

QV401 QV402 QUAD SPLIT

User Manual

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Chapter 1 Product Overview

QV401/402 is a professional quad split instrument. It supports high quality quad split displays for multiple environment with high quality display and swift switch for various display modes.

QV401/402 has compact and beautiful structure design, offering local control buttons and embedded web configuration functionality, and supports Ethernet loop out functionality, which is convenient for multiple QV401/402 integration controlled by only one control computer.

QV401/402 is suitable in office work environment and cabinet mounting environment, it is widely used in the following fields: command and dispatch center, video conference center, broadcast master control, studio, broadcasting vehicle and so on.

Model	Inputs	Outputs
QV401	4CH HDMI Video Input 4CH GPI Input	1CH HDMI Video Output
QV402	4CH SD/HD/3G-SDI Video Input 4CH GPI Input	1CH SDI Video Output 1CH HDMI Video Output

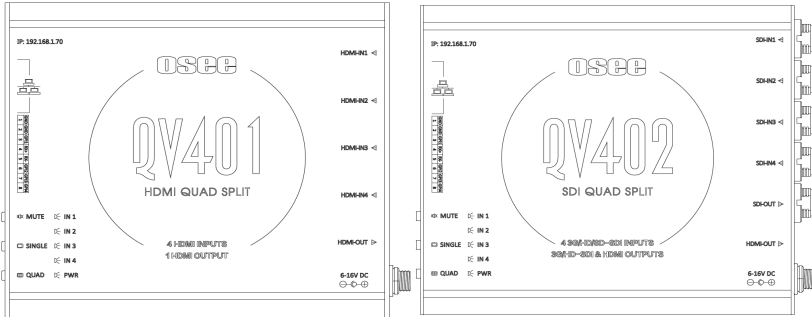
Features

- Supports 4 channels of signal inputs with LED indicators and one power input indicator
- Supports four kinds of output formats: 1080P50, 1080P59.94, 1080I50, 1080I59.94
- Supports four kinds of screen display modes: four uniform size screens, one big left with three right small, one big right with three left small, one big top with three bottom small
- Supports TSL3.1/4.0, TSL5.0 protocol
- 4ch GPI interfaces, one RS-422 interface, two ETHERNET interfaces and supports ETHERNET loop out
- Embedded Web Server, supports web interview

Chapter 2 QV401/402 Features

2.1 Control Buttons and Interfaces

There are a series of control buttons, interfaces and indicators at the front panel (left side) of the device, besides, a series of interfaces at the rear panel (right side) of the device.



Name	Position	Quantity		Description
		QV401	QV402	
Interfaces				
Power Input	Rear Panel	1	1	DC6~16V External Power(12V/1A)
HDMI Input	Rear Panel	4	--	Input formats: HDMI, DVI-D, Labeled as HDMI IN1, HDMI IN2, HDMI IN3, HDMI IN4
HDMI Output	Rear Panel	1	1	Output formats: 1080P50/P59.94, 1080I50/I59.94, Labeled as HDMI OUT
SDI Input	Rear Panel	--	4	Input formats: HD/SD/3G-SDI , Labeled as SDI IN1, SDI IN2, SDI IN3, SDI IN4
SDI Output	Rear Panel	--	1	Output formats: 1080P50/P59.94, 1080I50/I59.94, Labeled as SDI OUT
Configuration Ethernet	Front Panel	1		RJ45
Loop Out Ethernet	Front Panel	1		RJ45
Serial Communication	Front Panel	1		RJ45, RS422 Standard, only received
GPI	Front Panel	4		RJ45, TTL level
Operating Buttons				
Reset	Front Panel	1		
Controls	Front Panel	3		Mute, Single, Quad
Indicators				
Power	Front Panel	1		Labeled as PWR
Input Signal	Front Panel	4		Labeled as IN1, IN2, IN3, IN4

Function of the Operating Buttons

- **MUTE:** Mute button, click this button to enable or disable the audio play.
- **SINGLE:** Single mode button, click this button to switch to display only one picture for one signal source on whole screen in SINGLE mode.
- **QUAD:** Quad mode button, click this button to switch to display quad split windows, including four uniform size screens display, one big with three small screens display. The latter including one big left with three right small, one big right with three left small, one big top with three bottom small.
- **RESET:** used to restore the factory settings. Insert a needle tool into the reset hole to trigger the reset operation.

2.2 Network Control

1. General Setting

Click General tab to set the following parameters, including device IP address and its corresponding parameters, TSL address, output format, volume and mute switch.

General	Input	Display	Layout
General			
Device Name: QV402			
Firmware Version	FPGA: 0.0.1.3		MCU: 0.0.1.3
Output Format	<input type="radio"/> 1080P60	<input type="radio"/> 1080P50	<input type="radio"/> 1080I60 <input checked="" type="radio"/> 1080I50
Network Setting	IP Address:	192.168.1.70	Gateway: 192.168.1.1
	Subnet Mask:	255.255.255.0	<input type="button" value="SET"/>
RS485	Baud Rate:	38400	Data bits: 8
	Stop bits:	1	Parity bit: Even
	TSL	TSL Version: TSL3.1	TSL 5.0 Port: 8900
Reset to Default	<input type="checkbox"/> Mute		Audio Level: 16

Menu items	Default	Value Range	Description	
General				
Device Name	QV401/402	--	Set the device name	
Firmware Version	--	--	Display the version number of FPGA/MCU	
Output Format	1080I50	1080I50/1080I 60 1080P50/1080P 60	Set the signal output format	
Network Setting	IP Address	192.168.1.70	Set the network address of the device	
	Baud Rate	38400	2400/4800/9600/19200 /38400/57600/115200	Set baud rate
	Data bits	8	8/9	Set data bits
	Stop bits	1	1/1.5/2	Set stop bits
	Parity bit	Even	None/Odd/Even	Set parity bit
TSL	TSL Version	v3.1/v4.0/v5.0	v3.1	Set the version of TSL

Menu items		Default	Value Range	Description
	TSL Port 5.0	0~65535	8900	Set the port for the device below TSLv5.0
Reset to Default		Restore factory defaults		Click this button to restore the factory defaults.
Mute		OFF		ON/OFF
Audio Level		16	0 ~ 31	Set volume

2. Input Setting

Click Input tab to set characters for each input signals IN1~IN4: designate audio channels for each of the four audio meters, TSL3.1/4.0 address, TSL5.0 address, UMD type, UMD character, left Tally source, right Tally source.

General	Input		Display	Layout
Input Setting	IN1	IN2	IN3	IN4
Audio Meter: 1	Emb 1-2	Emb 1-2	Emb 1-2	Emb 1-2
2	Emb 3-4	Emb 3-4	Emb 3-4	Emb 3-4
3	Emb 5-6	Emb 5-6	Emb 5-6	Emb 5-6
4	Emb 7-8	Emb 7-8	Emb 7-8	Emb 7-8
ID: TSL3.1/4.0	128	129	130	131
TSL5.0	0	0	0	0
UMD Type	Static	Static	Static	Static
UMD Text	VIDEO_INPUT1	VIDEO_INPUT2	VIDEO_INPUT3	VIDEO_INPUT4
Tally Source:L	TSL	TSL	TSL	TSL
R	TSL	TSL	TSL	TSL

Menu items	Default	Value Range	Description
Audio Meter1~4	Emb 1-2	Emb 1-2 Emb 3-4 Emb 5-6 Emb 7-8 Emb 9-10 Emb 11-12 Emb 13-14 Emb 15-16	Set an audio channel group of two audio channels to the designated audio meter.
ID:TSL3.1/4.0	129	--	Set the address ID for this TSL 3.1/4.0 protocol (128~255)
ID:TSL5.0	0	--	Set the address ID for this TSL 5.0 protocol (0~65535)
UMD Type	Static	Static/Dynamic	Set the type for UMD source as static or dynamic. If it is static, the UMD content will be the value set in UMD text; if it is dynamic, the UMD content will be the value received from the TSL protocol
UMD Text	VIDEO_INPUT*	--	Set static UMD characters
Tally Source: L	TSL	TSL/GPI	Set the left TALLY source as GPI or TSL

Menu items	Default	Value Range	Description
Tally Source: R	TSL	TSL/GPI	Set the right TALLY source as GPI or TSL

3. Display Setting

Click **Display** tab to set the following display parameters: UMD and Audio Meter display position, set whether to display format, marker, border, UMD or tally lamp on the monitor window and so on.

General	Input		Display		Layout	
Display Setting	IN1	IN2	IN3	IN4		
UMD & AM Pos	Outside Video					
Video Aspect	Keep the original					
Display: Format	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Marker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Board	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
UMD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Tally Lamp	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Tally on Board	None <input type="checkbox"/>	None <input type="checkbox"/>	None <input type="checkbox"/>	None <input type="checkbox"/>	None <input type="checkbox"/>	None <input type="checkbox"/>
Tally on UMD Back	None <input type="checkbox"/>	None <input type="checkbox"/>	None <input type="checkbox"/>	None <input type="checkbox"/>	None <input type="checkbox"/>	None <input type="checkbox"/>
Audio Meter: L	4 <input type="checkbox"/>	4 <input type="checkbox"/>	4 <input type="checkbox"/>	4 <input type="checkbox"/>	4 <input type="checkbox"/>	4 <input type="checkbox"/>
Audio Meter: R	4 <input type="checkbox"/>	4 <input type="checkbox"/>	4 <input type="checkbox"/>	4 <input type="checkbox"/>	4 <input type="checkbox"/>	4 <input type="checkbox"/>
UMD : Character	White <input type="checkbox"/>	White <input type="checkbox"/>	White <input type="checkbox"/>	White <input type="checkbox"/>	White <input type="checkbox"/>	White <input type="checkbox"/>
Tally Color: L	Red <input type="checkbox"/>	Red <input type="checkbox"/>	Red <input type="checkbox"/>	Red <input type="checkbox"/>	Red <input type="checkbox"/>	Red <input type="checkbox"/>
Tally Color: R	Green <input type="checkbox"/>	Green <input type="checkbox"/>	Green <input type="checkbox"/>	Green <input type="checkbox"/>	Green <input type="checkbox"/>	Green <input type="checkbox"/>

Menu items	Default	Value Range	Description
UMD & AM Pos	Outside Video	<ul style="list-style-type: none"> Outside Video Inside Video 	Set the positions of UMD and audio meter relatively to the monitor frame.
Video Aspect	Keep the original	<ul style="list-style-type: none"> Keep the original: keep the signal source originally. Follow window: the aspect ratio of the signal source will be consistent with the value of monitor window. 	Set the display area ratio of the signal source in the monitor window.
Display: Format	OFF	ON/OFF	Enable/Disable format display
Marker	OFF	ON/OFF	Enable/Disable Marker
Board	OFF	ON/OFF	Enable/Disable video frame
UMD	OFF	ON/OFF	Enable/Disable UMD
Tally Lamp	OFF	ON/OFF	Enable/Disable Tally light
Tally on Board	None	None Correlate Left-Tally Correlate Right-Tally	Correlate Left-Tally or Right-Tally to border display

Menu items	Default	Value Range	Description
Tally on UMD Back	None	None Correlate Left-Tally Correlate Right-Tally	Correlate Left-Tally or Right-Tally to UMD background display
Audio Meter: L	4	0/2/4	Set the audio channels displayed as left audio meter.
Audio Meter: R	4	0/2/4	Set the audio channels displayed as right audio meter.
UMD Character	White	White/Red/Green/Yellow	Set the color of UMD characters
Tally Color: L	Red	Red/Green/Yellow	Set the color of left Tally light
Tally Color: R	Green	Red/Green/Yellow	Set the color of right Tally light

4. Layout Setting

Click Layout tab to set as single display mode or quad display mode.



Menu items	Default	Value Range	Description
Quad	Quad display	four uniform size screens display/ one big left with three right small/ one big right with three left small/ one big top with three bottom small	Switch to quad display mode
Single	1	1/2/3/4	Switch to single display mode

2.3 Supported Signal Format

The supported signal format for this device is as shown in Table 2.3-1:

Table 2.3-1 Supported Signal Format

Input	HDMI	SDI	DVI-D	Input	HDMI	SDI	DVI-D
480/59.94i,60i	✓	✓		1080/59.94p,60p	✓	✓	
576/50i	✓	✓		640x480(60Hz)			✓
720/23.98p,24p	✓	✓		800x600(60Hz)			✓
720/25p	✓	✓		1024x768(60Hz)			✓
720/29.97p,30p	✓	✓		1280x1024(60Hz)			✓
720/50p	✓	✓		1366x768(60Hz)			✓
720/59.94p,60p	✓	✓		1440x900(60Hz)			✓
1080/23.98PsF,24Ps	✓	✓		1400x1050(60Hz)			✓
1080/50i	✓	✓		1600x1200(60Hz)			✓
1080/59.94i,60i	✓	✓		1680x1050(60Hz)			✓
1080/23.98p,24p	✓	✓		1920x1080(60Hz)			✓
1080/25p	✓	✓		1920x1200(60Hz)			✓
1080/29.97p,30p	✓	✓		2048x1152(60Hz)			✓
1080/50p	✓	✓					

Chapter 3 Specifications

Specification	Values		
Model	QV401	QV402	
Video Input Interface	Digital Video: 4*HDMI	Digital Video: 4*SDI	
Video Standard	HDMI1.4	SMPTE-259M;270Mbps	
	VESA	SMPTE-292M;1.485Gps SMPTE-425M;2.97Gps	
Video Output Interface	1*HDMI	1*HDMI, 1*SDI	
Video Output Format	1080P50/P59.94、1080I50/I59.94		
Dimension(WxHxD)	128.4*113*27.9mm	128.4*113*27.9mm	
Power Consumption	5.7W	5.7W	
Power Supply	DC6~16VExternal Power (12V/1A)		
Control Interface	2* RJ45 Ethernet(10/100M adaptive RJ45)		
Work Temperature(° C)	0~50	Storage Temperature(° C)	-20~60
Work Humidity(%RH)	10~90	Storage Humidity(%RH)	10~90

Tips

- Specifications are subject to change without notice.