CV-305P

3G/HD/SD-SDI to HDMI Scaler-Converter

User Manual

Full HD 1080 | HDCP HIGH-DEFINITION CONTENT PROTECTION | x.v.Color | 7.1 CH AUDIO | RoHS Compliance | FC | CE

rev: 110726
Made in Taiwan

Safety and Notice

The **CV-305P** **3G/HD/SD-SDI to HDMI Scaler-Converter** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, **CV-305P** should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.
- Do not attempt to service this unit yourself, except where explained in this manual.
- Provide proper ventilation and air circulation and do not use near water.
- Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.
- Use only the power adapter and power cords and connection cables designed for this unit.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.

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INTRODUCTION

The **CV-305P** **3G/HD/SD-SDI to HDMI Scaler-Converter** offers the highest compatibility among SDI, composite, component, DVI, VGA, HDMI and S-Video to HDMI or DVI in the market. This unique device supports analog and digital conversion and scaling without loss of quality. With the embedded advanced de-interlacer, interlaced video inputs, such as component, composite and S-Video, can be further improved. **CV-305P** supports the insertion of stereo analog audio and S/PDIF inputs into HDMI output with local duplicated outputs! For SDI, **CV-305P** can support up to 8 digital audio channel embedded in SDI stream and make perfect conversion between SDI and HDMI signals. With this advanced feature, users can combine asynchronous video and audio sources into the state-of-art HDMI compliant A/V signal for further long range lossless transmission and high standard A/V experience!

CV-305P is especially designed to ease the SDI conversion to the common HDMI interface with affordable cost. With **CV-305P**, SDI will not become a bottleneck in your applications and the handy audio support can make the input video and audio become HDMI ready. With versatile IR remote control and push buttons, **CV-305P** offers a very easy way to convert, switch, adjust videos at your convenience. With PIP and PAP support, users can display two video inputs at the same time!

FEATURES

- SD/HD/3G SDI compliant
- HDCP 1.1 and DVI 1.0 compliant
- Scales up and down VESA compliant formats (VGA and DVI)
- Scales SD/ED/HD video inputs to VESA compliant formats
- PIP and PAP support
- Advanced video processing supports: noise reduction, color management, fleshtone control, dynamic contrast control, closed caption support for CVBS, 3D de-interlacing, 3:2/2:2 pull down detection and recovery.
- Selectable analog stereo and S/PDIF audio support for HDMI audio
- RS-232 Firmware upgradable to guarantee the functionality revised.
- Equivalent to 6 different video format switcher to HDMI
- Video output supports up to WUXGA, UXGA or 1080p
- Supports stereo audio and S/PDIF
- Supports 8 channel SDI digital audio
- Supports two up to 3G-SDI loop-outs
- HDMI / DVI compliant output
- Versatile IR control
- Push button control

SPECIFICATIONS

Model Name	CV-305P	CV-805
Technical		
HDMI&HDCP Compliance	HDMI & HDCP 1.1	
Digital video bandwidth	4.95Gbps	
Analog video bandwidth	165MHz [Single Link]	
Analog audio bandwidth	N/A	20 ~ 20KHz
Maximum resolution	1080p60 / 1920x1200@60	
Max. TMDS input clock	165MHz	
Max. output pixel clock	165MHz	
Input TMDS signal	1.2 Volts [peak-to-peak]	
Input DDC signal	5 Volts [peak-to-peak, TTL]	
SDI Support	SD/HD/3G	N/A
Input	1x HDMI + 1x CVBS + 1x S-Video + 1x VGA + 1x YPbPr + 1x DVI + 1x S/PDIF + 1x Stereo + 1 x SDI	1x HDMI + 1x CVBS + 1x S-Video + 1x VGA + 1x YPbPr + 1x DVI + 1x S/PDIF + 1x Stereo
Output	1x HDMI + 1x S/PDIF + 1x Stereo + 2x SDI	1x HDMI + 1x S/PDIF + 1x Stereo
PIP / PAP	YES	
Audio support	8CH SDI Audio / Stereo (24 bit ADC) / S/PDIF	Stereo (24 bit ADC) / S/PDIF
S/PDIF support	48KHz	
ESD protection	[1] Human body — ±19kV [air-gap discharge] & ±12kV [contact discharge] [2] Core chipset — ±2kV	
PCB stack-up	6-layer board [impedance control — differential 100Ω; single 50Ω]	
IR remote control	Electro-optical characteristics: τ = 25° / Carrier frequency: 38KHz	
DVI connector	DVI-I [29-pin female]	
RS-232 connector	DE-9 [9-pin D-sub female]	
RCA connector	9 pin S-Video, CVBS, and S/PDIF	
BNC connector	75Ω inter-locked socket	
3.5mm connector	Earphone jack for analog stereo audio or IR cable	
DIP switch	Restore default	

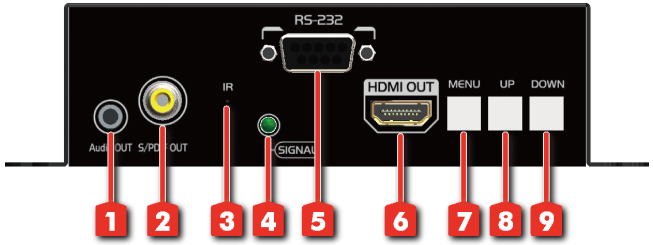
Mechanical			
Housing		Metal enclosure	
Dimensions [L x W x H]	Model	132 x 158 x 40mm [5.2” x 6.2” x 1.6”]	125 x 165 x 42mm [4.9” x 6.5” x 1.6”]
	Package	330 x 200 x 95mm [1’1” x 7.9” x 3.7”]	
	Carton	495 x 440 x 380mm [1’7” x 1’5” x 1’3”]	
Weight	Model	530g [1.2 lbs]	594g [1.3 lbs]
	Package	995g [2.2 lbs]	1581g [3.5 lbs]
Fixedness		Wall-mounting case with screws	
Power supply		5V 2A DC	
Power consumption		1 Watts	
Operation temperature		0~40°C [32~104°F]	
Storage temperature		-20~60°C [-4~140°F]	
Relative humidity		20~90% RH [no condensation]	

PACKAGE CONTENTS

- 1x CV-305P
- 1x DVI to VGA adapter
- 1x 3.5mm to L/R audio cable
- 1x Installation software CD
- 1x DC 5V 4A in-line with C7 power cord
- 1x VGA to component breakout cable
- 1x Composite&S-video breakout cable
- 1x IR Remote control
- 1x User Manual

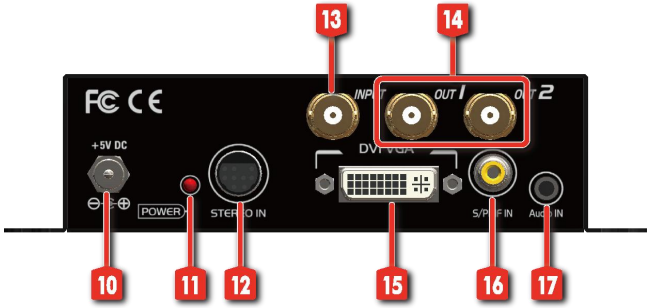
PANEL DESCRIPTIONS

Input Panel



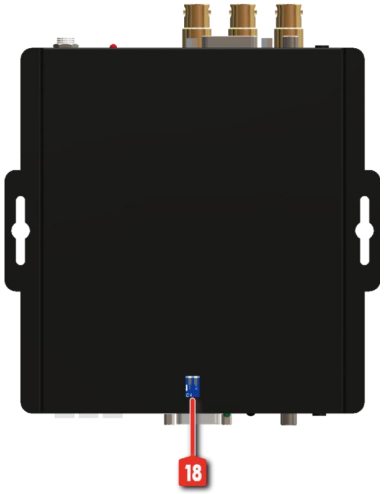
1. **Audio OUT:** Analog audio output from PC or DVD players
2. **S/PDIF OUT:** 48KHz digital audio output from PC or DVD players
3. **IR:** Receiving IR signal
4. **SIGNAL LED:** Indicate signal
5. **RS-232:** Firmware update and future software control
6. **HDMI OUT:** HDMI signal out
7. **MENU Button**
8. **UP Button**
9. **DOWN Button**

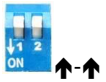
output Panel



10. **+5V DC**
11. **POWER LED:** Indicate power up
12. **STEREO IN:** Input CVBS and S-Video by breakout cable
13. **INPUT:** SD/HD/3G SDI input
14. **OUT 1-2:** SD/HD/3G SDI loop-out
15. **DVI VGA:** Input HDMI/DVI/Component
16. **S/PDIF IN:** 48KHz digital audio input from PC or DVD players
17. **Audio IN:** Analog audio output from PC or DVD players

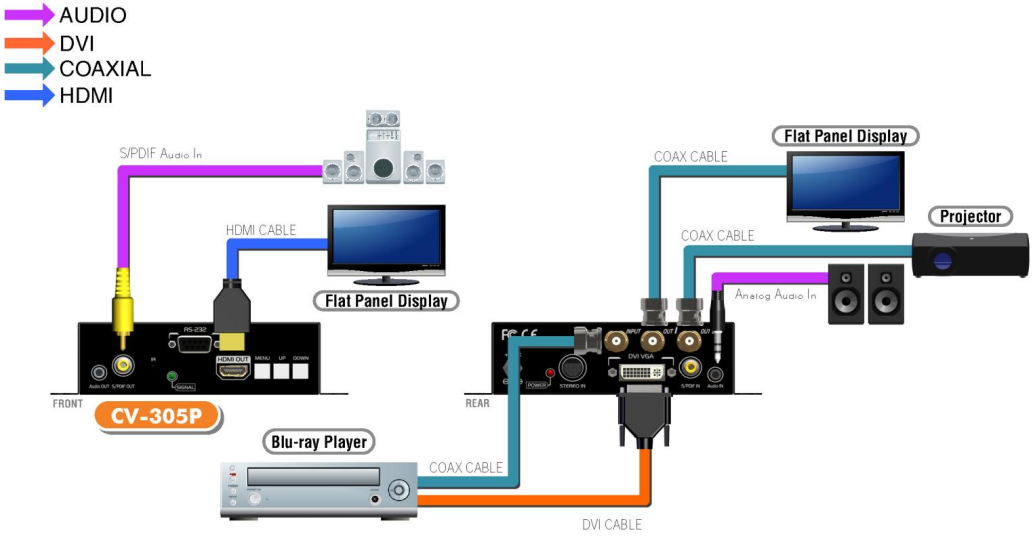
Bottom Panel – 2-pin DIP Switch



18.Switch Position		
Input 1	Normal	Reset
Input 2	Normal	Reset

CONNECTION DIAGRAM

1. Connect your video sources to the input connectors.
2. Connect your HDMI enabled monitors into the device's HDMI output port.
3. Power up the CV-305P.
4. Use IR or push buttons to select the input, setup the output resolution, and adjust your video format.



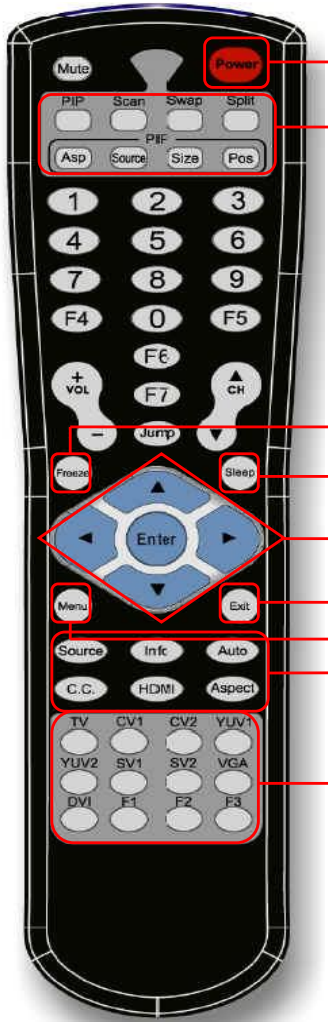
DEFAULT SETTING

1. Power up the CV-305P.
2. To reset CV-305P back to the factory default values, pull up-and-down the DIP switch 1&2 from OFF to ON to complete the process. You NEED to pull back the DIP switch back to OFF in order to get CV-305P work normally.

NOTICE

1. As the video formats evolves and expands, CV-305P is firmware upgradable for this fashion.
2. PIP and PAP only support digital and analog display or dual display for single input.
3. Analog stereo audio can merely support 2-channel audio. This version does NOT support 8-channel analog audio applications.
4. S/PDIF audio input can support 2 out of 8-channel audio input.
5. S/PDIF supports only 48KHz audio sample rate. Other than this rate, the input digital audio should be adjusted to 48KHz in order to get audio signal correctly sent.
6. Through OSD menu, users can decide which audio groups of SDI can be output!

IR REMOTE CONTROL



Idle

PIP/PAP Menu

Freeze Video

Sleep ON

Control Buttons Menu

Exit OSD

Menu On

Source: Sequential source switch
Info: Display input type and time
Auto: Auto adjustment for VGA input
C.C.: *No use in this model*
HDMI: No use in this model
Aspect: Aspect ratio change

TV: *No use in this model*
CV1: CVBS
CV2: *No use in this model*
YUV1: *No use in this model*
YUV2: *No use in this model*
SV1: S-Video
SV2: *No use in this model*
VGA: VGA
DV1: DVI/HDMI
F1: *No use in this model*
F2: Display input timing
F3: Auto color balance

The buttons not listed above are not in use for this model.

IR & FRONT PANEL BUTTON

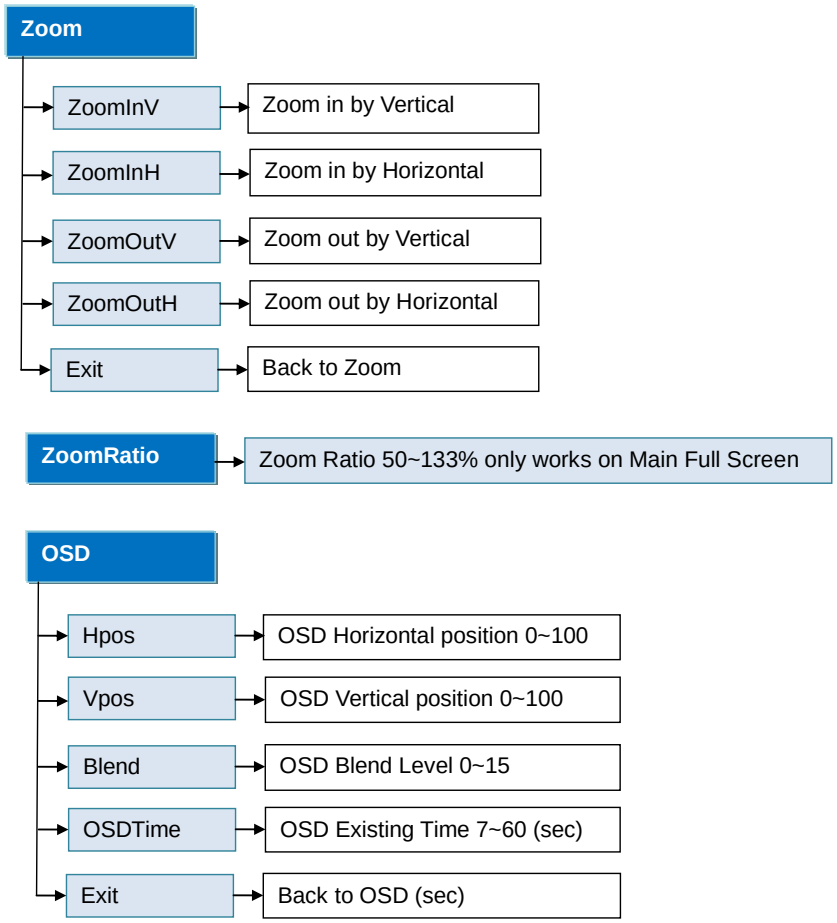
- **Men**
  - Video Processing
  - Audio Settings
  - Image Settings
  - Settings
  - Display Mode
  - Resolution
  - Inputs
  - PIP
  - Zoom
  - ZoomRatio
  - OSD
  - Video Wall
  - Exit

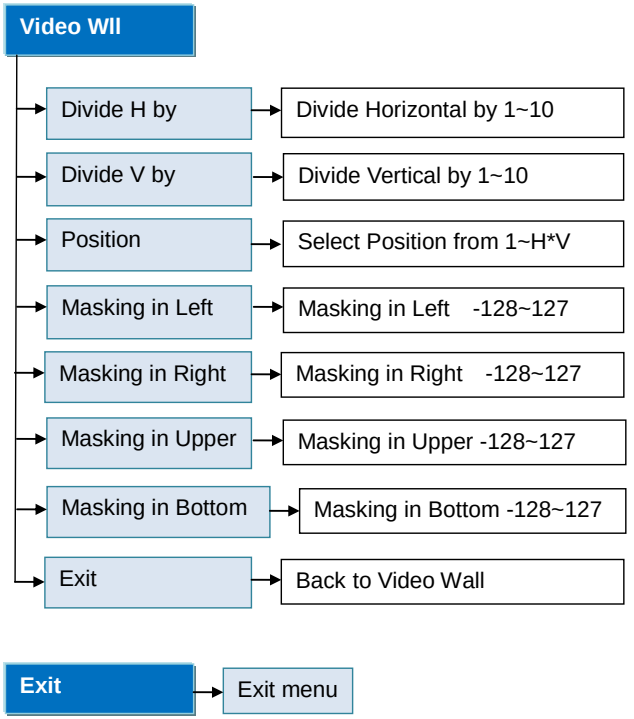
- **Video Processing**
  - Main DCDi → On/Off/Exit
  - Main MADI → Off/Adaptive/Standard/Low/High/Exit
  - LCD Overdrive → Off/Medium/Low/High/Exit
  - Split Screen → On/Off/Exit
  - Blue Stretch → Off/Low/Medium/High/Exit
  - Film Mode → Off/Force2:2/Normal3:2/Video-3:2-2:2/Exit
  - Exit → Back to Video Wall

- **Audio Settings**
  - SPDIF/PC → PC Audio/SPDIF/Mute/2.1CH G1&2/2.1CH G3&4/7.1CH G1&2/7.1CH G3&4/Exit
  - Exit → Back to Audio Settings

- **Display Mode**
  - Size → 16:9/Letter Box/Letter Box Expand/4:3/ Pillar Box Expand /Water Glass/Panoramic/Exit
  - Mode → DVI Mode/HDMI Mode/Exit
  - Exit → Back to Display Mode
- **Image Settings**
  - Brightness → Adjust Brightness 0~100
  - Contrast → Adjust Contrast 0~100
  - Saturation → Adjust Saturation 0~100
  - Hue → Adjust Hue 0~100
  - Red → Adjust Red 0~100
  - Green → Adjust Green 0~100
  - Blue → Adjust Blue 0~100
  - MPEG NR → Adjust MPEG NR 0~63
  - Temporal NR → Medium/High/Off/Exit
  - Fleshtone → Low/Moderate/High/Off/Exit
  - Exit → Back to Image Settings

- **Settings**
  - IR → On/Off/Exit
  - Factory Reset → Execute Factory Reset
  - Information → Show the Input Information
  - Mode Overlap → 480p/640x480/Exit
  - Freeze → Freeze Unfreeze Main Screen
  - OSD Language → English/繁體中文/简体中文/Exit
  - Exit → Back to Settings
- **Resolution**
  - 800x600@60 /1024x768@60 /1280x1024@60 /1280x720@60 /1366x768@60 /1440x900@60 /1400x1050@60/ 1920x1080@60/ 1920x1200@60 /1600x1200@60
  - Exit → Back to Resolution
- **Inputs** → VGA/VIDEO1/SVIDEO1/CMPT1/HDMI(DVI)/SDI/Exit
- **PIP**
  - PIP Mode → No PIP/Large PIP/Small PIP/ Side-By-Side /Exit
  - PIP Position → UpLeft/UpRight/DownLeft/DownRight/Exit
  - Inputs → VGA/VIDEO1/SVIDEO1/CMPT1/HDMI(DVI)/Exit
  - Blend → PIP Blend Level 0~100
  - Exit → Back to PIP

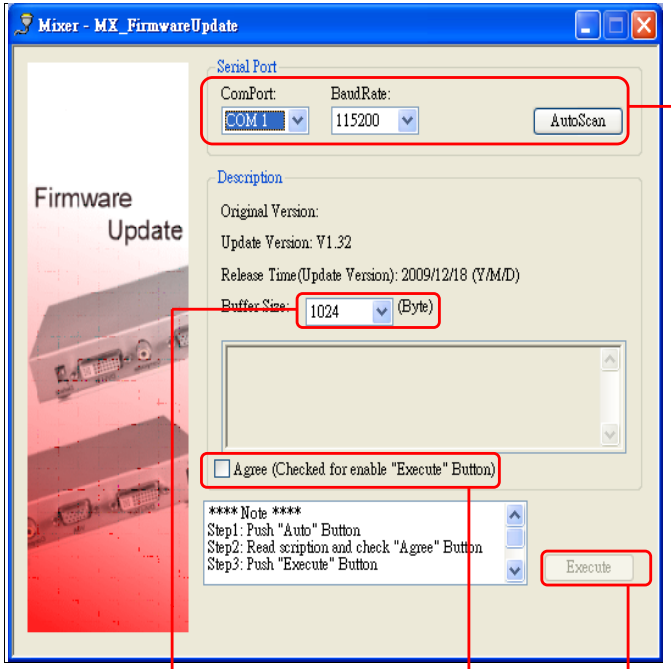

Zoom
ZoomInV
Zoom in by Vertical
ZoomInH
Zoom in by Horizontal
ZoomOutV
Zoom out by Vertical
ZoomOutH
Zoom out by Horizontal
Exit
Back to Zoom
ZoomRatio
Zoom Ratio 50~133% only works on Main Full Screen
OSD
Hpos
OSD Horizontal position 0~100
Vpos
OSD Vertical position 0~100
Blend
OSD Blend Level 0~15
OSDTime
OSD Existing Time 7~60 (sec)
Exit
Back to OSD (sec)


Video Wll
Divide H by
Divide Horizontal by 1~10
Divide V by
Divide Vertical by 1~10
Position
Select Position from 1~H*V
Masking in Left
Masking in Left -128~127
Masking in Right
Masking in Right -128~127
Masking in Upper
Masking in Upper -128~127
Masking in Bottom
Masking in Bottom -128~127
Exit
Back to Video Wall

Exit
Exit menu

FIRMWARE UPDATE PROCEDURE

Software Interface:



ComPort Settings:
Select ComPort of PC connected to the device.
Push “auto scan” to start the automatic scan on each ComPort.

BaudRate is default as **115200**.

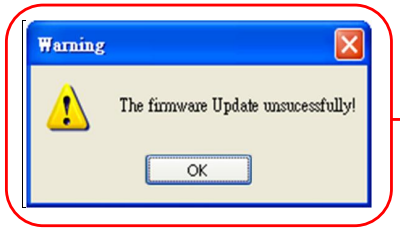
1024 bytes as the default.

Execute firmware update.

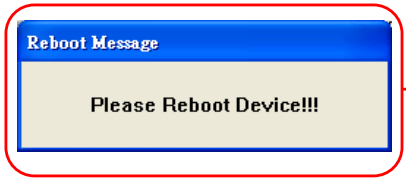
Please check all the power and serial port connection to avoid any further unexpected damages during firmware update. Check “**Agree**” to enable the firmware update procedure.

Window Messages

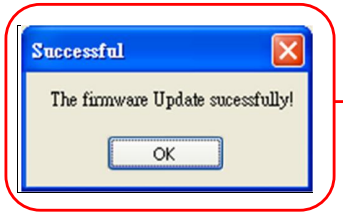
The connection is not correct. Please check:
- Power
- Cable
- Baud Rate



The whole firmware update procedure fails. Please check
- Power
- Cable
- Baud Rate



The firmware update procedure requires a power cycle. Please turn off the device, wait for a couple of seconds, and power on the device.



Congratulations. The whole process is successfully completed!

APPENDIX-SUPPORTED RESOLUTION

[DVI-IN1] Socket

Supported Mode	Resolution
NTSC/480I/525I	720x240 @60Hz
PAL/576I/625I	720x288 @50Hz
480P/525P	720x483 @60Hz
480P (16:9)	960x483 @60Hz
576P/625P	720x756 @50Hz
(HDTV) 720p	1280x720 @50Hz
(HDTV) 720p	1280x720 @60Hz
(HDTV) 1080i	1920x1080 @50Hz
(HDTV) 1080i	1920x1080 @60Hz
(HDTV) 1080p	1920x1080 @30Hz
VESA	720x400 @85Hz
VESA	640x350 @85Hz
VESA	640x400 @85Hz
IBM	720x400 @70Hz
IBM	720x350 @70Hz
IBM	640x350 @70Hz
IBM	640x400 @70Hz
VESA	640x480 @60Hz
MAC	640x480 @67Hz
VESA	640x480 @72Hz
VESA	640x480 @75Hz
VESA	640x480 @85Hz
VESA	800x600 @56Hz
VESA	800x600 @60Hz
VESA	800x600 @72Hz
VESA	800x600 @75Hz
VESA	800x600 @85Hz

Supported Mode	Resolution
MAC	832x624 @75Hz
VESA	1024x768 @60Hz
MAC	1024x768 @60Hz
VESA	1024x768 @70Hz
IBM	1024x768 @72Hz
VESA	1024x768 @75Hz
MAC	1024x768 @75Hz
VESA	1024x768 @85Hz
VESA	1152x864 @75Hz
MAC	1152x870 @75Hz
SUN	1152x900 @66Hz
SUN	1152x900 @76Hz
VESA	1280x960 @60Hz
VESA	1280x960 @85Hz
VESA	1280x1024 @60Hz
HP	1280x1024 @60Hz
IBM	1280x1024 @67Hz
HP	1280x1024 @72Hz
VESA	1280x1024 @75Hz
SUN	1280x1024 @76Hz
VESA	1600x1200 @60Hz
VESA	1920x1200 @60Hz

[DVI-OUT] Socket

Supported Mode	Resolution
(HDTV) 720p	1280x720 @60Hz
(HDTV) 1080p	1920x1080 @60Hz
VESA	800x600 @60Hz
VESA	1024x768 @60Hz
VESA	1280x1024 @60Hz
VESA	1366x768 @60Hz
VESA	1400x900 @60Hz
VESA	1400x1050 @60Hz
VESA	1600x1200 @60Hz
VESA	1920x1200 @60Hz