

VIDEO TEST SIGNAL SOURCE

KP-6215

Three Vertical Bar Video Signal Generator

Controlled video stimulus for television and moving-image display test setups



ENGINEERING PURPOSE Provides a stable, repeatable three vertical white-bar image for use while a television or display is operated under an applicable IEC 62368-1 laboratory procedure. The signal geometry is referenced to IEC 60107-1:1997, Clause 3.2.1.3.

CVBS, YPbPr and HDMI outputs allow one controlled source to cover legacy analog television inputs and modern HD/4K display connections.

Key item	Specification	Key item	Specification
Model	KP-6215	Signal pattern	Three white vertical bars
Video outputs	CVBS / YPbPr / HDMI	SD formats	PAL / NTSC
HD output	Up to 1920 x 1080p, 60 Hz	4K output	3840 x 2160, 30p
Audio	Independent L / R outputs	Operation	Touch screen + physical keys

Signal control	Interface coverage	Operator control
Repeatable white-bar stimulus	CVBS / YPbPr / HDMI	Touch screen, keys and USB
IEC 60107-1 pattern geometry	PAL / NTSC / HD / 4K	Lab-oriented configuration

Application reference: IEC 62368-1 | **Signal definition:** IEC 60107-1:1997, Clause 3.2.1.3

1. Product Overview

The KP-6215 is a dedicated laboratory video signal source for televisions and other equipment incorporating moving-image displays. It replaces uncontrolled sources such as a laptop, media player or manually prepared video file with a defined test pattern delivered through commonly used analog and digital interfaces.

Operators can select the required output interface and format, apply the three vertical bar image to the equipment under test (DUT), and maintain a repeatable display condition while electrical, thermal, EMC or other measurements are performed under the governing test procedure.

1.1 Why a Dedicated Generator Is Used

- Stable and repeatable input conditions across DUTs, operators and laboratories.
- Direct support for legacy analog inputs and modern HDMI-equipped displays.
- No dependency on operating-system updates, media-player settings or ad-hoc test files.
- Consistent signal selection for pre-compliance, certification and quality-control work.

2. Three Vertical Bar Signal

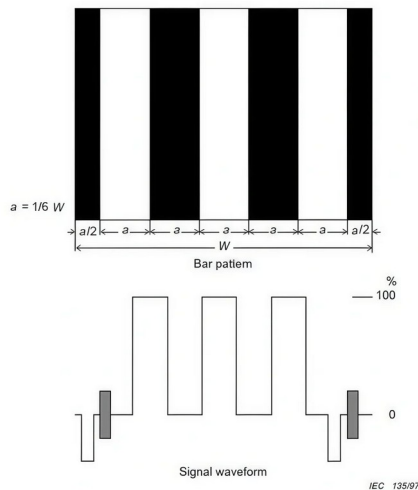


Figure 9 – Three vertical bar signal (3.2.1.3)

Signal geometry

The referenced pattern comprises three vertical white bars on a black background. Each bar has a width of one-sixth of the nominal horizontal picture width (W), with equal black intervals and half-width black margins at the two sides. The pattern includes reference white and an average picture level (APL) of 50%.

IMPORTANT DISTINCTION This is a white-bar operating pattern. It is not an RGB three-color pattern and should not be described as a SMPTE color-bar generator.

3. Technical Specifications

Parameter	Specification
Product name	Three Vertical Bar Video Signal Generator
Model	KP-6215
Intended function	Controlled video source for televisions and equipment with moving-image displays
Application standard	IEC 62368-1 (edition/adoption to be specified by the laboratory)
Signal reference	IEC 60107-1:1997, Clause 3.2.1.3
Test pattern	Three vertical white bars on a black background
Video interfaces	CVBS, YPbPr, HDMI
Analog terminals	Y/CVBS, Pb, Pr
Audio outputs	Independent L / R channels
Standard definition	PAL / NTSC
HD support	Up to 1920 x 1080p, 60 Hz
4K support	3840 x 2160, 30p
User interface	Touch-screen display
Physical controls	Navigation, numerical and function keys
Peripheral interface	USB
Typical DUT	Television or equipment incorporating a moving-image display
Manufacturer	KingPo Technology Development Limited

3.1 Analog Video Output Performance

Interface	Parameter	Output range	Accuracy
CVBS	Luminance level	0-700 mV	+/- (2% x X + 6 mV)
CVBS	Chrominance level	0-885.1 mV	+/- (2% x X + 6 mV)
CVBS	Chrominance phase	0-360 degrees	+/- 2 degrees
YPbPr	Y luminance output	0-700 mV	+/- (2% x X + 6 mV)
YPbPr	Pb / Pr color-difference output	-350 to +350 mV	+/- (2% x X + 6 mV)

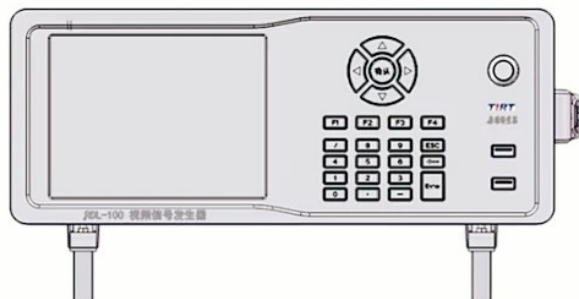
Note: X represents the set or measured signal level applicable to the stated accuracy expression.

CONFIGURATION CONTROL Supply voltage, chassis dimensions, mass, included cables and certificate scope must be confirmed on the quotation or contract specification.

3.2 Specification Verification Before Order

- State every required video format, resolution and refresh rate in the purchase specification.
- Confirm the DUT connector type and required cables or adapters.
- Specify supply voltage, plug type, certificate format and calibration quantities.
- Treat unlisted functions as optional or subject to written technical confirmation.

4. Interfaces and Controls



Front-panel control layout

Rear-panel connection layout

Interface illustrations are for connection reference; production labeling and installed ports shall follow the confirmed order configuration.

Interface	Function	Typical connection
Y / CVBS	CVBS for PAL/NTSC; Y component for YPbPr operation	Composite or component-video DUT input
Pb / Pr	Analog color-difference components used with Y	YPbPr component-video DUT input
HDMI	Digital video output for HD and 4K formats	HDMI-equipped television or display
L / R	Independent left- and right-channel audio outputs	External audio connection when required
USB	Peripheral interface	Use as defined in the supplied operating documentation

4.1 Output Selection Guide

DUT condition	Recommended output	Configuration note
Legacy TV with composite input	CVBS	Select PAL or NTSC as required by the DUT.
Display with analog component input	YPbPr	Connect Y, Pb and Pr; verify the DUT format setting.
Modern HD / 4K display	HDMI	Confirm resolution and refresh-rate compatibility before the test.
External audio required	L / R	Confirm the required audio condition in the governing procedure.

CONNECTION CHECK Before energizing the test setup, verify the selected format, cable type, DUT input selection and laboratory grounding arrangement.

5. Typical Test Setup

SIGNAL PATH KP-6215 signal generator -> CVBS / YPbPr / HDMI -> DUT video input -> electrical, thermal or EMC measurement system



The generator creates the selected video format and applies the white-bar pattern directly to the DUT. The DUT remains active and displaying defined content while the laboratory establishes and monitors the operating conditions required by the applicable test method.

5.1 Basic Operating Procedure

1. Review the governing standard, test clause and target-market adoption before configuring the test.
2. Connect the KP-6215 to the appropriate DUT video input using CVBS, YPbPr or HDMI.
3. Select the required PAL/NTSC, HD or 4K output format and confirm compatibility with the DUT.
4. Select the three vertical bar test signal and verify that the DUT displays it correctly.
5. Connect the L/R audio outputs or other loading and measurement equipment where the procedure requires them.
6. Allow the DUT to reach the specified operating condition, then perform and document the required measurements.

5.2 Typical Applications

Application	Use of the KP-6215
Safety evaluation	Controlled moving-image input during applicable IEC 62368-1 tests.
Certification laboratory	Repeatable stimulus for third-party and accredited-lab workflows.
Manufacturer R&D	Reproduction of laboratory input conditions before formal certification.
Pre-compliance	Early identification of DUT behavior under a controlled display condition.
Quality control	Repeatable source for comparative or batch verification.
EMC support	Stable displayed content when an applicable EMC method requires the DUT to remain active.

6. Standards and Compliance Position

Reference	Subject	Relevance to KP-6215
IEC 60107-1:1997	Methods of measurement on receivers for television broadcast transmissions - Part 1	Defines the referenced three vertical bar signal in Clause 3.2.1.3.
IEC 62368-1	Safety requirements for audio/video, information and communication technology equipment	Provides the principal product-safety application context. The adopted edition must be specified for the target market.

COMPLIANCE & REGULATORY ASSURANCE The KP-6215 is a test stimulus source used within a wider laboratory setup. Its use does not by itself establish DUT compliance. Final pass/fail decisions depend on the applicable standard edition, national or regional adoption, test clause, DUT configuration, auxiliary equipment, measurement uncertainty and laboratory procedure.

6.1 Calibration and Traceability

Where the instrument is used in an accredited or quality-controlled laboratory, the calibration scope should be defined by the laboratory's management system and the actual quantities relied upon in the test. Relevant checks may include analog video amplitude, chrominance phase and other output characteristics stated in the approved procedure.

Calibration interval, certificate format, traceability route and any ISO/IEC 17025 requirements should be agreed before order placement. A certificate should not be assumed to cover quantities that are outside the confirmed calibration scope.

7. Technical Inquiry & Configuration Support

For an accurate configuration and quotation, provide:

- DUT type, brand/model and available video inputs.
- Required CVBS, YPbPr or HDMI interface; PAL/NTSC, resolution and refresh rate.
- Applicable standard, edition/adoption and specific laboratory procedure.
- Required external audio condition and connection method.
- Destination supply voltage, plug type and delivery country.
- Required accessories, certificate type, calibration scope and report language.

8. Manufacturer and Contact

Company	KingPo Technology Development Limited
Factory address	No.9 University Road, Songshan Lake, Dongguan 523770, China
Telephone / Email	+86-769-81627526 sales@kingpo.hk
Website	www.dgkingpo.com

Product page: dgkingpo.com/product/three-vertical-bar-video-signal-generator/

Official publication records checked at issue date: IEC 60107-1:1997 (Edition 3.0) and IEC 62368-1:2023 (Edition 4.0). Target-market adoptions may require a different referenced edition.

Document revision: 1.0 | Issue date: 2026-08-10 | Specifications are subject to the final quotation and contract confirmation.