

# **VQS - 200**

Video Player and Reference Source

*Version 1.2*

**User Manual**



# VQS-200

## Video Player and Test Source

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*by VideoQ Inc*

*Compact Tool to evaluate and measure the quality of processed and displayed video.*

*Advanced test patterns instantly revealing your video processor and/or display device performance.*



# VQS-200 User Manual

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## Revision History

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# 1 Introduction and Overview

VQS-200 is an advanced Video Player and Test Source that consists of a media player platform loaded with sophisticated video and audio content.

It is housed in the compact light metal case combining hardware and software modules. Setup, work modes and content file selection are performed via on-screen menus and compact remote control unit.

VQS-200 system relies on VQL - the unique VideoQ Test Pattern Library. VQL patterns are provided in a variety of formats, sets, and media.

The sub-set of VQL patterns loaded into VQS-200 is described in a separate document.

Additional test patterns or any video/audio/static image content files of compatible formats can be played-out thru rear panel USB port.



VQS-200 is equipped with digital HDMI and SPDIF outputs plus baseband analog NTSC/PAL CVBS video output and analog L-R audio outputs.

*This model does not support 3G or HD-SDI output formats. However the signals in these formats, can be produced by connecting the VQS-200 HDMI output to any suitable HDMI-to-SDI converter.*

The VQS-200 is a turn-key system, based on Western Digital "WD TV HD Media Player" platform. It is supplied complete with pre-installed audio-video content. No additional software installation is required for normal system operation.

VQS-200 is a compact size tool, loaded with unique sophisticated set of static and dynamic test patterns up to 1080p@60fps, ideally suitable for applications in:

- Broadcast and Prosumer Studios
- Home Theater Installation & Calibration
- Engineering & Development
- Shows & Exhibitions
- Technical Training
- Benchmarking
- AV Retail
- Repairs

## 2 Features and Parameters

### Main Features:

- HDMI 1.3 output in YUV format:
  - 16-235 level scheme used for both video and photo images
  - Note 1: Some Test Pattern components may hit levels 1-15 or 236-254*
  - Note 2: Photos viewed thru HDMI output are always converted from 0-255 to 16-235*
- Multi-format SD and HD playback:
  - 480p@60, 576p@50, 720p@50, 720p@60
  - 1080i@50, 1080i@60, 1080p@24, 1080p50, 1080p@60
- Major Video Codecs/Formats: MP2, MP4, H264/AVC, VC1; AVI, MP4, VOB, TS, M2TS
- Major Audio Codecs/Formats: WAV, AAC, AC3, MP3, etc.
- SPDIF 5.1 Digital Audio and Analog Audio (L & R ) out
- Auxiliary CVBS output (NTSC/PAL)
- Flexible pixels mapping and scaling:
  - No scaling (dot-by-dot), if file resolution matches native HDMI resolution
  - Up- and down- scaling to match the HDMI resolution, if AutoScaling = On
- Easy Navigation thru straight forward folders and files with Remote Control
- Slide-shows with adjustable speed, e.g. Tutorials:
  - BMP or JPG photo images,
  - these formats are not suitable for Static Test Patterns because of levels conversion*
- Easy expansion with any external USB storage device: live clips, user content, etc

### 3 Operation

VQS-200 is supplied fully configured with all settings in the correct positions. However, it is highly recommended to check the set-up as described in "Configuration and Customization" section.

To select the desired content for play-out use the remote control - browse folders tree and find the content file name.

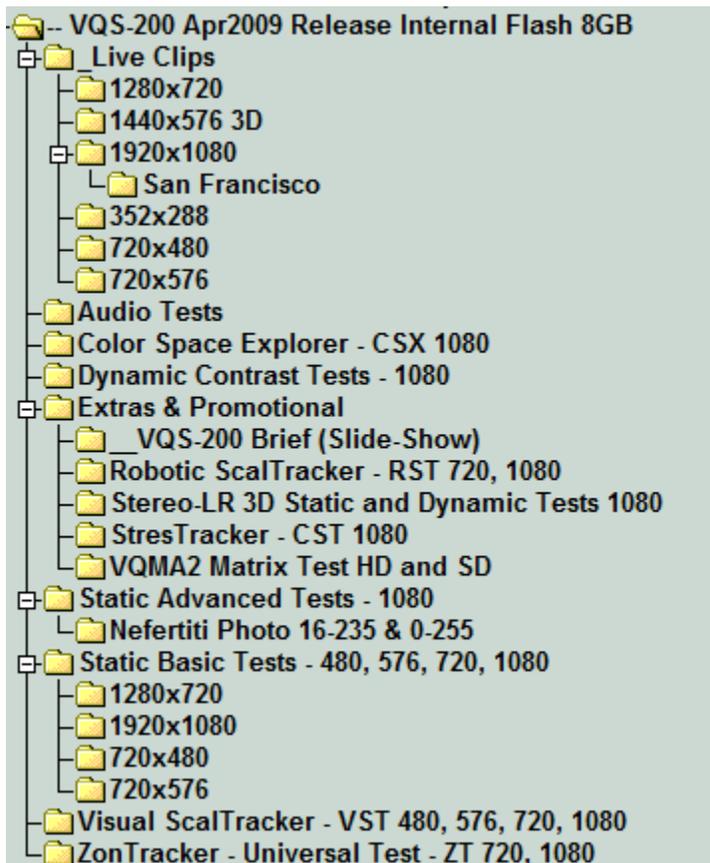
Different types of content are accessible after choosing the corresponding menu:

- Static or Dynamic VQL test patterns and live clips are accessible via "Video" menu.
- Static photos and slide-shows are accessible via "Photo" menu.
- Audio test patterns are accessible via "Music" menu.

In each of these modes not all folders are visible - only the folders with the content of the selected type. For example, in "Photo" mode only the folders containing *static pictures* are visible, other folders, e.g. containing only video files or only audio files are hidden.

Picture below shows all folders with all types of the pre-loaded VQL content.

*This picture serves for information only and it is not displayed on-screen; folders structure may vary depending on release version.*



### Important Note:

For truly objective evaluation of the display device performance the internal VQS-200 scaler should be bypassed, i.e. neither spatial nor temporal internal scaling should be applied.

It means that HDMI resolution, interlace mode and frame rate should be set *exactly* matching the media content file parameters.

For example, the appropriate 1080i60 HDMI mode should be selected via submenu "Settings/Audio-Video/Display Resolution" *before* playing out "VST 1080i 60" test pattern .

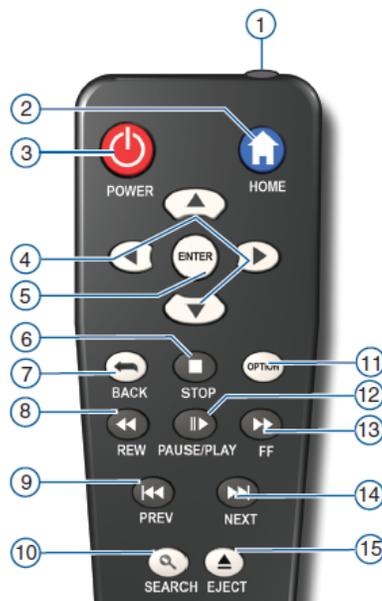
Once selected, the HDMI mode is preserved, even when the VQS-200 is switched on/off by the Remote Control "Power" button.

However, if the external PSU or main supply line is disconnected, the unit may return to HDMI "Auto" (safe) mode, which is the lowest resolution available for this particular display. In such case the submenu "Settings/Audio-Video/Display Resolution" should be re-visited to set or restore the desired HDMI mode.

Below is brief description of Remote Control functions

### Remote Control

1. Infrared transmitter
2. HOME
3. POWER
4. Navigation buttons
5. ENTER
6. STOP
7. BACK
8. REV (rewind)
9. PREV (previous track)
10. SEARCH
11. OPTION
12. PAUSE/PLAY
13. FF (fast forward)
14. NEXT (next track)
15. EJECT (safe removal of attached storage)



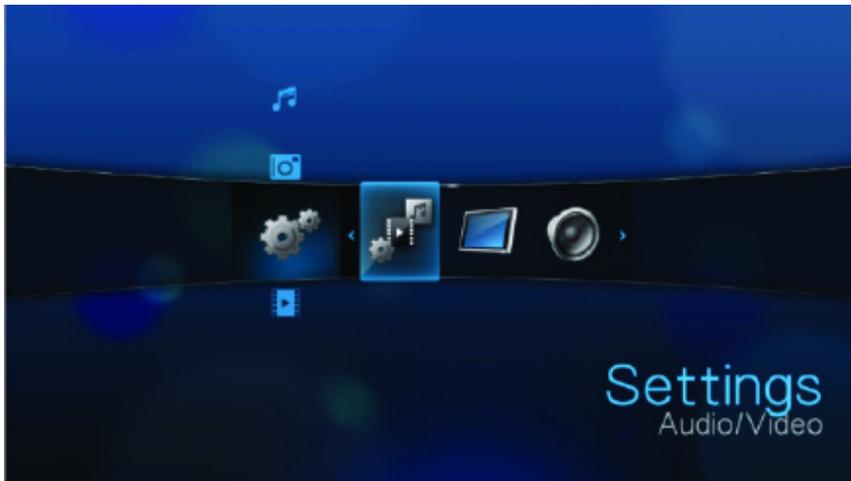
"Option" button is important because it enables OSD messages and menus, in particular - media info, pan & zoom controls, repetition mode (play once, repeat same file, repeat all files in the folder), etc. This button works as on/off toggle switch.

For full description of Remote Control keys and functions, navigation instructions and complete list of on-screen menus see separate document "WDAVN00BN UserManual.pdf".

## 4 Configuration and Customization

### VQS-200 Recommended Settings

From "Home" page select "Settings/Audio/Video" menu



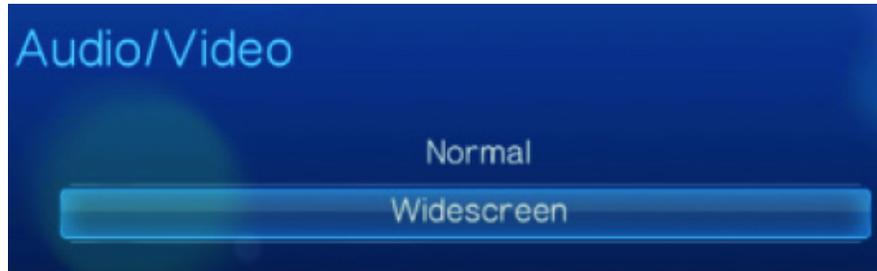
In the Display Resolution sub-menu below "Auto" means "safe mode", i.e. the *lowest* available resolution, which is seldom needed.

After the unit is powered on first time and "Home" menu appears on screen (in small size), "Audio-Video/Display resolution" should be changed to *native* display resolution, interlace and frame rate, e.g. 1080p60.



In the "Aspect Ratio" sub-menu select *native* display aspect ratio - typically "Widescreen".

"Normal" here means 4x3 display aspect ratio, which is seldom needed.

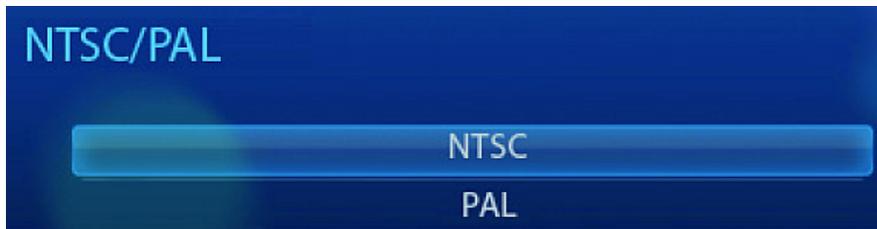


**Important:** In the "Settings/Audio-Video" sub-menu selection of "Composite" instead of "HDMI" *disables* HDMI output and vice versa. This selection should be taken with caution because for few seconds the menus will be visible *only* on the display connected to "CVBS" output. On the other hand, VQS-200 automatically detects connections to HDMI and CVBS outputs, so once the HDMI output is disconnected the CVBS output is automatically enabled (if connected) - overriding the menu settings. Consequent disconnection of CVBS output automatically restores HDMI output.

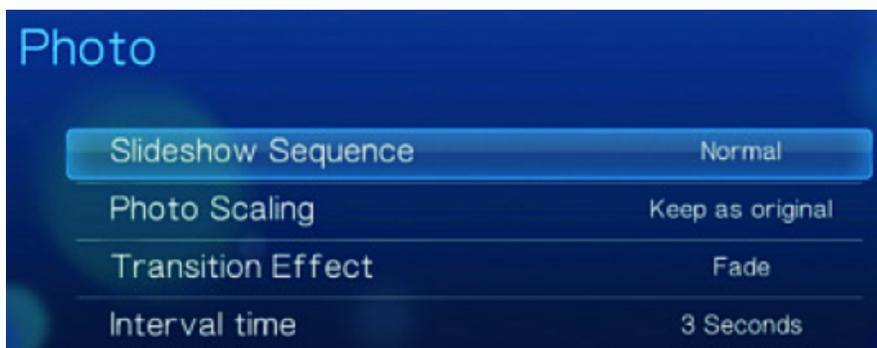
**Important:** In Settings/Audio-Video" menu the selection of "Stereo" as an audio output *disables* digital SPDIF output, but if "Digital" audio output is selected, the analog stereo output may be still present. In the latter case all L+R stereo formats and some types of 5.1 surround sound content (not all formats) can played on both digital and analog output, but on analog output 5.1 content is converted to L+R (down-mix).



Selection of NTSC/PAL in "Settings/Audio-Video" sub-menu affects only the format of auxiliary analog CVBS output, it does not affect HDMI output.

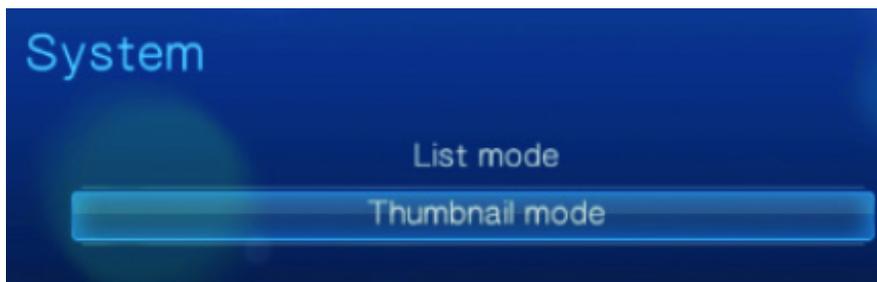


In the "Settings/Photo" sub-menu "Keep as original" option is recommended because it prevents unwanted scaling (distortion) of photo images.



In the "System Settings/Browser Display" menu select "List mode", because it allows navigation via folders and long file names.

Selection of "Thumbnails mode" *is not recommended* because the current version of VQS-200 system does not support navigation by thumbnails.



## 5 Specifications

- Aluminum Alloy Case:
  - Weight: 0.3 kg
  - Dimensions (D x W x H): 95 mm x 155 mm x 50 mm (3.75" x 6" x 2")
- External PSU:
  - Input 100-240 V, 50-60 Hz
  - DC Output 12 V, 1.5 A, center = positive
- LED Indicators (dimmed red):
  - Power On
  - Memory Status (blinking: scans for media from the USB storage, lit: ready)
- Remote Control: IR, wide angle
- Internal memory: 4GB (standard), 8 GB (option)
- USB 2.0 Plug-n-Play port for external storage device x 1
- USB Storage Device File System: NTFS, FAT/FAT32 or HFS+
- Display resolution and display frame rate::
  - 480p@60, 576p@50, 720p@50, 720p@60
  - 1080i@50, 1080i@60, 1080p@24, 1080p@50, 1080p@60
- Video content resolution: Any resolution, up to 1080p at 60 fps
- Static images: BMP (max 2048x2048), JPG (lossy, max 4096x4096), also GIF, TIFF, PNG
- Video Codecs & : MP1, MP2, MP4, H264/AVC, VC1, WMV9
- Video Container Formats: ASF, MKV, AVI, Xvid, MP4, DVR-MS, VOB, TS, M2TS
- Playlist formats: PLS, WPL, M3U
- Audio Codecs & Containers: WAV (including 5.1 WAV format), WMA, FLAC, AAC, AC3, MP3
- Video outputs:
  - HDMI 1.3 x1
  - NTSC/PAL CVBS, 1Vpp on 75 Ohm, RCA x1
- Audio outputs:
  - 5.1 Digital, SPDIF optical x1
  - Analog Stereo (L & R), RCA x2

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