



QX
UHDTV



PHABRIX® Qx

UHDTV1 / 4K & UHDTV2 / 8K GENERATOR / ANALYZER / MONITOR

Designed as a complete solution for testing the new UHDTV formats, the PHABRIX Qx features the very latest technology in a new 'future-proof' platform targeted at broadcasters and manufacturers looking for a comprehensive test and measurement solution. The key differentiator of this new instrument is its ability to provide simultaneous generation and analysis tools on signals with up to 48Gbps payloads offering both video and audio instruments.

The Qx comes complete with support for HD-SDI, 3G-SDI, 6G-SDI and 12G-SDI as standard. Two base models are available: one complete with physical layer analysis and one without.

Incorporating the 'World's First' TRUE REAL-TIME 12G-SDI physical layer analysis tool set with automatic SMPTE compliance measurements, the PHABRIX Qx enables comprehensive testing for both UHDTV1/4K and UHDTV2/8K infrastructures. Importantly the PHABRIX Qx can present measurements for both overshoot and undershoot along with eye height, rise time and fall time - compulsory when verifying SMPTE compliance and a key differentiator with Qx technology. With an analog front end bandwidth in excess of 30 GHz, the Qx is perfect for 12G-SDI Eye and Jitter testing.

The PHABRIX Qx supports both generation and analysis of UHDTV signals simultaneously - a must have for closed loop testing and a standard feature on the Qx. The low noise floor of the Qx generator sets a benchmark standard for quality testing of the new standards.

With 4 x 12Gbps BNC inputs and 4 x 12Gbps BNC outputs the platform is able to support UHDTV standards up to 4320p60. In addition two fully connected SFP+ cages provide support for both 12Gbps optical SDI SFPs and 10GbE SFPs for the testing of IP based infrastructures. A range of format options will be available including SMPTE 2022-6.

The Qx is controlled using an intuitive user interface consisting of mouse, keyboard and 1920x1080 HDMI and SDI instrument outputs. The all new client/server based Qx GUI provides up to 20 simultaneous scalable instrument windows backed by a powerful preset mechanism.

On first release the Qx is focused on support for manufacturers requiring a sophisticated tool set for test and measurement of UHDTV. The Qx is based on FPGA design enabling 'in the field' upgrades of this rapidly developing product.

Support for HDR (High Dynamic Range), WCG (Wide Color Gamut), HFR (High Frame Rate) and the advanced object based audio formats will be provided as the standards develop.

FEATURE HIGHLIGHTS

- TRUE NEXT GENERATION PRODUCT
- UHDTV TEST & MEASUREMENT
- UHDTV1 / 4K SUPPORT UP TO 2160p120
- UHDTV2 / 8K SUPPORT UP TO 4320p120
- COMPREHENSIVE RANGE OF AUDIO TOOL SETS (UP TO 128 CHANNELS)
- 12GBPS COPPER AND FIBER (SFP) SUPPORT
- 4x 12G-SDI IN, UP TO 48GBPS PAYLOADS
- 4x 12G-SDI OUT, UP TO 48GBPS PAYLOADS
- 2x SFPs SUPPORTING 10GBPS NETWORKS* AND 12GBPS OPTICAL SDI
- HDR, WCG, HFR, AND OBJECT-BASED AUDIO FORMATS*
- CLIENT/SERVER ARCHITECTURE
- APP-BASED CONTROL - PC, ANDROID, iOS
- HDMI AND SDI INSTRUMENT OUTPUT
- 10/100/1000 ETHERNET CONTROL
- KVM CONTROL

OPTIONS

- TRUE REAL-TIME MULTI RATE 12Gbps CAPABLE SDI EYE/JITTER ANALYSIS
- ADVANCED JITTER INSERTION AND ANALYSIS
- 10 GbE SFP OPTION FOR SMPTE ST2022-6*

PHYSICAL

- H: 1U (1.75", 4.4 CM), W: 1/2 RACK WIDTH (8.25", 21 CM), D: 10.5", 27 CM

*Specifications and features described herein are subject to change without prior notice. Please see www.phabrix.com for the latest data



ANALYZER INPUTS (BNC x 4)

Label A,B,C,D
 Supported standards 12G/6G/3G/1.5G
 Standards see www.phabrix.com
 Input Impedance 75 Ω terminated
 Maximum Input Voltage +/- 2V

GENERATOR / GEARBOX / LOOP OUTPUTS (BNC x 4)

Label A,B,C,D
 Supported standards 12G/6G/3G/1.5G
 Standards see www.phabrix.com
 Output Impedance 75 ohm terminated
 Output Level 800mV +/-10%

LOCKING REFERENCE LOOP THROUGH (BNC x 2)

Label REF
 Input Signal Tri-level or black burst syncs
 50/59.94/60Hz
 Input Impedance 75 Ω loop through
 Input Return Loss >40dB to 6MHz (typical)
 Maximum Input voltage +/- 2V
 Specification Tri-level syncs 600 mV pk-pk PAL,
 NTSC, Black Burst 1V pk-pk,

HDMI INSTRUMENT OUTPUT (TYPE A)

Video Format 1920 x 1080 RGB 4:4:4
 Audio Format 8 x PCM audio at 48 KHz

12G-SDI INSTRUMENT OUTPUT (BNC)

Label SDI OUT
 Input Impedance 75 Ω terminated
 Output Level 800mV +/- 10%

NETWORKING (RJ-45)

Ethernet IEEE 802.3 10/100/1000Mbps
 (10/100/1000-base-T connection)

AUDIO/GPI/LTC (26-WAY D-TYPE)

Purpose GPI I/O (general purpose interface)
 LTC input, analog audio
 4x AES I/O

USER INTERFACE CONTROL (USB 2.0 TYPE A)

Quantity 3 (1 x front, 2 x rear)

SFP (CAGE x 2)

Type SFP+, MSA/NON-MSA, 12Gbps
 copper or fiber or 10Gbps Ethernet

PHABRIX UHDTV-SDI VIDEO PAYLOADS

	Pixels	Lines	Frames	10b 4:2:2/4:2:0 (Gbps)	10b 4:4:4(:4) (Gbps)	12b 4:4:4 (Gbps)	12b 4:2:2(:4) (Gbps)
UHDTV2/8K	7680	4320	120/119.88	80 [8]	160 [16]	160 [16]	160 [16]
	7680	4320	100	67 [8]	133 [16]	133 [16]	133 [16]
	7680	4320	60/59.94	40 [4]	80 [8]	80 [8]	80 [8]
	7680	4320	50	34 [4]	67 [8]	67 [8]	67 [8]
	7680	4320	30/29.97	20 [2]	40 [4]	40 [4]	40 [4]
	7680	4320	25	17 [2]	34 [4]	34 [4]	34 [4]
	7680	4320	24/23.98	16 [2]	32 [4]	32 [4]	32 [4]
UHDTV1/4K	3840	2160	120/119.88	20 [2]	40 [4]	40 [4]	40 [4]
	3840	2160	100	17 [2]	34 [4]	34 [4]	34 [4]
	3840	2160	60/59.94	10 [1]	20 [2]	20 [2]	20 [2]
	3840	2160	50	9 [1]	17 [2]	17 [2]	17 [2]
	3840	2160	30/29.97	5 [1] *	10 [1]	10 [1]	10 [1]
	3840	2160	25	5 [1] *	9 [1]	9 [1]	9 [1]
	3840	2160	24/23.98	4 [1] *	8 [1]	8 [1]	8 [1]

[] 12G Links required
 * Single Link at 6Gbps
 48Gbps Payloads are in development and will be licensed

 UHDTV2/8K 48G Payload
 (planned future option)

 UHDTV1/4K 48G Payload
 (planned future option)

 UHDTV1/4K 12G Payload
 (Standard)



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