Quintessence

Audio - Video Workstation and Server Chassis

User Manual

MERGING

POWER   RESET

Pyramix

MERGING

Quintessence User Manual

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IMPORTANT NOTICE:

Please read the following information very carefully before attempting any installation. Failure to comply with the precise instructions may result in damage to your Merging hardware. Please read this entire section of the manual carefully before installation.

STATIC DANGER NOTICE:

Please note that the Quintessence AV Chassis contains delicate electronic components that can be damaged or even destroyed when exposed to static electricity. Take all necessary precautions not to discharge static electricity when touching any of the AV Case connectors.

Product Regulatory Compliance

The Merging Pyramix, VCube and Luxor Chassis are designed and tested to meet the standards and regulations listed in the following sections when configured with the workstation/server boards specified.

Product Safety Compliance

The Merging Chassis complies with the following safety requirements:

- UL 1950 – CSA 950 (US/Canada).
- EN 60 950 (European Union).
- IEC 60 950 (International).
- CE – Low Voltage Directive (73/23/EEC) (European Limits).
- EMKO-TSE (74-SEC) 207/94 (Nordics).

Product EMC Compliance

The system has been tested and verified to comply with the following EMC regulations when configured with the workstation/server boards specified

- FCC (Class A Verification) – Radiated and Conducted Emissions (USA).
- CISPR 22, 3rd Edition (Class A) – Radiated and Conducted Emissions (International).
- EN45022 (Class A) – Radiated and Conducted Emissions (European Union).
- EN45024 (Immunity) (European Union).
- EN6100-3-2 & -3 (Power Harmonics and Fluctuation and Flicker).
- CE – EMC Directive (89/33/EEC) (European Union).

Electromagnetic Compatibility Notices

This device 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.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential 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 to correct the interference by one or more of the following measures:

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

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment. The customer is responsible for ensuring compliance of the modified product.

Only peripherals (computer input/output devices, terminals, printers, etc.) that comply with FCC Class B limits may be attached to this computer product. Operation with noncompliant peripherals is likely to result in interference to radio and TV reception.

All cables used to connect to peripherals must be shielded and grounded. Operation with cables, connected to peripherals that are not shielded and grounded, may result in interference to radio and TV reception.

Environmental Limits

System Office Environment

Parameter Limits

Operating Temperature +5 degrees C to +35 degrees C with the maximum rate of change not to exceed 10 degrees C per hour.
Non-Operating Temperature -40 degrees C to +70 degrees C
Non-Operating Humidity 95%, non-condensing @ 30 degrees C
Acoustic noise less than 50 dBA in a typical office ambient temperature (18-25 degrees C)
Operating Shock No errors with a half sine wave shock of 2G (with 11-millisecond duration).
Package Shock Operational after a free fall, 18 – 24 inch depending on the weight.
ESD 15kV per Merging Environmental Test Specification

Quintessence Warranty Information

This product is warranted to be free of defects in materials and workmanship for a period of one year from the date of purchase. Merging Technologies, Inc. extends this Limited Warranty to the original purchaser.

In the event of a defect or failure to confirm to this Limited warranty, Merging Technologies, Inc. will repair or replace the product without charge within sixty (60) days. In order to make a claim under this limited warranty, the purchaser must notify Merging Technologies, Inc. or their representative in writing, of the product failure. In this limited warranty the customer must upon Merging Technologies, Inc. request, return the product to the place of purchase, or other local designation, for the necessary repairs to be performed. If the consumer is not satisfied with the repair, Merging Technologies, Inc. will have the option to either attempt a further repair, or refund the purchase price.

This warranty does not cover: (1) Products which have been subject to misuse, abuse, accident, physical damage, neglect, exposure to fire, water or excessive changes in the climate or temperature, or operation outside maximum rating. (2) Products on which warranty stickers or product serial numbers have been removed, altered or rendered illegible. (3) The cost of installations, removal or reinstallation. (4) Damages caused to any other products.

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For all documentation inquiries or suggestions for improvement:

www.merging.com

1 – Introduction

Thank you!

Congratulations on your Merging Technologies Quintessence AV Chassis purchase. Quintessence is a precision enclosure with custom interface modules for Pyramix and VCube workstations and the Luxor Media Server and will considerably enhance the operating experience.

Creativity Distilled

Quintessence is a custom designed aluminium Chassis, with a very efficient, low-noise cooling system and bespoke interface modules. From first acquaintance, this engineering masterpiece induces a sense of confidence and calm, highly conducive to creativity. The softly glowing blue Pyramid of the power switch echoes the sculpted front panel, subtle reminders of an earlier civilization's creative expertise.

Quintessence embodies the features you should expect from a machine designed for exacting professional environments. Cooling is efficient and quiet and there is ample space for extra hardware. Drive bays are suspended and shock mounted. The recessed rear panel hosts a comprehensive set of studio grade connections.

2 - Installation

Positioning

Rack spacing and airflow recommendations:

When Quintessence is to be rack-mounted, we recommend allowing one RU of blank space below the unit, in order to allow for optimum air flow to cool the equipment.

However, in the following specific circumstances the bottom air intake can be obstructed and machines may be stacked without the recommended blank space:

1. Machine room or rack ambient temperature is kept below 25°

2. Side air intake is kept completely free of obstacles (rack mounting rails, cables, etc.) and ample airflow is available in the left side of the rack

3. Rear air exhaust outlets also are kept as unobstructed as possible (tidying the cabling out of the way of PSU fan and chassis's fans is a must) and ample air flow is available at the rear of the rack

On the other hand, in the following situations the bottom air intake should be left completely open:

4. When multiple high RPM (SCSI / FC / SATA 10'000rpm or more) hard drives are installed in the machine

5. When a Dual Xeon machine is used for processing intensive tasks such as HD Video playback and/or recording

So as rule of thumb, while the bottom air intake of a standard VCube / Pyramix or of a Luxor server with external storage can, under specific conditions, be obstructed without problem, **it is highly recommended** that a VCube HD2k or a Luxor server with internal storage is installed with a **blank space below the unit**.

In the Table below, differences between open and closed bottom air intakes are displayed in Celsius. The sensor was placed in the centre of the chassis, immediately behind the internal hard drives.

Warning! If in any doubt when installing, please check that the internal temperature of your machine remains within the range shown.

Merging Quintessence AV Case Temperature Measurements				
		Bottom Air Intake		
Pyramix / VCube SD	Ambient	Open	Closed	Delta
1x SATA 120GB	23	28	34	6
Luxor / VCube HD	Ambient	Open	Closed	Delta
6 x SATA250GB	24	29	35	6

Making Connections

Note: Please ensure that the host PC and any powered network switch is switched off before making connections to the Quintessence AV Case.

3 – External Features

Front Panel

Power and Reset

The elegant blue Merging Logo also houses the Power and Reset buttons. As shown below, the chassis' Soft Power function is controlled by the left-hand, larger, section of the pyramid while smaller, right-hand part is used to invoke the Reset function. Reset button illumination increases in intensity to denote hard drive activity.

POWER & RESET
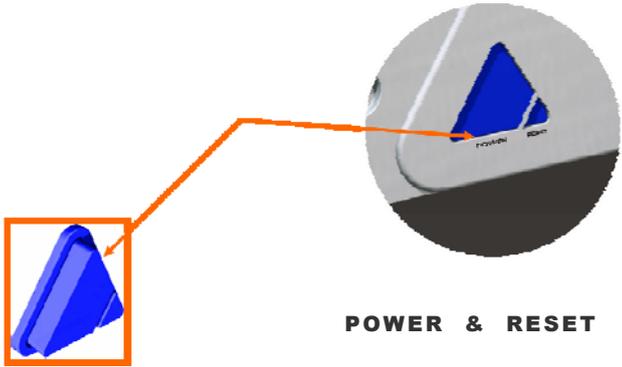
The logo glows softly when the machine is in standby. I.e. connected to the mains but in power-off mode.

USB/FireWire

Two flush mounted front-panel USB 2.0 & an IEE1394a Firewire socket provide convenient connections for dongles, external drives or auxiliary equipment.

Rear Panel

Connections

From top to bottom and left to right:

- 4 x DB-25 slots for 4 x 8 channels of AES/EBU, SDIF or TDIF I/O installation
- Power Supply with IEC socket, voltage selector and switch
- RS-422 connector with master / slave mode switch, for machine or remote control connections.
- WordClock I/O, Video Reference Input & Video Reference Output on BNC connectors
- TimeCode "SMPTE-EBU" LTC Input and Output on XLR connectors
- PS-2 keyboard and mouse, DB-25 parallel and DB-9 Serial connectors
- Firewire / IEE1394a, Gigabit Ethernet and USB connectors and on-board audio jacks.
- 7x "PCI" mounting brackets (one populated with Graphic card)

> **Note:** The precise content and layout will depend on the motherboard and power supply of the specific model.

Quintessence Serial Number

The Serial number plate is located on the rear of the chassis above the power supply fan grille:
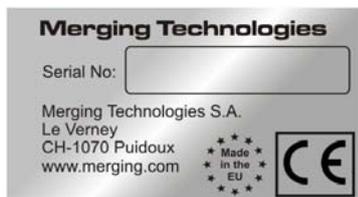
4 – Chassis modules

Overview

The **MTCHIO** Sync Board module, coupled with the master Mykerinos board, provides various I/O directly to the rear of PC. The **USB/FIREWIRE (IEEE1394)** module extends the internal USB and Firewire connections directly to the front panel of the PC. Finally, the **LOGO** module extends the motherboard power switch, reset switch and IDE activity LED to the front panel of the PC.

MTCHIO Sync Board

(Pyramix and VCube Systems only)

(**M**erging **T**echnologies **CH**assis **I**nput **O**utput)

MTCHIO stands for **M**erging **T**echnologies **C**hassis **I**nput and **O**utput. (We are very fond of this name, particularly since we discovered that in French MTCHIO pretty much means "love your puppies". This custom panel, located on the rear of the Merging chassis, extends the sync I/O capabilities of the Mykerinos board with user friendly connectivity and adds some interesting new features. It has been designed to mirror and improve all the connections found on the Mykerinos optional TC-Breakout cable.

Internal Connections & Jumpers
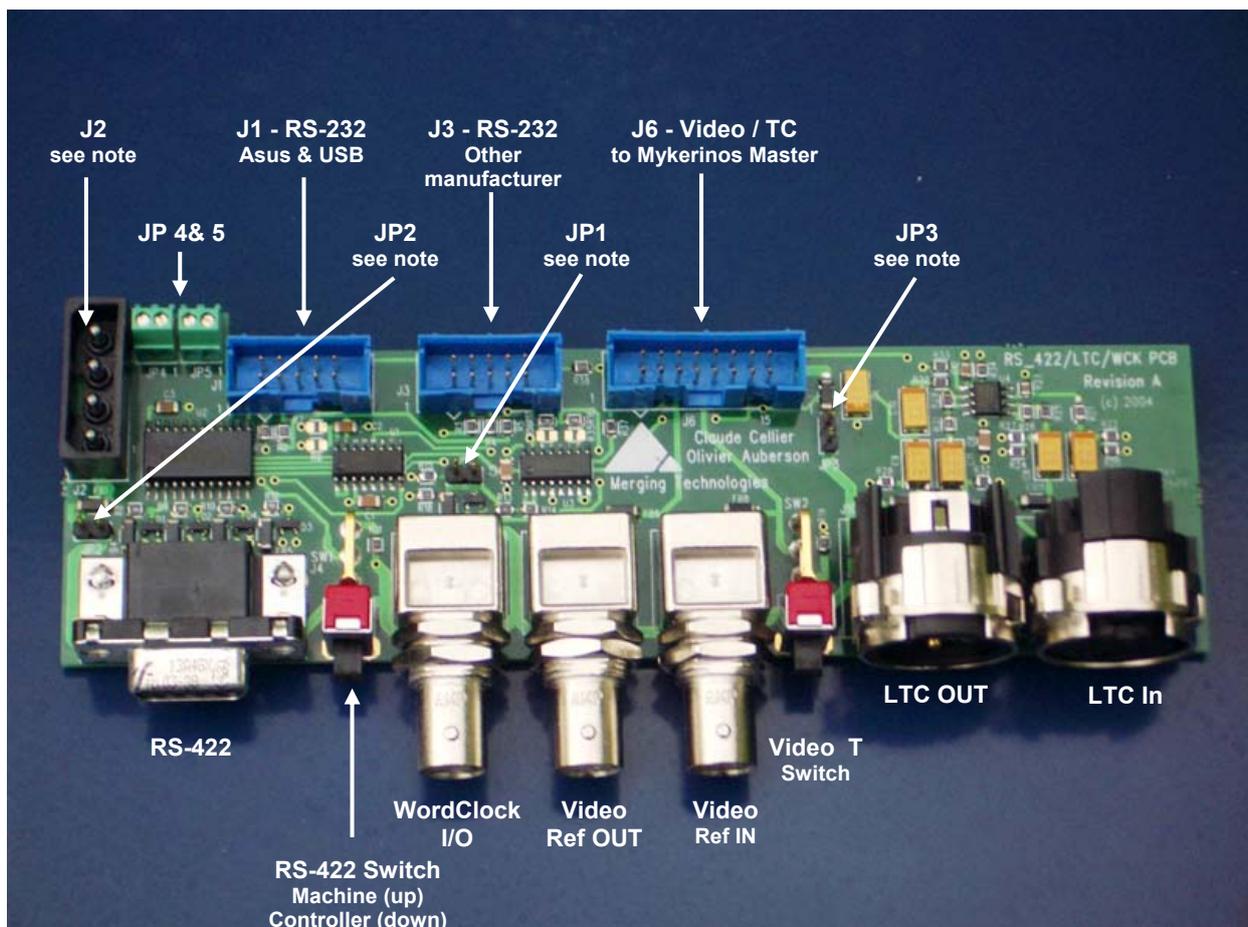
Mykerinos Connection

- **J6 –** 16 pin ribbon cable to the primary (master) Mykerinos card for TimeCode and sync. In order for the MTCHIO Sync board's TimeCode & Video functionalities to be fully operational, it is necessary to connect the **J6** socket to the primary (TimeCode Master) Mykerinos card, with the 16 pin ribbon cable provided. In multi-board systems, by convention, the primary Mykerinos card is the one fitted in the PCI slot closest to the graphics adapter. **Note**: video termination Jumper 4 on the TimeCode Master Mykerinos should be set to **OPEN** when used in conjunction with MTCHIO.)

Jumpers and Power

- **JP1** – 75Ω termination for the Word clock input signal
- **JP2** – 5V from the PC power supply through the Molex (**J2**) connector (hard disk type connector)
- **JP3** – 5V from the Mykerinos board through the 16 pin ribbon cable connected to the Video/TC header.

The internal Molex connector **J2** is used to provide +12V to the rear fans through **JP4** and **JP5** terminals. It also provides alternative +5V to the **MTCHIO** module through jumper **JP2**.

WARNING: Never close **JP2** and **JP3** at the same time.

Power and Fan Connectors
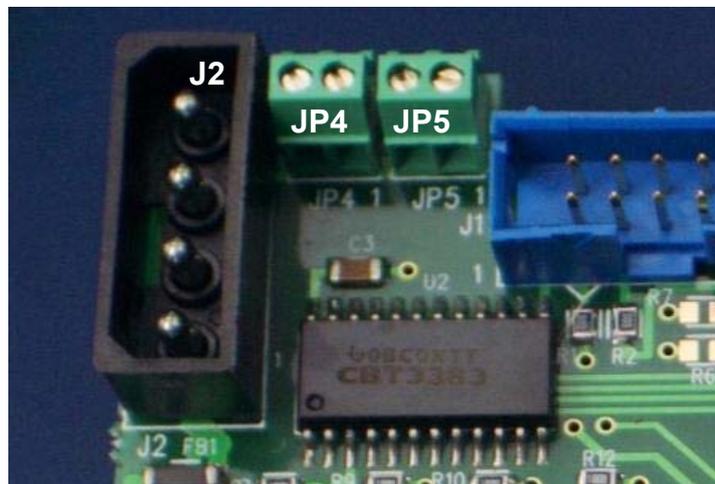
- **J2** Molex connector takes power from PC PSU

Detailed pinout of **J2**:

	+12V
	GND
	GND
	+5V
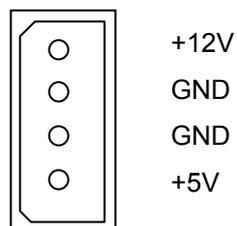
- **JP4** & **JP5** provide +12V to the rear panel fans of the chassis. Here is the pinout of **JP4** and **JP5**.

+12V GND
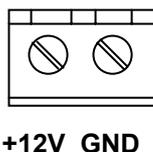
RS-232 connection

- **J1** – RS-232 connector with pinout **A** works with Asus and Intel on-board RS-232 connectors. This is also the connector used with the Merging Technologies USB to RS-232 adaptor. (see below)
- **J3** – RS-232 connector with pinout **B** is provided for compatibility with motherboards from other manufacturers.

> **Note:** This connector may not be available on recent revisions of the MTCHIO board.

If in any doubt, please refer to your motherboard User Manual and ensure the on board connector matches the pinout of either **J1** or **J3** as shown here:
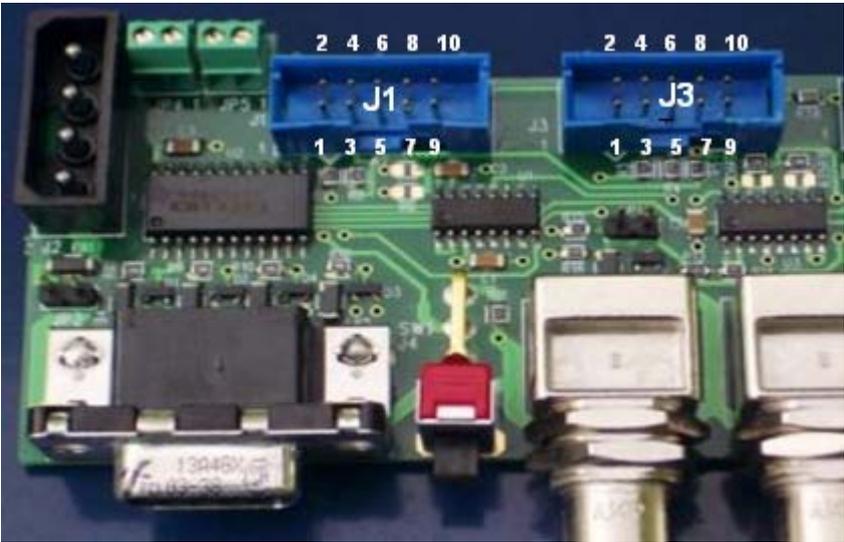
RS-232 Socket Pinouts						
J1				J3		
1	NC	**2**	**RX**	1	NC	2	NC
3	TX	4	NC	3	RX	4	NC
5	GND	6	NC	5	TX	6	NC
7	NC	8	NC	7	NC	8	NC
9	NC	10	NC	9	GND	10	NC

USB to RS-232 adapter

Since many modern motherboards do not have spare RS-232 headers MTCHIO is generally supplied from the factory already connected to an on-board USB header via an included USB to RS-232 adapter and cable.
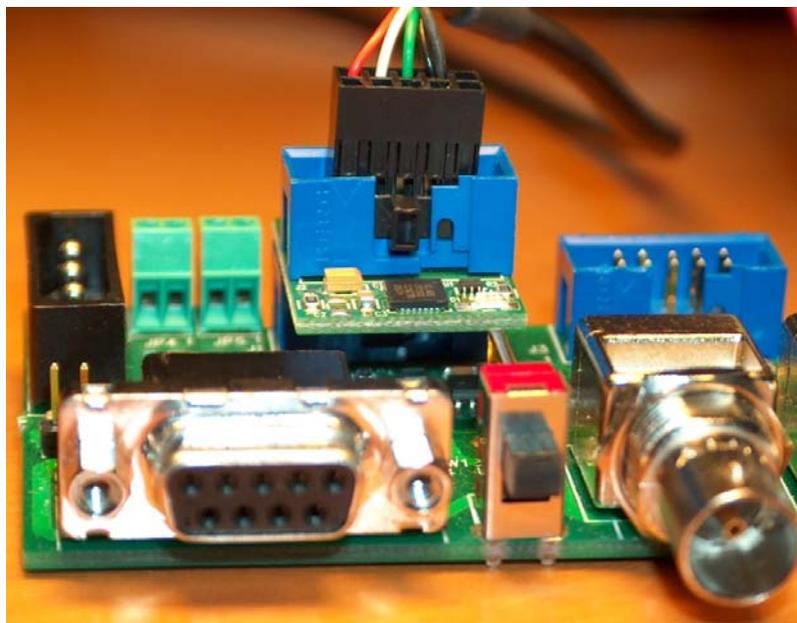
The RS-232 ↔USB converter transforms RS-232 signals to/from USB signals. It has been developed to allow the MTCHIO RS-422 functionality to be retained with motherboards lacking an internal RS-232 connector. This converter is USB 2.0 compliant (12Mbps).

The RS-232 ↔USB module must be inserted into the **J1** connector.

> **Warning!** Due to the small dimensions of the RS-232 connector, it is possible to incorrectly insert the plug. Please ensure it is correctly aligned as in this picture:
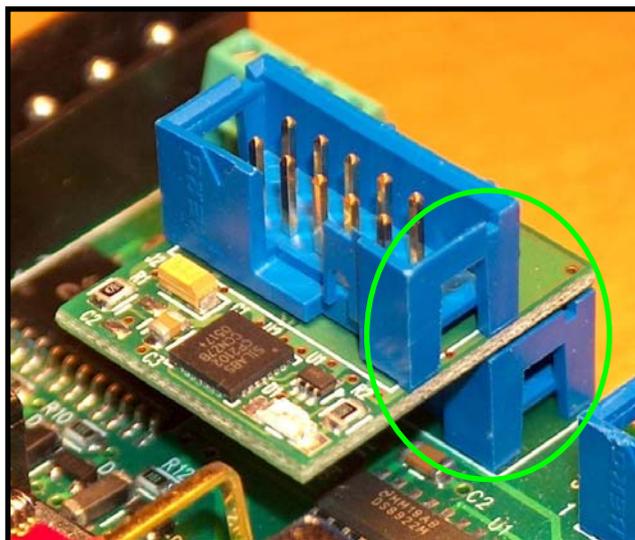
USB to RS-232 adapter Software Installation

Where a USB to RS-232 converter is supplied, a driver is required:

1. Do **not** plug the 5 pin connector of the Merging Y-type USB cable into a USB port of the motherboard. First, power on the computer and extract the drivers located on the accompanying CD to a temporary folder. The file to extract is labelled **CP210X_DRIVERS.EXE**.

2. Then, plug the 5 pin connector of the Merging Y-type USB cable into a USB connector of the motherboard. There is no need to power off the computer at this stage!

3. Windows will detect a new USB device and ask for the drivers. Choose the folder in which you have previously extracted the file and go to the following directory:

4. **...\SiLabs\MCU\CP210x\WIN**

5. Continue the installation.

6. Once the drivers are installed, Windows will detect a **USB to RS-232 Bridge** and ask for the drivers. Give the same location as in point **3** and continue until the installation is complete.

7. If all is well, the blue converter LED should be ON indicating that the USB link is now fully operational. Check in Windows Device Manager, that you can see a new COM port labelled like this: CP2102 USB to UART Bridge Controller (COM4). Of course, the COM port number will depend on the number of COM ports present on your computer.

MTCHIO Panel Connections

WordClock, Video Ref and LTC connections provide identical functionality to that originally offered by the TC-BreakOut optional cable. RS-442 provides functionality originally enabled by external 3rd party RS-232 to RS-422 adapters such as an "Antona".

> **Note:** Please take care never to connect an (old) optional breakout cable and a **MTCHIO** board to the TC Master Mykerinos at the same time.

RS – 422

This DB-9 socket is an RS422* port for connecting a machine or a controller utilizing the Sony 9-pin (P2) protocol without having to use an external RS232 to RS422 converter. A switch, labelled **to Machine** and **from Controller,** enables the port to be configured correctly, depending on what it is connected to. This fully featured RS-422 connection (rather than a modified RS-232) offers direct and hassle free connection to professional outboard equipment such as video player/recorders, workstations or remote controllers.

to Machine means that Pyramix/VCube will control an external Machine and **from Controller** means that Pyramix/VCube will be controlled by an external controller.

When Pyramix/VCube controls a machine, a **Machine** must be created and the proper COM port** selected in Pyramix Settings or by activating Sony 9-PIN Machine in VCube Settings. In order to achieve proper synchronization the correct TC Source must be selected, such as External (with the correct machine selected as Ext. TC Source), in Pyramix Settings or Ext selected in the VCube Transport Panel. Then Pyramix/VCube can be put into **Chase** mode in the Transport Panel.

When Pyramix/VCube is controlled by an external 9-PIN controller, a **Controller** must be created in Pyramix Settings or Sony 9-PIN Controller should be checked in VCube Settings.

Note: Remember that a single common timebase for the entire system is essential for trouble free machine synchronization. A proper Video Reference and possibly WordClock should be distributed to all machines to enable them to base their TimeCode calculations and derive their digital audio/video clocks from a single common clock source. Please also see below for more about WordClock & Video Ref.

Note*: the RS-422 adapter is attached to an internal USB2 port via a dedicated USB to RS-232 adapter.

Note:** The COM Port used by RS-422 adapter will most probably be COM2 (COM1 is normally assigned to the rear panel on-board RS-232 port). But since our RS-422 adapter now is attached to a USB port, it may happen that Windows decides to get real fancy and decides that COM1, or COM3 ! should be the RS-422 COM Port, depending on hardware configuration.

COM ports can be identified in: **My Computer > Properties > Hardware > Device Manager > Ports (Com & LPT)** and identify the following line: **CP210x USB to WART Bridge Controller (COMxx)**. Note the corresponding COM port listed in between the brackets and change Pyramix/VCube Settings to match.

Word Clock

The word clock connection offers a bi-directional signal flow, software controlled directly by Pyramix/VCube. This is typically used for clocking the Mykerinos audio engine from external AV equipment such as AD/DA converters, workstations or player/recorders. (Set Audio Synchronization Source to **WordClock** in Settings) Alternatively external equipment can be clocked from the Mykerinos audio engine, using the same connection (Set Audio Synchronization Source to **Internal**, or other valid clock source in **Settings**)

This innovative I/O brings a more robust word clock signal capable of driving longer 75Ω impedance cables. It has been tested on cable runs of up to 50m length.

The word clock port may be terminated on the MTCHIO board with the JP1 jumper. If this feature is used, be sure to open the jumper JP5 located on the Mykerinos board to avoid double termination.

Tip: On multi-board systems, one or more slave Mykerinos cards can be used to send out WordClock through their own WordClock I/O (which defaults to output) while being synchronized by the TC/Master Mykerinos through **MTCHIO**'s WordClock I/O. This requires the use of (old), optional TC-Breakout cable(s).

Video Ref In and Video Ref Out

Video Ref In offers clocking of either or both the Mykerinos audio and TimeCode engines from an external video reference signal generated by a House Sync Video generator or a video player/recorder. A switch has been added to easily enable/disable the 75Ω termination for the incoming video signal. (Set Audio Synchronization Source and/or TC Reference to **Video** in Settings)

Video Ref Out mirrors video reference signals seen at the Video Ref In connector.

> **Note:** Please ensure that the Mykerinos on-board termination jumper **JP4** is set to **OPEN** when using this connector (This is factory set to open for all systems shipped in the Quintessence AV Case. Please also refer to the Mykerinos User Manual to locate this jumper).

LTC Out and LTC In

The **LTC In** connection accepts balanced signals as well as unbalanced signals. The **LTC Out** connection offers a fully balanced output signal, whose gain can be remote controlled by Pyramix/VCube. **LTC**, stands for Linear Time Code, it is also commonly known as **SMPTE/EBU**.

Minimum input voltage, in single ended mode, is 0.3Vpp
Maximum input voltage, in single ended mode, is 5.3 Vpp.
Minimum input voltage, in differential mode, 0.2 Vpp.
Maximum output voltage in differential mode is 2 Vpp with a gain adjustable directly in Pyramix in 3dB steps.

LTC In will accept LTC TimeCode generated by equipment such as video player/recorders and workstations. Set Pyramix/VCube to **Chase** in the Transport Panel and set TC Source to **LTC** in Settings (Pyramix) or in the Transport Panel (VCube)

LTC Out will generate an LTC TimeCode mirroring the TimeLine's time ruler for a 3rd party workstation or video player/recorder to lock to. Set LTC Generator to **On** and adjust signal level in General Settings

> **Note:** In order for your entire system to be accurately synchronized both the LTC "master" and the LTC "slave" will need to also share a common clock reference such as Video Ref and/or WordClock.

Front Panel USB / IEE 1394a Module

This module is attached to the front panel of the Quintessence AV Chassis. It extends the following internal signals to the front panel:

- 2 x USB
- 1 x Firewire (IEEE 1394a)

IMPORTANT: Use only the corresponding Merging supplied USB and IEE 1394 cables.
See back side of board below:

Internal 1394 connector to motherboard

Internal USB connector to motherboard

12 V Power for Chassis Fan connectors

5V & 12V Power connector
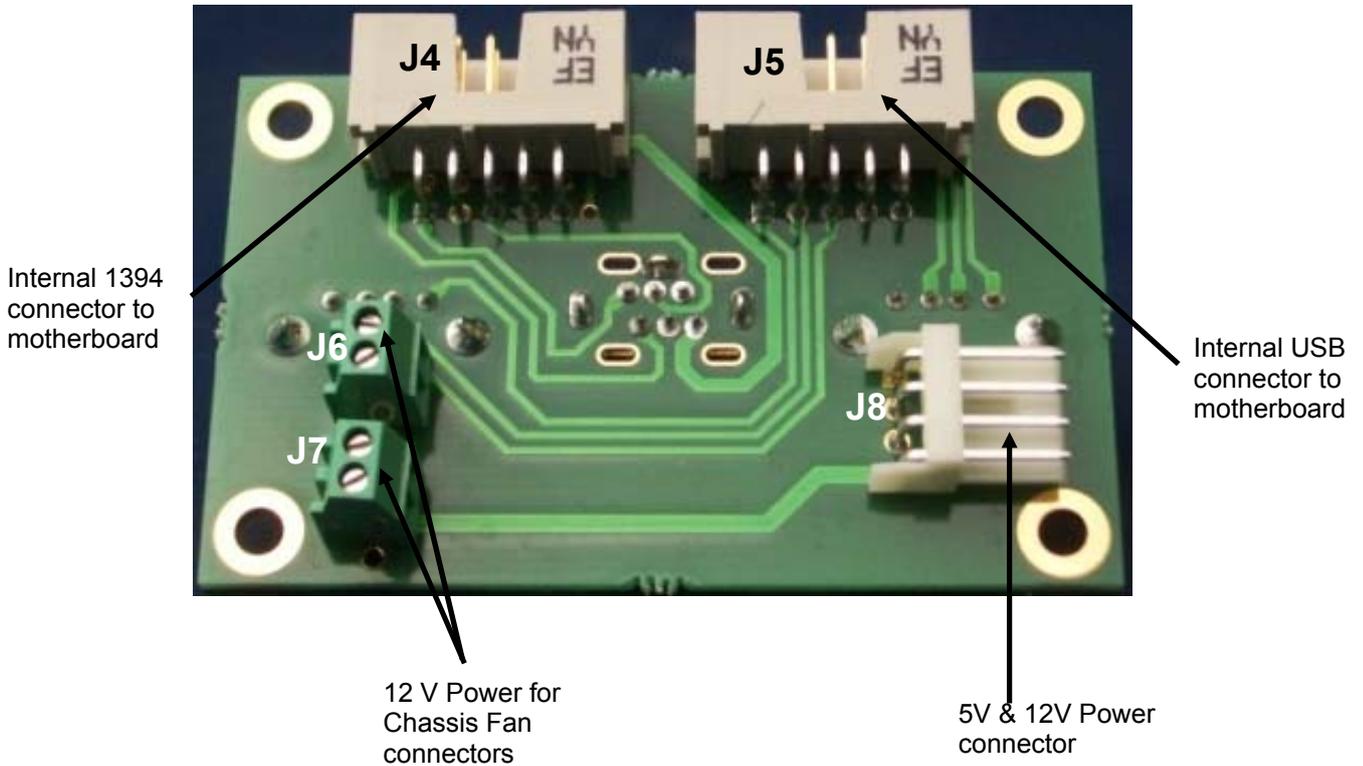
The module also provides a simple means of connecting power to two hard disk fans. Connect a floppy disk type connector from the PSU to **J8** to bring +12V voltage to **J6** and **J7**

+12V

GND

+12V

GND
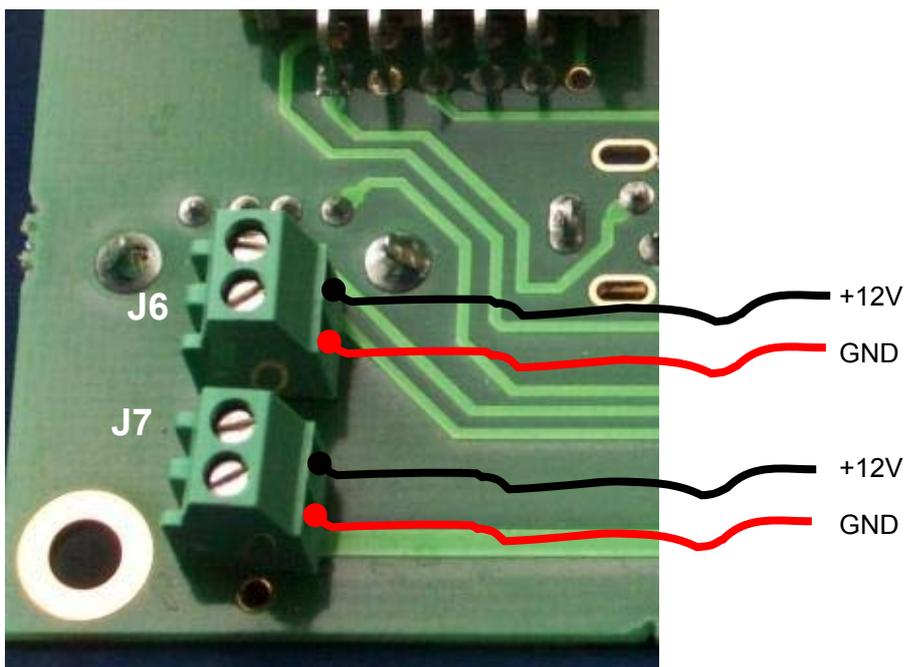
Front Panel Logo Module

This module is attached to the front panel of the Quintessence AV Chassis. It extends the following internal signals to the front panel:

- 1 x Power switch
- 1 x Reset switch
- 1 x IDE led

These three functions are displayed through the Merging logo (a) located on the chassis front panel. This logo glows blue when the PC is in stand by (b) and shines brightly when the PC is ON (c). Each HD access makes the smaller part of the Merging logo (reset) shine more brightly.

(a)	(b)	(c)

Internally (on the back of the logo), the module looks like this:
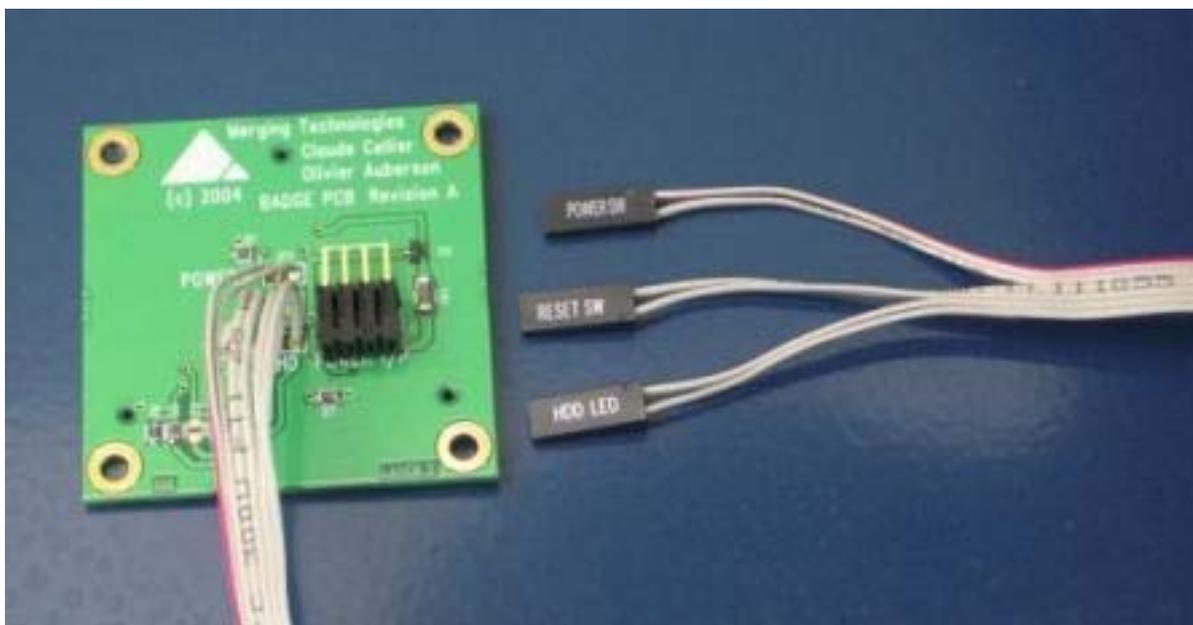
A triple ribbon cable is directly soldered on the pcb and provides connectivity for the motherboard power, reset and HD activity LED headers.

Connect these three connectors as described below:

Plug the red wire side of the **POWER SW** connector onto the **+** pin of the motherboard **POWER** switch header.

Plug the **RESET SW** connector onto the motherboard **RESET** switch header. The polarity is not important.

Plug the **HDD LED** connector onto the motherboard **HDD** header. The upper wire (when viewed as on the above picture) must be connected on the **+** pin of the **HDD** header.

5 – Storage

Hard Disk / CD-ROM Trays

Quintessence has easily removable disk trays for 6 internal and 3 removable drive bays:

Hard Disk Tray

All 4x retaining screws are easily visible and accessible   Hard disk tray is removed as a single unit
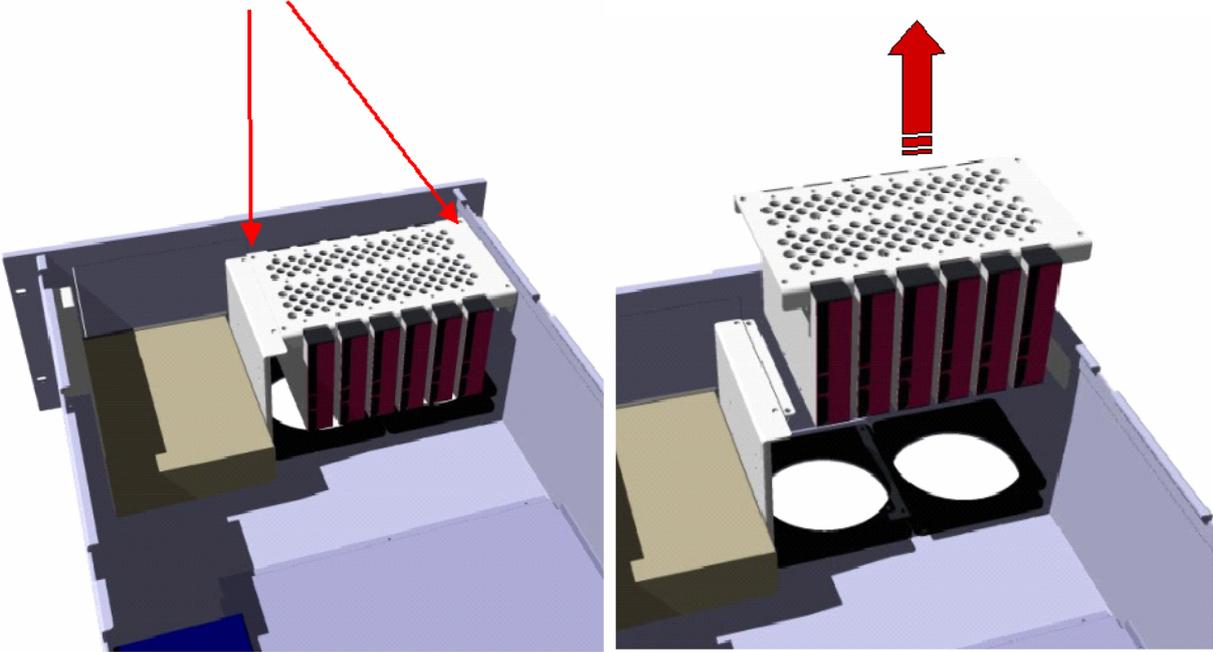
CD / DVD / Removable Media Drives

Media drives screws are also easily visible and accessible   Media tray is removed as a single unit
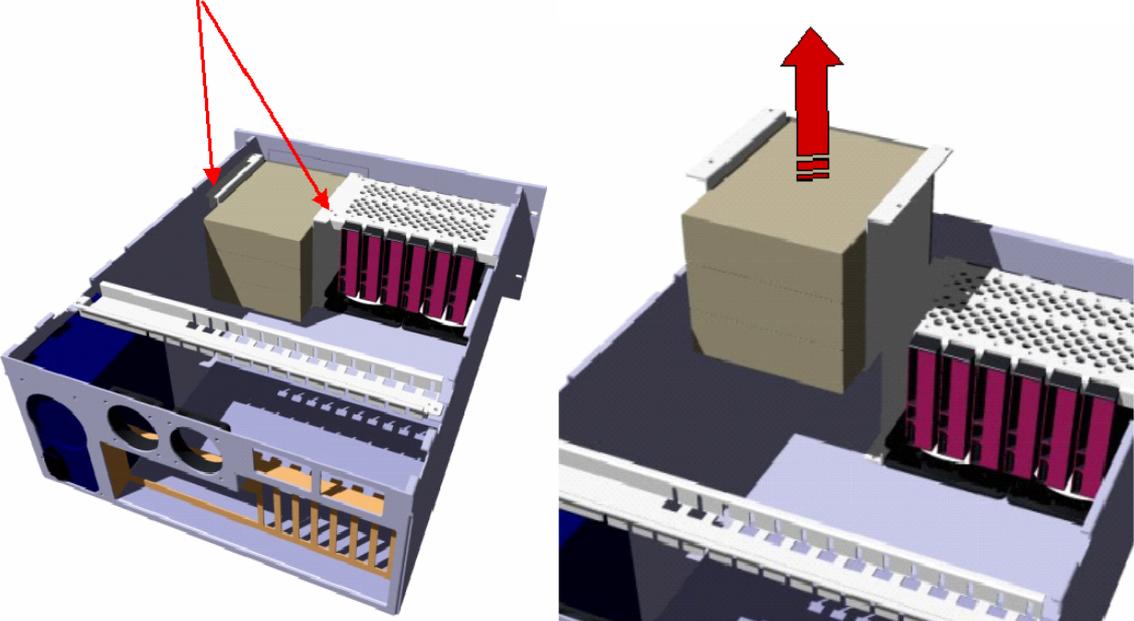
Adding Storage

On large systems, (especially with multi-board Mykerinos configurations) most of the PCI 32Bit (Legacy) bus bandwidth is needed and used by the Mykerinos cards in Pyramix & by Mykerinos & Video output cards in VCube, so for attaching storage units dedicated to real time media record and playback, we recommend, wherever possible, NOT using any I/O connection or PCI add-on card that will interfere with the PCI bus bandwidth.

Determining I/O connections suitable for real time storage:

1. Go to: **My Computer > Properties > Hardware > Device Manager**. In the **View** Menu, select **Devices by connections**.

2. Navigate to, **Microsoft ACPI – Compliant System / PCI Bus**, then open any single node/connection until you locate the **PCI Bridge** where the Mykerinos cards and/or Video output cards are listed. Any item listed here, directly sharing a PCI Bridge (or PCI-Express root port) with Mykerinos and/or Video card, such as the 1394a adapter and SCSI card shown in the example should be considered as non optimal for attaching storage dedicated to real time record or playback of audio and/or video files when maximum performance is the principle criterion.
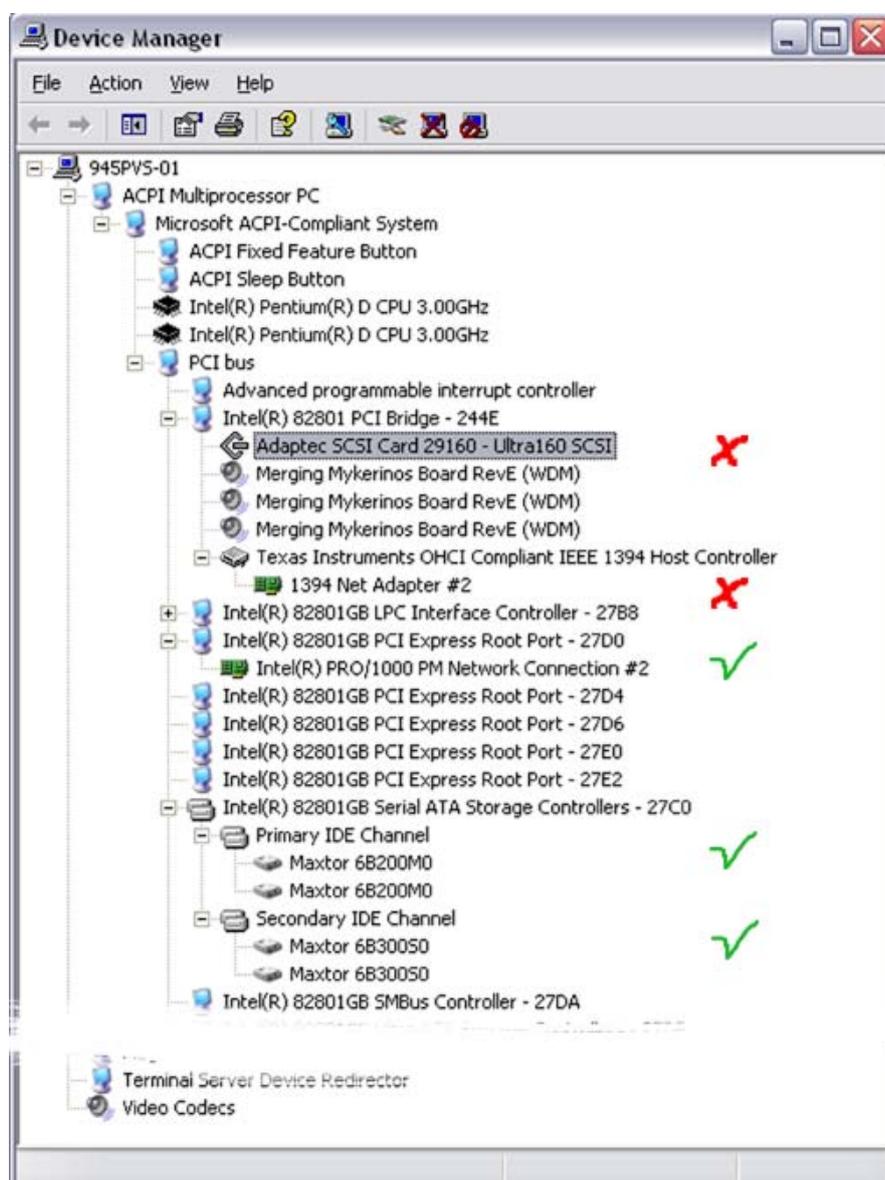
(Pyramix/VCube shown)

6 – Card Retention

A card retaining bar is supplied with the case.
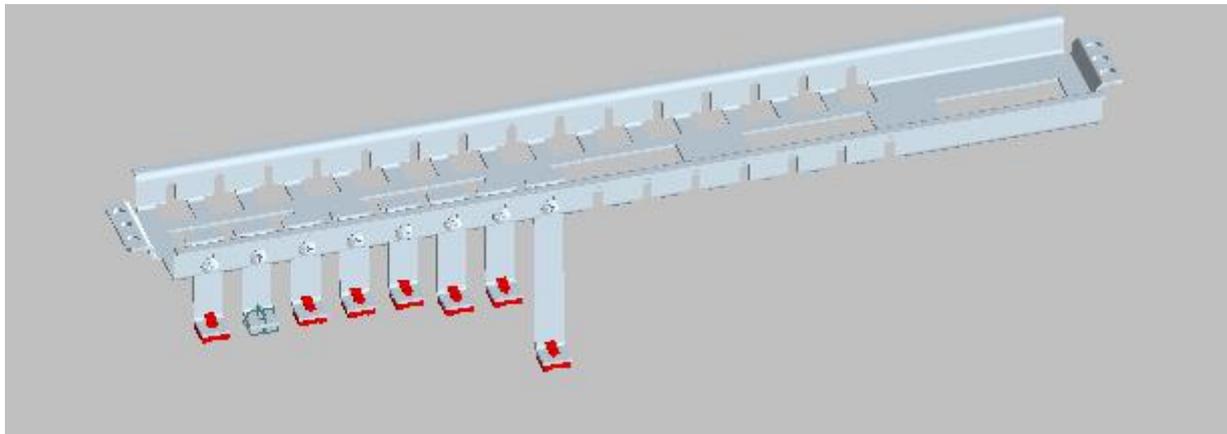
The retaining bar serves two functions. It braces and strengthens the case and the retaining fingers prevent the Mykerinos and other cards from becoming dislodged. Although the retaining bar may be safely omitted in permanently installed systems its use is recommended in all cases and mandatory for machines intended to be moved. E.g. hire and touring systems.
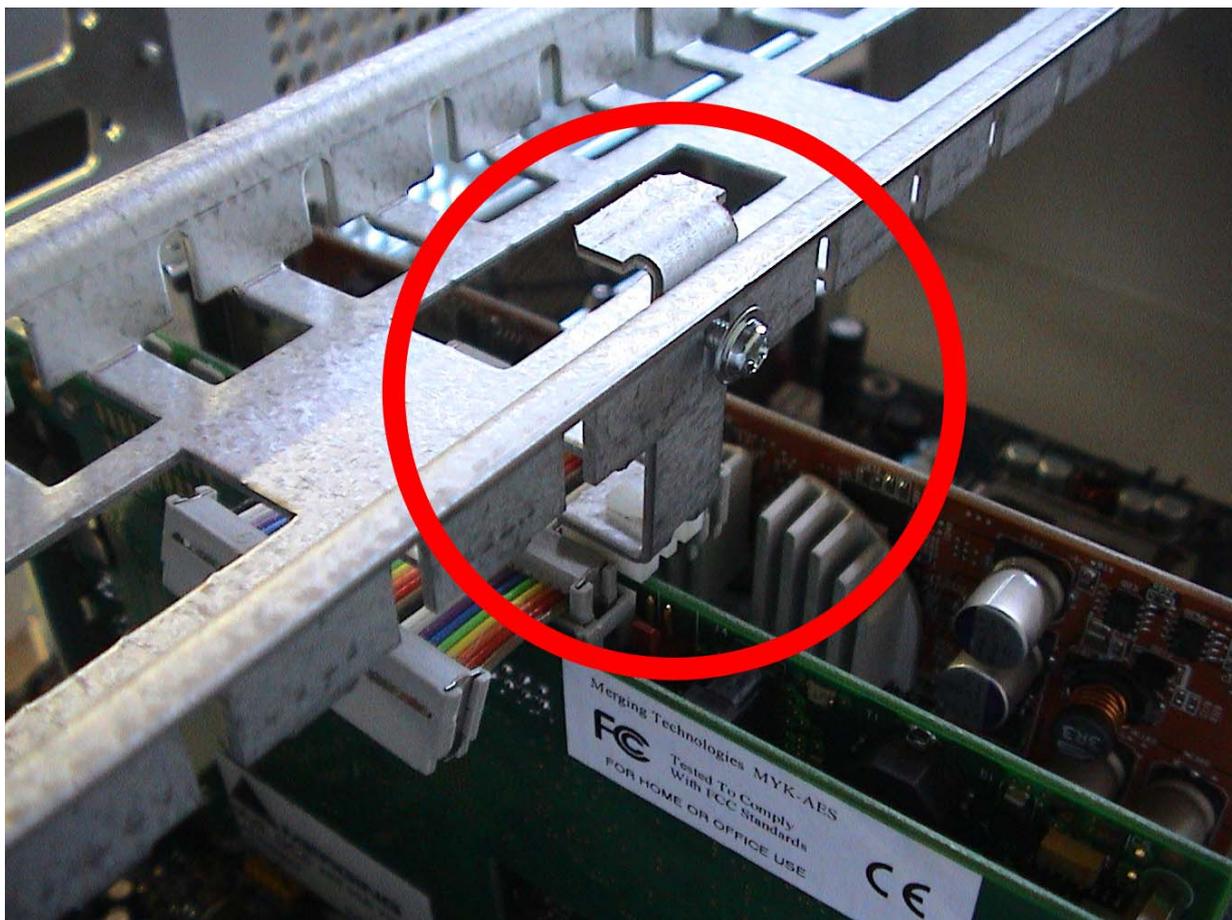
This image shows the retaining bar in situ with a card retaining finger ringed. Retaining fingers are supplied in different lengths to suit different height cards. Limited adjustment is possible by moving the finger up or down before tightening the retaining screw. Ideally, the plastic fingertip should be in light contact with the card.

7 – Sample System Specifications

Pyramix & VCube Systems

(Intel DP965LT motherboard)
- Quintessence AV Case – All aluminium ultra lightweight Custom Case
- High performance Intel 965 chipset and Core 2 Duo processor
- Gigabit Ethernet, Firewire/1394a, USB 2.0 (4x rear, 2x front)
- 1 x IDE ATA-100 Parallel port supporting two devices (both used)
- 4 x Independent SATA 3Gbit/s ports (one used)
- 3 x PCI slots (32bits/33MHz)
- 3 x PCIe (PCI-Express) slots (1x)
- 1 x PCIe slot for graphics card (16x) (used)
- Dual Head fast Graphics card with 1x VGA & 1x DVI outputs
- Dual DVI / Triple SVGA / Dual SVGA + Composite/Components Graphics card options
- 40GB system drive and 120GB 7.2k RPM data drive
- Optional RAID0/1, SATA storage (up to 4 internal drives)
- 1024MB of DDR2 DIMM memory (2 x 512MB)
- DVD+/- R/RW Optical CD-DVD reader/writer unit
- Low noise processor cooling system
- 6 x 3.5" shock mount, fast removal internal drive bays
- 3 x 5.5" shock mount drive bays for optical or removable drives installation
- Filtered, hard drive heat dissipation path
- 4 x low RPM low noise system fans
- 34 dB SPL "A" Weighted of acoustic noise measured at 1m, from front*
- 38 dB SPL "A" Weighted of acoustic noise measured at 1m, from rear*

measured in anechoic chamber, using B&K large diaphragm mic and test equipment

Luxor & VCube HD2K Systems

(Tyan Thunder S2676 motherboard)
- Quintessence AV Case – All aluminium ultra lightweight Custom Case
- Top of the range Intel Dual Xeon chipset and processor
- Gigabit Ethernet, Firewire/1394a, USB 2.0 (4 x rear, 2 x front) (VCube HD2K 1 x front)
- 2x U320 SCSI internal (optional rear connectors available for external use)
- 2 x IDE ATA-100 Parallel port supporting four devices (three used)
- 2 x Independent SATA 1.5Gbit/s ports (one used)
- 2 x PCI slots (32bits/33MHz)
- 3 x PCI-X slots (1 x 64bits/133MHz, 2 x 64bits/100MHz) on two busses
- 1 x PCIe slot for graphics card (16x) (used)
- Dual Head fast Graphics card with 1x VGA & 1x DVI outputs
- Dual DVI / Triple SVGA / Dual SVGA + Composite/Components Graphics card options
- 40GB system drive and 120GB 7.2k RPM data drive (Luxor 2 x 80GB mirrored system drive)
- Optional RAID0/1/5, SATA or SCSI storage (up to 6 drives internal, external unlimited)
- 1024MB of DDR2 DIMM memory (2 x 512MB)
- DVD+/- R/RW Optical CD-DVD reader/writer unit
- 6 x 3.5" shock mount, fast removal internal drive bays
- 3 x 5.5" shock mount drive bays for optical or removable drives installation
- Filtered, hard drive heat dissipation path
- 4 x low RPM low noise system fans
- 37 dB SPL "A" Weighted of Fan Noise measured at 1m, from front*
- 41 dB SPL "A" Weighted of Fan Noise measured at 1m, from rear*

measured in anechoic chamber, using B&K large diaphragm mic and test equipment

> **Note:** These sample specifications are subject to change at any time and without notice due to the rapid pace of development.
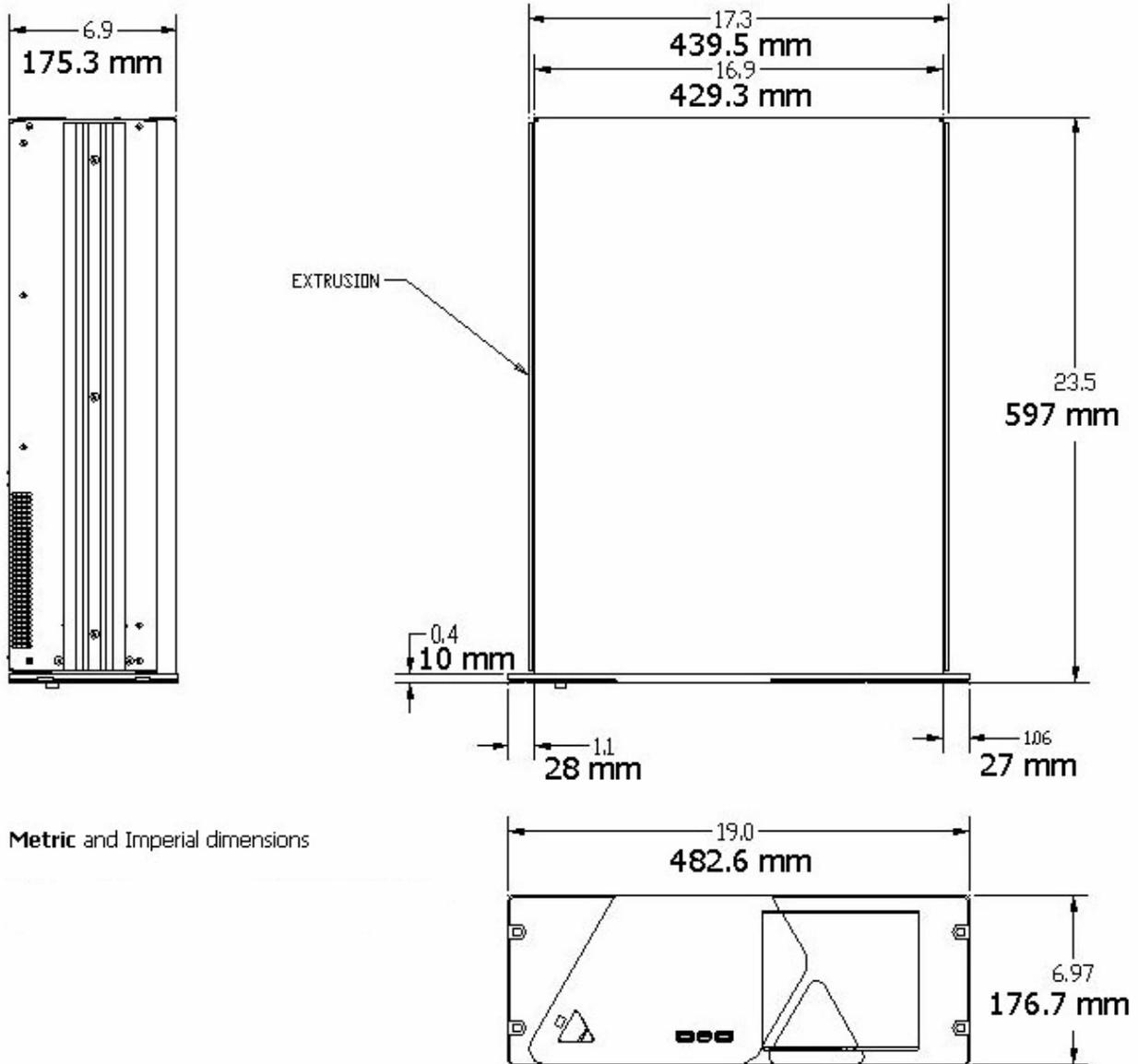
8 – Dimensions

Pyramix & VCube weights & dimensions

Installation:
Turnkey, standard configuration: 15 kg
Chassis size: mm: 597(D) x 482.6(W) x 176.7(H)
Shipping:
In shipping box, including accessories & manuals: 22.5 kg
Box size, mm: 730(D) x 630(W) x 330(H)

Luxor & VCube HD2K weights & dimensions

Installation
Turnkey, standard configuration: 16 kg
Chassis size: mm: 597(D) x 482.6(W) x 176.7(H)
Shipping:
In shipping box, including accessories & manuals: 23.5 kg
Box size, mm: 730(D) x 630(W) x 330(H)

9 – Troubleshooting

How can I determine which Mykerinos board is connected to the MTCHIO panel?

By default, the Mykerinos board connected to the MTCHIO panel is the one nearest of the PC power supply / PC Graphics card.

In a multiboard system, this board must be set as the Master for the system (check the TC checkbox in the VS3 control Panel), in order to be able to use the connected Video or the Word clock sync capabilities.

Nothing happens when I plug a USB device into a USB connector (located either on the back or on the front of the PC) ?

In some cases, it has been observed that a USB device (for example a mass storage device) is not always recognized by Windows. In fact, this occurs more often with USB 2.0 high speed devices. In such circumstances, please remove the USB key and try plugging it in again. Please note that a slow or hesitant insertion movement could be causing this unpleasant behaviour.

My Merging Logo is not shining in a light shade of blue in power off state, what is wrong ?

Check that the power cable is properly inserted into the power connector of the motherboard. Check also the polarity of this connection (the red line has to be on the positive pin of the motherboard power connector).

The rear chassis fans are not working when the PC is in power on state, what is wrong ?

Check that the polarity of the red and blue wires is respected on the connector blocks JP4 and JP5 on the MTCHIO module. Please see the picture below:
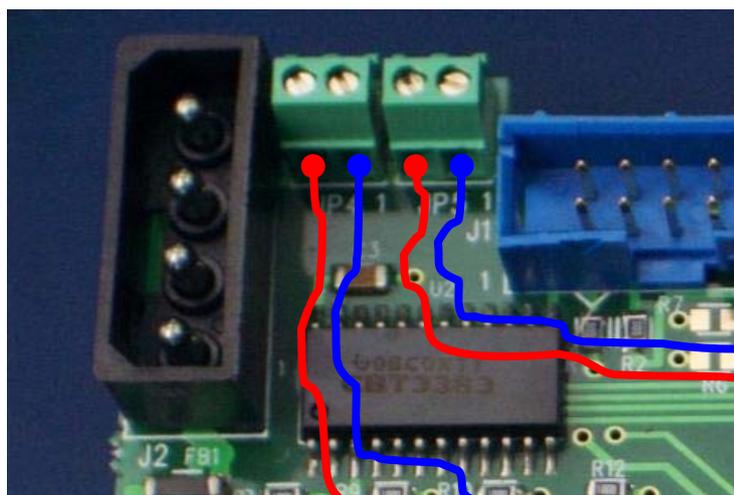
+12V : Red

GND : Blue

Appendix I

Motherboard Specific Notes

RS-232

An on-board COM header is not available on many modern motherboards including the Tyan Thunder S2676. Therefore it is necessary to use the Merging USB – RS232 converter and reworked Y-type USB cables.

Tyan Thunder S2676 motherboard only

(VCube HD2K only)
On this motherboard, there are only 2 on-board USB headers. This means you can only connect the USB – RS232 converter and ONE front panel USB port. The left one is connected and the right is obscured by an "**NC**" sticker.

Front USB Header (P24)

Function	Pin #	Pin #	Function
Power	1	2	Power
USB6-	3	4	USB7-
USB6+	5	6	USB7+
GND	7	8	GND
Key	9	10	Reserved
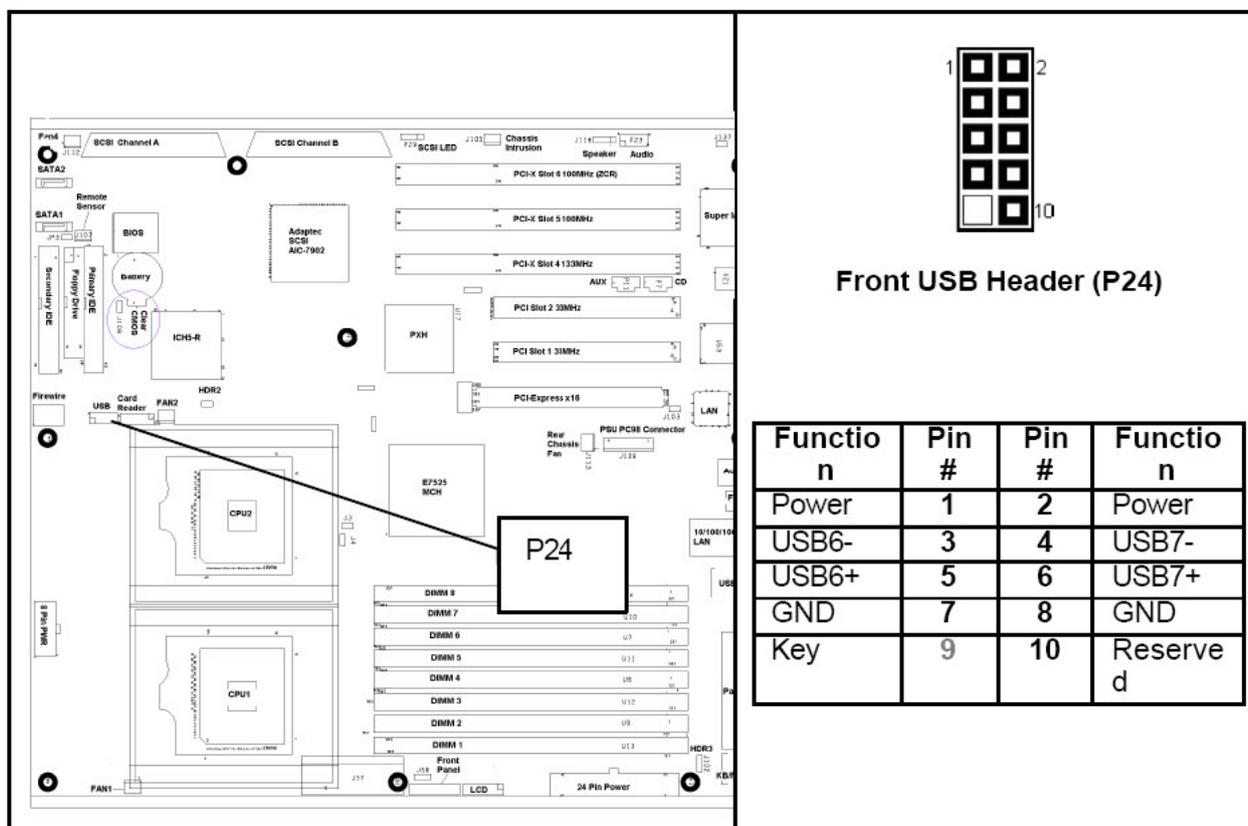
Note: One port is connected to the USB to RS-232 module and the remaining one to the front panel USB/1394 module.

A reworked Y-cable is used to connect the USB to RS-232 converter module and a normal Y-type cable for the front panel module. The spare connector is retained in case the motherboard is later upgraded to a model with more than two USB headers.

Appendix II

Luxor and VCube HD2K Slot Configuration

The following tables apply to **Luxor** and **VCube HD** machines using the **Tyan Thunder S2676** motherboard.

Luxor

Luxor - Recommended Extension Slot configuration				
Slot	**Bus**	**Luxor SATA**	**Luxor SCSI**	**Luxor Fiber**
1	16x PCIe	Graphics Card	Graphics Card	Graphics Card
2	PCI32			
3	PCI32			
4	PCI-X 133	Network Card	Network Card	Network Card
5	PCI-X 100			
6	PCI-X 100	SATA Raid Card		Fiber Card
on board	SCSI U320 A		used	
on board	SCSI U320 B		used	

VCube HD2K

Vcube HD2K - Recommended Extension Slot Configuration				
Slot	**Bus**	**Vcube HD2K SATA**	**Vcube HD2K SCSI**	**Vcube HD2K Fiber**
1	16x PCIe	Graphics Card	Graphics Card	Graphics Card
2	PCI32			
3	PCI32	Audio Card	Audio Card	Audio Card
4	PCI-X 133	Video Card	Video Card	Video Card
5	PCI-X 100			
6	PCI-X 100	SATA Raid Card		Fiber Card
on board	SCSI U320 A			
on board	SCSI U320 B			