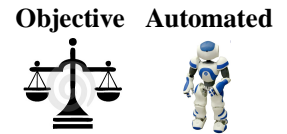
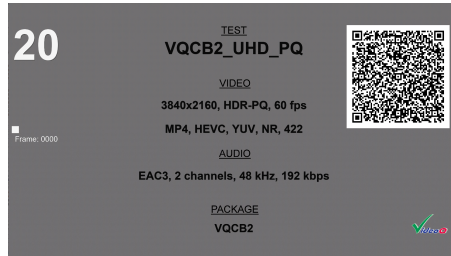




# VQCB – VideoQ Color Bars Test Patterns Suite

## Wonder Bars™



### Video data analysis and fidelity verification tool for the 8K / 4K / 2K, HDR / SDR environment

- Easy-to-use tool, **instantly revealing** your video device / system / workflow **performance**
- **BT.2111, BT.2100, BT.2020, BT.709** compliant tests for visual estimation, instrumental and automated analysis
- Frame sizes **up to 8K, HDR-PQ, HDR-HLG**, and **SDR** dynamic range formats
- **Production, post-production, contribution, transcoding, distribution** and **consumer video** applications
- Variety of **color spaces, frame rates** and **encoding formats**

VQCB tests are useful when streaming in **multiple formats** or when **converting between formats**.

They provide for **automated cloud-based QA/QC** via the companion **VQCB software analyzer**, generating **JSON reports**.

With a **VQCB dynamic test** you can instantly check that the video circuit is **active** and associated audio is **in sync** with video.

VQCB suite includes **26 combinations** of

- **3 frame sizes**,
- **3 dynamic range modes**,
- **4 color spaces**

	HDR-PQ			HDR-HLG			SDR		
	8K	UHD	HD	8K	UHD	HD	8K	UHD	HD
RGB Full Range	✓	✓	✓				✓	✓	✓
RGB Narrow Range	✓	✓	✓	✓	✓	✓	✓	✓	✓
YUV Narrow Range BT.2020	✓	✓	✓	✓	✓	✓	✓	✓	1)
YUV Narrow Range BT.709							2)		✓

<sup>1)</sup> Non-standard, but often used, version, e.g. for UHD originated content down-scaled to HD

<sup>2)</sup> Non-standard seldom used version, e.g. for HD originated content up-scaled to UHD

*Special frame sizes, e.g. down-scaled 960x540, are available on request*

VQCB suite includes **4 pre-packed sets** of media files;

Package Code Name	VQCB8K	VQCB1		VQCB2		VQCB2HD
Typical Application	High-end Production and Post-production	Production, Post-production		Contribution, Distribution		Transcoding, Distribution
Frame Size	8K	UHD	HD	UHD	HD	HD
Container	MOV	MOV		MP4		MP4
Codec	PNG	PNG, JPEG2K		HEVC		HEVC, AVC
Sampling & Bit Depth	444, 48bpp, 16bpc	444, 48bpp, 16bpc		444, 10bpc		422, 10bpc
RGB, Full & Narrow Range	✓	✓	✓			
YUV, Narrow Range		✓	✓	✓	✓	✓
Media Files Count	48	144		48		48

each set aimed at specific field of application

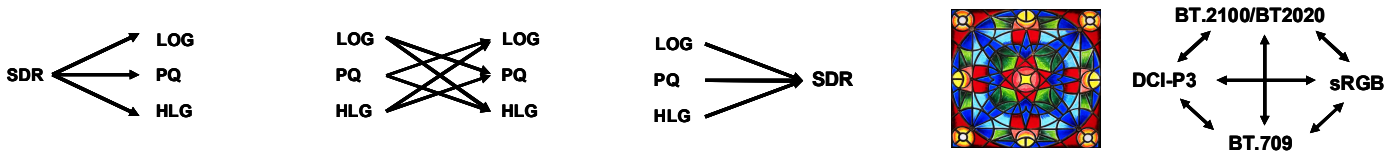
### Features:

- All VQCB suite tests have the **same layout**, consisting of 5 horizontal bands
- Test Patterns **pixel positions** strictly match the positions specified in **BT.2111** standard
- **Full Range and Narrow Range RGB data levels** strictly match the **12-bit values** of the BT.2111 standard tables
- **RGB levels of SDR tests** are exact copies of the **BT.2111 HDR-HLG** test levels, except the **BT.709 Bars**, located in the bottom band
- **YUV data levels** (not specified by BT.2111 standard) are derived from RGB levels with **16-bit accuracy** in YUV 444 format
- VQCB tests contain **customizable texts** within left and right **Grey Panels**, indicating 8K/UHD/HD frame size, HDR/SDR, RGB/YUV, FR/NR and Color Matrix info
- The right-side panel shows **license terms** and optional test **originator info**
- VQCB **test sequences** are suitable for **automated repetitive testing**. Each sequence consists of **three segments**:
  - **Text Box** containing **all test pattern details** and machine-readable **QR Code**,
  - **Color Bars** test pattern,
  - **Reference Black** flat field.



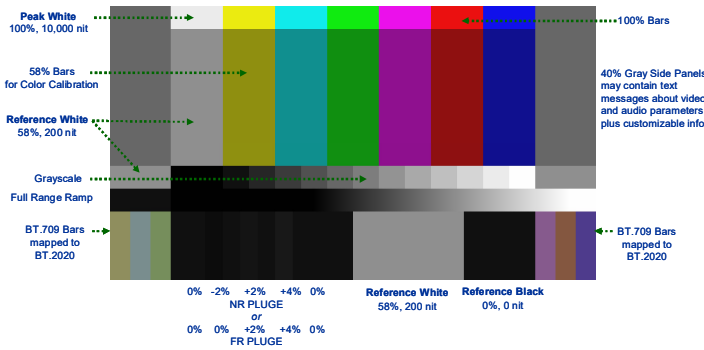
# VQCB – VideoQ Color Bars Test Patterns Suite

Modern **RGB**  $\hat{U}$  **YUV**, **UHD**  $\hat{U}$  **HD**, and **HDR**  $\hat{U}$  **SDR** conversion workflows should handle FR / NR RGB data, NR YUV data, BT.2020 / BT.709 Matrices, and a number of Color Primaries & Transfer Functions:

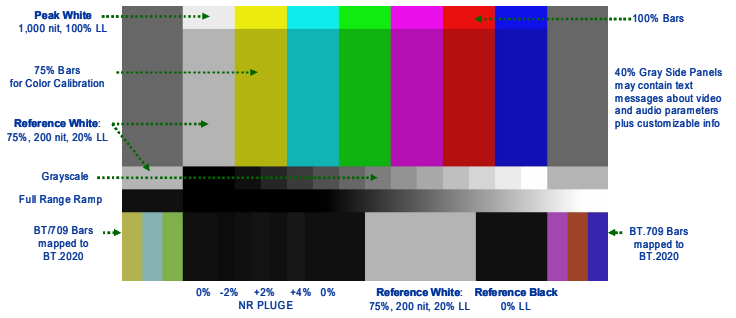


VideoQ Color Bars (VQCB) test tools suite does meet this challenge.  
*The best way to reliable QA is via reliable QC!*

## VQCB HDR-PQ Test Composition

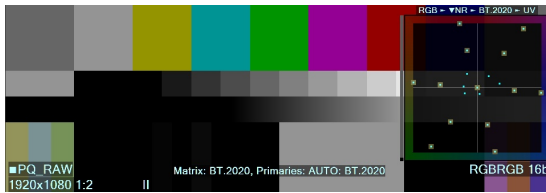


## VQCB HDR-HLG Test Composition

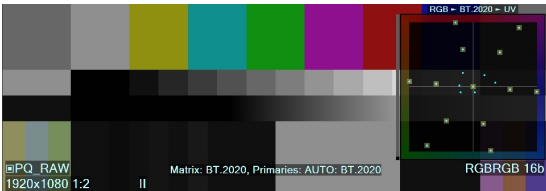


## Checking HD HDR-PQ RGB Data vs. File Metadata, using VideoQ VQV VectorScope

RGB Full Range Metadata Check Passed **P**

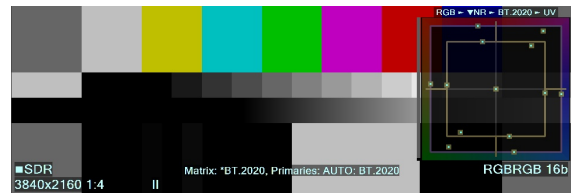


RGB Narrow Range Metadata Check Passed **P**



## Checking UHD SDR RGB Data vs. File Metadata, using VideoQ VQV VectorScope

RGB Full Range Metadata Check Passed **P**



RGB Narrow Range Metadata Check Failed **O**



VideoQ, Inc. – Critical Picture Quality Technologies for Broadcast, Consumer Electronics, Transcoding, Video Data Compression, HDR, UHD, WCG, SDR, SD, HD, Digital Cinema, CDN, Mobile TV, IPTV.

We make tools for you to do the best work within the most complicated modern HDR / WCG / SDR video supply chains and multi-format, multi-resolution workflows. We make automatable software for Video Formats Conversion, Video Parameters Normalization, Video Processing Chain Integrity & Performance Validation.

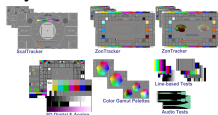
Detailed Training Presentations and more information are available from VideoQ website, VideoQ Technical Blog and VideoQ YouTube Channel.

Related VideoQ products:

**VQMA**  
Video Analyzer and Scope



**VQL**  
Library of Advanced Test Patterns



**VQV**  
Video Viewer-Analyzer

