Micro-UDX
User Manual

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c) Caused by installation of the Product in a hostile operating environment or connection of the Product to incompatible equipment;

Table of Contents

1.0 WHAT'S IN THE BOX

1 x Micro-UDX

1 x Mounting Plate

1 x RJ50 to DB9 cable for GPI/Tally

1 x 75 ohm BNC terminator

1 x DC 5V 3.2A Power Adapter

1 x CD (software, manual)

2.0 Key Features

- Low power consumption - 12 W and Silent – No fan!
- Accepts 1 x auto-detect 3G SDI, HD SDI, SD SDI and Composite video signals
- Simultaneous HDMI and SDI outputs
- Decode up to 8 embedded audio per SDI input
- Ethernet port for Configuration
- Audio monitoring output – analog, HDMI
- Four configurable Front Panel Buttons
- 8 x GPI contacts: Configurable for tally or ASCII protocol
- Automatic aspect ratio

3.0 Specifications

Description	Compact video Up, Down, Cross-convertor
Output	1 x HDMI, 1 x SDI
HDMI	800x480 to 1920x1200, (1080p) 50/59.94/60Hz
SDI	Matching the HDMI, output resolution up to 3G
Inputs	3G/HD/SD-SDI/Composite
Serial Digital Video	SMPTE 424M, 292M, 259M
Equalization	120m at 2.97 Gbps, 140 m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A
Return Loss	>15db up to 1.485 Gbps >10db up to 3G
Embedded Audio	SMPTE-272M-A
Composite	NTSC (SMPTE-170M), PAL (ITU624-2)
Signal Level	1V nominal
DC Offset	0V, ± 0.1V
Impedence	75 Ω
Return Loss	40 db up to 5MHz
GPI	8 for tally or AXP (ASCII commands)
IP	100 Base-Tx, AXP_Lite
Electrical	12 W, 90-250V 50/60Hz
EMI/RFI	Complies with FCC Part 15, Class A, CE, EU, EMC, C-tick
Power	DC 5V 3.2A
Size	171mm W x 120mm D x 44.45mm H
Mount	Magnetic
Options	Rack Mount

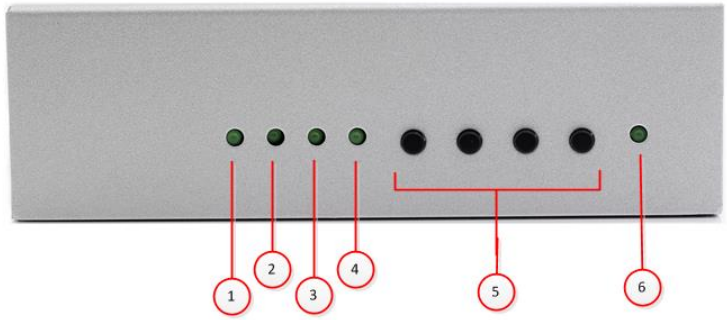
3.1 Input / Output Combinations

Input / Output (SDI/HDMI)	SDI / HDMI OUTPUTS									
Supported input format	525i / 480p	625i / 576p	720p59.94	720p60	720p50	1080i59.94 / 1080p59.94	1080i60 / 1080p60	1080p59.94	1080p60	1080p50
525i 59.94	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
720p59.94			✓			✓		✓		
720p23.97			✓			✓		✓		
720p24	✓	✓		✓	✓		✓		✓	✓
720p29.97			✓			✓		✓		
1080i59.94			✓			✓		✓		
1080p59.94			✓			✓		✓		
1080p30	✓	✓		✓	✓		✓		✓	✓
1080p29.97			✓			✓		✓		
1080p25				✓	✓		✓		✓	✓
1080p24	✓	✓		✓	✓		✓		✓	✓
1080p23.97			✓			✓		✓		
1080p25sf	✓	✓		✓	✓		✓		✓	✓
1080p24sf	✓	✓		✓	✓		✓		✓	✓
1080p23.97sf			✓			✓		✓		
720p30	✓	✓		✓	✓		✓		✓	✓
720p60	✓	✓		✓	✓		✓		✓	✓
1080i60	✓	✓		✓	✓		✓		✓	✓
1080p60	✓	✓		✓	✓		✓		✓	✓
625i50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
720p25				✓	✓		✓		✓	✓
720p50				✓	✓		✓		✓	✓
1080i50				✓	✓		✓		✓	✓
1080p50				✓	✓		✓		✓	✓

4.0 Hardware and Installation

4.1 Front / Rear Panel

Figure 4-1: Micro-UDX Front Panel



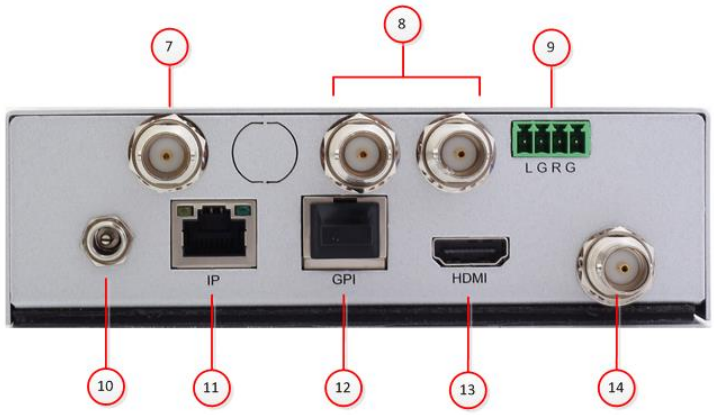


Figure 4-2: Micro-UDX Rear Panel

1	STATUS	Indicates detected input video
2	AUDIO	Input video embedded audio detected
3	HDMI	HDMI output video format (on=HDMI, off = DVI)
4	59.94	Output video clock (system clock) (on=59.94/29.97/23.98, off=60/50/30/24)
5	1 thru 4	Preset buttons
6	PWR	Power indicator
7	IN 1	SDI/CVBS video input
8	LOOP 1,2	Loop out of video input signal
9	AA OUT	Audio Monitoring output connections (Left Channel, Ground, Right channel, Ground)
10	5V DC	Power input. 5 Volt DC 3 Amp
11	IP	LAN Ethernet
12	GPI	GPI/O port (adapter cable and breakout panel accessories included)
13	HDMI	Video output (configurable as DVI or HDMI video)
14	SDI OUT	SDI Video output (duplicates HDMI video)

4.2 Installation

4.2.1 Ventilation

The MicroQ is a fan-less device; therefore, it is very important the heating vents on the sides are not blocked

Figure 4-3: MicroQ Venting

4.2.2 Mounting

The MicroQ can be mounted 3 different ways

- Using the standard magnetic mounting plate
- Using the optiona VESA plate for mounting on the back of the monitors
- Using the optional rack mount to mount 2 MicroQ's side by side

Figure 4-4: MicroQ Standard Mounting Plate

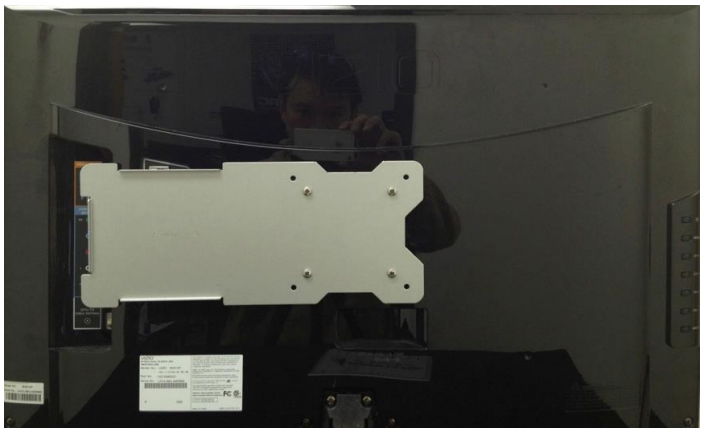


Figure 4-5: MicroQ Optional VESA Mounting Plate

Figure 4-3: MicroQ Optional VESA Mounting Plate with MicroQ

Figure 4-6: MicroQ Optional Rack Mount

4.2.3 Power

Make all connections prior to energizing the unit. Connect and secure the power adapter to the unit prior to plugging in or energizing the adapter. Power indicator LED will lite on unit when power is applied.

4.2.4 SDI Loop Out

If only one loop out is utilized, terminate the other loop out connection with the supplied 75ohm terminator.

4.2.5 IP

Note: Default IP address: 192.168.1.151

If the configuration PC is connected directly to the unit, it must be on the same subnet as the MicroQ, for example, "192.168.1.1". If the configuration PC and unit are connected via a LAN system, the PC must be able to 'ping' the unit's IP address. This will depend upon your LAN network hardware and configuration.

4.2.6 HDMI video output

The default output resolution is set to 1024x768@59.95 Hz for 60Hz countries and 1024x768@60Hz for 50Hz countries to accommodate the most common display resolution. The output resolution will need to be set to obtain an HDMI display on some monitors. HDMI output will also carry the selected for monitoring audio channel pair as embedded HDMI audio.

4.2.7 SDI video output

The SDI video duplicates the HDMI video resolution. If the HDMI is not set to a resolution which is a standard SDI video resolution, then no SDI video will be present.

4.2.8 AA OUT

The analog audio output port comes with a detachable screw terminal block. The pinout of the port is:

- Left Audio Channel
- Left Ground
- Right Audio Channel
- Right Ground

The audio output can be configured to select any of the available SDI video embedded audio channel pairs (or muted). (see software chapter.)

4.2.9 GPI port

Note: the GPI port is an 10-wire RJ50 connection, not a standard 8-wire Ethernet RJ45. Connections can be made to the GPI port with the included accessories; a RJ50 to DB9 adapter cable and a DB9 to screw terminal breakout block.

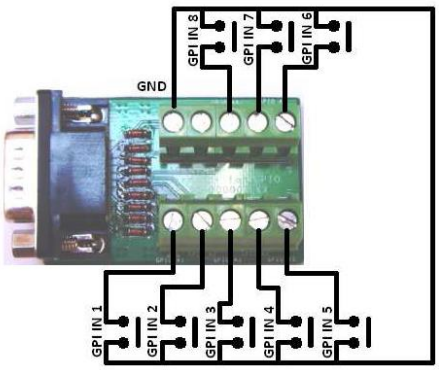


Figure 4-7: Wiring diagram for GPI inputs

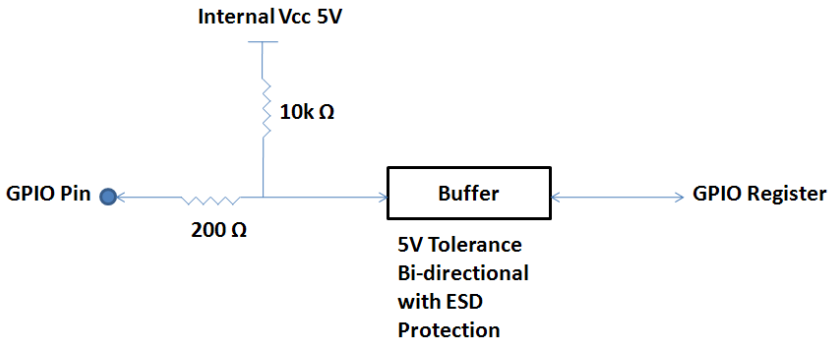


Figure 4-8: GPI/O Electrical Characteristics

5.0 MicroQ_Lite_Controller Software

5.1 Getting Started

The MicroQ_Lite_Controller is designed to allow you to quickly access all the feature sets of the Micro-UDX on a single User Interface. This section will help you get the Micro-UDX up and running with the MicroQ_Lite_Controller as quickly as possible.

5.2 Running the MicroQ_Lite_Controller

Before you can successfully run the MicroQ_Lite_Controller, you must first copy it from the CD prvided and place it in an appropriate location on your computer's HDD.

Now you can run the MicroQ_Lite_Controller by double clicking on the "Apantac MicroQ_Lite_Controller" icon.

Figure 5-1: Double click on the Apantac MicroQ_Lite_Controller

5.3 Connecting to the Micro-UDX

To connect to the Micro-UDX you PC must be connected to the same subnet as the Micro-UDX. The default IP address for the Micro-UDX is 192.168.1.151 After the MicroQ_Lite_Controller launches, you will see this screen

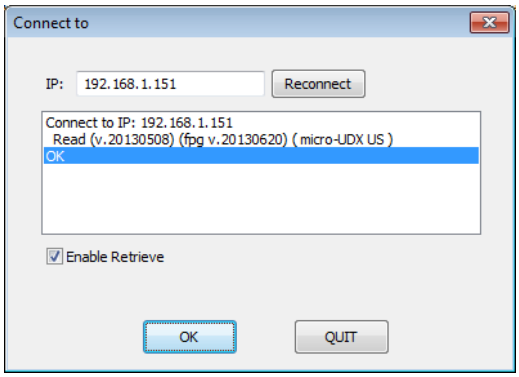


Figure 5-2: Connect dialog

Edit the IP address text box, if the desired IP address is not already entered.

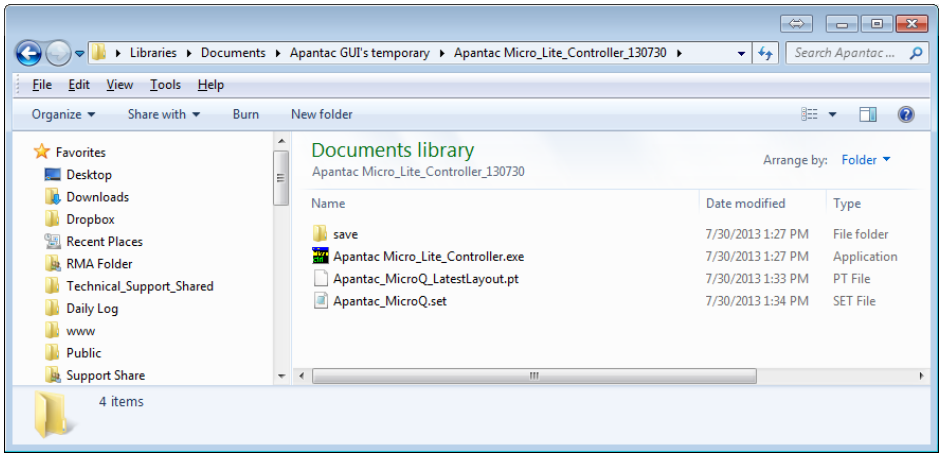


Figure 5-3: Save folder will create automatically

Once the MicroQ_Lite_Controller connects to the Micro-UDX a Save folder and data files will be created in the same directory

After the MicroQ_Lite_Controller is connected to the Micro-UDX, the configuration surface will appear.

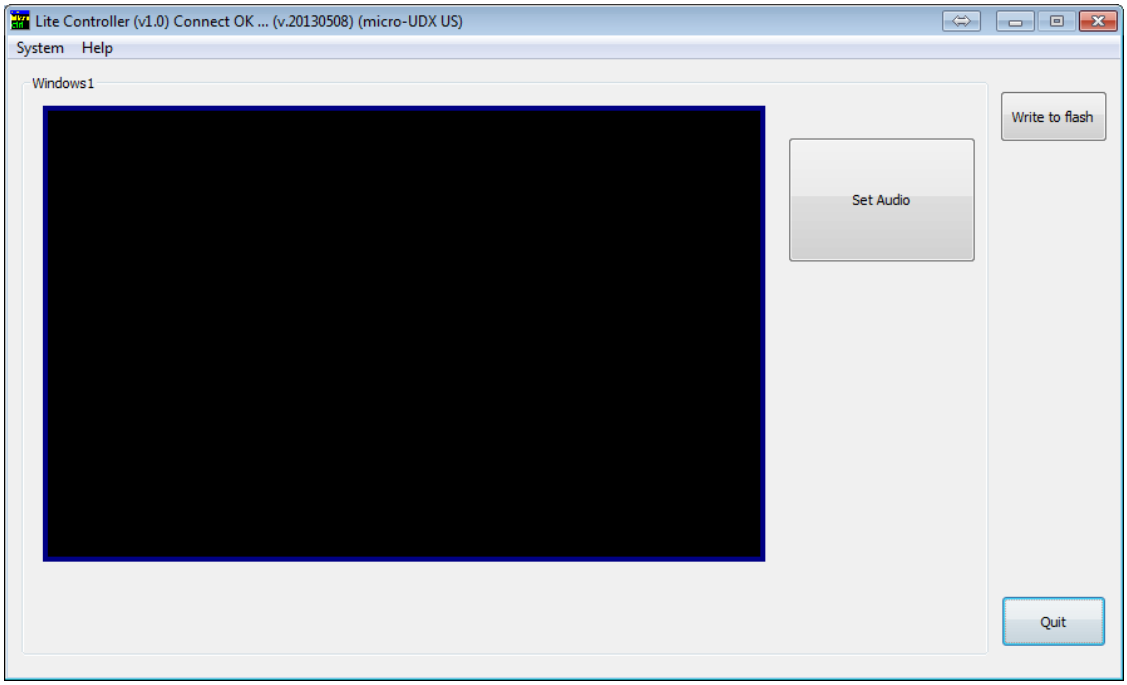


Figure 5-4: Micro-UDX control GUI

Now you are ready to configure your layout.

Note: the Micro-UDX software is a derivative of the MicroQ series software. Some of the software is not applicable to the features of Micro-UDX model.

5.4 Configuring the Micro-UDX

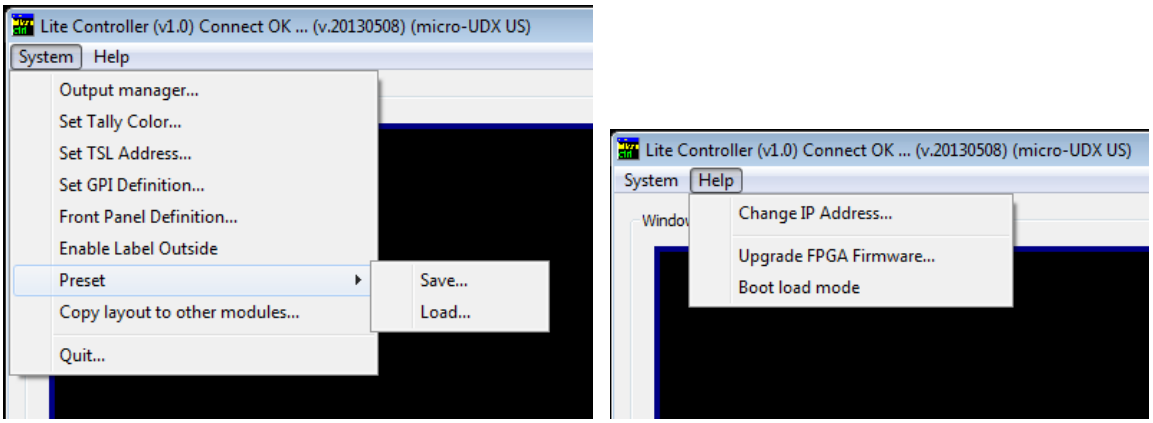


Figure 5-5: Micro-UDX menus

5.4.1 Output manager...

The primary configuration of the Micro-UDX unit is setting Output resolution and Frequency. This is performed through the Output Manager.

The Micro-UDX has a single video clock generator. Setting the output frequency also determines the accepted input video frequencies. If your input sources are 59.94, the output resolution and timing must be set to 59.94Hz.

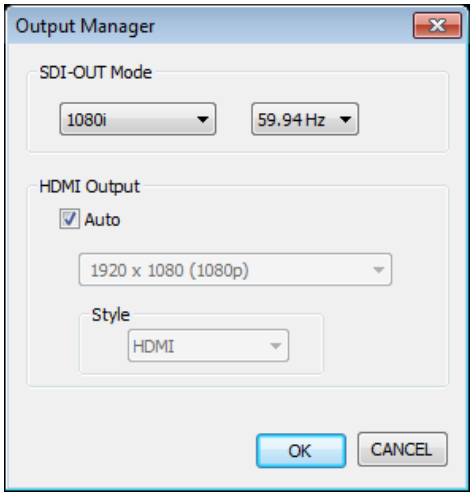


Figure 5.5: Set output resolution

SDI-OUT Mode

Choose the resolution (format) and refresh rate (frequency) from the pulldowns.

The SDI output format must match the HDMI/DVI output timing. However, as an exception, if the HDMI/DVI output is set to 1080p, the SDI output can also be set to 1080i.

HDMI Output 'Auto' mode
The default is to have the 'Auto' mode ON (checked).

If the Auto mode is un-checked, the HDMI output can be set independently. However, if the HDMI output is set to a different resolution than the SDI it will result in no SDI video output.

HDMI Style
The default is HDMI video format. This can be changed to DVI video format if necessary.

Note: If HDMI is selected, HDMI will also carry the audio monitoring output as part of its embedded audio. DVI video format does not include embedded audio.

5.4.2 Set GPI Definition...

The Micro-UDX unit does not include the Tally feature. Therefore the GPI functionality is limited to performing AXP commands. For a list of AXP commands see appendix 1.

To configure the GPI inputs change the pull-down selection to "AXP Command", then type the desired command in the associated text box.

The most common use would be to change the selected audio monitoring channel or to load a preset configuration file.

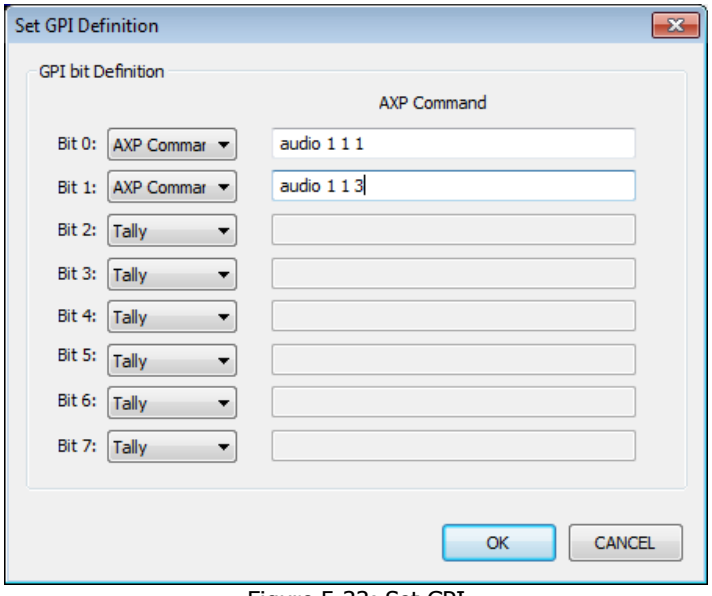


Figure 5-33: Set GPI

5.4.3 Front Panel Definition...

The Micro-UDX unit being based upon our MicroQ series has four front panel buttons. On the Micro-UDX model their functionality is limited to the loading of presets.

To enable this functionality, select 'Fast Load Preset' from the pull-down list and then click OK.

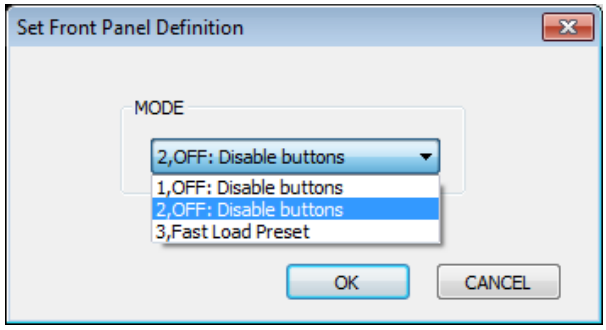


Figure 5-33: Set Front Panel Buttons

The preset configuration files that will be loaded by the four buttons will be the preset files with the filenames; "1.pt, 2.pt, 3.pt, 4.pt" respectively. Preset files saved under different names cannot be loaded in this manner.

5.4.4 Preset - Save... / Load...

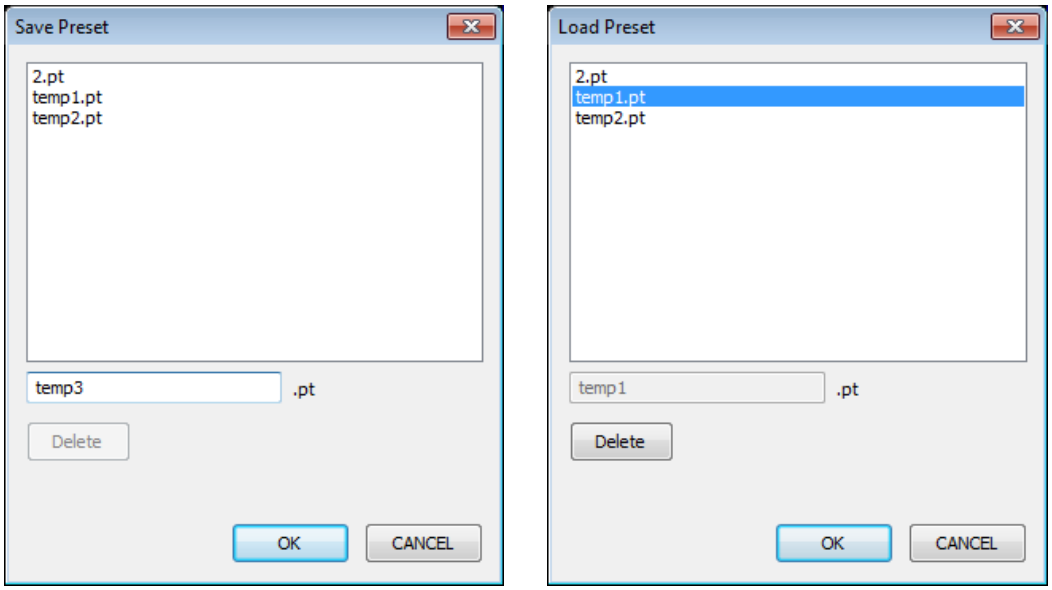
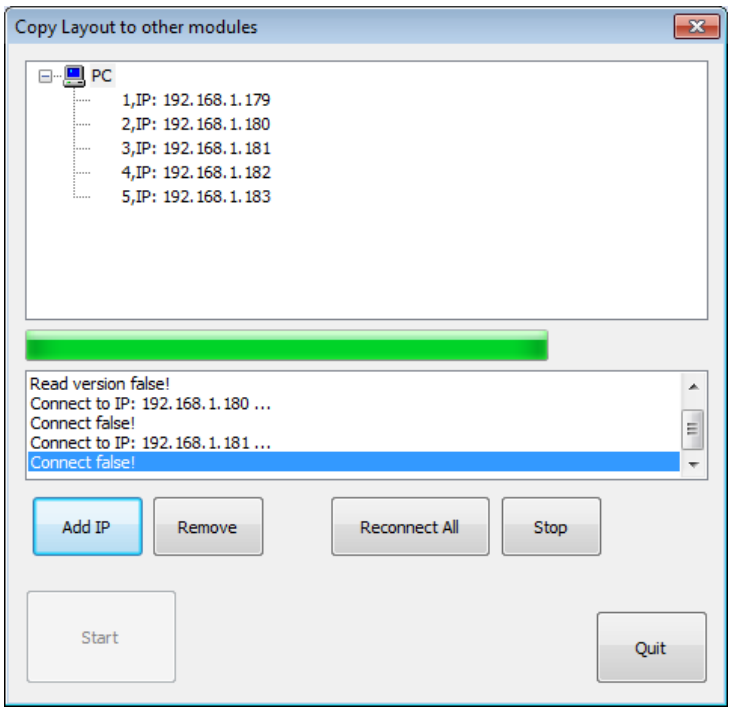


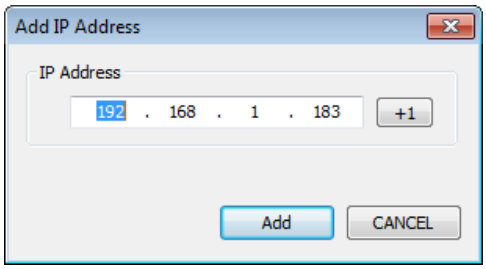
Figure 5-10: Save and Load Preset

The current configuration of the Micro-UDX can be saved into the unit's memory, and recalled later by the Load command.

5.4.5 Copy Layout to other modules...

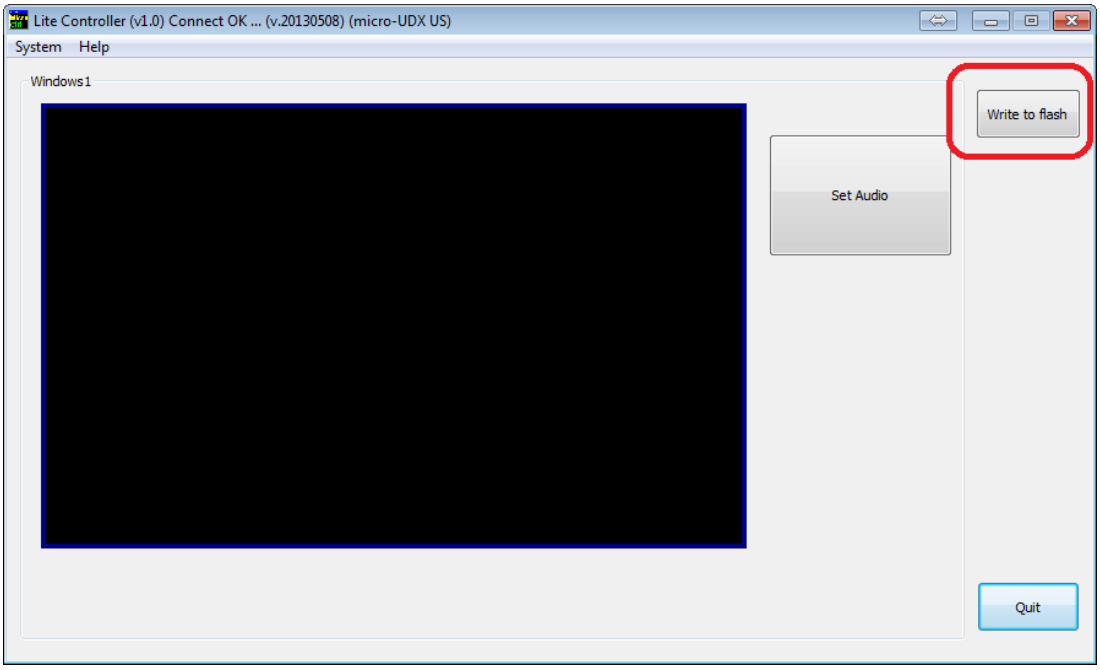
The current configuration can be copied to other Micro-UDX modules (Allowing that all modules are on the Local Area Network and each has an independent IP address).





Choose 'Add IP' to add the other Micro-UDX units to the list. When the list is complete, click the 'Reconnect All' button to establish communication, then click the 'Start' button to copy the configuration file to the other units.

5.4.6 'Write to Flash' button



It is a good idea to write to flash occasionally, just in case your PC should experience problems.

The Write to Flash save's all changes to the unit. The current configuration is stored in a preset file named 'Apantac_MicroQ_LatestLayout.pt'. This is the configuration file the unit will load upon power up.

5.4.7 'Set Audio' button

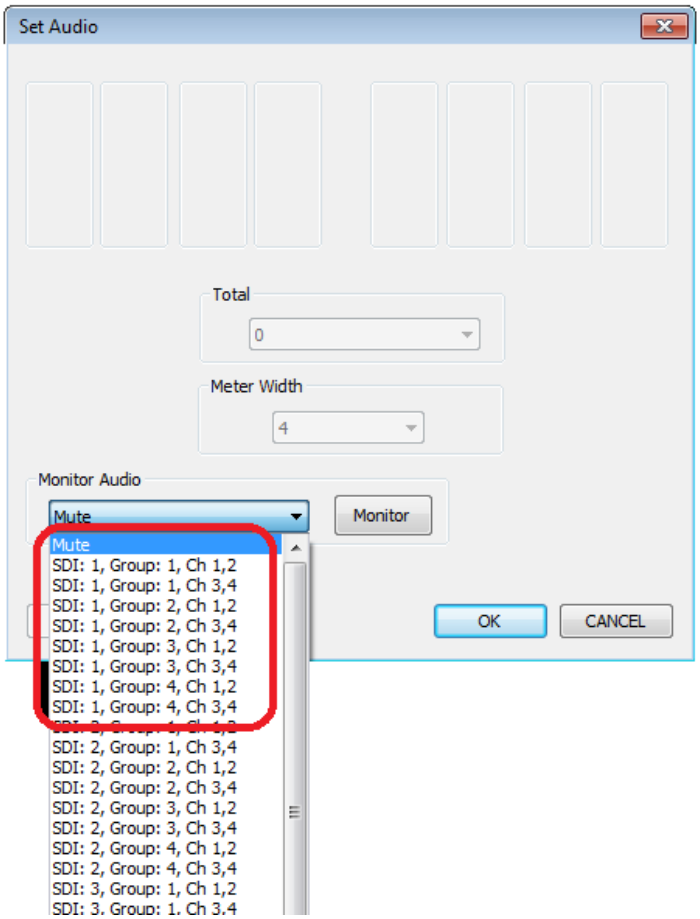


Figure 5.19: Set audio monitor output

One pair of audio meters can be selected as monitor output to go to the analog audio output and the HDMI output.

Note: the list includes sources for a four input MicroQ model. For the Micro-UDX model select only from the first set listed as "SDI: 1".

5.4.8 'Quit' button

Exits the program. This command is followed by two confirmation boxes; confirm exit, and save to flash option.

Appendix I

Apantac eXchange Protocol - MicroQ

Revision Date: November 23, 2012

Introduction
The AXP-Lite is a set of text commands to allow 3rd party interface to control the Crescent MicroQ via TCP/IP.

Port Description
TCP/IP: Default port = 101

AXP-Lite Commands set Overview

Command	FW Release	Overview
audio		Set audio monitoring output
Exit		Exit from text command mode
ledumd		Turn on/off tally and set label text
Load		Load presets

AXP-Lite command sets

Audio: Set audio monitoring output

Note: MicroQ only supports 2 groups of embedded audio (8 channels), audio monitoring must be done in pairs, therefore, when you choose meter 1, you will get a stereo pair of 1 and 2, when you choose 3, you will get a stereo pair of 3 and 4 and so on.

Audio [SDI_Number][GROUP] [Channel/PAIR]

Parameters	Values	Description
[SDI_Number]	1 - 4	SDI input number
[Group]	1 – 2	
[Channel/Pair]	1 – 4 channel	Pairs of audio meters to be monitored

Examples:

Command	Description
`Audio 1 2 3`	Select SDI input 1, Group 2, Channel 3 and 4 to the monitoring output

Exit: Exit from text command mode

Exits the text command mode. Press <CR> to return to text command mode

Ledumd: Turn on/off tally and set label text

Ledumd [WIN_ID] [LED1] [LED2] [TEXT]

Parameters	Values	Description
[WIN_ID]	0 ~ 4	
[LED1 on/off]	1, 0	Turn on/off Tally LED 1
[LED 2 on/off]	1, 0	Turn on/off Tally LED 2
[LED 3 on/off]	1, 0	Turn on/off Tally LED 3
[LED 4 on/off]	1, 0	Turn on/off Tally LED 4
[TEXT]	Text	Label text. Must be bracketed with "| |"

Load:

Load [FILE_NAME]

Parameters	Values	Description
[file_name]	The preset file name.	*The file name must be bracketed with "| |".

Examples:

Command	Description
`Load |1_full.pt1|`	Loads preset name "1_full.pt1"