

# MicroQ User Manual

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# **1.0 WHAT'S IN THE BOX**

1 x MicroQ

- 1 x Mounting Plate
- 1 x RJ50 to DB9 cable for GPI/Tally
- 1 x DC 5V 3.2A Power Adapter
- 1 x Manual

#### **Important Note:**

Default IP address: 192.168.1.151

The configuration PC must be on the same subnet as the MicroQ, for example, "192.168.1.1"

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

# 2.0 Key Features

- Low power consumption 12 W and Silent No fan!
- Fixed Quad Split, each window can go full screen
- Accepts 4 x auto-detect 3G SDI, HD SDI, SD SDI and Composite video signals
- Simultaneous HDMI and SDI outputs
- Decode/display up to 8 embedded audio per SDI input
- Ethernet port for Configuration, Dynamic Labels & Tallies interface (TSL)
- One 32 characters labels per Window
- Up to 32 characters
- Text and Background Colors, Transparency are adjustable
- Borders, can be turned ON or OFF
- Visual Alarms (Tags)
- 0 to 8 Embedded Audio Meters can be displayed for each Window
- Audio monitoring output analog, HDMI
- Four Front Panel Buttons capabilities configurable for:
- Safe Area Markers
- Up to 4 tally levels control with TSL, 2 with GPI
- Support of the TSL protocol v. 3.1 over IP is standard
- 8 x GPI contacts: Configurable for tally or ASCII protocol
- Automatic aspect ratio

# 3.0 Specifications

Decription	Compact video quad split	Output	1 x HDMI, 1 x SDI
Total Windows	4	HDMI	800x480 to 1920x1200
			(1080p)
			50/59.94/60Hz
Inputs	3G/HD/SD-SDI/Composite	SDI	Matching the HDMI
			output resolution up to
			3G
Serial Digital Video	SMPTE 424M, 292M, 259M	On Screen Display	Border, Tally, Audio
			meters, Alarm tags,
			Safe area marker
Equalization	120m at 2.97 Gbps, 140 m	GPI	8 for tally or AXP
	at 1.48 Gbps, 400m at 270		(ASCII commands)
	Mbps with Belden 1694A		
Return Loss	>15db up to 1.485 Gbps	IP	100 Base-Tx, TSL,
	>10db up to 3G		AXP_Lite
Embedded Audio	SMPTE-272M-A	Electrical	12 W, 90-250V
			50/60Hz
Composite	NTSC (SMPTE-170M), PAL	EMI/RFI	Complies with FCC Part
	(ITU624-2)		15, Class A, CE, EU,
			EMC, C-tick
Signal Level	1V nominal	Power	DC 5V 3.2A
DC Offset	0V, ± 0.1V	Size	171 mm W x 120 mm
			D x 44.45 mm H
Impedence	75 Ω	Mount	Magnetic
Return Loss	40 db up to 5MHz	Option	Rack Mount

# 4.0 Hardware and Installation

# 4.1 Front Panel

4 configurable buttons – 3 possibilities

- 1. Toggle Full Screen / Quad
- 2. Disable buttons
- 3. AXP commands recall presets



Figure 4-1 MicroQ Front Panel

# 4.2 Rear Panel



**GPI Tally / Control** 

Figure 4-2: MicroQ Rear Panel

# 4.3 Installation

**4.3.1** 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

#### **4.3.2** 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

# 5.0 MicroQ\_Lite\_Controller Software

# 5.1 Getting Started

The MicroQ\_Lite\_Controller is design to allow you to quickly access all the feature sets of the MicroQ on a single User Interface. This section will help you get the MicroQ 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 MicroQ

To connect to the MicroQ you PC must be connected to the same subnet as the MicroQ. The default IP address for the MicroQ is 192.168.1.151

After the MicroQ\_Lite\_Controller launches, you will see this screen

Connect to		X
IP:	192.168.1.156 Reconnect	
Conr Rea	nect to IP: 192.168.1.156 ad MicroQ (v.20121010) (fpg v.20121026) ( micro-q2.0	
	nable Retrieve	
	OK QUIT	
	Figure 5.2: Connect dialog	

• Click on the IP address 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 MicroQ a Save folder will be created in the same directory

After the MicroQ\_Lite\_Controller is connected to the MicroQ, the configuration surface will appear.

🚟 MicroQ Lite Controller (v1.0) Connect OK (v	. 20121107) (r	nicro-q2.0)		
System Help				
Window 1		Window 2		
Set Meter	Set Border	Set Me	eter Set Border	Write to flash
Auto Ratio	Set Alarm	Auto F	tatio Set Alarm	
	Set Tally		Set Tally	
Label	Safe Area	Label	Safe Area	
Label Properties		Label Properties		
< Window 3		Window 4		
Set Meter	Set Border	Set Me	eter Set Border	
Auto Ratio	Set Alarm	Auto F	Latio Set Alarm	
	Set Tally		Set Tally	
Label		Label		
	Safe Area		Safe Area	
Label Properties		Label Properties		Quit

Now you are ready to configure your layout

Figure 5.4: MicroQ control GUI

The default settings of the On screen Elements on the MicroQ are as follows,

Labels

- Default settings
  - o On
  - On top of the video
  - Text <Label>
  - Color Dark blue
  - $\circ$  Fit to Text

Borders

- Default settings
  - o On

○ Color – Dark Blue

Audio meters

- Default settings
  - $\circ$  Off
  - o Width 16

#### Alarms

- Default settings
  - $\circ \quad \text{Video} \text{Off}$
  - o Audio Off

Tally

- Default settings
  - $\circ \quad \text{Off} \quad$
  - $\circ$  Left LED Red
  - Right LED Green

0

Safe area

- Default settings
  - o Off
  - Line color Yellow

#### 5.4 Configuring the Output

Set Output resolution

01	tput Manager	
		SDI-OUT Mode
	1920 × 1080 (1080p)	60 Hz 💌 1080p 💌
	800 x 480 800 x 600 1024 x 768 1280 x 720 (VESA) 1280 x 768 1280 x 1024 1360 x 768 1400 x 1050 1680 x 1050 1600 x 1200	OK CANCEL
	1920 × 1080 (1080p) 1920 × 1200	
	1280 x 800	
	1920 × 1080 ( JVC ) 1920 × 1080 ( Sharp ) 720 × 480 ( 59.94 ) 720 × 576 ( 50 Hz ) 1280 × 720 (CEA)	

Figure 5.5: Set output resolution

#### Set Output Frequency

Output Manager	
	SDI-OUT Mode
1920 × 1080 (1080p)	🖌 60 Hz 💙 1080p 💙
Output Style	60 Hz 59.94 Hz 50 Hz
	OK CANCEL

Figure 5.6: Set output timing

# Important Note: If your input sources are 59.94, the output resolution and timing must be set to 59.94Hz.

#### Set HDMI/DVI Output Format

Note: If HDMI is selected, HDMI will also carry the audio monitoring output as part of its embedded audio

utput Manager				
			SDI-OUT Mode	
1920 × 1080 (1080p)	🐱 60 Hz	~	1080p	~
Output Style		ſ		

Figure 5.7: Set output display format

Set SDI Output Format

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.

Output Manager		
		SDI-OUT Mode
1920 × 1080 (1080p)	🖌 60 Hz 🖌	1080p 🔽
Output Style		1080p 1080i
HDMI		OK CANCEL

Figure 5.8: Set output SDI format

#### 5.5 Configuring the On Screen Elements

#### 5.5.1 Labels

Default Labels are on top of the video. Got to, <System> -> <Enable Label Outside> To move the labels outside the video

- Set label properties
  - Put labels inside or outside of video
  - Turn on/off label
  - Change label text
    APANTAC LLC, 7556 SW BRIDGEPORT ROAD, PORTLAND, OR 97224
    INFO@APANTAC.COM, TEL: +1 503 968 3000, FAX: +1 503 389 7921

- Change label background color
- Change label text color
- Change label width
  - Change Label Width
    - Fit to text: The label background will be the same width as the text
    - The maximum width is 32, which the same as the maximum number of characters
    - If the number selected is less than the number of characters on the label text, it will default to <Fit to Text>
- Change label transparency
  - Change Label Transparency
  - 100% = opaque
  - 0% = 100% transparent



Figure 5.9: Put labels outside

Window 1	
Set Mete	r Set Border
Auto Rat	io Set Alarm
	Set Tally
Label	
	Safe Area
Label Properties	

Label Properties	
✓ ON	
	.abel
Label	Text Color Background Color
Transparency	abel Background Width
100 %	Fit to Text
Apply to all	OK CANCEL

Figure 5.11: Change label text

Select Col	or	
	Blue 🗸	
	Black	
	Dark Red	
	Dark Green	
	Drak Yellow	
	Dark Blue	
	Purple	
	Dark Cyan	
10	Dark Grey	
[	Light Grey	
	Red	
	Green	
	Yellow	
	Blue	
	Cyan	
	Magenta	
	White	

Figure 5.12: Change label background color

Label Properties		×
⊠ oN Lat	pel	
Label	Text Color Background Color	
100 %	Fit to Text	
Apply to all	8 10 12 12	
	14 16 18 20 22 24	
	26 28 30 32	

Figure 5.13: Change label width



Figure 5.14: Connect label transparency

#### 5.5.2 Audio Meters



Figure 5.15: Set meters

- Set Meters
  - 0 8 meters can be turned on/off
  - $\circ$  Meter width can be set to 4 16 pixels
  - $\circ$   $\;$  SDI embedded audio channels can be assigned to individual meters
  - One pair of audio meters can be selected as monitor output to go to the analog audio output or the HDMI output



Figure 5.16: Diso;ay 0 – 8 meters

Set Meter	$\mathbf{X}$
Total 8	
Meter Width	
Monitor Audio 6 8 SDI: 1, Group: 1, Ch 1,2 10 12 14 16	
Apply to all	OK CANCEL

Figure 5.17: Set meter width

Μ	icro	οQ
---	------	----

Set Meter	X
	8
	Meter Width
Monitor Audio	
SDI: 1, Group: 1, C SDI: 1, Group: 1, C SDI: 1, Group: 1, C SDI: 1, Group: 2, C SDI: 1, Group: 2, C SDI: 1, Group: 3, C SDI: 1, Group: 3, C	Monitor 1,2 Monitor 1,2 Monitor 1,2 Monitor 1,2 Monitor 1,2 Monitor 0K CANCEL 1,2 Monitor
SDI: 1, Group: 4, C SDI: 1, Group: 4, C SDI: 2, Group: 1, C SDI: 2, Group: 1, C SDI: 2, Group: 2, C SDI: 2, Group: 3, C SDI: 2, Group: 3, C SDI: 2, Group: 4, C SDI: 2, Group: 4, C SDI: 3, Group: 1, C SDI: 3, Group: 1, C SDI: 3, Group: 2, C SDI: 3, Group: 3, C SDI: 3, Group: 3, C SDI: 3, Group: 3, C	n 1,2 n 3,4 n 1,2 n 3,4
SDI: 3, Group: 4, C SDI: 3, Group: 4, C SDI: 4, Group: 1, C SDI: 4, Group: 1, C SDI: 4, Group: 2, C SDI: 4, Group: 2, C SDI: 4, Group: 3, C SDI: 4, Group: 3, C	n 1,2 n 3,4 n 1,2 n 3,4 n 1,2 n 3,4 n 1,2 n 3,4 ▼

Figure 5.18: Set SDI audio channels

MicroQ
--------

Set Meter			$\mathbf{X}$
	Total 8	~	
	Meter Width	~	
Monitor Audio	h 1,2 🗸 🗸	Monitor	
Apply to all		ок	

Figure 5.19: Set audio monitor output

#### 5.5.3 Border

Window 1	
Set Meter	Set Border
Auto Ratio	Set Alarm
	Set Tally
Label	
<i>(</i> )	Safe Area
Label Properties	

Figure xx: Set borders

- Set Borders
  - Border can be turn on/off
  - Border color can be set

Border	
Border Width: ON	Color
ON	
Apply to all	OK CANCEL

Figure 5.20: Turn border on / off



Figure 5.21: Set border color

#### 5.5.4 Alarm Tags

Window 1		
	Set Meter	Set Border
	Auto Ratio	Set Alarm
		Set Tally
Label		Safe Area
Label Properties		

Figure 5.22: Set Alarm Tags

- Set Alarm Tags
  - Video Format and Audio Status alarm tags can be turned on/off
  - Video Alarm Tags shows the following
    - While video signal is present
      - Displays video format, (NTSC/PAL, 525, 626, 720p, 1080i/p 50/60)
    - While video signal is lost
      - <No Video>
  - Audio Alarm Tags shows the following
    - While audio signal is present
      - No tag
    - While audio signal is lost
      - "No Audio"

CANCEL

Figure 5.23: Turn Alarm tags on / off

🚟 MicroQ Lite Controller (v1.0) Conne	ect OK (v. 20121	107)
System Help		
Window 1		
Video Format	Set Meter Set Bor	der
Audio Status	Auto Ratio Set Ala	rm
	Set Ta	lly
Label	Safe Ar	ea
Label Properties		

Figure 5.24: Result after the alarm tags turned on

#### 5.5.5 Auto Aspect Ratio

- Set Auto Aspect Ratio
  - $\circ$   $\;$  Auto Ratio can be turn on/off
  - $\circ$   $\;$  Aspect Ratio can be set by the user to any ratio  $\;$
  - Default is 4x3 for SD and 16x9 for HD

Set Auto R	atio					×
🗹 Enable						
Ratio						
SD :	4	~	:	3	~	
HD:	16	*	:	9	~	
Apply to a	ll		C	ОК	CANCE	EL

Figure 5.25: Set Aspect Ratio

### 5.5.6 Tally

#### Default: Tally LEDs are off



Figure 5.26: Set Tally

- Set Tally
  - $\circ$  Tally 1 (left) and Tally 2 (right) can be turned on/off
  - Border, UMD (Label) Text and UMD (Label) Backgruond can be assigned to be associated with the tally
  - $\circ \quad \text{Tally LED colors can be set} \\$
  - $_{\odot}$   $\,$  GPI can be assigned to the tallies or AXP (ASCII protocol)  $\,$
  - TSL can be assigned to the dynamic tallies

Set Window Tally		X
Tally 1 Left LED	Tally 2 Right LED	- UMD Bkod Tally
Apply to all		

Figure 5.27: Turn on / off LED and tally options

🚟 MicroQ Lite Controller (v1.0) Conne	ct OK (v	.20121107)
System Help		
Window 1		
Video Format	Set Meter	Set Border
Audio Status	Auto Ratio	Set Alarm
		Set Tally
		Safe Area
Label Properties		

Figure 5.28: The result have the tally LEDs are turned on

Tally 1 Left LED	Tally 2 Right LED		
OFF Tally: 1 Tally: 2 Tally: 3	UMD Text Tally	UMD Bkgd Tally	

Figure 5.29: Assign border tally

Set Window Tally		
Tally 1 Left LED	Tally 2 Right LED ✓ ON	
Border Tally	OFF	UMD Bkgd Tally
Apply to all	Tally: 2 Tally: 3 Tally: 4	

Figure 5.30: Assign UMD text tally (text tally)

Set Window Tally		
Tally 1 Left LED	Tally 2 Right LED	
Border Tally	UMD Text Tally	UMD Bkgd Tally
Apply to all		Tally: 1 Tally: 2 Tally: 3 Tally: 4

Figure 5.31: Assign UMD Background tally (Label tally)

📲 Mici	roQ Lite Controller	(v1.0) Connec
System	Help	
Outpi	ut manager	1
Set T	ally Color	L r
Set T:	5L Address	at
Set G	PI Definition	ומנ ן
Front	Panel Definition	us í
Enabl	e Label Outsize	
Prese	t 🕨	
Quit		
	Label	

Figure 5.32: Set tally colors



Figure 5.33: Set GPI

Set GPI D	efinition	
GPI bit D	efinition	
		AXP Command
Bit O:	Tally 🔽	
Bit 1:	Tally AXP Command	
Bit 2:	Tally 🔽	
Bit 3:	Tally 🔽	
Bit 4:	Tally 🔽	
Bit 5:	Tally 🔽	
Bit 6:	Tally 🔽	
Bit 7:	Tally 🔽	
		OK CANCEL

Figure 5.34: Set GPI to trigger Tally

🚟 Mici	oQ Lite Controller	(v1.0) Connec
System	Help	
Outpu Set Ta	ut manager ally Color	
Set T	5L Address	
Set G Front ✔ Enabl	PI Definition Panel Definition e Label Outsize	
Prese Quit	t ►	
	Label	

Figure 5.35: Set TSL address

Set TSL Address	
Window 1: 0 Window 2: 1 Window 3: 2 Window 4: 3	CANCEL

Figure 5.36: Set TSL address

#### 5.5.7 Safe Area

Window 1	Set Meter	Set Border
	Auto Ratio	Set Alarm
		Set Tally
Label	l(	Safe Area
Label Properties		



- Set Safe Area
  - Safe Area can be turn on/off
    - With a mask
    - With a line
    - Or with both mask and line
  - The safe area line color can be changed
  - The safe area can be freely assigned

Set Safe Area	
🗹 Enable Mask	
🗹 Enable Line	
Video Information	Line Color
16:9	Yellow
Ratio Fix        4:3      16:9      14:	9
-0	_ 86%
90%	
Apply to all	OK CANCEL

Figure 5.38: Turn on safe area

#### 5.5.8 Presets



Figure 5.39: Save Preset



Figure 5.40: Recall Presets

#### 5.5.9 Front Panel Definitions



Figure 5.41: Set Front Panel buttons

- 1. Default: Fullscreen/Quad
- 2. Off: Disable the buttons, so no one accidentally triggers them
- 3. Fast Load Preset: As long as the preset names are set to 1.pt, 2.pt, 3.pt and 4.pt, buttons 1 will recall 1.pt, button 2 will recall 2.pt, button 3 will recall 3.pt and button 4 will recall 4.pt

Set Front Panel Definition
MODE
1,Default: Fullscreen / Quad 🛛 💙
1,Default: Fullscreen / Quad
2,OFF: Disable buttons 3,Fast Load Preset
OK CANCEL

Figure 5.42: Select front panel settings

#### 5.5.10 Write to Flash

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

🚟 MicroQ Lite Controller (v1.0) Connect OK (v.20121107	) (micro-q2.0)	
System Help		
Window 1	Window 2	
Set Meter Set Border	Set Meter Set Border	Write to flash
Auto Ratio Set Alarm	Auto Ratio Set Alarm	
Set Tally	Set Tally	
Label Safe Area	Label Safe Area	
Label Properties	Label Properties	
Window 3	Window 4	
Set Meter Set Border	Set Meter Set Border	
Auto Ratio Set Alarm	Auto Ratio Set Alarm	
Set Tally	Set Tally	
Label Safe Area	Label Safe Area	
Label Properties	Label Properties	Quit

Figure 5.43: Write to flash

### 5.5.11 Quit and Exit

📲 MicroQ Lite Controller (v1.0) Connect OK (v	v.20121107)	micro-q2.0)	
System Help			
Window 1		Window 2	
Set Meter	Set Border	Set Meter Set	t Border Write to flash
Auto Ratio	Set Alarm	Auto Ratio Se	t Alarm
	Set Tally	Se	et Tally
	Safe Area	Label	fe Area
Label Properties		Label Properties	
⊂ Window 3		Window 4	
Set Meter	Set Border	Set Meter Set	t Border
Auto Ratio	Set Alarm	Auto Ratio Se	t Alarm
	Set Tally	Se	et Tally
	Safe Area	Label	fe Area
Label Properties		Label Properties	Quit

Figure 5.44: Quit

Warnning!	Warnning!
Exit Program?	Write to Flash?
Yes No	Yes No

Figure 5.45: Confirm and write to flash again

# **Apendix I**

# **Apantac eXchange Protocol - MicroQ**

#### **Revision Date: November 23, 2012**

#### Introduction

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

#### **Port Description**

TCP/IP: Default port = 101

#### **AXP-Lite Commands set Overview**

Command	FW	Overview
	Release	
audio		Set audio monitoring output
Exit		Exit from text command mode
<u>ledumd</u>		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.

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

Audio [SDI\_Number][GROUP] [Channel/PAIR]

**Examples:** 

Command	Description	
Audio 1 2 3	Select SDI input 1, Group 2, Channe	
	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 "   ".	

#### Example:

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

#### Example:

Command	Description	
turn 3 6 0	Turn off VPM[3], standalone label	
	#2. See Appendix A for item_id	
Turn 3 6 0 3	Turn off VPM[3] standalone label #2,	
	#3 and # 4	