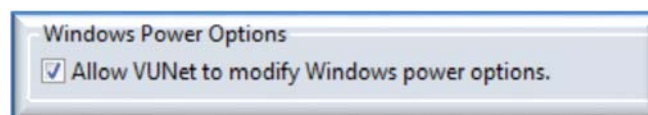
Increment Values; -



These allow the default increment values for both Gain and Delay to be changed as required. The default for Gain is 0.5dB but the options are for increments of 0.1, 0.2, 0.25, 0.5 or 1dB.

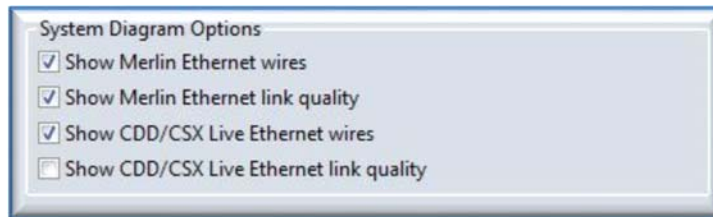
For delay, the default is 25ms, the options are 0.1, 0.2, 0.25, 0.5 or 1ms.

Windows Power Option; -



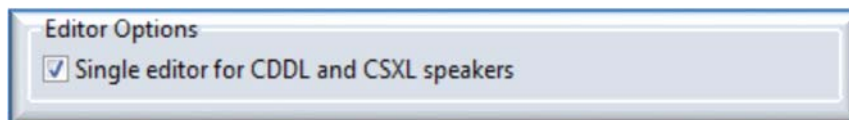
Allows Vu-Net to prevent Windows from implementing changes to the power settings that can affect network operation. This should be left checked unless there is a very specific need to do otherwise

Finally there are a number of options for how the system diagram is displayed; -



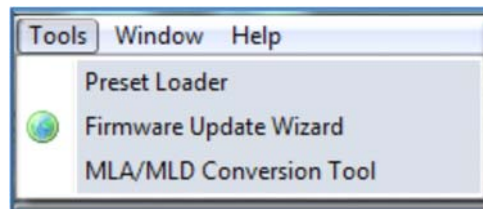
This is intended to reduce the number of lines on the System Diagram overview which may get cluttered in large systems with a high number of devices.

Finally you can select whether CDD-LIVE and CSX-LIVE products appear in a single editor window; -



Tools

The tools menu; -



This has three important functions for system operation.

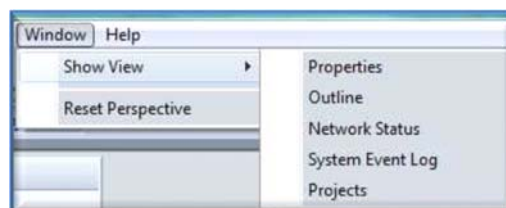
Preset Loader is used to upload EQ optimisations into the arrays.

Firmware Update Wizard is used to check and upload the latest firmware into the system components.

MLA/MLD Conversion Tool is used to convert the amplifier modules used in MLA and MLD cabinets from one type to another. Mechanically and electrically these are identical, they simply need a firmware conversion, so the system is aware of what type of enclosure they are powering. An MLD module can be converted to an MLA or more commonly an MLA module to an MLD.

Window

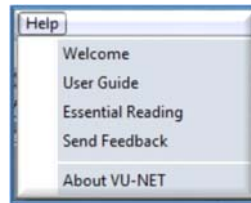
The Window menu is used to determine which sections of the project window are displayed; -



The System Diagram is always visible, but the other windows can be closed and reopened as required. By default, they are all open but if closed they can be reopened by selecting them from the Window menu. The Reset Perspective option will restore the project layout to the default view.

Help

The help menu has a number of options; -



'Welcome' opens the splash screen that is displayed when Vu-Net is run for the first time; -



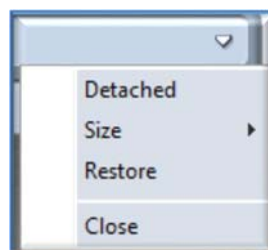
The lines 'Go to Martin Audio website' and 'Go to MLA website' are hyperlinks and clicking on them will take you directly to the respective website if your PC is connected to the internet.

The window can be closed in one of three ways; -

1. Click on 'Start using the software'
2. Click on the x in the Welcome box in the top left of the window; -



3. Click on the drop down arrow in the top right of the window and select 'close'; -

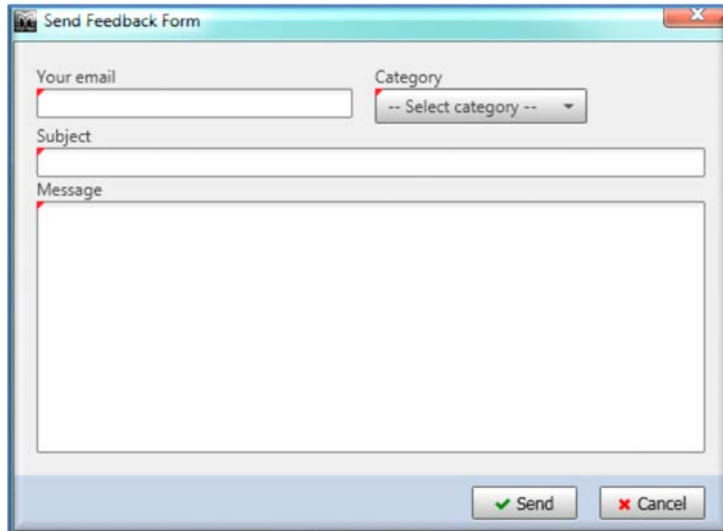


Any of these will close the welcome screen to reveal the project window.

User Guide: This is a link to this very guide slightly rearranged for use in the field when running the software. The contents page features links directly to the specific subject so you can very quickly navigate to where you need to be to discover the answer to something you don't fully understand.

Essential Reading: This opens a pdf document that outlines the new features in the latest version of Display 2.2 and how they affect their implementation in Vu-Net.

Send Feedback: opens a communication window which gives you an opportunity to communicate any issues or ideas for new features straight back to Martin Audio; -



The 'Send Feedback Form' dialog box contains the following fields and controls:

- Your email:** A text input field.
- Category:** A dropdown menu with the text '-- Select category --'.
- Subject:** A text input field.
- Message:** A large text area for the feedback message.
- Buttons:** 'Send' (with a green checkmark icon) and 'Cancel' (with a red X icon).

Note that an internet connection is required for your Feedback to reach Martin Audio.

Tool bar

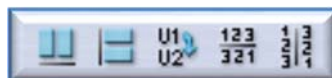
The toolbar has a number of icons which offer either quicker access to commonly used functions from the file menus or specific functions which are essential to system set up and operation.

The first 4 icons are file management tools; -



These are New Project, Open existing project, Save and Save As.

The next group are graphic alignment tools for effortlessly making your system diagrams look neat and tidy; -



The first, second, fourth and fifth of these are only active when two or more components are selected; the third is only active when one or more Merlin controllers are selected.

The first icon aligns all selected components horizontally on the page. The second aligns all selected objects vertically. The third tool is used with the Merlin. When a system is discovered its network connections are drawn in place. The two U-Net nodes on the Merlin, usually run as a closed loop will go off to the first cabinet in the array and back from the last cabinet. Depending on the layout of your system diagram this may mean that network cables are crossing over looking a little messy. This tool reverses the two network nodes in the diagram to try and neaten the diagram. Note that it is only adjusting the graphic representation; it is not making any electrical changes to the U-Net nodes in the Merlin.

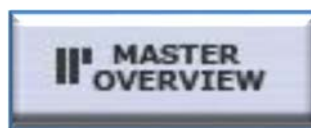
The final pair of icons will reverse the position of any selected objects. Perhaps you have an MLA array to the right of an MLX array and you would rather position them round the other way, you just select both arrays and click on the 'Reverse order horizontally' button and their order will be reversed maintaining their connections and keeping them aligned. Likewise, if you wish to reverse the vertical order, position DSX subs under an MLA Compact array when the diagram has the subs on top, select the required components and click the 'Reverse order vertically button'

Discover Devices is the method by which U-Net connects to all system components once all hardware connections have been made; -



This will interrogate the U-Net network and find all connected devices opening Wizards for each type of device; MLA & MLD, MLX, MLA Compact, DSX, MLA Mini, MSX, DD12, CDD Live and Merlin. All devices on the same U-Net loop will be grouped together by type by the discovery process. Note that Vu-Net will discover devices regardless of how they are connected, either directly by USB in the case of MLA Mini, DD12 or PSX, via Ethernet for CDD Live and CSX Live, or over a U-Net loop via a Merlin acting as a network bridge

Master Overview; -



Gives an overview of all devices in the project displaying all bargraph level meters giving access to essential functions such as gain, mute and Delay and with a link to EQ functions. This is designed to be used once a show is in progress to allow easy monitoring of an entire system from a single page. The Master Overview is opened as another tab next to the Project System diagram and any other open arrays or components.

Ganging; -



From version 2.1, Ganging for all devices is accessed from the toolbar using this button. A list of all device types is displayed, selecting the appropriate device will bring up the ganging window that was previously accessed from a tab in the device window.

;-

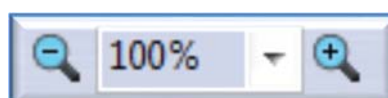


As the name suggests, this is intend for use during a show once set-up is complete. It changes the operation of the Mute function for all products. When disabled, all mutes can be selected and de-selected freely, when show mode is active; -



Any click on a mute button will bring up a pop-up window asking you to confirm that you want to Mute or Un-Mute that array or channel. It also disables the output cell check function, see later in this guide for details

The zoom function; -

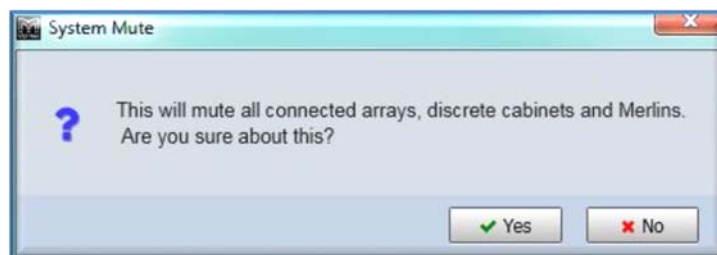


Allows you to adjust the system diagram size to suit the complexity of the system on your PC display. The '-' and '+' buttons will decrease or increase the zoom in increments of 25%. Alternatively, you can use the drop-down box to select either 10%, 25%, 50%, 100%, 125%, 150%, 200%, 300%, 400%, 600% or 800%. Particularly useful are 'Page' which will zoom to the maximum size that the page will allow, 'Width' which will zoom to the maximum width of the diagram and 'Height' which will maximise the size to fit the height of the diagram.

Mute is essentially an "emergency" function if something is causing severe noise through the system you can click on the mute button; -



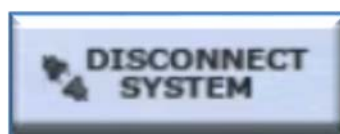
This will bring up the following window; -



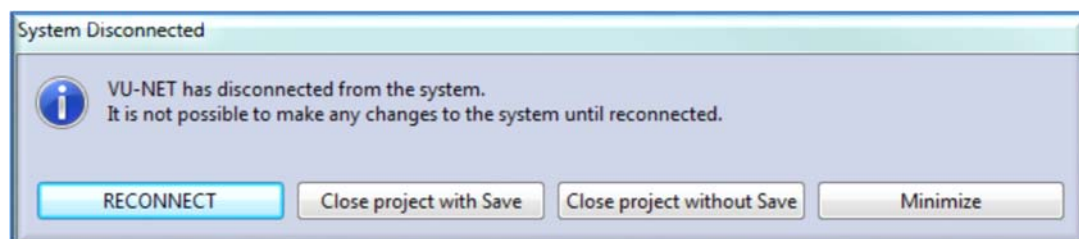
As you can see it is a very drastic measure which will shut down the entire system which is why it should be considered as an emergency measure only and not an everyday means for muting the system. If you are sure you wish to proceed you can select 'Yes' if not click on 'No' and the window will disappear, the audio will remain routed. This function mutes every input and output on connected Merlins and every zone on all arrays. Once used there is no global un-mute, all Merlins and arrays will have to be individually un-muted. Note that Show Modes does not change operation of the System Mute, the confirmation window will always appear.

Our advice is never to leave a system muted within Vu-Net, always use a mute that can be defeated manually such as a Merlin output. If a system has been muted within Vu-Net and for some reason you lose network connectivity you will be unable to un-mute and will have an unusable system!

System Disconnect

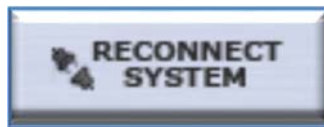


This will disconnect the project from the hardware in the system. A Window will pop up giving you a selection of options; -



As you can see, once you are disconnected from the system you are unable to make any changes to the project, this is to ensure compatibility and accurate synchronisation when you reconnect. You have the option to reconnect straight from the window or can close the project with or without saving. Finally, you can minimise the project. This is particularly useful if you have disconnected to switch from a Wi-Fi to a hard-wired connection, having minimised to can access the PC network setting to make the switch to a cable Ethernet connection.

Once Disconnected the Disconnect button will change to reconnect also allowing you to reconnect to the project; -



Project Workspace

The workspace is divided into several sections which can each be opened, closed or in the case of the ancillary section, "detached" as a floating window.

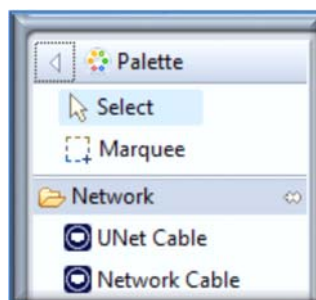
By default, the workspace appears like this; -



There are three main sections, the first is the system diagram; -

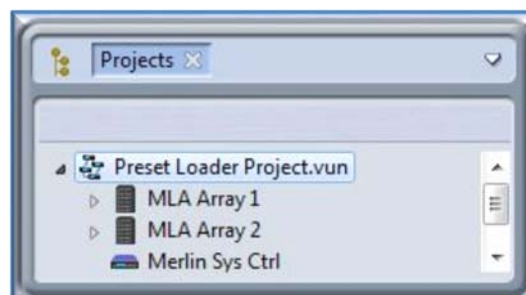


This window will show all array components on the network and is used for all configuration changes and system monitoring. The palette on the left is used to manually enter system components when working off line (in normal use, Device Discovery is used to find all connected components). If you need to maximise the workspace the palette can be minimised by clicking on the white triangle in the top left corner of the palette; -



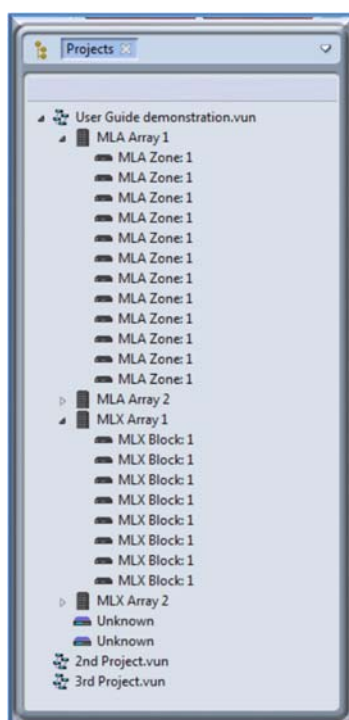
The overall size of the System Diagram can be increased or decreased by clicking and holding on the gap between its right-hand edge and the left-hand edge of the other windows. You can then drag either left or right to adjust the relative sizes of the windows. Alternatively, the white drop-down arrow gives you the option to maximise the screen. The other windows will not be closed; they will be represented by an icon on the right side of the page with the option to restore. Clicking restore will return the windows to their previous state.

On the right side of the window are two further windows; -

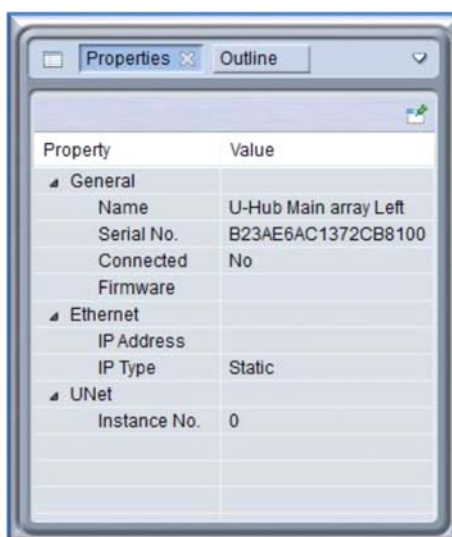


The first is a project overview window showing the open project. The window can be maximised, detached or closed by clicking on the white arrow in the top right corner. The project icon can be expanded if they have a small arrow to the left (a project that doesn't yet have any components added or discovered will not show an arrow). This will then show all connected components

as in the picture above. Arrays will have a further arrow which if clicked will show all individual cabinets. This screen grab shows an enlarged project window in which the User Guide system has been expanded and one of the MLA arrays and one of the MLX arrays have also been expanded; -



The final window by default has Properties and Outline available but by using the 'Show View' option in the Window menu, you can also select Network Status. This shows all three options available; -



Any of the three options can be viewed by clicking on the relevant button. As with the Project window any of the selected options can be detached as a floating window, maximised or closed by clicking on the white arrow. If all options in the window are closed the project window will fill the space, if that is also closed the Project window will fill the space.

The Properties window will show the properties for any element selected in the System diagram. The example above shows the properties for a Merlin in an off-line project. There are a number of options available for the Properties display selected by the icons in the top right corner of the window; -



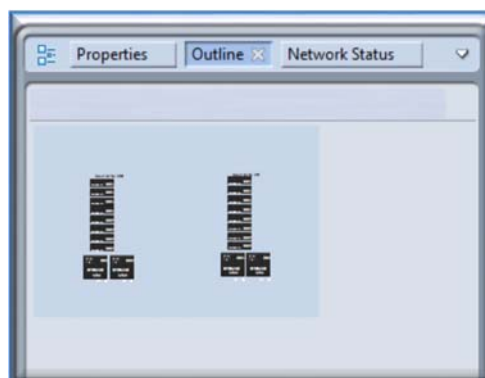
The first pins the Property view of the selected element so it remains on view regardless of whether an alternative element or even project is selected. A second click on the icon will un-pin the view and any new selected element can have its properties displayed.

The next is the Show Categories button which is selected by default. This shows the categories for each of the properties and gives the option to display or hide any of the properties in a particular category by clicking on the small arrow leaving just the category heading.

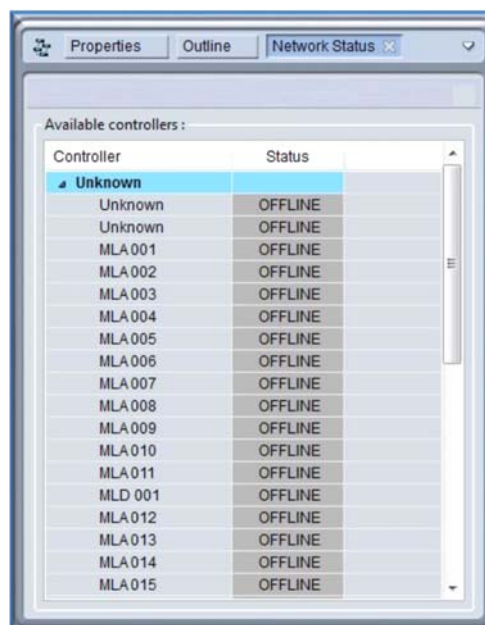
The third icon displays advanced properties for the selected element.

The final icon will reset any modified properties to their default values.

The Outline window displays a miniature thumbnail of the system diagram for whichever project is selected; -



The network status shows the status of the network connection to all elements in all projects running in Vu-Net. This screen shot shows the network status of the elements in an MLA/MLD & MLX system (currently off line); -

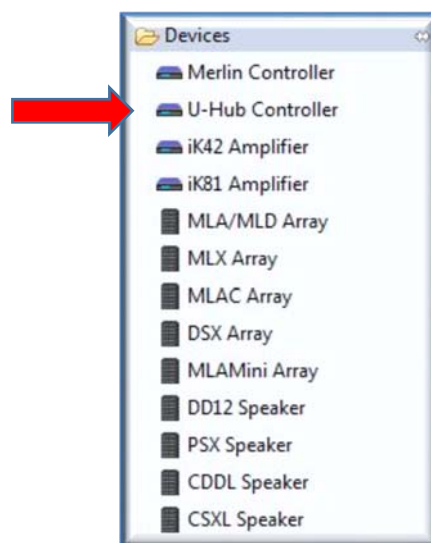


Working Offline

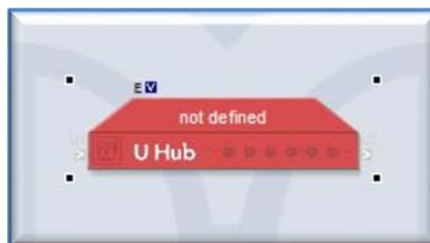
Before we move on to look at adding elements to projects it is important to understand the difference between working off line and normal on-line operation at an event. When working off line the Palette allows you to drop elements into the System Diagram, you can open arrays, speakers, U-Hubs and Merlins as you would for an on-line system. This is useful as a means to get used to system operation in Vu-Net but very little beyond that. Unlike some systems you CANNOT create a system design off line and connect to a system on site. When connecting to a system you have to use Device Discovery which searches all available connected devices for system elements and automatically drops them into the system diagram showing their Ethernet and Vu-Net Connections. This is vital as every Vu-Net element has a unique factory set IP address which Vu-Net records, so it can provide real-time monitoring of the system and can display the status of every device. If for example you re-connect to a system having used it on one day and shut down over night, Vu-Net will be able to detect that every cabinet has been turned back on and the status of all parameters of every DSP. We will show how to introduce all available elements into a project off line but will cover Device Discovery and on-line operation in a later chapter.

Adding U-Hub

Adding any devices to a System diagram is a simple case of clicking on the required item in the Palette; -



Then click on the System Diagram workspace. The cursor will have a small white box with a cross in the centre prompting you to click where you wish to deposit the device. Here we see a new U-Hub added to a project; -



The four black squares in the corners indicate that the device is still selected which is the default when a new element is added to a project. The most useful thing about this is that it gives you the opportunity to move it to exactly where you need it simply by using a click-drag-drop movement. A click anywhere else in Vu-Net will de-select the U-Hub.

Any other device can be added to the project window in the same way.

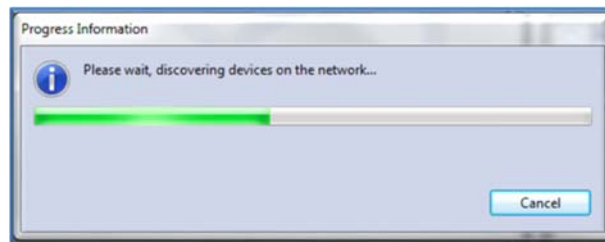
Device Discovery

The normal method for operating a system following completing the system rigging and connection is to run Vu-Net is to run Device Discovery. It is good practice to check your network connectivity, first by using the network icon on the PC task bar which should show connection to your system (it will flag that there is no internet connectivity which can be ignored). Then by going

into Preferences and selecting 'Network' and making sure that the Available IP addresses window has an IP address for every Merlin in use with your system. If all is ok you can proceed by clicking on the Discover Devices button; -

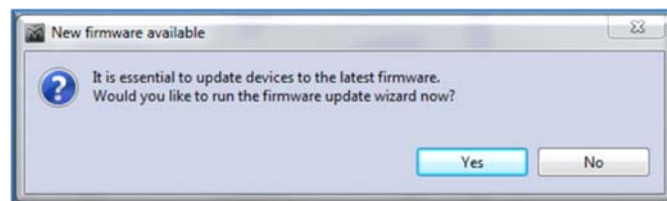


Assuming everything is OK with your network connection you will see the following window; -



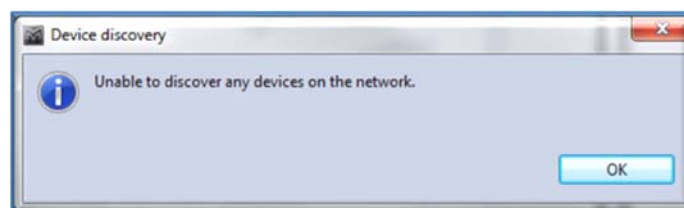
The meter bar will gradually move across until it is completely green, and all devices have been found. This may take a few seconds on bigger systems with large arrays of many cabinets.

There are a couple of other windows that may appear at this stage, as well as discovering all devices on the network and identifying their type and IP address, Vu-Net also checks their Firmware to ensure it matches the latest version stored in its internal Firmware database. If it detects an older Firmware version, you will see the following window; -



For more detail on Firmware updates please see the full Vu-Net User guide.

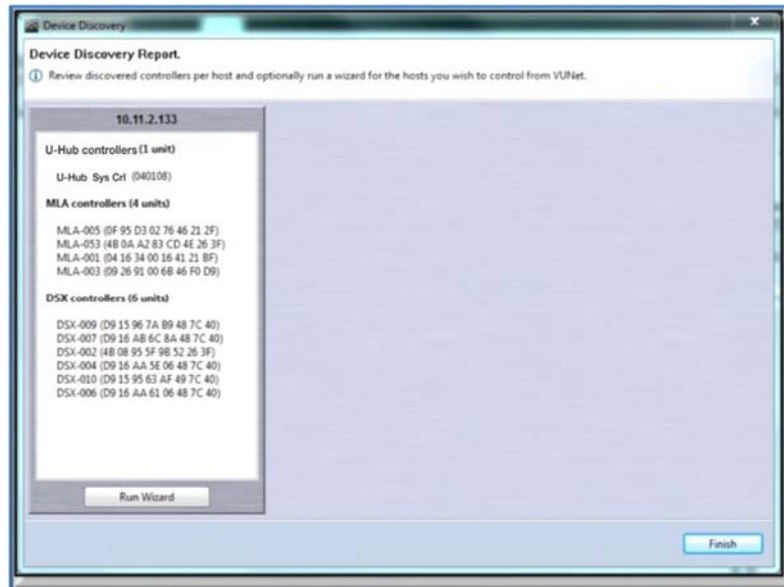
Finally, it is possible you may see this window; -



This would indicate a problem down-stream of the U-Hub; are the cabinets powered? Are all the network connections made? Is a U-Hub (or Merlin) set to Static IP instead of Dynamic? Can you see two green U-Net LEDs on all devices including the U-Hub? If everything is ok, try power cycling the U-Hub and run Device Discovery again.

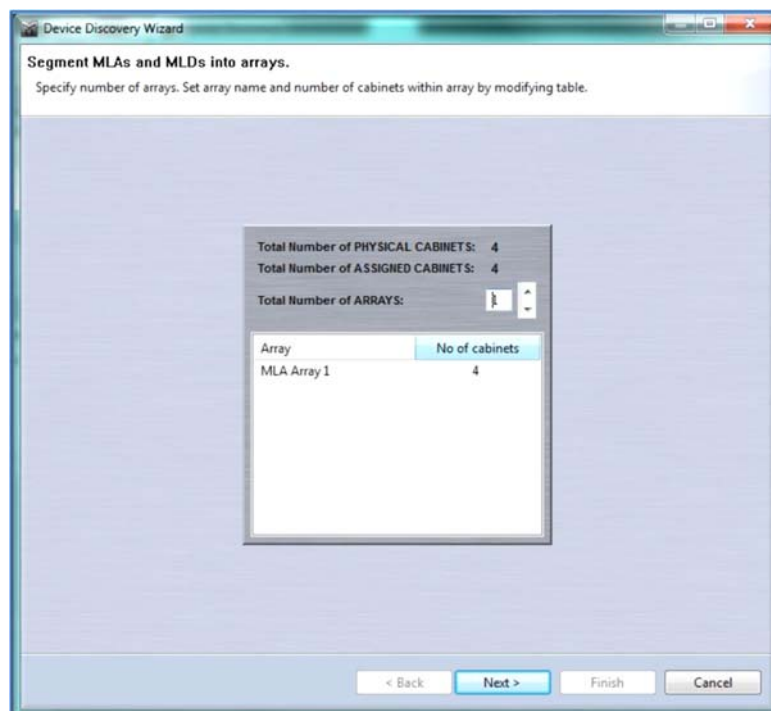
Note: It is not essential to have the complete system wired before you run Device Discovery; for example, you may wish to check each array individually as they are rigged so they can be flown out which is perfectly acceptable. Every subsequent press of Device Discovery will find any new elements that have been introduced to the network ignoring those already discovered.

Once Device Discovery has completed its scan you will see the following window; -

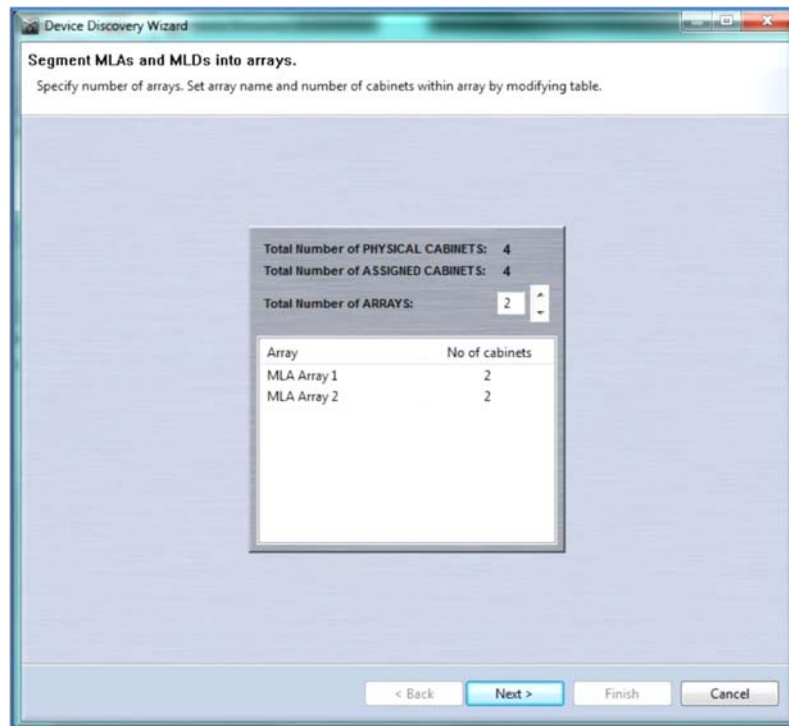


This shows a list of all connected devices found grouped into categories; U-Hub Controllers, MLA, MLD, MLX et cetera. Each individual U-Net network created either by a U-Hub, Merlin or USB connected device (such as an MSX or DD12) will create an individual window with the IP address shown at the top. All devices connected to that U-Net loop will be listed grouped by type.

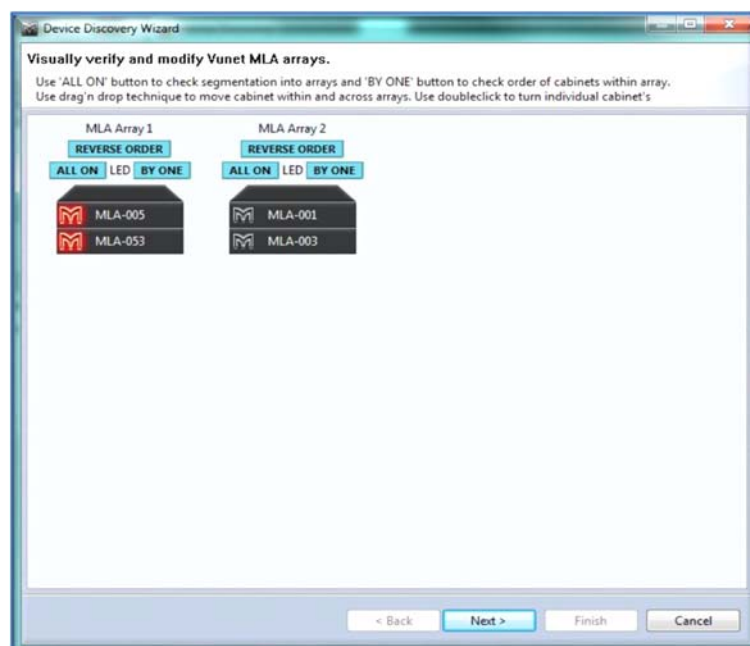
Next press the 'Run Wizard' button and an individual Wizard will run for all categories, the first will be MLA, MLD or MLA Compact; -



If you have more than one array of each type of cabinet on the same U-Net loop you have the opportunity to divide them into two or more arrays as required. Use the up/down button to select the number of arrays then change the number of cabinets in each array to match what you physically have connected; -



If the total does not match what Vu-Net has discovered the numbers will be flagged in red. Click next and you will see a new window showing the array or arrays; -

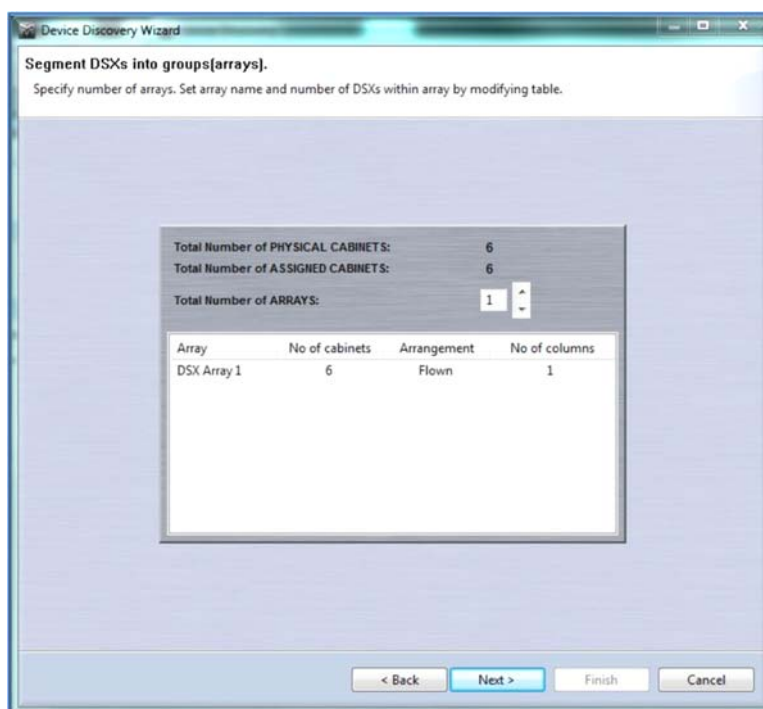


If you have more than one array the first step is to use the 'ALL ON' button which will illuminate all the LED badges on the array to check that the Vu-Net arrays match the physical deployment. If there are any errors the cabinets can be dragged and dropped to the correct positions or array. If you only have one array it is still worth flashing all LED's to see the look on the faces of the lighting technicians when they see LED lighting over which they have no control...

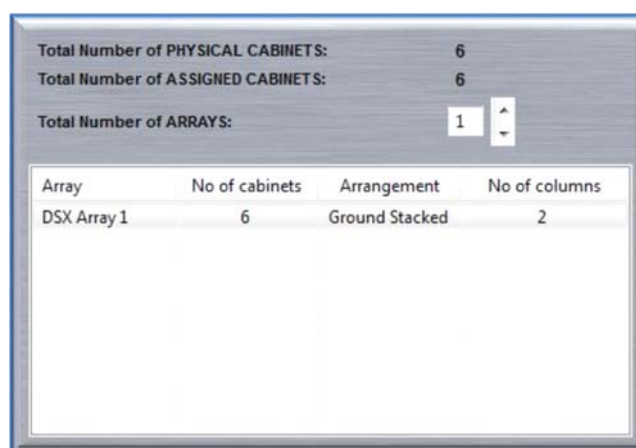
Next click the 'BY ONE' button. This will flash the LEDs in sequence from top to bottom. As the U-Net network is bi-directional it is entirely possible that the arrays could have been discovered starting with what is actually the last cabinet in the array. If this has happened you will see the LEDs on the actual cabinets flashing from bottom to top and you MUST click 'REVERSE ORDER' to get it flashing the right way up. This is essential so that Vu-Net knows that the array is orientated the right way, failure to do this

could result in an EQ optimisation being loaded upside down producing an array attempting to produce a coherent, flat response for an audience 30 meters or so up in the air!

Next you will see the following window for any connected MLX or DSX; -



By default, the 'Arrangement' will be displayed as 'Flown' therefore the 'No of columns' field will show 1. If you click on 'Flown' it will toggle to 'Ground Stacked' and if this is how your subs are deployed you can select the number of columns to reflect in Vu-Net exactly how they are positioned; -



This could even mean making the columns equal the number of enclosures where a broadside array is being deployed; -

Total Number of PHYSICAL CABINETS: 6
 Total Number of ASSIGNED CABINETS: 6
 Total Number of ARRAYS: 6

Array	No of cabinets	Arrangement	No of columns
DSX Array 1	1	Flown	1
DSX Array 2	1	Flown	1
DSX Array 3	1	Flown	1
DSX Array 4	1	Flown	1
DSX Array 5	1	Flown	1
DSX Array 6	1	Flown	1

Once you have selected the array configuration select 'Next' and you will see a similar window to the one for MLA, MLD or MLA Compact; -

Device Discovery Wizard

Visually verify and modify VU-net DSX cabinets.

Use 'ALL ON' button to check segmentation into arrays and 'BY ONE' button to check order of cabinets within array. Use drag'n drop technique to move cabinet within and across arrays. Use doubleclick to turn individual cabinet's

DSX Array 1

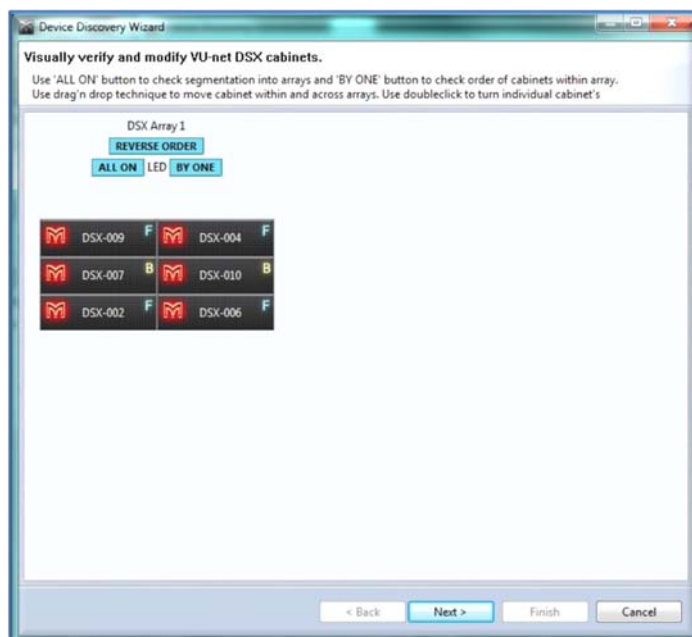
REVERSE ORDER

ALL ON LED BY ONE

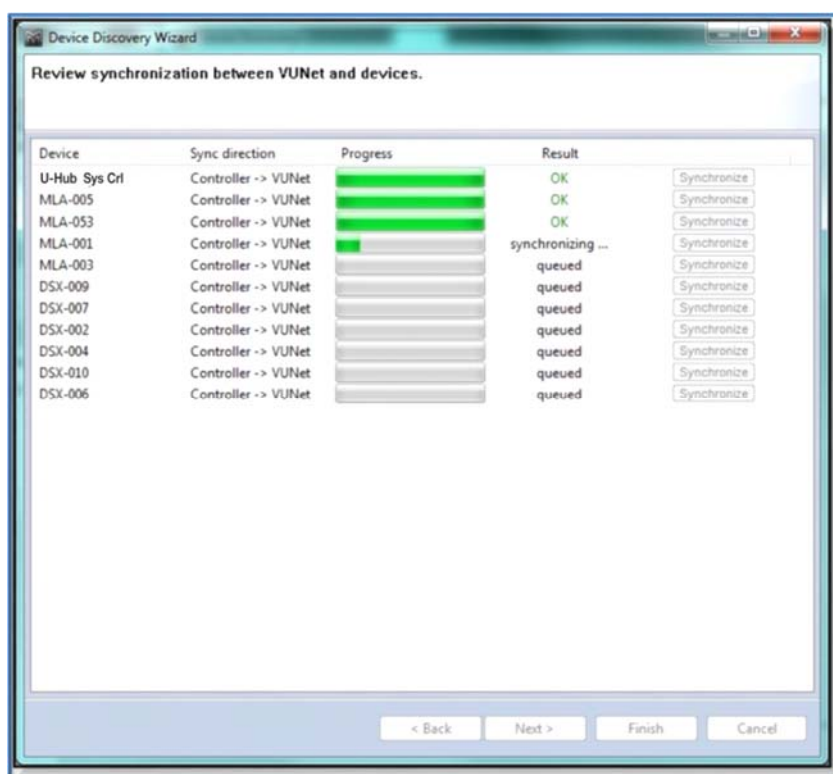
DSX-009 F	DSX-004 F
DSX-007 F	DSX-010 F
DSX-002 F	DSX-006 F

< Back Next > Finish Cancel

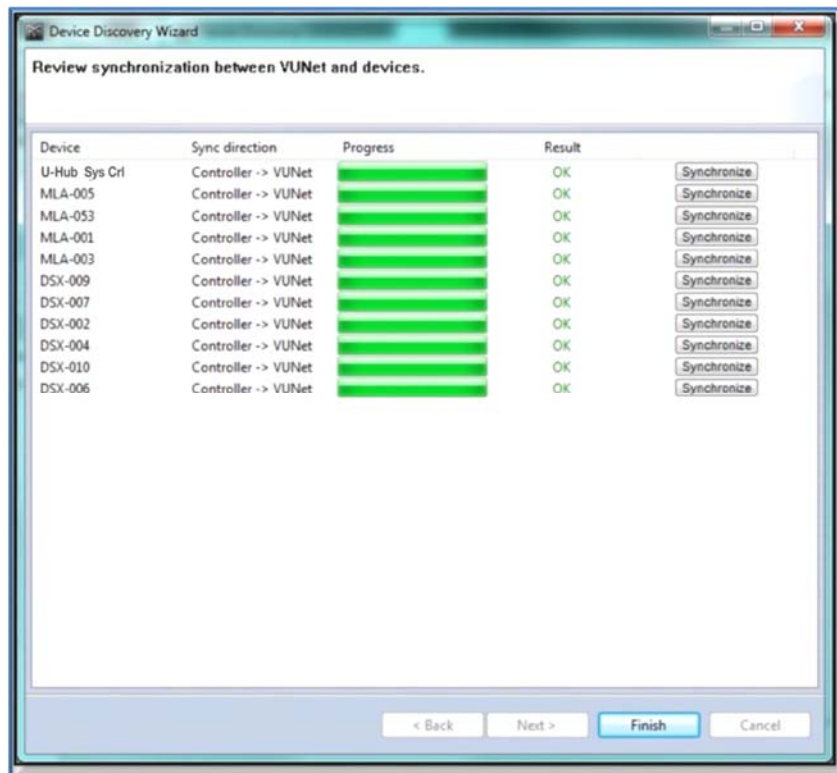
Repeat the process of flashing LED badges to ensure that the cabinets are in the correct order. If any are in the wrong position use drag and drop to reposition them. For a conventional sub stack this may not be vital as the parameters are likely to be identical for all cabinets but for cardioid or broadside arrays it is essential to ensure that they are correct so delay and other parameters applied are directed to the correct cabinet. At this stage you can also change the LED badge to flash on the rear. They are configured for the front LED by default signified by the 'F' on the thumbnails. Double click directly on the badge and you will see the 'F' become a 'B' to signify the back LED. This will flash instead of the front LED when selected. Note that selecting 'B' does not change any internal parameters that may be required for cardioid array operation, it simply changes the LED indicator from the front to the rear for cabinet identification. All parameter changes must still be entered manually; -



Once you are satisfied with the sub layout click on 'Next' and the synchronisation of all elements on the U-Net loop will commence; -

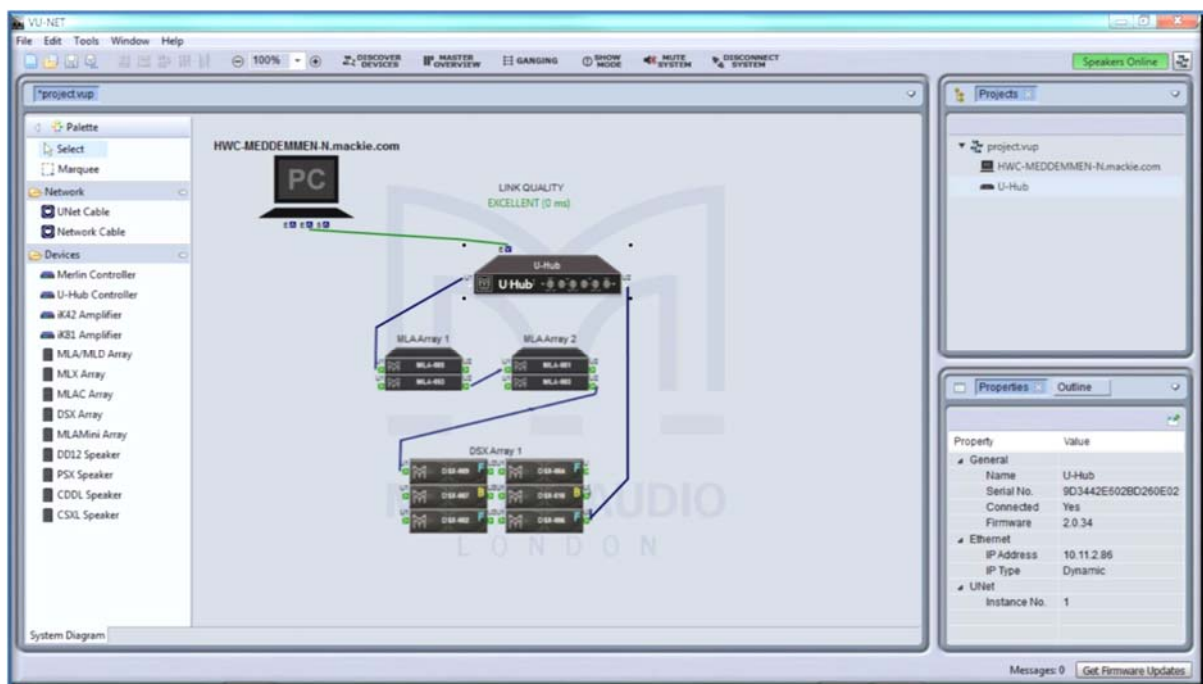


It possible (although unlikely) that one or more element will not synchronise correctly on the first pass in which case there will be a Red 'Fail' in the Result column for that device. If this occurs wait until the rest of the synchronisation is finished and click on the Synchronise button for that device in the extreme right column. The device will attempt a further synchronisation which should result in a success and a green 'OK'. A complete successful synchronisation will appear like this; -



This means that all settings residing in the DSP of all components have been uploaded into Vu-Net so you have a completely accurate picture of exactly how the system is configured on your tablet PC. You can click 'Finish' and a further 'Finish' on the Device Discovery Report window. Repeat the procedure for all connected U-Hubs or Merlins which will all have their own U-Net ring of elements.

Once this is completed the Vu-Net workspace will appear as shown; -



Device ID

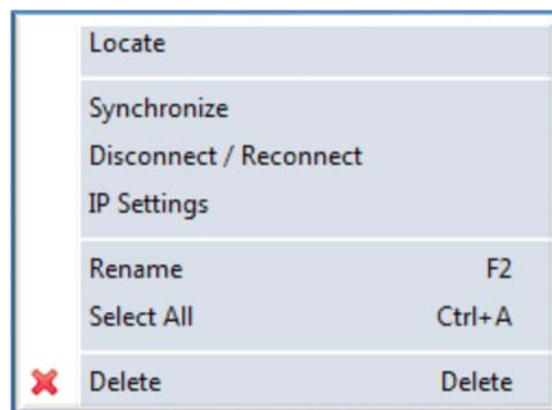
In larger systems with multiple U-Hubs it is helpful to identify them individually so they can be given an appropriate name. Double clicking on the U-Hub icon will turn the front panel name green as shown; -



This will make all front panel LEDs on the U-Hub to flash for approximately 3 seconds making it very easy to identify.

Right Click menu

Unlike other devices in Vu-Net, there is no internal processing, so all U-Hub functions are available from the right click menu which appears like this; -



Locate

Duplicates the identification function illuminating the front panel name on the Vu-Net thumbnail and making the LEDs on the front panel of the U-Hub flash.

Synchronise

Repeats the synchronisation that Vu-Net performs following device discovery.

Disconnect / Reconnect

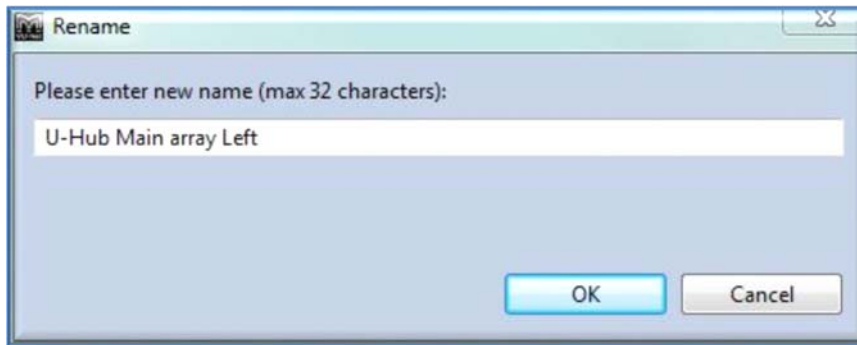
This allows you to disconnect the U-Hub from Vu-Net and then reconnect

IP Settings

This opens the IP Configuration Window to select between Dynamic and static IP (See the IP setting chapter)

Rename

You can give the U-Hub a name of your choice up to 32 characters; -



The keyboard shortcut to rename a U-Hub is F2.

Delete

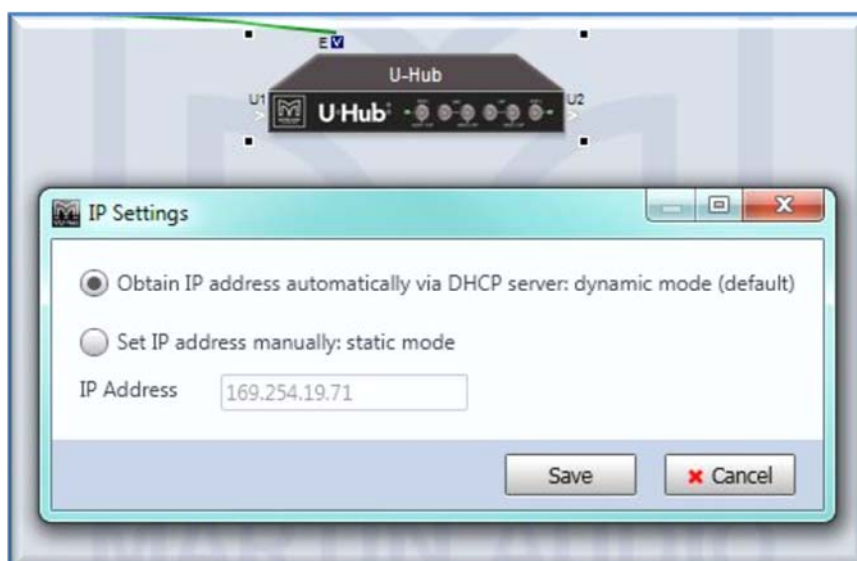
Removes the U-Hub from the system. This will open a confirmation window; -



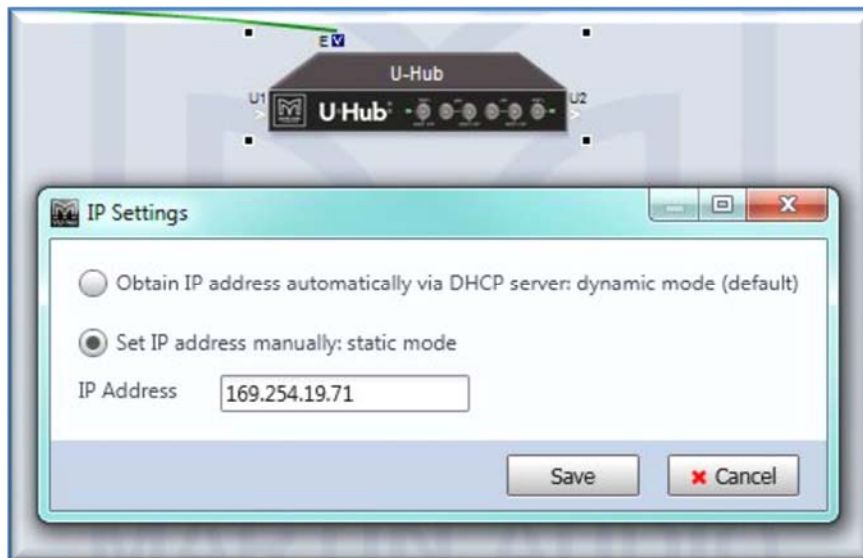
Click **OK** if you are sure or **Cancel** if not.

IP Settings

By default, the U-Hub is set to dynamic IP so will require a Lan with DHCP present to assign an IP. In a standard MLA system this is provided by the Zone Director housed in the Master rack. The U-Hub can be changed to Static IP for sophisticated networks which may be shared by many devices. Right clicking and selecting **IP Settings** opens this window; -



To change to Static IP click on '**Set IP address manually: static mode**' ; -



The default static IP is the same address that can be set using the front panel IP reset switch, 169.254.19.71. This can be changed to any IP address within the range you require for your network.

Once the U-Hub has been configured for Static IP the front panel Static IP LED will illuminate.

Technical Specifications

General

TYPE	Ethernet to U-NET™ bridge
SUPPORTED PROTOCOLS	Ethernet and U-Net™
CONTROL APPLICATION	Martin Audio VU-NET™
AC OPERATING RANGE	100-240VAC Nominal, 50-60Hz

Rear Panel

AUDIO INPUTS 1, 3 and 3	3 x 3 pin female XLR Type
ETHERNET	1 x Neutrik® Ethercon
MAINS POWER	3 pin IEC with connector retaining clip
FUSE	User-replaceable 1A T-type 20mm

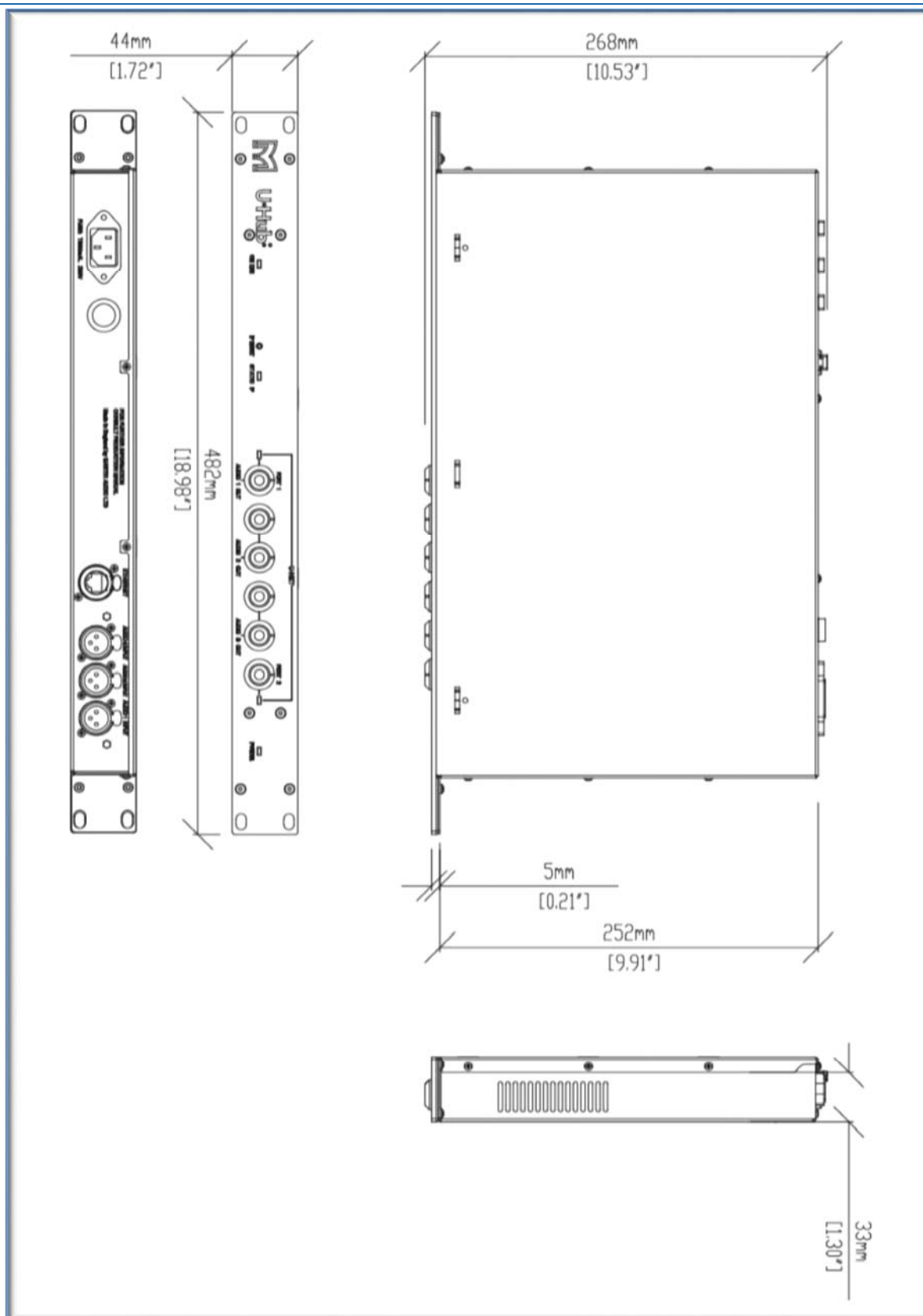
Front Panel

AUDIO OUT AND U-NET	6 x ODU 8-pin connector ports Audio In 1, 2, 3, Out on ports 1, 3, 5
U-NET STATUS	Bi-colour Green/Red LED on U-Net Ports
IP RESET (TO DYNAMIC)	Recessed push button
ETHERNET CONNECTION	Green LED = Online
MAINS POWER	Red LED = Mains power present

Physical

DIMENSIONS	(W) 482 x (H) 1U/44mm x (D) 268mm (W) 19in x (H) 1U/1.75in x (D) 10.6in
WEIGHT	3.5kg (17.6lbs)

Technical Drawing



Warranty

Martin Audio VIA U-Hubs are warranted against manufacturing defects in materials or craftsmanship over a period of 1 year from the date of original purchase.

During the warranty period Martin Audio will, at its discretion, either repair or replace products which prove to be defective provided that the product is returned in its original packaging, shipping prepaid, to an authorised Martin Audio service agent or distributor.

Martin Audio Ltd. cannot be held responsible for defects caused by unauthorised modifications, improper use, negligence, exposure to inclement weather conditions, act of God or accident, or any use of this product that is not in accordance with the instructions provided by Martin Audio. Martin Audio is not liable for consequential damages.

This warranty is exclusive and no other warranty is expressed or implied. This warranty does not affect your statutory rights.

Martin Audio Limited

Century Point

Halifax Road

Cressex Business Park

High Wycombe

Buckinghamshire

HP12 3SL

England

FOR SALES ENQUIRIES**UK**

Telephone +44 (0)1494 535312

E-mail: info@martin-audio.com**NORTH AMERICA**

Telephone: 818 649 7776

www.martin-audio.com

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The Martin Audio Experience