

Omneon MediaController™

Omneon MediaController™

Installation and Technical Manual

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1 Introduction

The Omneon MediaController™ provides a user-friendly remote control interface for the Spectrum media server as well as other professional videodisk recorders and servers.

This manual describes the installation and configuration of the MediaController. Refer to the MediaController Operation guide for operational details. The controller can program and control up to five devices.



In this manual MediaControllers are referred to as 'controller'. The Spectrum media server, VTR, DDR, server and video disk recorders may also be referred to as 'VDR' or 'device'.

The MediaController will control the Omneon Spectrum media server as well as VTRs and other servers.

Introduction

1.1 The MediaController

Initial configuration

The minimum configuration needed to use a Controller requires certain Disk, Channel and System settings to be selected within the setup menu. The settings depend on the server protocol in use.

The factory default settings are for the Spectrum media server uses VDCP (Harris / Louth) protocol. To change the default settings refer to the configuration and the Server Protocols chapters in this manual.

2 Installation

The Omneon MediaController –Spectrum media server controller is designed as a desk-top unit.

Unpacking

The Omneon MediaController – Spectrum media server controller is shipped in a carton, which may contain other optional items within the packing, and care should be taken to ensure that these are not thrown away. The contents of the carton are as indicated on the delivery note. Carefully unpack and check for shipping damage and shortages. Report without delay, any damage or shortages to Omneon Video Networks.

Desk mounting

The MediaController – Spectrum media server controller requires no special fixings.

Outline dimensions are given in the Addendum at the back of this manual.

Installation

Warnings – read before installation or use

Do not apply AC mains power until all the preliminary activities and interconnections have been completed.

AC voltages in excess of 100 volts can be dangerous and even lethal under certain conditions. To prevent injury to personnel and damage to the controller, ensure that it is disconnected from the AC power source (not just switched off) before any dismantling takes place.

Only suitably qualified engineers should carry out maintenance.

Ensure that the power earth connection is correctly made.

Always check that the supply voltage specified is correct for the local AC power supply voltage.

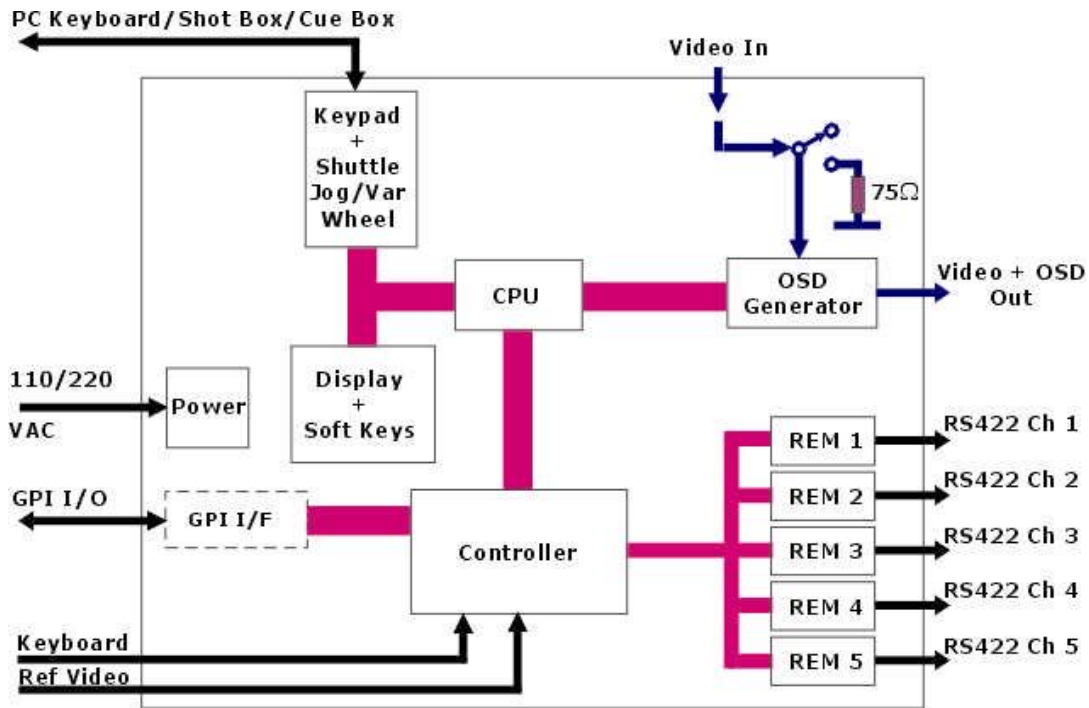
The controller consists of electronic parts. Do not drop the controller or bump it against other objects or place the controller near heat sources such as radiators or air conditioning ducts.

Care should be taken so that solid objects or liquid do not fall into the Controller enclosure.

Clean the case with a soft dry lint free cloth, such as chamois leather. Do not use any type of solvent such as alcohol, which might damage the special 'Nextel' finish.

Installation

2.1 External connections



Omneon MediaController – for Spectrum media server



Omneon MediaController – typical rear view

Power requirements

In the UK, the mains plug should be approved to BS1363 and be fitted with a 3 amp fuse approved to BS1362.

All accessible metalwork in the room and the safety earth connections of other electrical circuits must be electrically connected together in accordance with safety regulations BS6204. This can be accomplished either by separate routes to the building earth or by bonding together or a combination of the two.

A suitable double-pole earth leakage protection device, conforming to BS6204, VDE0805 and IEC435 must be used to protect power supplied to the unit.

Installation

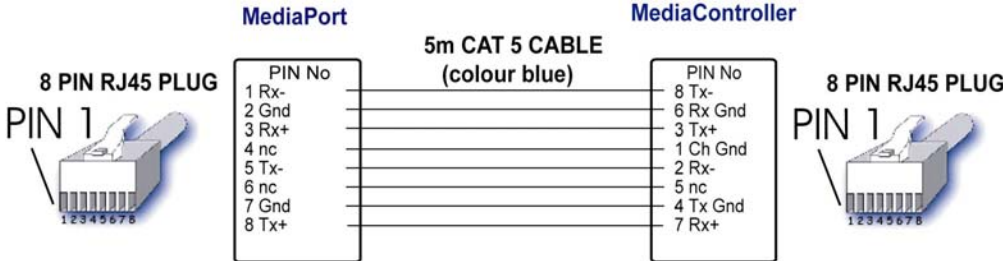


Check the mains input connector voltage setting. To change the voltage, reverse the fuse holder. Connect a power lead to the mains input when ready.

Connecting controlled devices

The RS422 device control ports are implemented as RJ45 connectors to make the best use of space at the rear of a desktop unit.

The unit is supplied with 5 off cables, each 5M in length, designed for direct connection from a Spectrum media server to a MediaController



If it is decided to manufacture your own cables it is recommended not to exceed 100 metres of CAT 5 cable. See addendum, cable pin out reference for wiring the converter.

RJ45 connector pin-out

Pin No	Description	RJ45 Connector
1	Chassis Gnd	
2	Rx A Data	
3	Tx B Data	
4	Tx Gnd	
5	N/C	
6	Rx Gnd	
7	Rx B Data	
8	Tx A Data	

Server Control

Each channel has a corresponding remote connector (REM 1 to 5). Connect the channels to be used to the MediaController using RS422 cable. It does not matter at this stage if it is an input channel (RECORD) or output channel (PLAYBACK) as this is configured in the MediaController.

A VTR can be also be connected to the MediaController, again it does not matter which channel is used as this is configured in the MediaController.



It is not necessary to connect a video reference to the MediaController. This is provided for ingest applications.

Installation

On Screen Display

If the on screen display (OSD) is required, connect an analogue video source to the OSD MON VIDEO IN connector, and connect the monitor to the OSD MON VIDEO OUT connector. Switch the OSD MON TERM switch to the ON position to terminate the video source (75 ohm termination). If a 'T' piece is used to loop the video source through the MediaController, the OSD MON TERM switch should be switched off.

Keyboard

Connect a standard PC keyboard to the keyboard connector.

3 Configuration

The Set-up Menu is used for altering the factory default settings. All settings are stored in battery backed RAM.

Navigating the menu

Use [SHIFT] + [ENTER] to enter the Set Up menu

The Set-up Menu consists of four separate set-up pages: - CHANNEL, VTR, DISK and SYSTEM Set-up Menus, selected using the soft keys [S1] to [S4]. Each page has a list of settings, which can be changed with a combination of the scroll wheel, [SELECT] key, keypad and keyboard.



A full explanation of each menu setting is displayed at the top of the set-up page on the display; therefore no attempt is made in this manual to repeat this information.

Before making any changes in the Set-up Menu, it must be decided which ports (REM 1 to REM 5) the Spectrum media server is to be connected to and which type of VDR (VTR and/or type of video disk server) is connected to any other ports of the MediaController.

Configuration



The Set-up Menu



Some of the settings require a keyboard to be connected.

If a mistake is made while changing a setting pressing [ESC] will exit from that setting without saving.

Additional VTR Menu settings

Live TC Source

To get running TC in Live modes, some machines supply this as a result to EE switching, others by the READ TC GEN command.

Additional System Menu settings

Reference TC

Initialise the internal reference TCG.

4 Server protocols

4.1 VDCP (Harris)

The MediaController is pre configured to control each channel of the Spectrum media server using VDCP. It is possible to use either VTR or Odetics protocols, but it is strongly recommended that expert advice is sought before doing so.

A table containing the recommended settings for the MediaController can be found at the end of this section of the manual.

To install and configure the MediaController proceed as follows:

1. Turn on the MediaController
2. Turn on the disk recorder
3. Select VDCP Automation communications on the Omneon Spectrum and check the following settings:
 - Serial ports correspond to the video channel being used, through which the MediaController will control the Spectrum media server
 - In the Player configuration for that MediaPort, be sure that VDCP is selected as the control method

4. Use the MediaController's channel Setup Menu to configure:
 - Which channels are to be used for playback and which are to be used for record
 - Set the video port number to 1 (other servers and devices may a different set up)
5. Connect the MediaController and the Spectrum media server using the supplied cables
6. Press the Channel Selection Keys - the MediaController then checks the Spectrum media server, opens the port for that channel and displays 'NO CLIP' in that channel selection key

The MediaController is now ready for use.

Application Server notes

Disk catalogue clip names longer than 30 characters are ignored.

Server protocols

Trouble shooting record errors

There are four common causes of record failures:

1. Improper video source. There must be a valid video source present at the encoder input for the record to work. For the purposes of testing, the output of one of the decoders can be fed to the encoder input, as long as there is some material present on the server.
2. The video file system is 'dirty'. This typically occurs if the server has been shut down improperly. If this has occurred, perhaps because of a power failure, the server marks the video file system as dirty. This prevents possible disk corruption that might occur otherwise.
3. The record port number is not properly encoded.
4. Insufficient disk space. MediaController defaults to 03:00:00:00. In a closed-ended recording, the system checks the available disk space. If there is not enough to record the length specified, the record cue fails.

4.2 Odetics VDR

The Odetics protocol is also supported by the MediaController. It is strongly recommended that VDCP is used; however, in some specific applications particularly where other VDRs or servers are used Odetics may be a preferred option. Contact Omneon support for advice.

Additional Odetics features

Disk catalogue extras

The Odetics protocol allows a disk catalogue to be performed on a record channel. There is also an additional update command in the disk catalogue menu.

Eject Delay

Sets the time that the controller must wait after unloading a clip before it can load the next clip.

Cue Command

Sets whether a cue operation uses the traditional BVW Cue command or the Odetics IN PRESET command.

Server protocols

4.3 MediaController Recipe for Omneon

It is important to note that the Omneon Spectrum media server supports both play and record on the same VDCP channel

DISK PROTOCOL	PARAMETER	RECOMMENDED VALUE	LOCATION	
VDCP	Device Type	Set as Required	Channel Menu	
	Video Port Number	1	Channel Menu	
	Disk Protocol	Louth	Disk Menu	
	Time Code	Set as Required	Disk Menu	
	GOTO Command	Jog	Disk Menu	
	Variable ID Lengths	On	Disk Menu	
	Playlist Load	00:00:05:00	Disk Menu	
	Playlist Change	00:00:00:05	Disk Menu	
	Cue End Latency	00:00:00:20	Disk Menu	
	Load Latency	5 frames	Disk Menu	
	Video Standard	PAL or NTSC	System Menu	
	ODETICS	Device Type	Set as Required	Channel Menu
		Disk Protocol	Odetics	Disk Menu
Time Code		Set as Required	Disk Menu	
Playlist Load		00:00:05:00	Disk Menu	
Cue End Latency		00:00:00:01	Disk Menu	
Eject Delay		0 mSec	Disk Menu	
Cue Command		New (44 14)	Disk Menu	
Video Standard		PAL or NTSC	System Menu	
VTR	Device Type	VTR	Channel Menu	
	Time Code	Set as Required	VTR Menu	
	Frame Offset	00:00:00:02		
	Cue End Latency	00:00:00:01		
	Live TC Source	TC Gen		
	Video Standard	PAL or NTSC	System Menu	

5 License Options



Power up Splash Screen

Bottom Left corner license information

5.1 System Configuration

To see which options are currently enabled on the controller, Press [SHIFT] + [ENTER] to go into the main SETUP menu. Push {S4} to go to Systems Menu and scroll to the bottom with the Scroll Knob/Wheel. Push down on the Licensed Options item to see which options are enabled.

License Options

5.2 Serial Number

The Serial Number is unique to every controller. You will need to quote this number when you contact us if there is a problem with the machine or when you want to upgrade the License options the controller has. To find the Serial Number of your controller, press [SHIFT] + [ENTER] to get to the main Setup Menu screen and the serial number is located on the top right of the screen.



Setup Screen

= Location of Serial Number

5.3 License Codes

License codes are used to enable and disable the different options so that you are able to use the options you have purchased and also to disable options not purchased. The MediaController comes preconfigured to support the options you have purchased. To upgrade your controller contact Omneon Support.

How to enter License codes

Press [SHIFT] + [ENTER] to go into the main SETUP menu. Push {S4} to go to Systems Menu and scroll to the bottom with the Scroll Knob/Wheel. On the item that says License Code, press the scroll knob down and then enter the 16-character code with the scroll knob and [-] and [+] keys, or with a PC keyboard.



When entering the License code, the PC keyboard is enabled even if it is not enabled in the License options.

6 Solving install problems

The following table lists commonly asked installation questions and their solution:

Why do the select buttons show NO COMMS?

Check the RS422 communications to the Spectrum media server or VTR.

Check that the appropriate protocol has been selected for any connected server and that it is powered and not in LOCAL mode.

Check that the server is running the correct protocol application.

If changes have been made last time the controller was used, try restarting the protocol application on the server and using RESET in the channel setup menu.

Check that the correct RS422 connections have been made to the Spectrum media server - on large server installations there may be many serial connectors not all RS422.

How do you change settings in the Setup Menu?

To enter the Setup Menu press [SHIFT] + [ENTER] from any mode.

Which disk servers are supported?

As well as the Spectrum media server the MediaController supports most devices that use Odetics and VDCP protocol. Contact Omneon for advice.

Which VTRs are supported?

VTRs that support the Sony RS422 9 pin protocol.

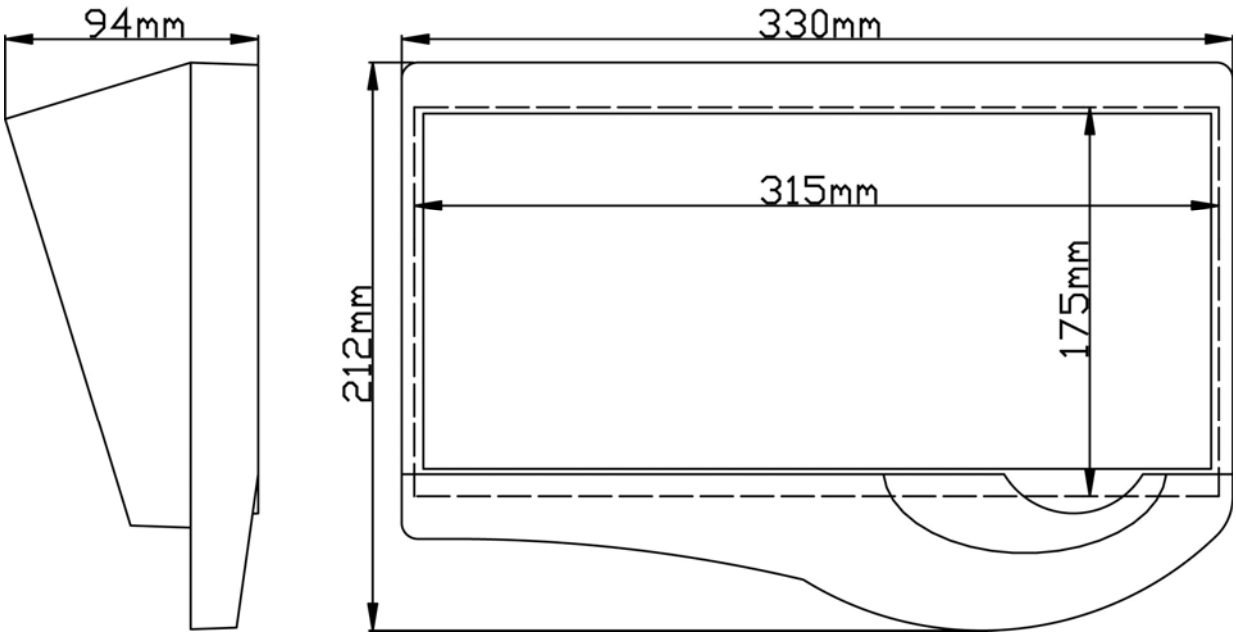
Why is the OSD output not working?

Check that a valid analogue signal is connected to the OSD input(s) and that a working PAL or NTSC analogue monitor is connected to the OSD output.

7 Addendum

7.1 Outline dimensions

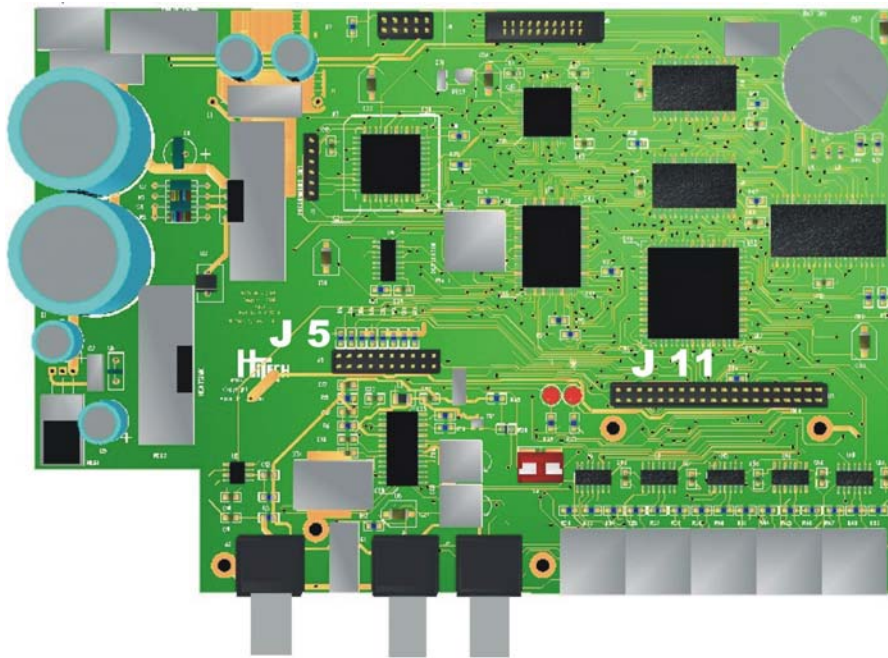
The MediaController has the following outline dimensions:



Omneon MediaController Outline dimensions

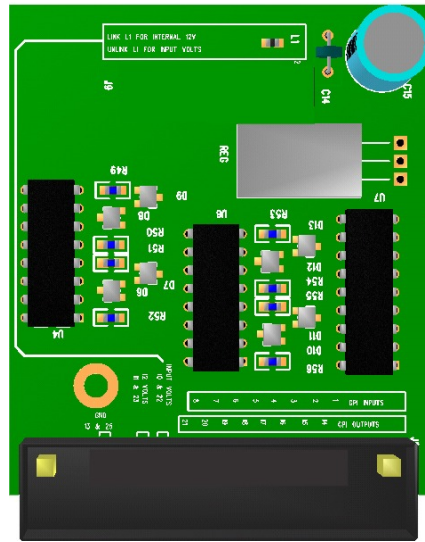
7.2 The GPI I/O Interface

The HT4451 GPI interface provides 8 GPI inputs and 8 GPI outputs. It is pre-installed as a plug-in module into the main MediaController PCB.



MediaController main circuit board

Addendum



GPI I/O option – slots into J 5

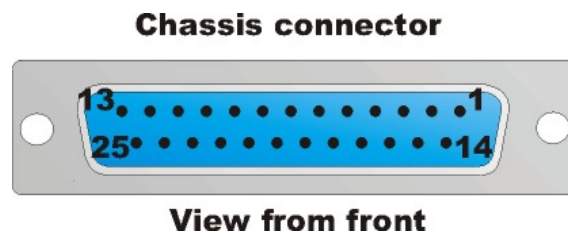
GPI action

GPI inputs are momentary or pulse connections to ground, except for ON-AIR which requires the connection to be held to ground for the time the ON-AIR is required to be on.

The functions of the general-purpose inputs and outputs are programmed in the system Setup Menu. No other software configuration is required to the MediaController.

GPI interface pin out

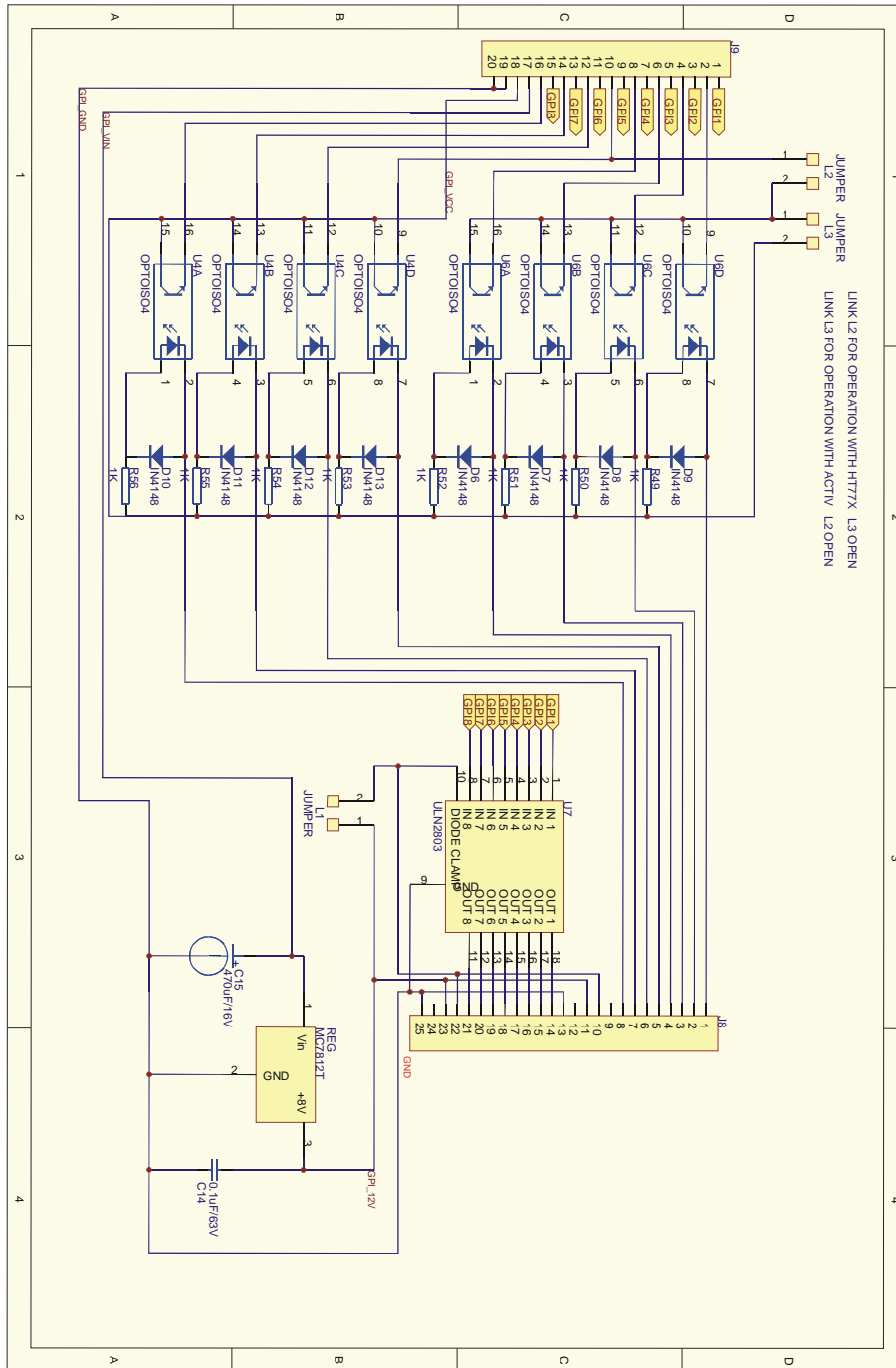
Pin No	Description	25 way 'D' connector
1	GPI – IN 1	
2	GPI – IN 2	
3	GPI – IN 3	
4	GPI – IN 4	
5	GPI – IN 5	
6	GPI – IN 6	
7	GPI – IN 7	
8	GPI – IN 8	
9	N/C	
10	LK1 – Power In/Out	
11	12 volts	
13	GND	
14	GPI – OUT 1	
15	GPI – OUT 2	
16	GPI – OUT 3	
17	GPI – OUT 4	
18	GPI – OUT 5	
19	GPI – OUT 6	
20	GPI – OUT 7	
21	GPI – OUT 8	
22	LK1 – Power In/Out	
23	12 volts	
24	N/C	
25	GND	



Addendum

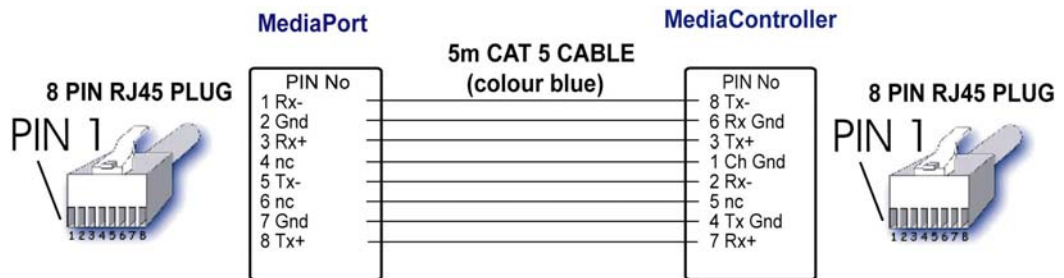


Refer to the GPI Interface circuit layout diagram below for further connection details and typical external tally wiring. As supplied LINK L1 is un-made.

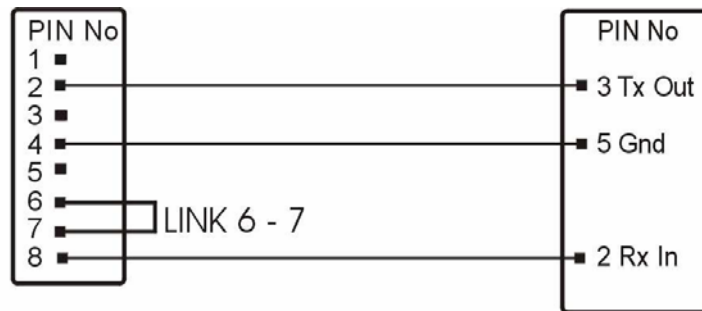


7.3 Cable pin out reference

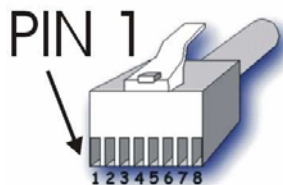
The following information is provided for those wishing to make their own cables



MediaController to Spectrum RS422 cable



8 PIN RJ45 PLUG



CONNECTION TO
CONTROLLER
USING RJ45 CONNECTOR

9 PIN "D" TYPE SOCKET'S



CONNECTION TO
RS232 ON PORT
ON COMPUTER

RJ45 to D type – RS232 cable

Making a software upgrade serial cable

Addendum

Notes on PC serial connectors

Some computers, particularly laptops have odd earth arrangements on the RS232 connector, making the download problematic. If possible, use a desktop PC for performing s/w updates.

8 Specification

Control ports

Communication Format: RS-422-A

Communication Channel: Full Duplex

Data Signalling Rate: 38.4 Kb/s (K bits per second)

Communication Protocol: VDCP, Odetics, and 9 pin RS422

Serial connectors: RJ45 – 8 pin sockets

Other Disk Recorders controlled: Those supporting Odetics and VDCP protocol. Contact Omneon for advice

VTRs controlled: VTRs that support the Sony RS422 9 pin protocol.

Power

Mains input: Fused IEC connector

Voltage: 90 to 260 VAC 47-63Hz selected via reversible fuse holder

Power consumption: Less than 10 watts

Optional GPI module

GPI / Extension: 25 pin "D" 25 socket

General

Operating Temp: 0 - 35 Deg C

Specification