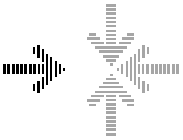
iQ System

Installation Manual



Model Number: 2116-01-nnn

Notice
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This manual is a change controlled document. Please quote the revision status of this manual when re-ordering. The revision status is determined by the content, any change in any part being reflected in the manual revision status.

This Manual is Revision A.

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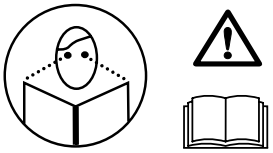
Notices

Important Product Information



WARNING: Read the Important Product Information book before use.

Conventions Used

☛ **WARNINGS: Indicate danger to life and limb if the indicated statements are ignored, or the indicated procedures are not performed correctly.**

☞ **Cautions: Indicate possible damage to (or misalignment of) the equipment if the indicated statements are ignored, or the indicated procedures are not performed correctly.**

Maintenance

☛ **WARNING (WM 2) Service Personnel - Maintenance and Calibration within the equipment enclosure is only to be carried out by SERVICE PERSONNEL. (12/97)**

Equipment Isolation

☛ **WARNING (WI 5) Equipment Isolation - The plug on the power supply cord, for Pluggable Equipment, is considered to be the isolation device and therefore the socket-outlet must be installed near the equipment and shall always be accessible for this purpose. For permanently connected equipment, where the unit's mains supply inlet is permanently connected, a readily accessible disconnect device must be incorporated in the fixed wiring. (12/97)**

Trade Marks

Most of the product names mentioned in this manual are manufacturer trade marks and are used within this manual only for the purpose of identification.

iQ is a registered trademark is of Quantel Limited.

About This Manual

This manual was written and produced by the Quantel Technical Publications Department.

This is a change controlled document. Each page of this document is given an issue letter (shown at the bottom of each page with the drawing number and revision date) which represents the status of the page. Revision A on any page indicates that the page is the original.

Any changes to any pages will raise the revision status of the document. When re-ordering, always quote the document type, the documents number and revision status along with the unit's serial number:

A	04/01	E31212	All pages

Chapter 1 : Overview

This chapter provides an introduction to the system.

Chapter 2 : Preparation

This chapter details pre-installation advice; including environmental and electrical supply requirements.

Chapter 3 : Unpacking

This chapter details the unpacking and handling of the various system units.

Chapter 4 : Racking

This chapter details the rack mounting of the various system units.

Chapter 5 : Connection

This chapter details the systems inter-connections and cable configurations.

Chapter 6 : Start-Up

This chapter details the system power-up and power-down procedures, and also details the various reset methods for each system unit.

Chapter7 : Maintenance

This chapter provides details of the maintenance required for each of the system's units.

Installation Check List

- Check all packaging for any sign of shipping damage before it is unpacked.
- Ensure that installation sites meets the requirements detailed in chapter 2 - “Preparation”.
- Unpack boxes in a clear area close to the installation site and follow all lifting guidelines.
- Keep all paper work and documentation in a safe place as it will be required later.
- Assemble and rack mount the system in accordance with the guide lines in chapter 4 - “Racking”.
- Interconnect the system’s units together using the cables provided (or cables meeting the required specifications detailed in the Technical Specification supplied) as detailed in chapter 5 - “Connection”.
- Start-up the system for the first time as detailed in chapter 6 - “Start-up” and check basic operation of pen/tablet/menu.
- Configure the system as detailed in the Setup and Admin guide.

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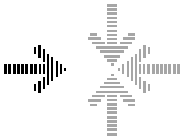


01 - Description

Overview

System Components

A IQ Platform

The iQ Platform is an 8U, 19 inch rack unit containing the system's major electronic circuitry, disk storage and power supply.

The rack unit is divided into three compartments; The top compartment holding a PSU; the front compartment holding the image processing circuitry and the unit's disk storage and the rear compartment holding an ATX PC motherboard, CD-ROM drive, ATX power supply and PCI printed circuit boards.

☞ **Note that the Quantel iQ platform and operating system are designed only to run content creation packages developed using the Quantel iQ SDK.**

B Dylan HD Disk Arrays

The Dylan HD units allow the system to store standard video (SD) and high definition video (HD) in the 'Native Format' in which it was originated. This video is processed by the iQ Platform in real time whatever the field/frame rate, aspect ratio, bit depth or colour space. Each Dylan HD is a 4U disk array containing 12 disk drives and two independent power supply modules.

C IQ Workstation

The iQ Workstation consists of a tablet & pen, a qwerty keyboard, a hand unit with docking port, a fader panel and jog/shuttle panel. These in conjunction with the systems monitor output for on-screen menu displays provide the system's user interface.

Digitising Tablet & Pen: These provide the positional co-ordinates and pressure information for the system for use with the on-screen menus and direct editing.

Keyboard: Provides text entry, macro setup and other shortcuts.

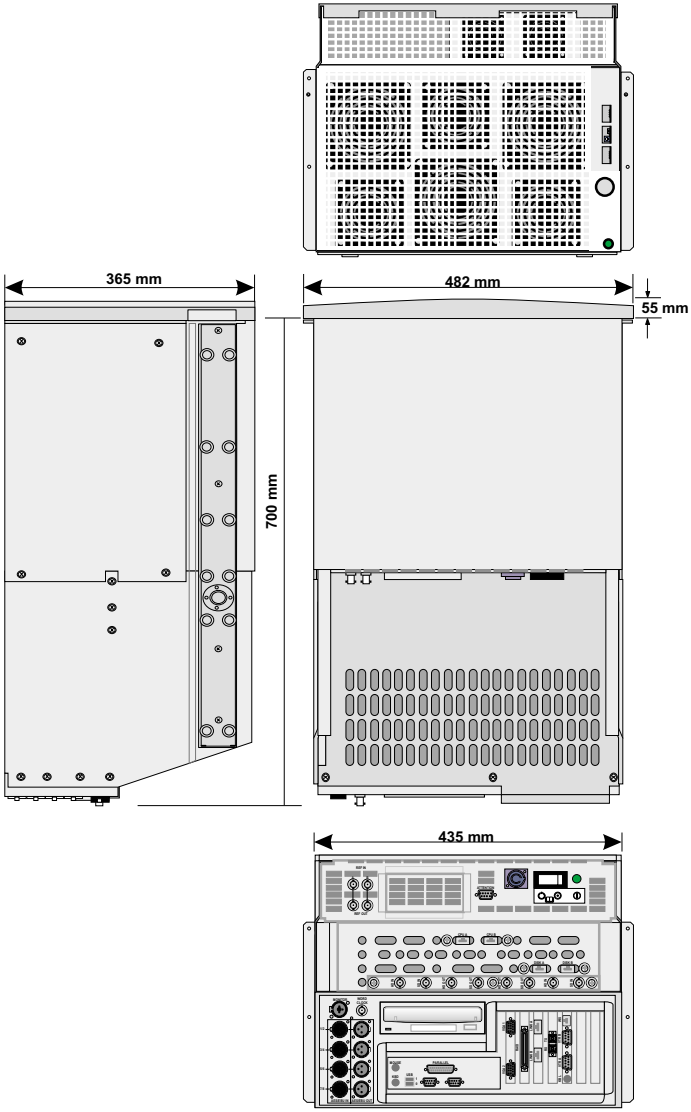
Hand Unit: A supplementary device allowing additional control to that of the menu structure via the thumb-switch and four buttons. A docking port may be supplied for remote control and to allow the Hand Unit to re-charged when not in use.

☞ **Note that the docking port can only be supplied where local regulations permit the use of the specific radio frequency employed by the Hand Unit and docking port. In these cases the Hand Unit connected via a cable.**

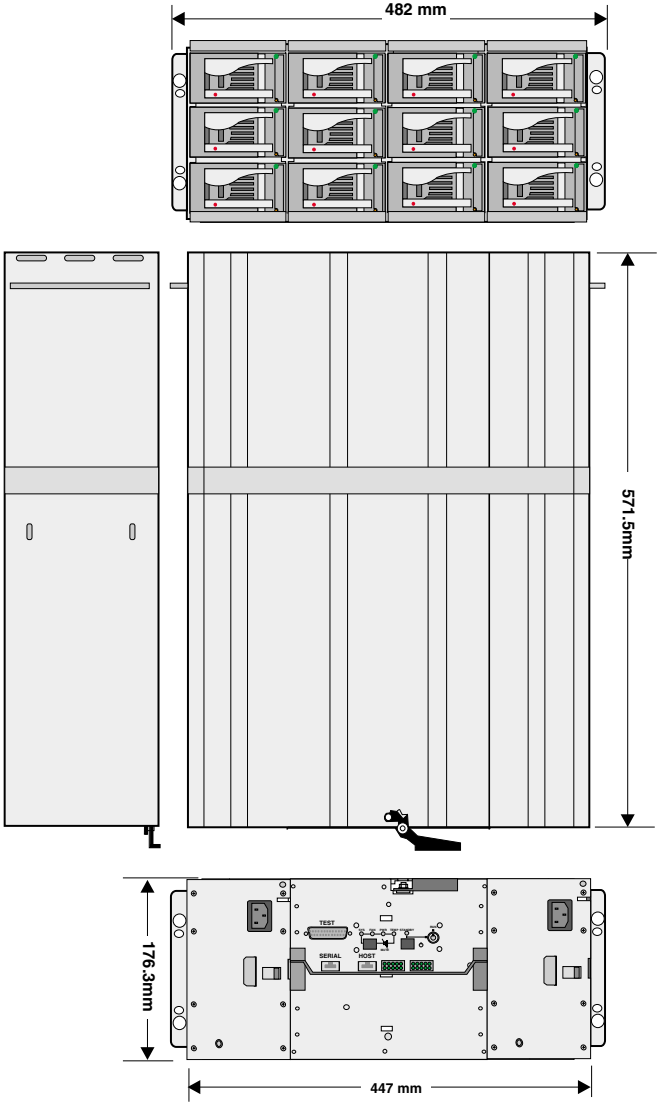
Fader Panel: A unit providing manual control over audio edits, consisting of 8 dynamic level controls, master level control, pan control knobs and track mute switches.

Jog/Shuttle Panel: Another supplementary device which can be used for navigation through clips freeing up the pen and tablet for menu selection.

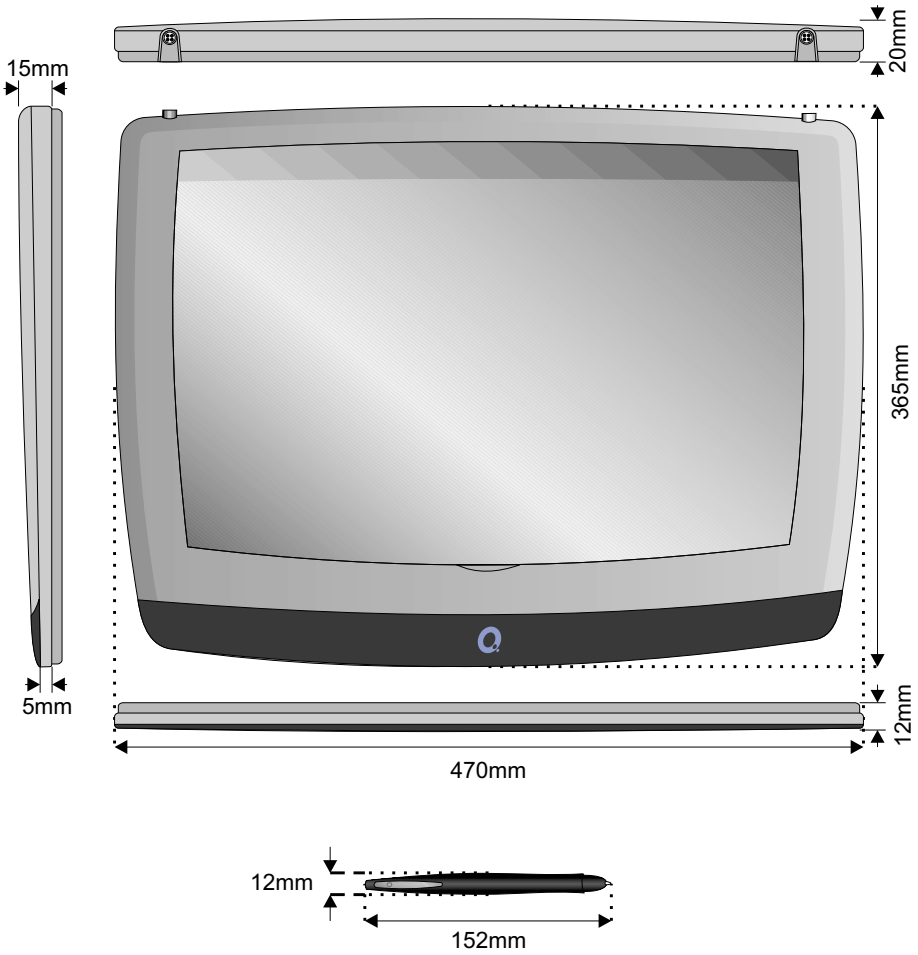
IQ Platform Dimensions (2116-01-nnn)



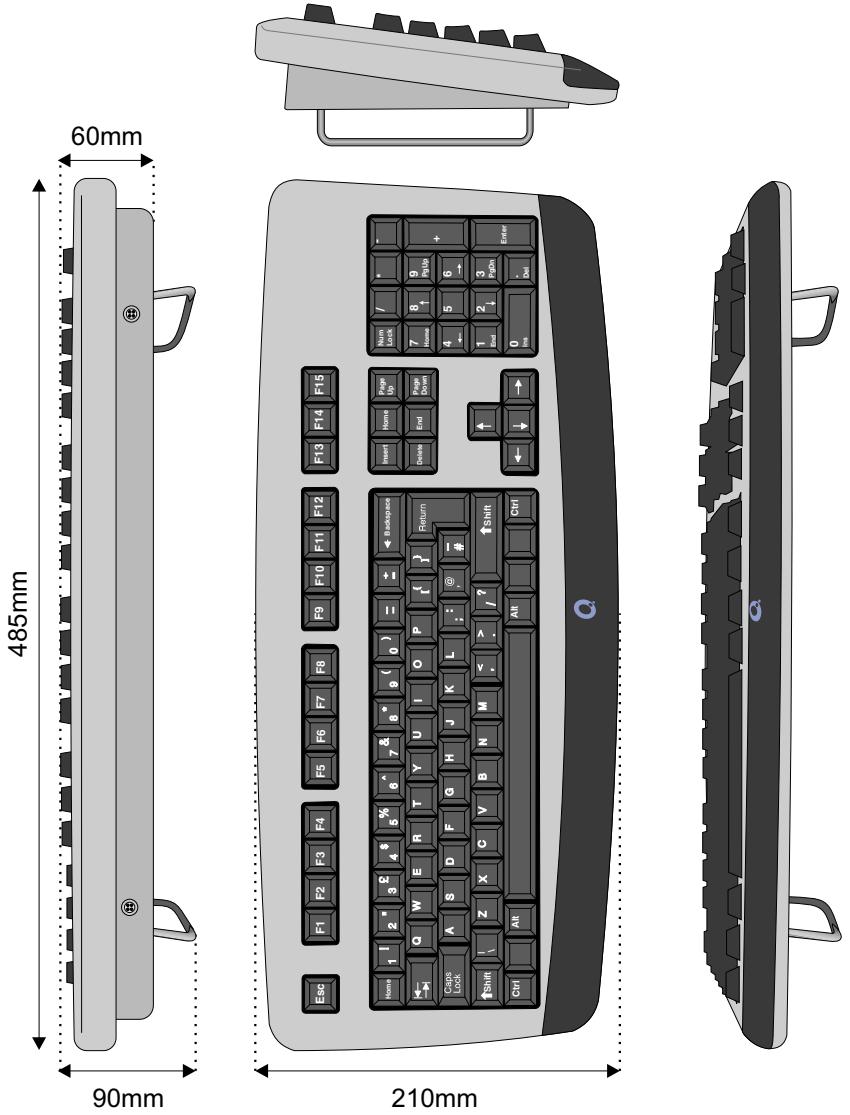
Dylan HD Dimensions (2110-12-nnn Serial)



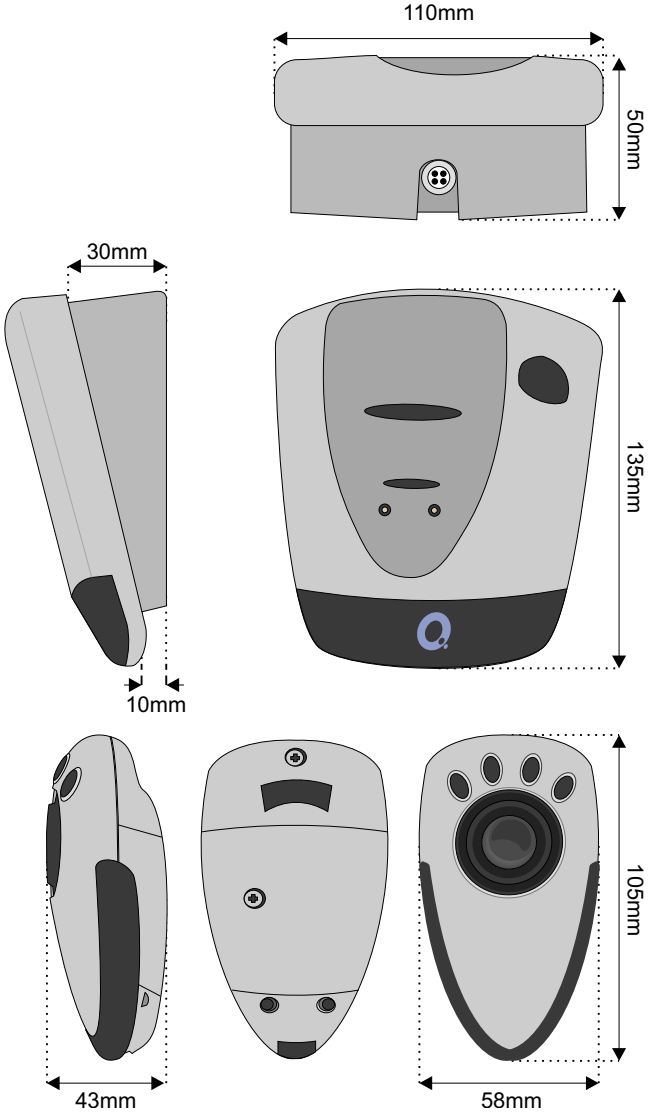
Tablet Dimensions



Keyboard Dimensions

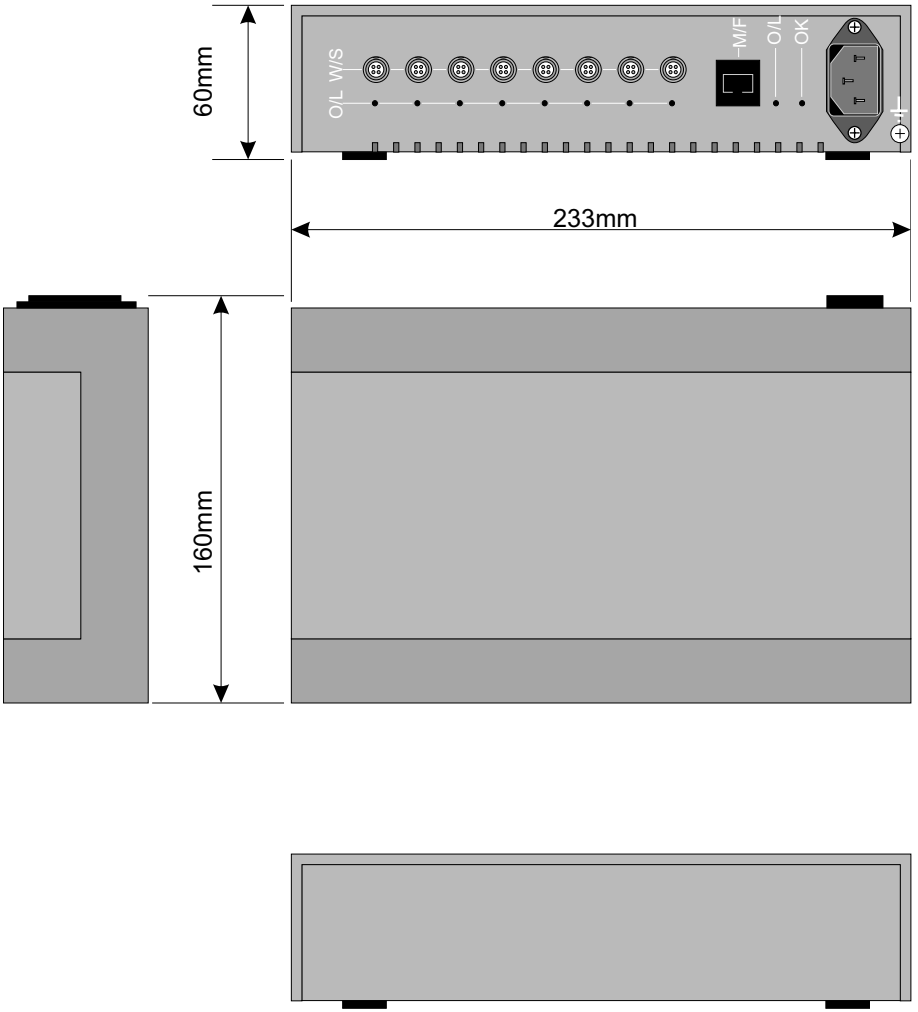


Hand Unit & Docking Port Dimensions

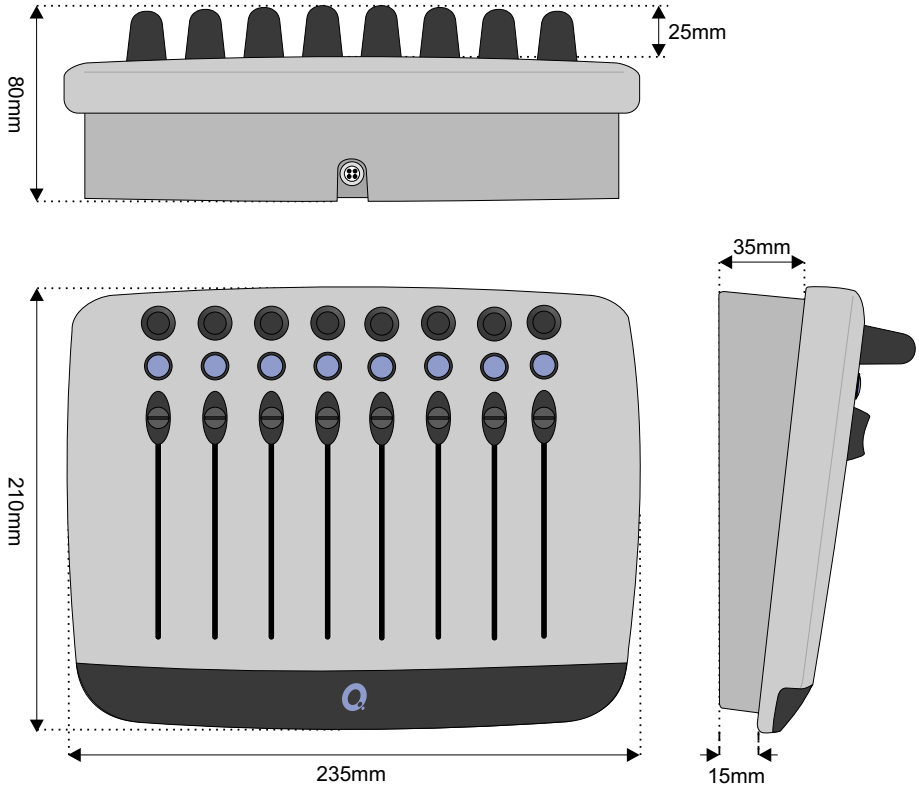


Note that the docking port may not be supplied in some countries.

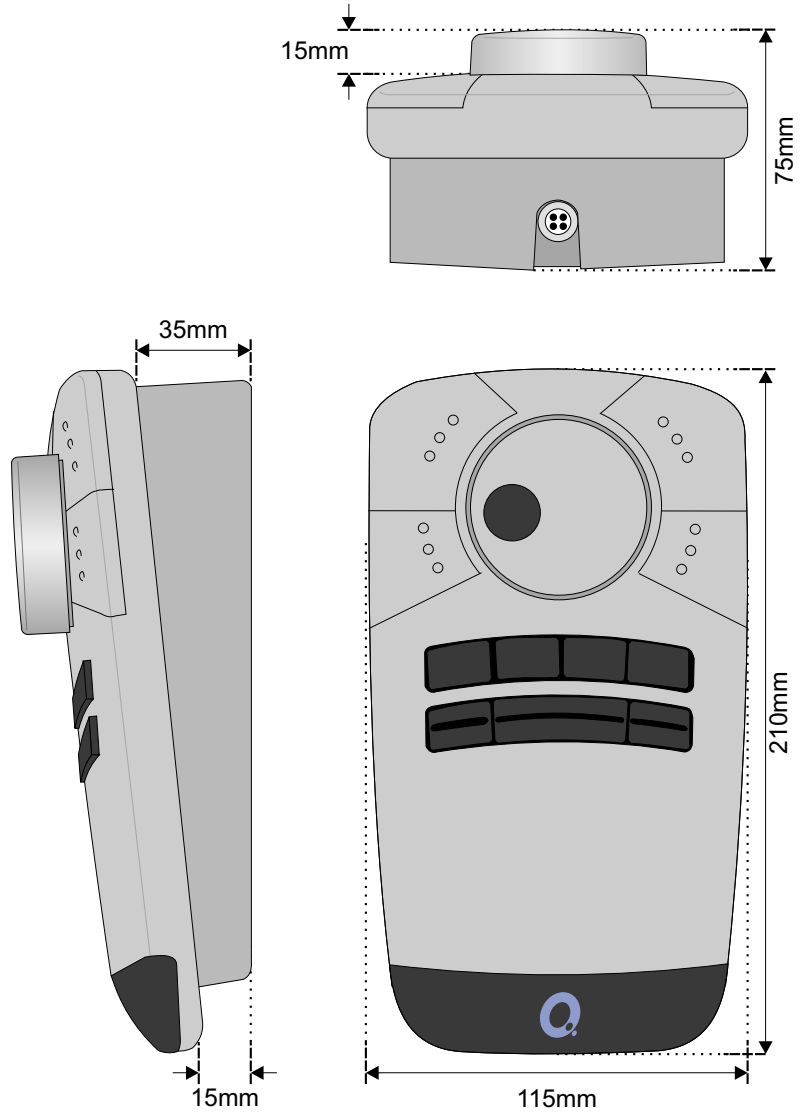
Control Interface Box Dimensions



Fader Panel Dimensions



Jog / Shuttle Panel Dimensions



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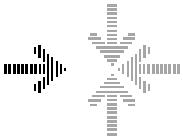
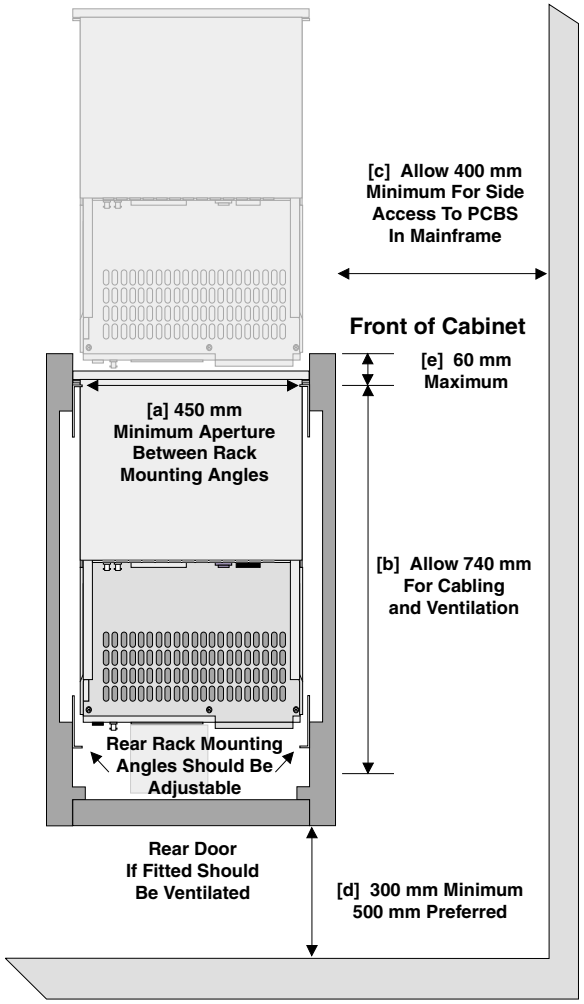


02 - Preparation

General

Equipment Location



The cabinet required to house the system is a standard 19 inch (483 mm) width with dimensions as detailed in the diagram.

The cabinet must be situated such that sufficient access space (1 metre if possible) is provided at both sides and the rear of the cabinets as detailed in the diagram. Values of [a] to [e] in the diagram must be correct to allow the system's units to be correctly installed and to allow maintenance to be performed.

The system is supplied with a rack mounting kit for each unit and includes rack slides and reinforcing plates to be fitted as described in the "Racking" chapter.

Note access to CD-ROM at rear is required for servicing purposes. The CD tray extends 140mm from the rear of the unit.

[a] The smallest aperture into which a unit can be fitted.

[b] The internal depth of the cabinet must exceed this value to ensure correct ventilation.

[c] The distance from the side of the unit and any obstruction (such as a wall or pillar) must be greater than this value to allow access to the side mounted PCBs in the unit.

[d] The distance from the rear of the cabinet and any obstruction (such as a wall or another cabinet) must be greater than this value to ensure correct airflow through the units and allow access.

[e] The distance between the front of the rack mounting bars and the absolute front of the cabinet must not exceed this value otherwise access to the side mounted PCBs is not possible.

The cabling should be carried out using the cables provided or using the shortest possible lengths, to avoid interference from stray electromagnetic fields.

The cabinets should be fitted with units from bottom to top to prevent the cabinets falling forward.

It is strongly recommended that cabinets with extending feet are used to ensure that the cabinet remains stable during installation and during any maintenance.

☛ **WARNING (WI 2) Rack Slides - Never have more than one equipment unit on extended rack slides as this may cause the cabinet to fall resulting in personal injury and possible other damage. (12/97)**

System Air Flow

The air flow through the iQ Platform is front to back, that is air is drawn through the front panels of each unit and expelled at the rear of the unit. The cabinets that are to hold the system should be located carefully to ensure adequate clearance to provide for the correct cooling of the system.

If the system is operated in a confined area, additional external forced air cooling may be required.

☞ **Caution (CI 1) Equipment Ventilation - Ensure that hot air expelled from one unit is not drawn into another as this may cause overheating and subsequent damage. (12/97)**

Electrical Supply

Description

☛ **WARNING (WI 6) Earthing - The equipment must be reliably connected to earth. (12/97)**

The cables supplied with the equipment should be connected directly (shortest cable length) to an earthed electrical supply outlet.

American Standard:	Black	Live
White	Neutral	
Green	Earth	

European Standard	Brown	Live
Blue	Neutral	
Green/Yellow	Earth	

This product is a Class 1 apparatus (as defined in IEC 536) and its accessible conductive parts must always be connected to the protective (earthing) conductor of the supply installation by the green or green/yellow conductor of the supplied 3-core cable, to ensure continued safety of both apparatus and user. The supply installation should be protected so as to safely interrupt prospective short circuit currents at the apparatus in excess of 300 A.

Quantel supplies a 3-core Mains cordset, of the correct current rating, with each item of equipment it despatches. These are full moulded assemblies with a socket to IEC 320 sheet C13 or C19 at the equipment end and a plug to either BS 1363 (for the UK market), CEE 7/7 (for much of the European market), or NEMA 5-15 (for the US and Japanese markets).

Should it prove necessary to replace or modify a Mains cordset provided by Quantel, either through loss, damage or incompatibility with local outlets, do so only with an approved item of equal or higher electrical ratings which also complies with local regulations for materials and construction (for example, the UK IEE regulations or the US NEC).

In particular, the plug to be used in the following countries should comply with the listed standards:

Austria: A5 3112

Denmark: Heavy current regulations AFSNIT 107-2-D.
DO NOT USE THE STANDARD EUROPEAN CEE 7/7 PLUG; although the live and neutral pins will make contact, THE EQUIPMENT WILL NOT BE GROUNDED.

INDIA: BS 546

ISRAEL: IS 32

ITALY: CEI 23-16/VII

RUSSIA: GOST 7396

SWITZERLAND: SEV 1011, SEV 6534-2. 1991

The colour coding of the conductors within the cordset supplied by Quantel will comply with one of 2 colour coded cable types detailed previously.

Modifications to the cordset must only be undertaken by suitably qualified persons. Any plug cut off during modification must be disposed of safety; making it unusable and preventing any hazards arising from its re-use such as accidental insertion into a mains outlet.

Electrical Supply Quality

It is recommended that the unit is connected to a “Technical Electrical Supply”; free from interference and low frequency transients etc. The electrical supply should be clean and sinusoidal, to prevent large transient currents during the peaks of the supply cycle.

Environment

Operating Environment

Care should be taken in the choice of installation environment to ensure reliability. The following points should be remembered when installing the system, to minimize possible failure:

i Avoid installations near sources of direct heat and avoid exposure to direct sunlight or any other strong direct lights. These may cause heat build-up within the unit.

ii Ensure that good air circulation around the rack is provided to prevent heat build-up. Air holes should be given adequate clearance. Ensure that no ventilation holes on the unit are restricted, because over heating will occur.

iii Ensure that power and data cables are not run together and that they are tied back to avoid obstructing the air flow.

iv Avoid areas where large temperature changes are possible as this may unduly stress components, and may also cause condensation damage to the system's magnetic disk media.

v Avoid areas subject to vibration and areas where dust contamination is possible.

vi It is recommended that the unit is connected to a "Technical Electrical Supply"; free from interference and low frequency transients etc. The electrical supply should be clean and sinusoidal, to prevent large transient currents when the unit's switch mode power supply unit is in operation.

☞ **Caution (CT 2) Static Discharges - The Integrated Circuits and other components within the equipment can be irreparably damaged by static fields or discharge. Therefore, adequate precautions must be taken to prevent possible damage. (12/97)**

Shipment & Storage Environment

Before powering up the equipment it must be given the minimum acclimatization time in the operating environment. Powering up the equipment before it has had time to acclimatize may cause damage due to condensation.

If the equipment has just been received or removed from a climate with temperatures at or below 50°F (10°C), do not open the container until the following conditions are met, otherwise condensation could occur and damage to the equipment result. Place packing in the operating environment for the time duration indicated below.

Previous Temperature	Acclimatising Time
+40°F +4°C	13 Hours
+30°F -1°C	15 Hours
+20°F -7°C	16 Hours
+10°F-12°C	17 Hours
0°F-18°C	18 Hours
-10°F -23°C	20 Hours
-20°F -29°C	22 Hours
-20°F -34°C	27 Hours

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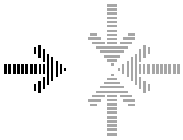


03 - Unpacking

Unpacking

General

Unpacking Advice

The various sections of this document detail the unpacking and handling of equipment as it was delivered. Use the shipping list and the content guide to check that all contents are correct and that no damage has occurred in transit.

Care should be taken when unpacking the equipment, to ensure that all packing material is removed, from around the individual units and their connectors.

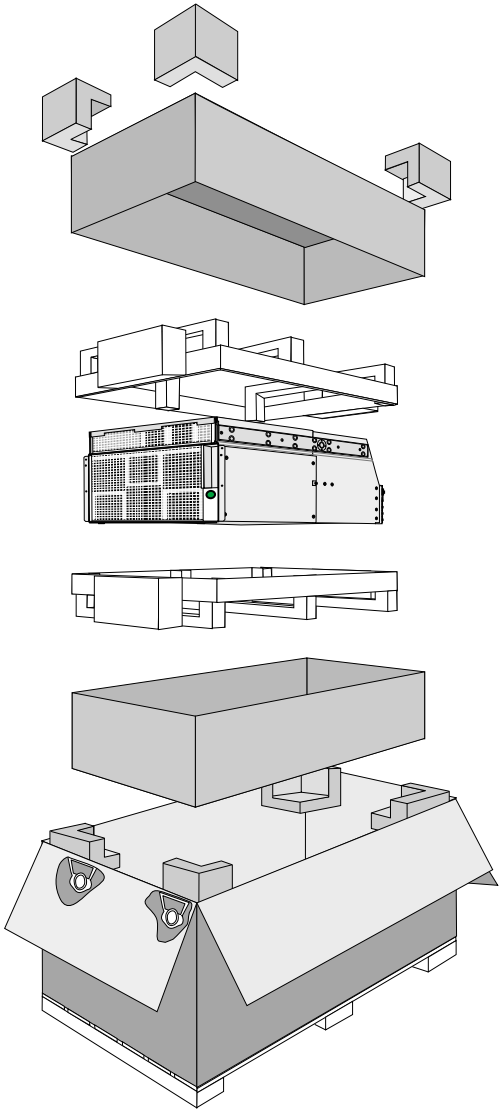
☛ **WARNING (WT 1) Heavy or Bulky Equipment - This equipment may be heavy or have awkward dimensions. Attempting to lift or move the equipment may cause personal injury if due care and consideration are not taken. Before attempting, read any unpacking/handling instructions and always comply with the Health & Safety rules. (12/97).**

iQ Platform

It is recommended that three people should remove the iQ Platform from its packing and to mount it in the cabinet to avoid damage to the unit and those who are unpacking it.

One person should hold the packing still while two people, one either side of the unit, lift it straight up and out of the packing using the handles provided. The packing can then be removed from beneath.

☞ **Caution (CT 1) Disk Drives - This equipment may contain disk drives which are prone to mechanical shock damage (12/97).**



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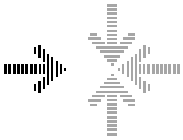


04 - Racking

Rack Mounting

Important Information

The cabinets required to house the iQ Platform system are standard 19 inch (483 mm) as detailed chapter 2 “Preparation”.

This system is delivered with the iQ Platform (8U) and 2 Dylan HD disk arrays (8U in total) which require 16U of contiguous rack space.

The system is supplied with a rack mounting kit and includes rack slides and reinforcing plates to be fitted as described in this chapter.

It is strongly recommended that cabinets with extending feet are used to ensure that the cabinet remains stable during installation and during any maintenance.

The cabinets should be fitted with units from bottom to top to prevent the cabinets falling forward.

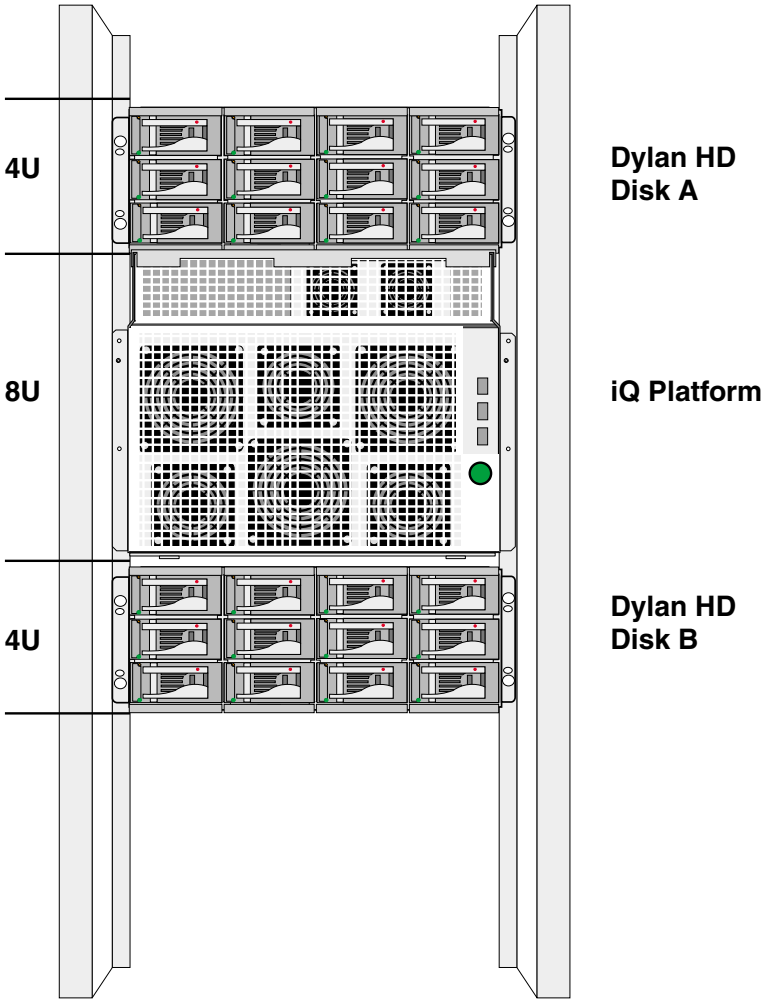
☛ **WARNING (WT 1) Heavy or Bulky Equipment - This equipment may be heavy or have awkward dimensions. Attempting to lift or move the equipment may cause personal injury if due care and consideration are not taken. Before attempting, read any unpacking/handling instructions and always comply with Health & Safety rules. (12/97)**

☛ **WARNING (WI 2) Rack Slides - Never have more than one equipment unit on extended rack slides as this may cause the cabinet to fall resulting in personal injury and possible other damage. (12/97)**

☞ **Caution (CT 1) Disk Drives - This equipment may contain disk drives which are prone to mechanical shock damage. (12/97)**

Rack Layout

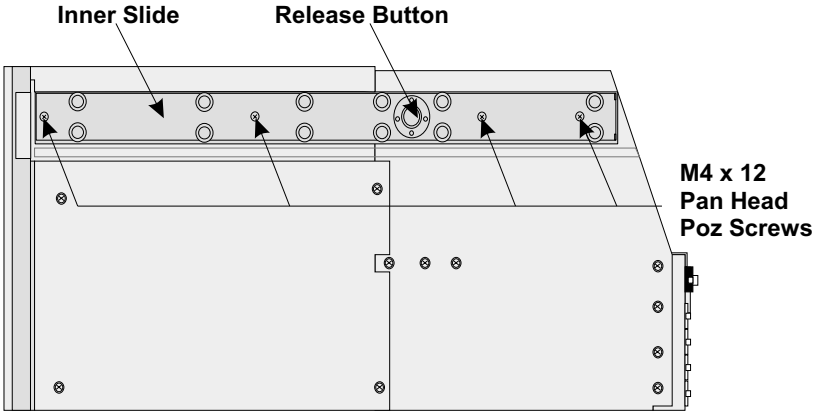
The system's units should be mounted as shown.



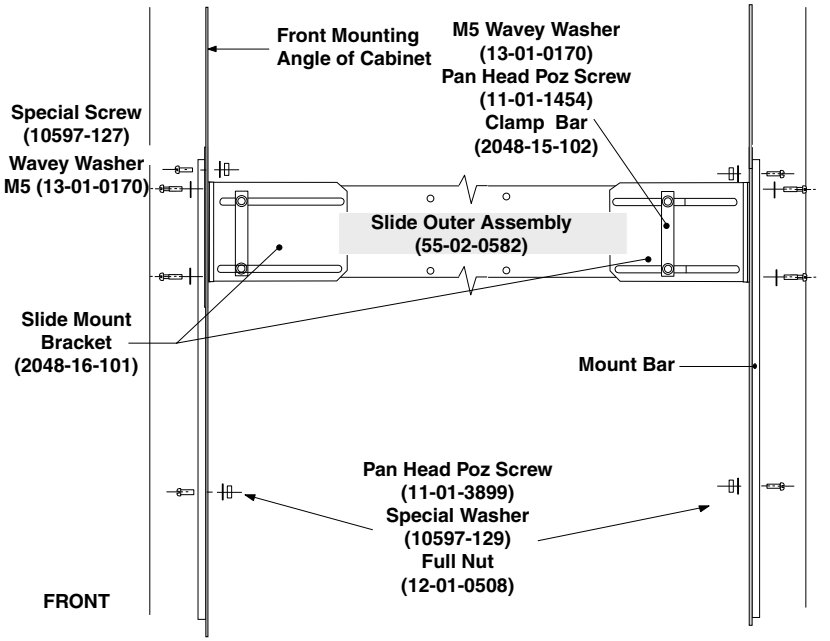
IQ Platform Rack Mounting Procedure

The system's rack mounting kit should be fitted to the cabinet in the following order.

i Locate and fit the two inner slides to the unit as shown below using 4 off M4 x 12 pan head screws and wavy washers:

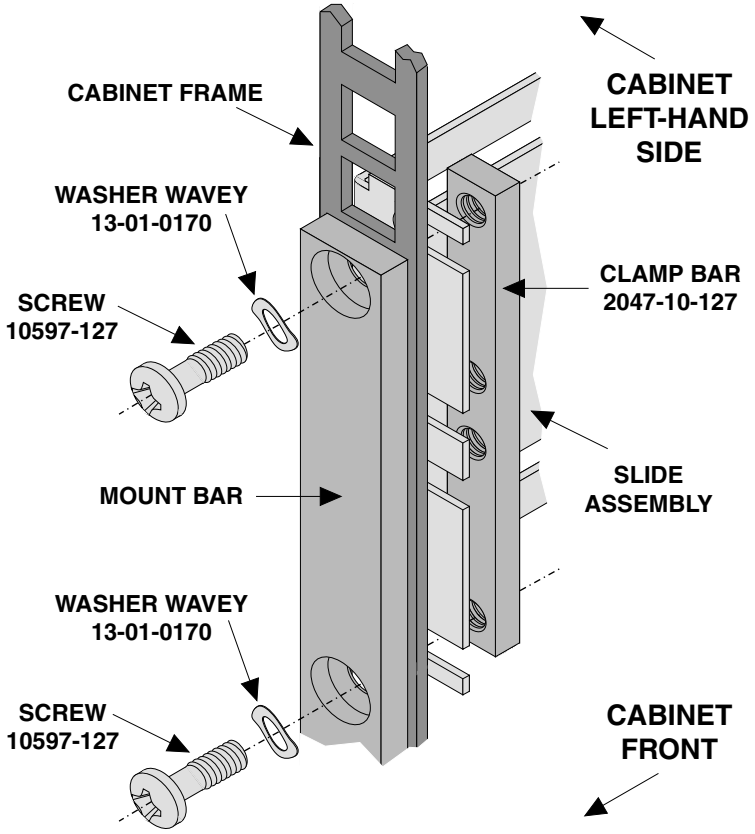


ii Assemble the outer slides as shown below:



iii Locate four identical mounting bars and fix them to the front and rear of the cabinet using the screws (11-01-3899), washers (10597-126) and nuts (12-01-0508). Ensure that the screw heads do not protrude from the mount bar.

iv Fit the relevant outer slide assemblies to the cabinet with the clamp bars (2047-10-127) using screws (10597-127) and washers (13-01-0170).



Note that when fixing the clamp bars, loosely secure them in the first instance in order that the outer slide assembly may be inserted between the clamp bar and the cabinet frame before tightening completely.

v Before proceeding, first lift off the front panel from the unit. These will be replaced when the loading operation is complete.

vi When fitting the unit into the cabinet, first line up the inner slides at the rear of the unit (left and right), with the outer slides at the front of the cabinet. When the inner and outer slides are aligned, begin pushing the unit gently onto the rack slides.

vii The unit will move onto the rack a short way before the ‘buttons’ on each side of the unit’s inner slides, will catch against the outer slides and stop any more movement.

viii To continue loading, hold the buttons down and advance the outer slides a short way so that the outer slides themselves hold the buttons down. The unit can now be pushed further onto the rack.

ix The left and right buttons will stop the unit once more before it is fully loaded into the cabinet. Again, manually hold the buttons down and gently advance the outer slides a short way so that they press the buttons down themselves.

x Continue pushing the unit all the way onto the rack slides and so into the cabinet.

xi Once on the rack slides and in the cabinet, the unit should be secured to prevent it accidentally being pulled out. The unit can be secured with the screws (11-01-1454) and washers (13-01-0196). These screws fit through the front of the unit and into the mount bar.

Note that when the unit is to be pulled out on the rack slides, these screws are released but should always be secured again when work on the slides is complete.

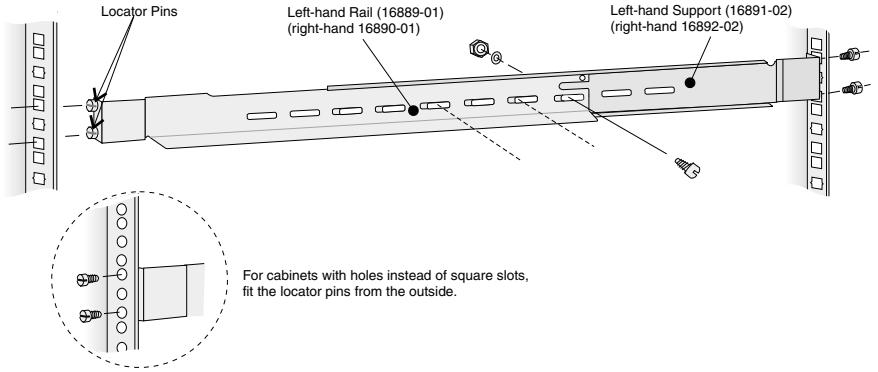
xii Once the unit is successfully loaded onto the rack slides and secured into the cabinet, the front panel of the unit can be replaced.

Dylan HD Disk Arrays

The Dylan HD disk arrays are rack mounted on the angles provided. .

A Fitting the Rails to the Cabinet

The unit must be rack mounted on the angles provided. The unit is 19" (483mm) wide and can be mounted into most standard 19" cabinets.



i Fit 2 locator pins (16931-02) and washers to the end of the left-hand rail (16889-1). Fit 1 locator pin and washer into the middle hole in the end of the left-hand support (16891-2)

ii Place the left-hand support behind the left-hand rail and extend the pair until they are approximately the same length as the distance between the front and back flanges of the cabinet.

iii Fit 3 x M5 Pan Head screws, washers and nuts finger tight to join the left-hand rail and left-hand support together.

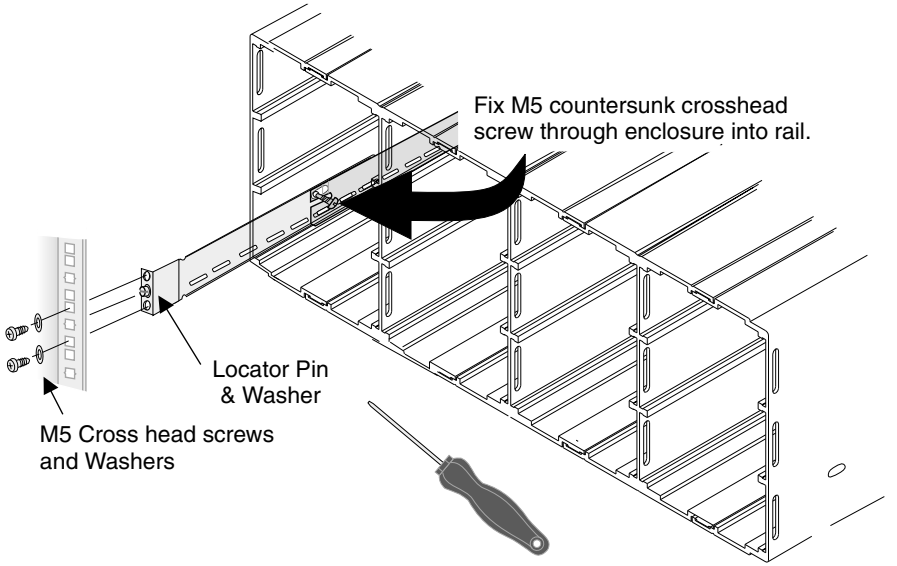
iv Place the location pins (on the front end of the left-hand rail), from the inside, into the correct square slots in the cabinet front flange. Adjust the length of the left-hand rail/support assemble so that the locator pin on the end of the left-hand support fits into the correct square hole on the inside of the cabinet's rear flange.

v Secure the rear of the assembly to the cabinet rear flange using 2 x M5 Pan Head screws and washers.

vi Ensuring that the assembly is fitted tightly between the front and rear cabinet flanges tighten the 3 M5 Pan Head screws joining together the left-hand rail and support.

vii Repeat for the right-hand side using the right-hand rail (16890-1) and the right-hand support (16892-2)

B Securing the Enclosure to the Rails

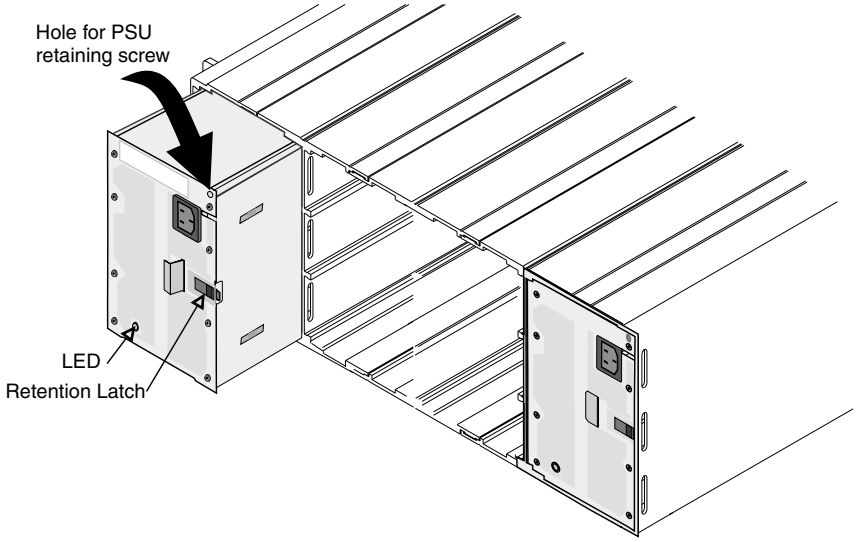


i Secure Enclosure into rack angles, via the two PSU compartments using 2 x M5 countersunk screws. These fit into the captive nuts in the left-hand and right-hand rails.

C Fitting the PSU Modules

There are two identical Power Supply Modules which are fitted into the left (bay 1) and right (bay 4) positions at the rear of the enclosure.

☛ **Warning: Ensure that no mains supply is connected to either PSU module before attempting to fit the Interface Module.**

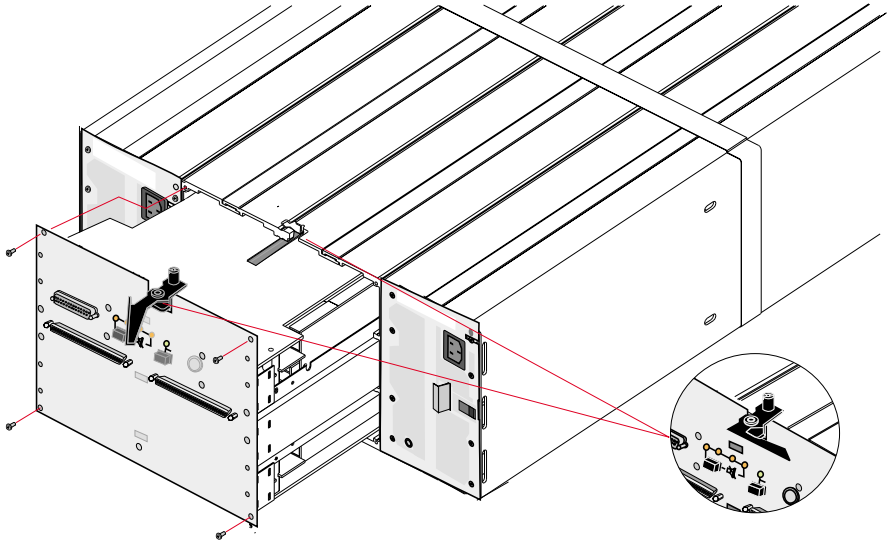


Hold the latch while pushing the module gently home into the bay, ensure that it is fully engaged and that the retention latches are engaged into the enclosure bay. Fit and tighten retaining screw on each PSU module panel.

☛ **Warning: The screws must be fitted to prevent unauthorised removal of either PSU module and exposure to energy hazards.**

D Fitting the Interface Module

The Interface Module is fitted into the rear of the enclosure between the 2 PSU modules as shown bellow.



Before attempting to fit the Interface Module ensure that all packing has been removed from around the connectors and that there is no damage to the connectors.

☛ **Warning: Ensure that no mains supply is connected to either PSU module before attempting to fit the Interface Module.**

With both hand carefully slide the Interface Module into the enclosure locating the handle into the guide as shown.

Apply a firm pressure the rear panel of Interface Module until the rear panel is flush with the PSU Modules already fitted. The use the handle to lock the Interface Module in position.

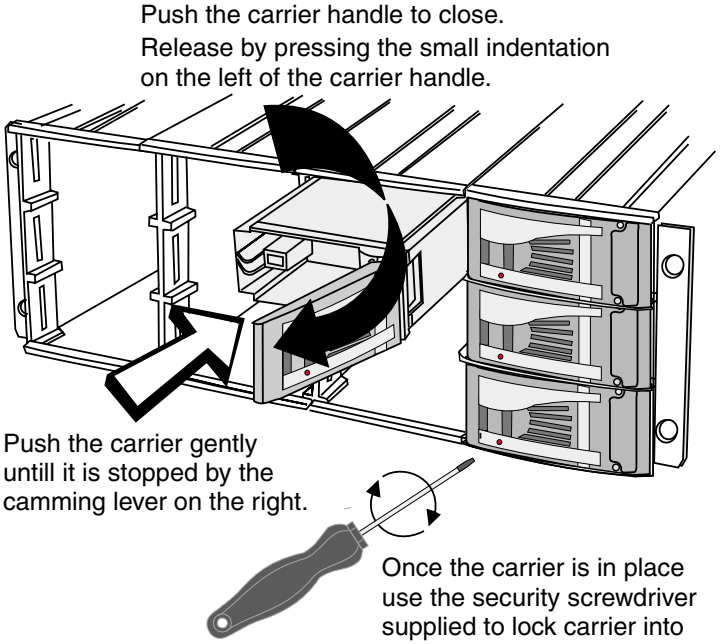
☞ **Caution: Excessive pressure or misalignment of the module can cause irreparable damage to the module and the enclosure.**

Fit and secure the 4 fixing screws in the 4 corners of the Interface Module's back panel.

☛ **Warning: The screws must be fitted to prevent unauthorised removal of the Interface module and exposure to energy hazards.**

E Fitting the Disk Carriers

☞ **When delivered the disk drives within the carriers are formatted but have no nominated position within the enclosure. Once data has been saved on these disks, however, their position within the enclosure is critical.**



i Carefully slide the each disk carrier into an empty compartment in the enclosure.

ii Push the carrier gently until it is stopped by the camming lever on the right hand side of the carrier handle.

iii Push the carrier handle on the left-hand side until it clicks in to position.

iv Secure the carrier in enclosure using the security screw driver provided. Turning the screwdriver anti-clockwise will lock the carrier and prevent accidental release of the disk carrier during operation.

Workstation

Workstation Layout

The workstation consists of a tablet and pen, hand unit (with docking port), fader panel, jog / shuttle panel and a keyboard as shown below. The connection between the control system and iQ Platform is via a serial link.

The tablet should be situated away from stray magnetic fields and electromagnetic interference. The workstation requires a VGA monitor to display the output of the system, situated in the best position for the operator.

Mounting the Tablet

The tablet is normally placed on top of the desk but can be mounted flush with the desk surface if required. There are no fixing points to secure the tablet to the desk top and therefore desks with steep inclines, or smooth surfaces should be avoided.

☞ **Caution: Do not dismantle the tablet or its controller as the delicate electronics can be easily damaged.**

Mounting the Keyboard

The keyboard is normally placed on the desk. There are no fixing points to secure the keyboard to the desk top and, therefore, desks with steep inclines or those with smooth surfaces should be avoided.

Mounting the Fader Panel

The fader panel is normally placed on the desk. There are no fixing points to secure the panel to the desk top and, therefore, desks with steep inclines or those with smooth surfaces should be avoided.

Mounting the Jog / Shuttle Panel

The jog / shuttle panel is normally placed on the desk. There are no fixing points to secure the panel to the desk top and, therefore, desks with steep inclines or those with smooth surfaces should be avoided.

Assembling the Hand Unit / Mounting the Docking Port

☞ **The hand unit is designed for wired operation. Where the local environment and regulations permitand where the docking port is provided it can be used in wireless mode.**

☞ **Note that the docking port can only be supplied where local regulations permit the use of the specific radio frequency employed by the Hand Unit and docking port.**

A Important Battery Information

☞ **Please ensure that this information is made available to installers, users and service personnel.**

☞ **Do not fit batteries in the Hand Unit if the cable is connected.**

☛ **Warning: Do not open or mutilate a battery, dispose of in a fire, expose to heat above 54°C (130°F), immerse in water, install improperly or short battery terminals. These actions may cause the battery to overheat, leak or explode causing burns and personal injury.**

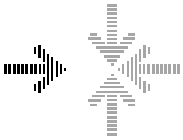
☛ **Warning: Do not solder battery terminals.**

☛ **Warning: Do not store or carry batteries in a way that could lead to the terminals being short-circuited.**

☛ **Warning: Do not store batteries in a hot or humid place.**

iQ System

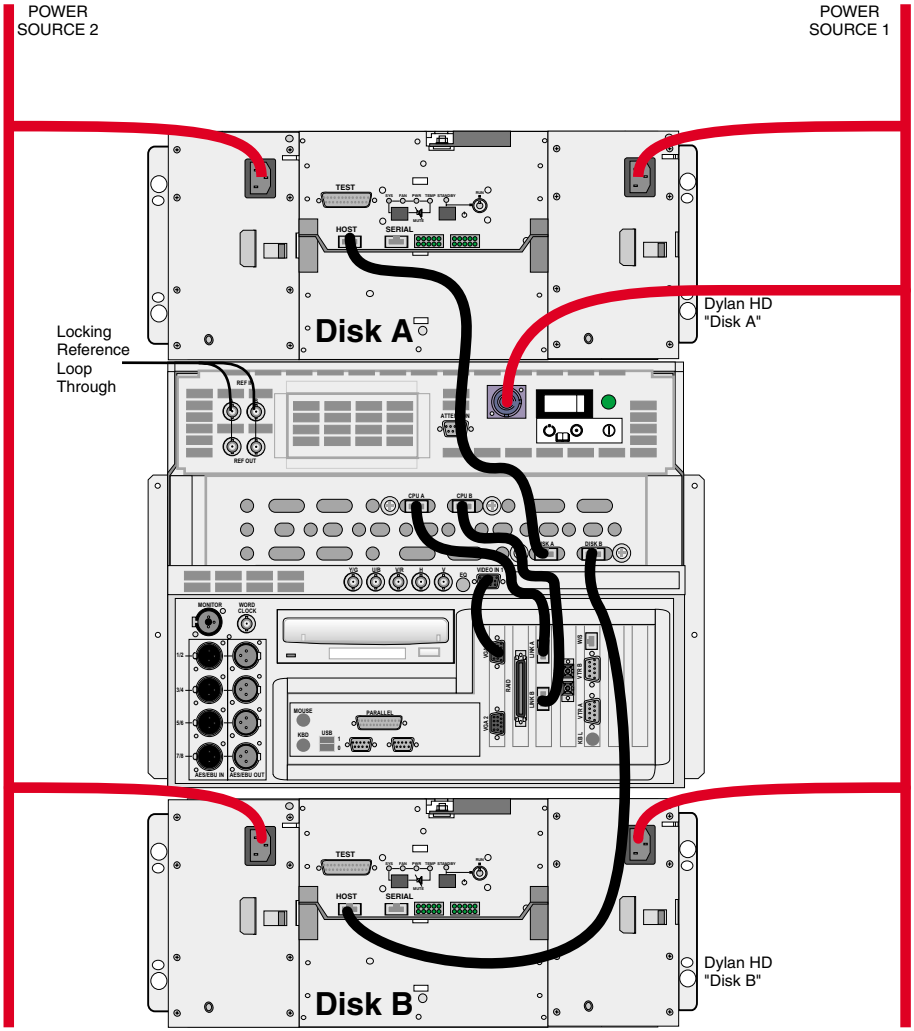
Installation Manual



05 - Connection

System Connection

System Connection Overview



Connect From	Using Cable	To
IQ Platform “VGA 1”		IQ Platform “Video In 1”
IQ Platform “CPU A”	31-10-9020	IQ Platform “LINK A”
IQ Platform “CPU B”	31-10-9020	IQ Platform “LINK B”
IQ Platform “Disk A”	31-10-9015	Dylan Disk A “Serial”
IQ Platform “Disk B”	31-10-9015	Dylan Disk B “Serial”

Electrical Supply Considerations

The Dylan HD disk arrays have dual independent electrical supply inputs, switching and PSUs to provide fault tolerance. It is therefore recommended that the two separate mains inputs to each unit are supplied from a separate mains supply spur (of the same phase) to maintain the fault tolerance of the compete system.

The System Connection schematic shows the left-hand electrical supply input of each unit connected to supply 1 and the right-hand connected to supply 2. It is recommended that supply 1 and supply 2 have separate circuit breakers so if one of the pair is tripped by a fault condition the system will remain operational.

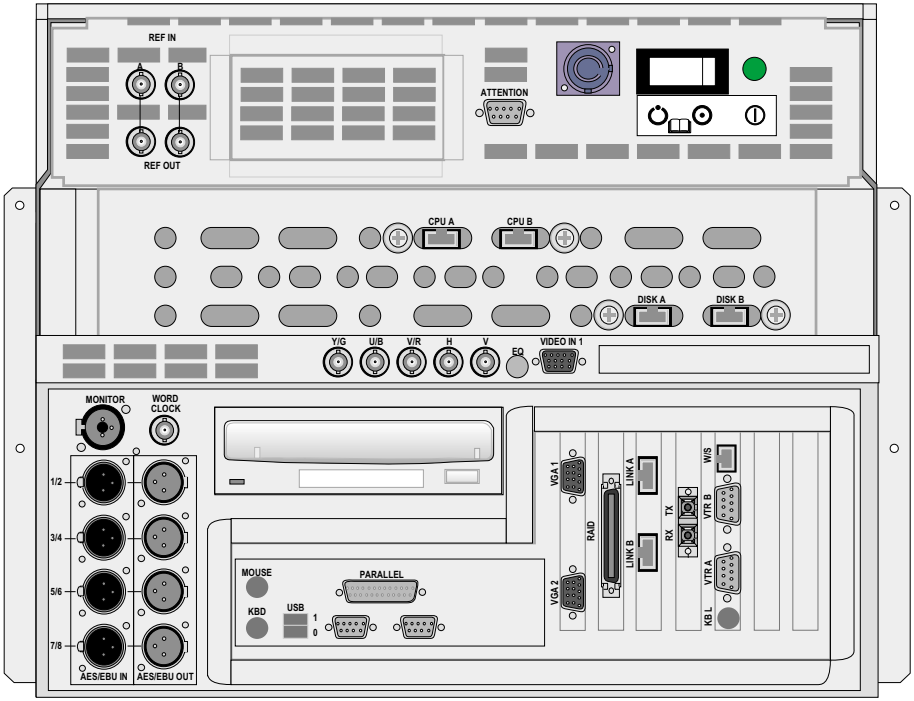
☛ **WARNING: BOTH OF THE MAINS ELECTRICAL SUPPLY CONNECTIONS TO EACH UNIT MUST BE REMOVED TO GIVE COMPLETE ELECTRICAL ISOLATION.**

Cabling Considerations

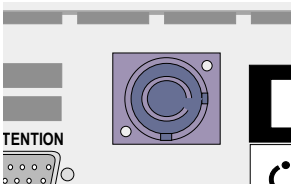
The cable connections to the rear middle panel of the iQ Platform must be looped and tied back so that the PC Sub-system can be removed for maintenance purposes.

IQ Platform

Rear Panel Layout



Mains Connection

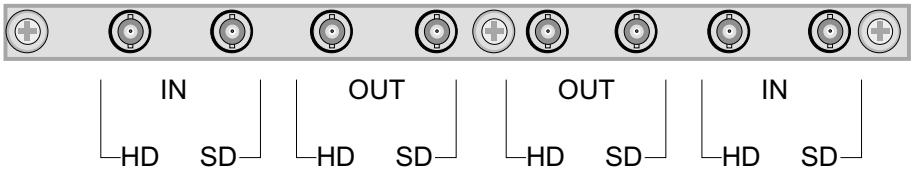


The iQ Platform's mains connector and mains switch/circuit breaker are situated on the rear panel. The connector is a 20 amp Nuetrik Powercon NAC3FCA type which is supplied with a mating cable (21 amp rated, 13 amp fused).

Digital Video Connections

A General

The iQ Platform provides the following digital video connections on the rear middle panel :



2 x SD (standard video) inputs

2 x SD (standard video) outputs

2 x HD (high definition video) inputs

2 x HD (high definition video) outputs

☞ **Caution: This equipment provides full broadcast specification video outputs when connected to a full broadcast specification studio locking reference. If the system is operated in 'free run' mode it cannot provide the accuracy of line frequency required for full broadcast specification video output. The 'free run' mode should only therefore be used for setup, configuration and test purposes.**

B SD Video Inputs and Outputs

The iQ Platform provides 2 independent SD inputs ("SD IN A" and "SD IN B") it also provides 2 independent SD outputs ("SD OUT A" and "SD OUT B"). These inputs and outputs are assigned within the iQ applications.

These SD bit-serial digital video connections (with embedded audio conforming to ANSI/SMPTE 272M-A) allow the system to be connected directly into bit-serial environments and to equipment conforming to ITU-R BT 606 & 656-2. See iQ Platform Technical Specification for full details.

When embedded audio is decoded from the input video “Group 1” is used. When embedded audio is output by the iQ Platform the audio “Group 1” is be used.

Each embedded audio input must have present one packet of 4 channels of digital audio (even if it is silent). The audio must be synchronous to 48 kHz.

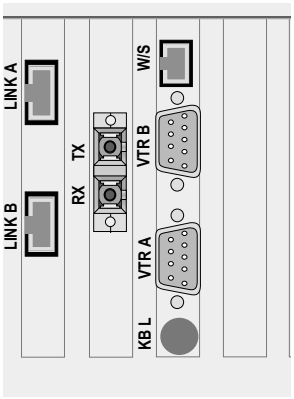
C HD Video Inputs and Outputs

The iQ Platform provides 2 independent HD inputs (”HD IN A” and “HD IN B”) it also provides 2 independent SD outputs (”HD OUT A” and “HD OUT B”). These inputs and outputs are assigned within the iQ applications.

These HD bit-serial digital video connections (with embedded audio conforming to SMPTE 299M) allow the system to be connected directly into bit-serial environments and to equipment conforming to SMPTE 274M, SMPTE 292M, SMPTE 295M and SMPTE 296M. See iQ Platform Technical Specification for full details.

Serial Control Connections

A General



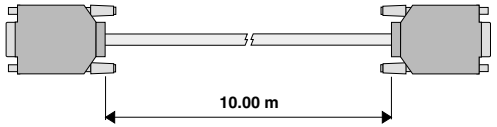
The system provides a dedicated workstation control connection (”W/S”) and 2 VTR control connections on the rear panel.

For the workstation a shielded RJ-45 connector is used and for the VTR connections two 9-way D-subminiature female (DE-9S) with metric (M3) female screw-lock are used with the following signal connections.

B VCR Connections

The VCR connectors have the following pin-outs.

Pin	Function	Pin	Function
1	*Chassis Gnd	6	0 V
2	Receive -	7	*Receive +
3	*Transmit +	8	Transmit -
4	0 V Transmit	9	
5			

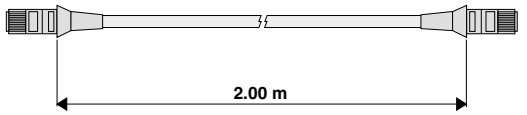


A10 metre VTR control cable is provided. This is a screened 6-core (3 x twisted pair) cable with the following connections.

9-way Male		9-way Male
Pin 2	Receive - (red)	Pin 2
Pin 7	Receive + (white)	Pin 7
Pin 3	Transmit + (brown)	Pin 3
Pin 8	Transmit - (white)	Pin 8
Pin 9	Ground (b/w)	Pin 9

C Workstation Connection

This serial connection is designated for use by the workstation and connects to the “W/S” socket on the Control interface box.

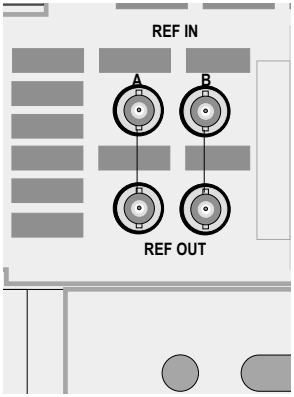


A10 metre workstation control cable is provided. This is a shielded 8-core cable which has pin to pin connections.

SCSI Port

The iQ Platform provides a SCSI port for test purposes only.

Locking References

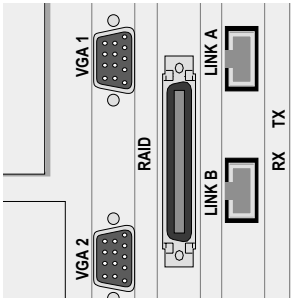


The iQ Platform uses input reference (obtained from the selected input video source) and 2 output locking references (A for Standard video and B for HD video to match the video standard to be output by the system).

The SD reference input “A” allows the iQ Platform to accept an analogue reference signal conforming to ITU-R BT 601 & 656-2 and lock the system’s output to this standard.

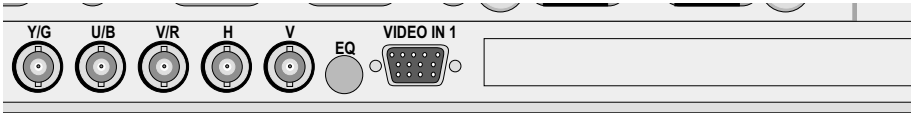
This HD reference input “B” input allows the iQ Platform to accept an analogue video reference signal conforming to SMPTE 274M and lock the system’s output to this standard.

SVGA Monitor Output



The platform provides 2 standard VGA monitor outputs. The “VGA 1” output is connected directly to the local workstation monitor (or to a remote workstation monitor via the video equaliser). The “VGA 2” output is for secondary output and diagnostics purposes.

On platforms that include a Video Equaliser (for installations where the Workstation is to be located away from the platform) a monitor quality standard SVGA output is provided via 5 BNC connections. These BNC outputs are connected to the SVGA workstation monitor. On platforms fitted with the Video Equaliser the “VGA 1” connection is connected directly to the “Video In 1” connection using a short cable.



The Video Equaliser has 3 settings which are made using the rotary switch on the panel:

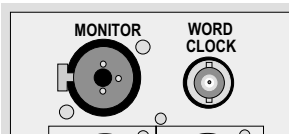
0 - cable lengths from 0 to 15m

1 - cable lengths from 15m to 50m

2 - cable lengths from 50m to 100m

Note that the 5 cables must be same length and of the same cable type to ensure that the video image that appears on the Workstation monitor is not distorted.

Analogue Audio Monitor



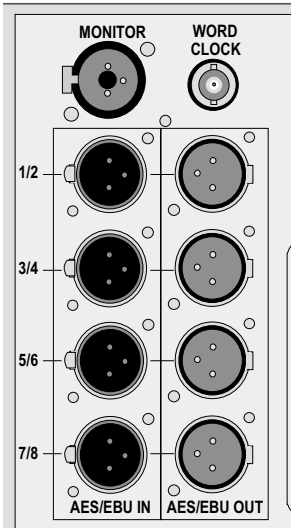
This combination socket provides both an analogue audio monitor output via an audio jack socket and an AES/EBU audio monitor output via the 3-pin XLR socket.

The analogue audio is a high impedance connection with a minimum load of 15 k Ω used for diagnostic output only. This output is not clean and should not be used as an analogue output device.

☛ **Warning: If headphones are used on this output an approved audio limiter must be used.**

The 3-pin XLR audio connector provide a twin-channel digital AES/EBU 48 kHz audio outputs.

Digital Audio Connections



AES/EBU Inputs: the four 3-pin XLR audio connectors allow the are iQ Platform to accept four twin-channel (stereo) digital AES/EBU 48 kHz audio inputs.

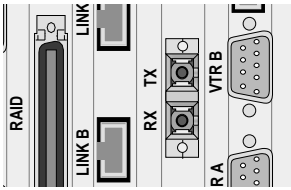
The system must be provided with synchronous digital audio, ie; the audio sample rate must be synchronised to the video reference signal that the system is receiving, as set out in the AES/EBU standard.

AES/EBU Outputs: The four 3-pin XLR audio connectors provide the iQ Platform's four twin-channel digital AES/EBU 48 kHz audio outputs.

Word Clock Output:: This is the 48 kHz word clock output used to lock an external analogue to digital converter.

Fibre Optic Connection

A Description



A standard SC duplex fibre optic connection is provided on the rear panel of the iQ Platform for 1000base-SX Gigabit Ethernet. This is used to connect the iQ Platform into a Clipnet network of Quantel and 3rd party products via 62.5/125 µm (or 50µm) fibre optic cabling. A connection can be made directly to another unit or via a HUB.

Clipnet is implemented using Gigabit Ethernet as a network carrier, with TCP/IP as a low level network protocol, and the Quantel Clipnet Protocol (QCP) as a high level protocol.

B Important Information

The Modules contain a class 1 laser product. Although the standard EN 60950 does not require a warning to be made, avoid eye contact with the beam emitted and follow any special instructions given by the manufacturer when attending to the devices.

C Connection

Do not remove dust cover until immediately prior to installation.

Clean the connector as detailed in the Maintenance chapter.

To insert the connector hold the connector by the strain relief boot directly behind the connector housing.

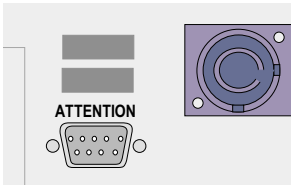
Insert the connector into the socket in the correct orientation so that keys in the connector and socket match and both latching arms ‘click’ into place.

D Disconnection

Grasp the connector housing and disconnect the housing from the unit. Cover connector ends with clean dust caps when not in use.

Attention Connection

A Description



The “Attention” port on the rear panel of the iQ Platform provides a remote monitoring facility that can be used to raise an alarm if a fault condition occurs. This connection should be used to inform the installation engineer that the machine requires attention.

Connections to a change over relay are provided with a fused +5V supply and 0V.

If a ‘loop back’ connector (Pin 7 connected to Pin 9, Pin 3 to Pin 5) is installed here, then an alarm device inside the crate will sound when attention is required.

Alternatively, an equivalent device or indicator can be connected externally and situated in a suitable ‘Engineering’ location.

Pin	Function	Pin	Function
1	0 V, Relay common	6	0 V
2		7	+5V, Internal buzzer
3	Fused +5V Supply	8	Fused +5V Supply
4	Relay normally open	9	Relay common
5	Relay normally closed		

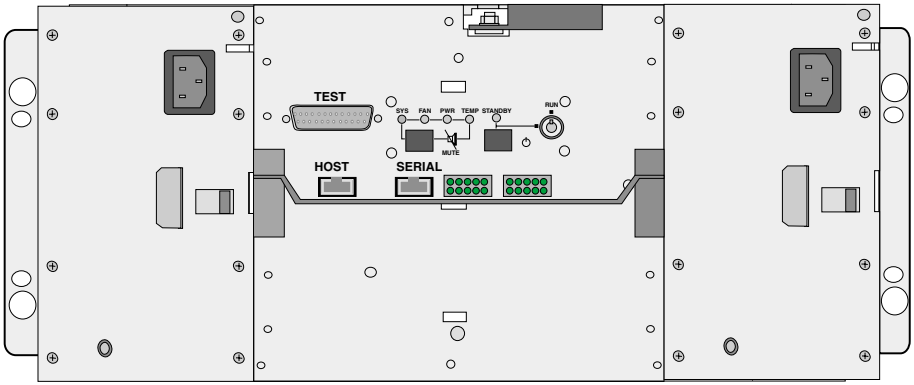
Note (1): The relay rating is 0.25 A.

Note (2): Relay state for attention is ‘Normal’.

This means that, for an externally wired circuit, the relay of a machine that is powered off will be in the ‘attention’ state, but the +5V supply from it will be off. Therefore, if positive indication of a powered off machine is required, an external power supply will be necessary.

Dylan HD

Back Panel Details



Mains Connection

The two independent power supply modules require individual Mains connections.

☞ **Caution: The PSU Modules are not auto-ranging, therefore failure to select the correct range will damage the modules.**

☞ **Caution: When the Dylan HD is shipped to certain countries an additional Electrical Supply Filter unit is provided to comply with applicable standards in those countries. When this filter unit is supplied it must be used.**

Host Connection

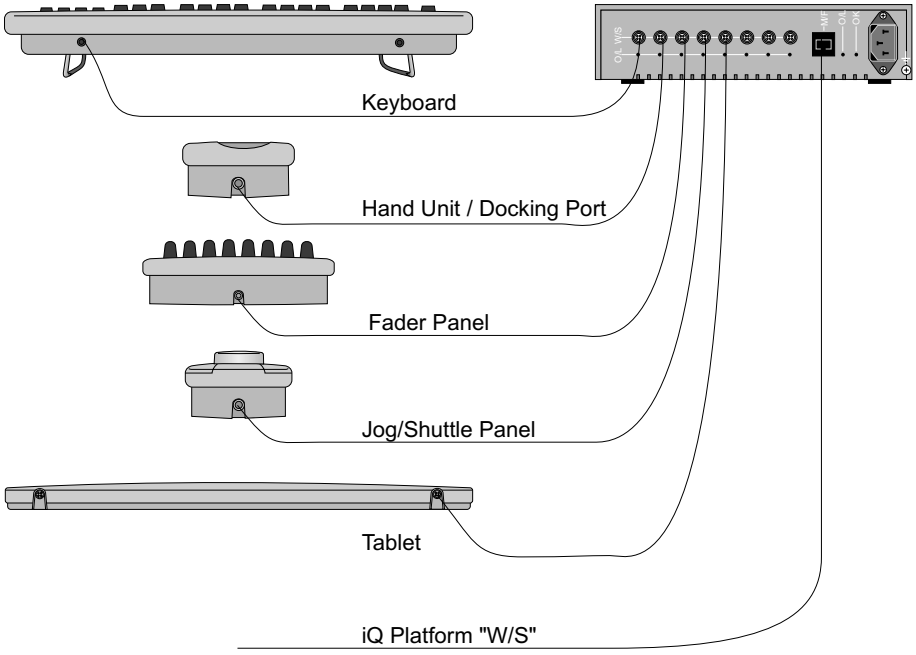
The “Host” socket on the rear of the Interface panel is connected to the iQ Platform as detailed in the “System Connection” section.

Workstation

Inter-connection

The Control Interface box is connected to the iQ Platform “W/S” socket (RJ-45) and the Control Interface box “M/F” socket (RJ-45) using the serial cable provided.

The components of the Workstation are connected to the Control interface box as shown:

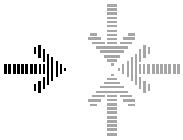


All Workstation units connect to the Control Interface box using identical leads provided and can be plugged into any of the “W/S” sockets.

☞ **Note that if the docking port is not provided a cable must be fitted directly between the Hand Unit and the Control Interface unit.**

iQ System

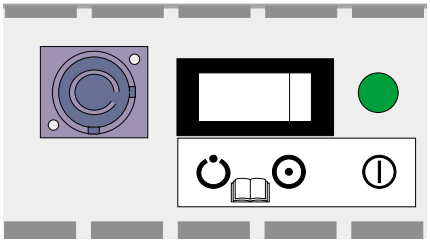
Installation Manual



06 - Start-up

Startup & Shutdown Procedures

IQ Platform



The iQ Platform contains 2 separate power supply units. One for the Image Processor unit (in the front compartment) and the other for the PC sub-system (in the rear compartment). These are turned on using the switches on the rear top panel of the unit.

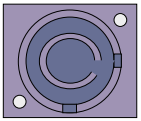
The system is designed to be powered and operating continually. However, when the system is to be powered-down and powered-up, the following should be remembered.

A Initial Start-up

Before attempting to power-up the system for the first time, ensure that it has the correct mains supply and that the system's components are correctly connected together.

B Normal Start-up

Always ensure that the control station components are turned on before the iQ Platform is turned on or reset.



1. Install power connector. This supplies power to the ATX PSU (in the PC sub-system) and activates the ATX standby DC O/P supplying power to the rear panel illumination LED's. Note that the front panel LED will show Red as power is connected.

2. Switch on the breaker. This activates the standby mode of the Image Processor unit PSU. Note that the front panel LED will show Red.

3. Press the green button. This is the remote power on/off switch and turns on the ATX PSU to supply power to the PC sub-system and turns on the Image Processor PSU to power to the Image Processor unit the unit's fans. Note that the front panel LED will flash red during system startup then turn solid blue when the iQ program is running to indicate that the system is ready for use.

Note that from power up the windows operating system takes approximately 1 minute to boot up then the system is available for use.

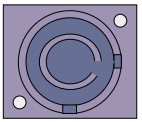
C Power-down Procedure

Always ensure that any graphics items have been saved.

1. Shut down the iQ operating system.

2. Press and hold the green button for five seconds, this remotely turns off all main outputs returning both PSU's to Standby.

3. Switch off the breaker, this turns off the Image Processor PSU. At this point the rear panel illumination LED's are still on.



4. Remove power connector.

Note that if the breaker is switched off before the ATX PSU main output, then the PC sub-system remains powered and operating. Only the Image Processor unit is powered down. To re-apply power to the Image Processor unit, simply turn on the breaker.

Dylan HD

A Initial Start-up

Before attempting to power-up the system for the first time, ensure that it has the correct mains supply and that the system is correctly connected together.

B Normal Start-up

The unit can be set to either enable or disable user power on and off. This is done using the lockable switch on the Interface panel on the rear of the unit.

If this switch is in the “Run” position the unit will be powered up and run continuously. If the switch is in the “Standby” position the black button under the “standby” LED will power up and run the unit. This button must be held for several seconds until the unit powers-up.

Note that the “standby” LED when lit indicates that there is power connected to at least one of the PSU modules.

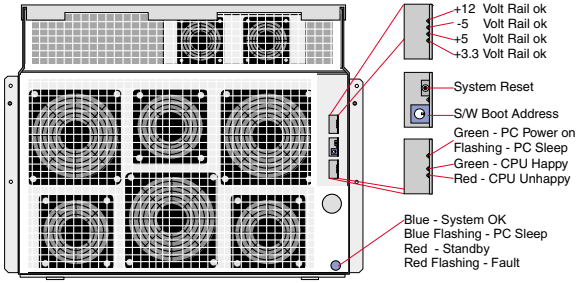
Always ensure that all externally connected disk drives are turned on before the iQ Platform is turned on or reset.

C Power-Down Procedure

The system is designed to be powered-up and operating continually. However, when the system is to be powered-down and then powered-up, the following should be remembered.

If the lockable switch is in the “Run” position it should be moved to the “Standby” position then pressing the black button under the “standby” LED for several seconds will run-down the disks then power-down the unit.

System Reset



The system can be reset by using the system's reset button (inside the front panel and accessed through the hole in the front of the unit.

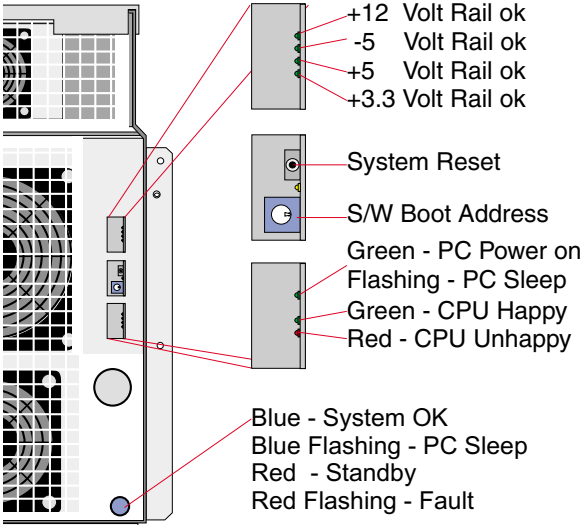
Resetting will reboot the system operating software after a few minutes. From power down it takes longer.

System Status

Correct Operation

There are various indications that the system's individual units are operating correctly. These can give a quick indication of the system status if there appears to be a failure.

IQ Platform



The status of the iQ Platform itself can be determined by the diagnostics LEDs behind the front panel and via remotely via the "Attention" port on the rear of the unit.

The light in the bottom right-hand corned of the panel indicates the current status of the iQ Platform:

Solid Blue	System Happy (ie the unit is powered up and running correctly).
Flashing Blue	PC Sleep Mode (ie the unit is powered up and operational but the PC sub-system has entered on of its power saving sleep modes). Sleep mode is automatically instigated if the PC sub-system has not been used for a period of time.
Solid Red	Standby Mode (ie the Mains is connected to the platform but the unit's PSU are not yet operational). A solid red can indicate that the rear panel Mains switch (breaker) in not in the correct position or that a PSU unit has failed.

Flashing Red	Fault Condition (ie a fan has failed in the unit or the system has exceeded its normal operating temperature.

The four LEDs visible through top hole the on the right-hand side of the front panel indicate that all four power rails are present.

The three LEDs visible through the bottom hole on the right-hand side of the front panel indicate the following:

Top Green On - PC Powered up

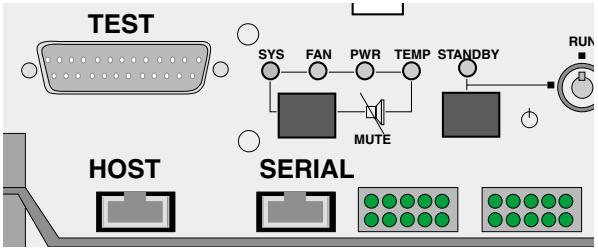
Top Green Flashing - PC Sleep Mode

Middle Green On - CPU Happy

Bottom Red On - CPU Unhappy

Dylan HD Status Checks

A Interface Panel



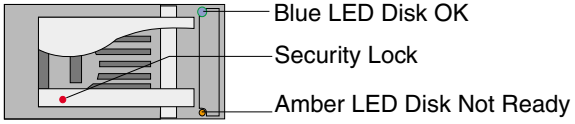
The LEDs on the Interface panel, at the rear of the unit, indicate the current operational state of the Unit (excluding the disk carriers). Normal operation is indicated by all LEDs being green.

SYS	This LED when amber indicates that the unit's diagnostics have found an unexpected fault condition.
FAN	This LED when amber indicates that there is a fan fail (or fan stall) condition in one of the two PSU modules. The amber LED one of the PSU modules identifies which one is faulty.
PWR	This LED when amber indicates that there is a power failure in one of the two PSU modules. The amber LED one of the PSU modules identifies which one is faulty. If the power is turned off to one unit or the power cable is disconnected it will be indicated in this way.
TEMP	This LED when amber indicates that the unit has exceeded its safe operating temperature.

The 20 green LEDs indicate the activity/status of the disk drives. After the system has successfully run up should one or more of the disk LEDs (0,1,2,3,4,5) be lit continuously this indicates a fault.

Under most fault conditions the unit will remain operable until the fault can be cleared or remedial action taken. If any fault condition is detected the unit will sound an alarm. This can be muted by holding down the "Mute" button on the Interface panel. The fault condition will remain as indicated by the amber LED (or LEDs).

B Disk Carriers



The two LEDs on each disk carrier indicate its current status.

When the unit is switched on both the blue and amber LEDs will be lit in all 12 disk carriers. Once each individual disk has run-up the amber LED will turn off and the blue LED should be lit to indicate that the disk is running normally.

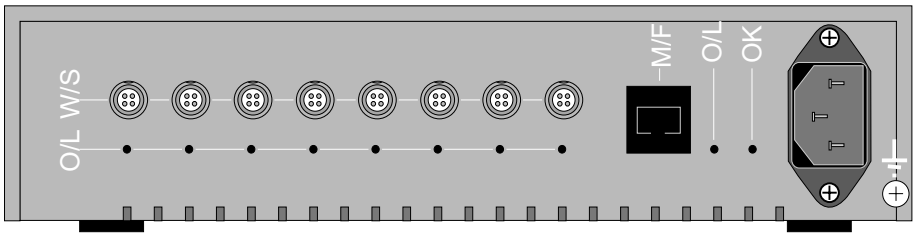
During operation the blue LEDs will turn off briefly to indicate disk access. The harder the disks are working the more the blue LEDs will be off. If an amber LED appear on any disk carrier this indicates a fault condition.

Workstation

A Control Interface Box

The green “OK” LED on the Control Interface box should be lit when the unit is connected to the Mains electrical supply to indicate the PSU within the box is operating.

The red “O/L” (overload) LEDs should all be off. If any are lit this indicates that the is a fault condition with the channel or with the unit connected to it.



B Tablet

The LED on the tablet should be lit when the pen is in proximity to the tablet surface. This indicates that the tablet is powered-up and operating correctly.

C Fader Panel

The Quantel Log on this unit should be illuminated. This indicates that the unit is powered-up.

D Jog / Shuttle Panel

The Quantel Log on this unit should be illuminated. This indicates that the unit is powered-up.

E Keyboard

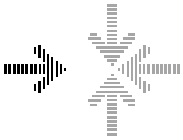
The Quantel Log on this unit should be illuminated. This indicates that the unit is powered-up.

F Hand Unit / Docking Port

The Quantel Log on the docking port (if supplied) should be illuminated. This indicates that the unit is powered-up.

iQ System

Installation Manual



07 - Maintenance

Routine Maintenance

Workstation

A Tablet Care

The tablet itself is made of an expanded foam moulding. The combination of different plastics and paints used in the production of the tablet restricts the use of cleaning agents that can be used to ones that are alcohol based.

As with any cleaning substances test that no damage is caused to the plastic and metal surfaces by applying the cleaning agent to an unobtrusive part first.

Never clean the tablet using abrasive materials.

☛ **WARNING (WM 4) Cleaning - Always isolate the equipment from the electrical supply before cleaning it, especially when using liquid cleaners. Refer to procedures in the Installation and Technical manual where supplied. Take note of the types of cleaner that may or may not be used. (12/97)**

B Pen Care

The pressure sensitive pen used with the control station is a delicate device, and therefore great care must be taken to avoid damage when it is being used or when it is stored. The following guide lines should be remembered so that the full operational life of the pen can be ensured:

i Do not attempt to take the pen apart, as this will permanently damage the pen.

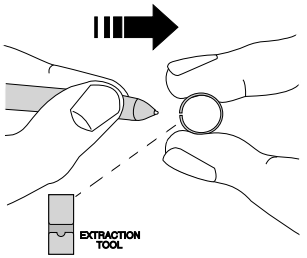
ii The only user adjustment on the pen is replacing the nib. (See next section).

iii Avoid using excessive pressure when using the pen as this will stress the pen and increase wear on the tablet surface.

iv Avoid heavy tapping of the pen on the tablet or any hard surface as this will cause damage to the delicate moving parts inside the pen.

v When the pen is not in use for long periods, the pen should be stored away from areas of strong light as this may cause the plastic to deteriorate and become brittle.

C Changing the Pen Nib



The pen nib, when worn-out can be replaced with one of the spare nibs supplied. To do this the nib extractor, also supplied with the pen, should be used as shown.

Grip the pen nib with the extraction tool and pull, firmly, in the direction shown by the arrow.

The new pen nib can be inserted and gently pressed into place.

Fibre Optic Connections

The fibre optic transceivers used by this equipment are precision devices and therefore care should be taken to extend their life and provide a reliable connection at all times.

Before inserting a fibre optic ferrule into its socket follow these instructions.

- Always use a lint-free, isopropyl alcohol dampened cloth to thoroughly wipe the side and end of the ferrule.
- Blow dry ferrule with clean compressed air.
- Visually inspect the ferrule for lint.
- After every de-mating cycle, clean and blow-dry the ferrule before re-mating.
- Do not interchange connectors from one unit to another unit without first cleaning the connector. Otherwise, ti may cause transferring of small particles, which may cause damage to the device.
- If a problem persists, clean the inside of the precision bore by gently rotating a lint-free swab with alcohol.

Corrective Maintenance

Important User Information

☛ **Warning: Unqualified personnel must not remove any panels or modules from the enclosure as this will expose energy hazards.**

Disk carriers have been provided with security locking systems specifically designed to prevent access to non Service Personnel.

Information for Service Personnel

☛ **Warning the information contained in this section is for qualified Service Personnel only.**

WARNING: Read the Important Product Information book before use.

A security screwdriver is provided to lock and unlock the disk carriers to prevent access non Service Personnel. This MUST BE USED.

☛ **Warning: Removing any of the modules with the mains supplies connected will expose energy hazzards. Disconnect the Mains electrical from both PSU modules for complete insolation.**

iQ Platform Configuration

The internal hardware configuration of the iQ Platform is factory preset. All user configuration and setup is made using the Configure application.

The printed circuit boards within the system are configured both physically (by links and switches) and by software control from the operating system.

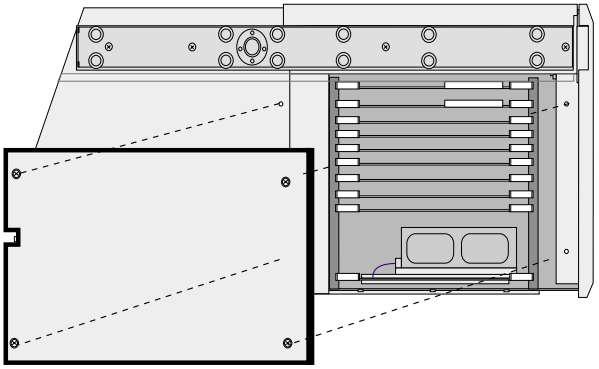
Any links and switches are factory set for correct operation, therefore this section should be considered as reference information only.

A Links and Switches

Any hardware links or switches on the printed circuit boards are used for local configuration of the printed circuit boards themselves and to configure the appropriate board addresses so that the operating systems can be correctly booted and in turn correctly initialise the printed circuit boards.

B Image Processor Unit Board Locations

The hardware configuration of the system is factory pre-set. The printed circuit boards for the Image Processor unit are located behind the left-hand side panel of the iQ Platform.

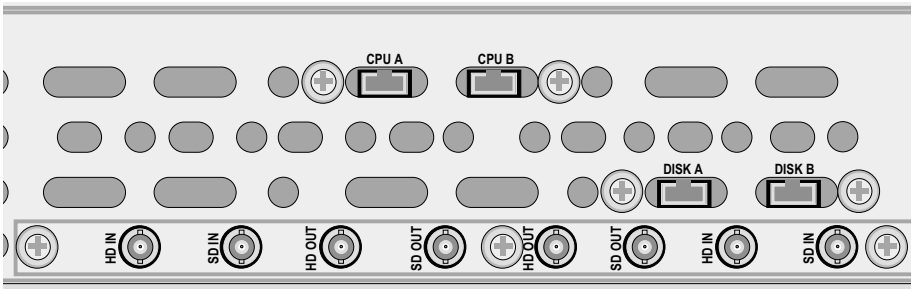


2099-81-005 CPU Link64

2099-76-005 Disk IF
2116-76-005 Vid IO
2116-75-005 Picstore

2116-66-005 PC Disks

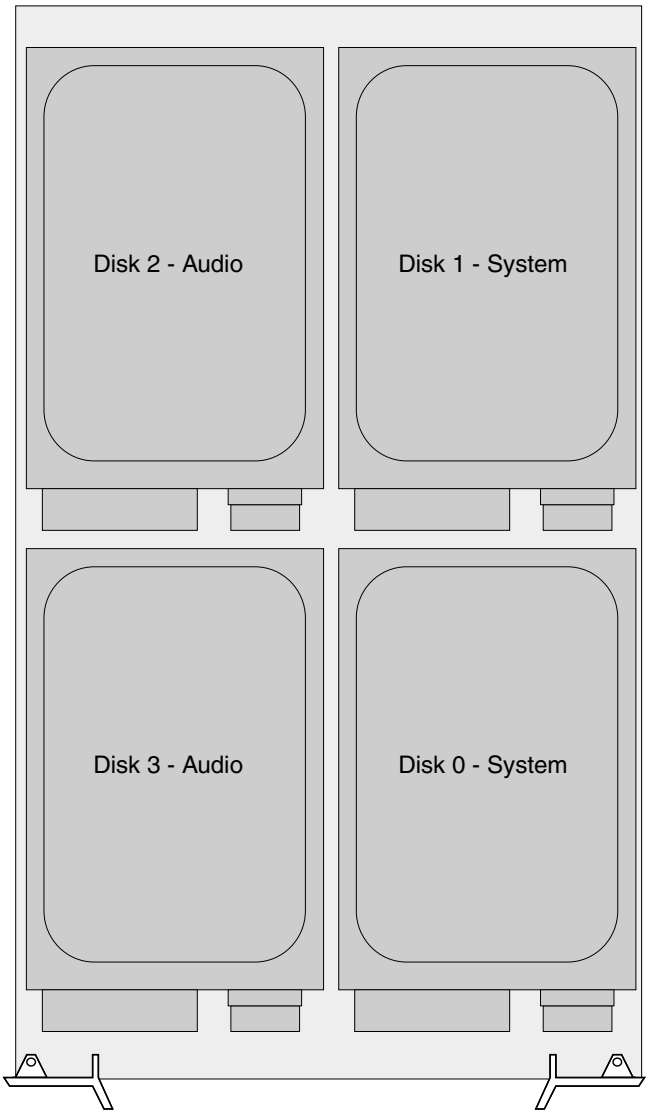
☞ **Caution: All boards (except the Pic Store and the PC disk) cannot be removed from the board frame until the retaining screws on the connector panels are removed from the rear panel of the unit.**



C PC Sub-system

The PC sub-system is mounted on a tray which fits into the rear of the iQ Platform.

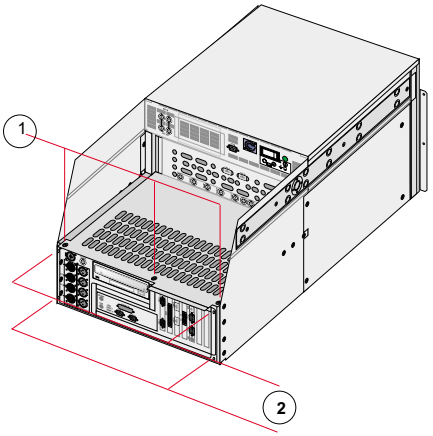
D Carrier Assembly



Removing the PC Sub-system

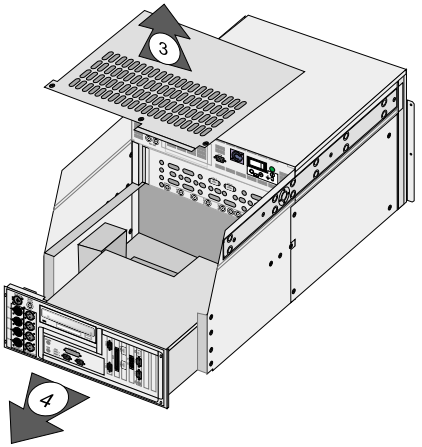
Remove the mains connector.

Remove connections to the PC rear panel.



Remove the screws from the PC rear panel and PC top panel as shown in the diagram.

Keep the screws safe as they will be needed later.



Remove the PC top panel and slide out the PC tray as shown in the diagram.

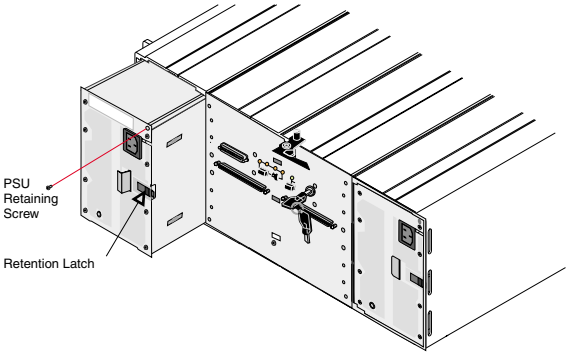
Hot Changing a Dylan HD PSU Module

There are two identical power supply modules fitted in the rear of the enclosure. The fans within these units are independent of the actual module and the fans in both PSU modules will remain operational even if one PSU module fails.

If the PSU module or its fans fail the module should be left in place until a replacement is available. The unit must not be run without both PSU modules fitted.

☛ **Warning energy hazards are exposed if either PSU Module is removed.**

A Removing a PSU Module with the Power On



Once a replacement unit is available the faulty unit can be removed from the enclosure.

i Remove the mains cable from the PSU unit.

ii Unscrew and remove the single retaining screw.

iii Press the retention latch to the left and pull the module out of the enclosure using the handle.

iv Carefully remove the PSU Module form the enclosure and place carefully in a safe place.

B Fitting a PSU Module with the Power On

Carefully slide the PSU Module into the enclosure until the retention latch clicks into place then secure using the single screw as shown in the diagram above.

☞ **Caution: Ensure that the connector is not damaged during handling and is free from any contamination (such as packing material).**

Hot Changing a Dylan HD Disk Carrier

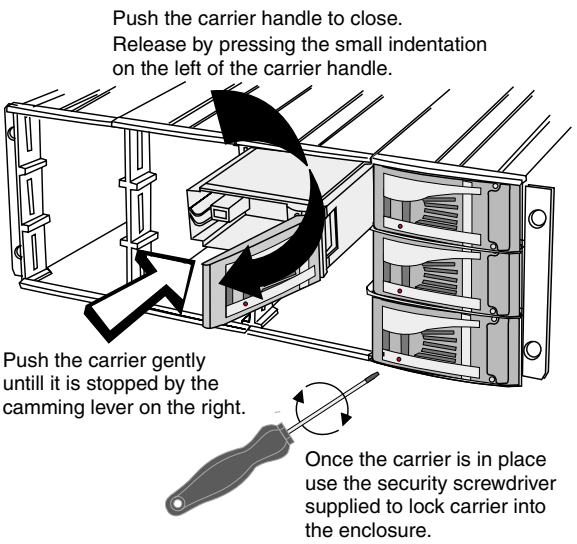
The unit contains 12 identical disk carriers which contain both data and parity information. Once the unit has been used to store data the position of the disk carriers in the enclosure must not be changed otherwise the data and parity information will become corrupt.

If a single disk carrier becomes faulty (indicated by its amber LED being lit continuously) it can be changed while the unit is running with a replacement disk carrier. When a new disk carrier is installed the unit will recreate the correct data on that disk using the data and parity information from the other 11 disk carriers.

If more than 1 disk carrier indicates a fault advise should be obtained and under no circumstances should a disk carrier be changed without instruction from Quantel. A multiple disk fault may indicate an underlying problem that can be solved without replacing disk carriers.

☞ **Caution: Changing more than 1 disk at a time will cause permanent and irreparable data corruption.**

A Disk Locks



Each disk carrier is locked in position using a security screwdriver to prevent uncontrolled removal and unwanted access by unauthorised or unqualified personnel.

B Removing a Disk Carrier

A disk carrier can be removed from the enclosure while the unit is powered-up and running:

i Using the security screwdriver provided unlock the front latch on the disk to be removed. Turning the screwdriver clockwise will unlock the disk carrier.

ii Press the handle at the left-hand side until it clicks open.

iii Carefully pull the disk carrier from the enclosure using the handle and put in a safe place.

C Fitting a Disk Carrier

☞ **Caution: Ensure that the connector is not damaged during handling and is free from any contamination (such as packing material).**

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