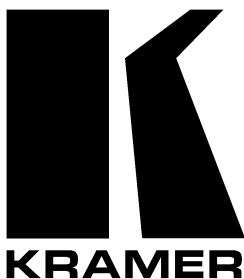


Kramer Electronics, Ltd.




USER MANUAL

Model:

811

Video / Audio Generator

Contents

| | | |
|----------|---|-----------|
| 1 | Introduction | 1 |
| 2 | Getting Started | 1 |
| 3 | Overview | 1 |
| 4 | Your 811 Video / Audio Generator | 2 |
| 5 | Installing on a Rack | 5 |
| 5.1 | Before Installing on a Rack | 5 |
| 5.1.1 |  CAUTION!! | 5 |
| 5.2 | Instructions for Rack-Mounting | 5 |
| 6 | Connecting the 811 Video / Audio Generator | 6 |
| 6.1 | Connecting the Balanced/Unbalanced Stereo Audio Output | 7 |
| 7 | Operating the 811 Video / Audio Generator | 8 |
| 7.1 | Adjusting your Video Equipment | 8 |
| 7.2 | Adjusting your Audio Equipment | 8 |
| 8 | Defining the 811 Test Patterns | 9 |
| 9 | Technical Specifications | 14 |

Figures

| | |
|---|---|
| Figure 1: 811 Video / Audio Generator – Front and Rear View | 2 |
| Figure 2: 811 Video / Audio Generator Underside | 4 |
| Figure 3: Connecting the 811 Video / Audio Generator | 6 |
| Figure 4: Connecting the Balanced Stereo Audio Output | 7 |
| Figure 5: Connecting an Unbalanced Output | 7 |

Tables

| | |
|--|----|
| Table 1: Front Panel 811 Video / Audio Generator Features | 3 |
| Table 2: Rear Panel 811 Video / Audio Generator Features | 3 |
| Table 3: Front Panel 811 Video / Audio Generator Underside Features | 4 |
| Table 4: Recommended Ambient Temperature and Humidity Range | 5 |
| Table 5: Test Pattern Definitions | 9 |
| Table 6: Technical Specifications of the 811 Video / Audio Generator | 14 |

1 Introduction

Welcome to Kramer Electronics (since 1981): a world of unique, creative and affordable solutions to the infinite range of problems that confront the video, audio and presentation professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better! Our 350-plus different models now appear in 8 Groups¹, which are clearly defined by function.

Congratulations on purchasing your Kramer **811 Video / Audio Generator**, which is ideal for testing video and audio equipment.

The package includes the following items:

- **811 Video / Audio Generator**
- Power cord
- This user manual²

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high performance high resolution cables³

3 Overview

The desktop-sized **811 Video / Audio Generator** is designed for the testing and adjusting of video and audio equipment. It outputs a composite video signal, an s-Video signal, a component video signal, 2 SDI signals, 6 black burst signals⁴ and a balanced audio signal.

1 GROUP 1: Distribution Amplifiers; GROUP 2: Video and Audio Switchers, Matrix Switchers and Controllers; GROUP 3: Video, Audio, VGA/XGA Processors; GROUP 4: Interfaces and Sync Processors; GROUP 5: Twisted Pair Interfaces; GROUP 6: Accessories and Rack Adapters; GROUP 7: Scan Converters and Scalers; and GROUP 8: Cables and Connectors

2 Download up-to-date Kramer user manuals from the Internet at this URL: <http://www.kramerelectronics.com>

3 The complete list of Kramer cables is on our Web site at <http://www.kramerelectronics.com>

4 To simultaneously genlock several video sources in a studio

In addition, the **811 Video / Audio Generator**:

- Lets you adjust the amplitude and frequency of the balanced audio signal
- Lets you determine the video output standard—PAL or NTSC—via the VIDEO STANDARD button
- Offers 74 static or moving patterns, all of which are available in each video standard
- Transmits a video signal to each output simultaneously

The **811** can be rack-mounted using the **RK-80** 19" rack adapter. To achieve the best performance:

- Connect only good quality connection cables, thus avoiding interference, deterioration in signal quality due to poor matching, and elevated noise-levels (often associated with low quality cables)
- Avoid interference from neighboring electrical appliances and position your Kramer **811** away from moisture, excessive sunlight and dust

4 Your 811 Video / Audio Generator

Figure 1, Table 1 and Table 2 define the **811**:

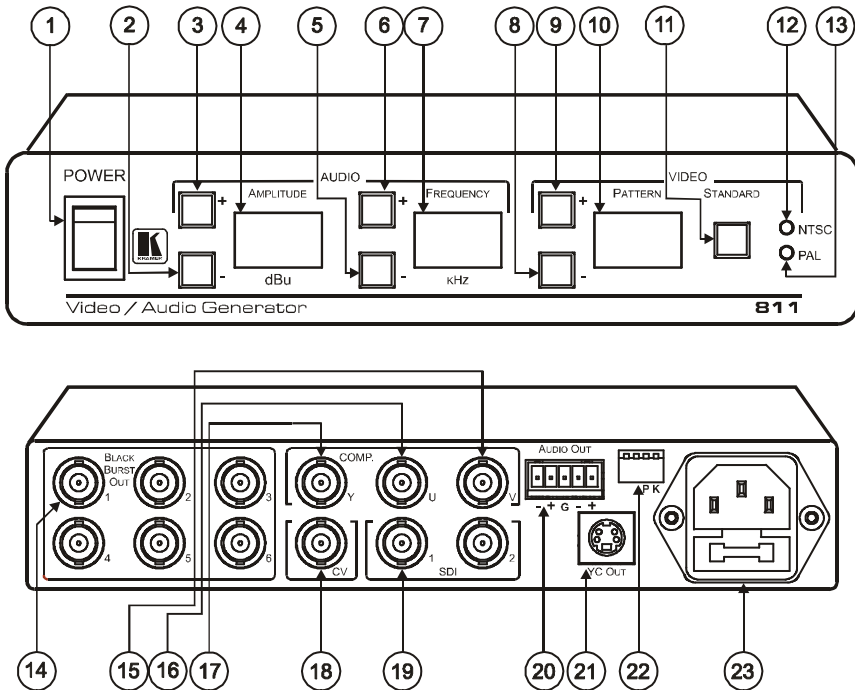


Figure 1: 811 Video / Audio Generator – Front and Rear View

Table 1: Front Panel 811 Video / Audio Generator Features

| # | Feature | Function |
|----|-------------------|--|
| 1 | POWER Switch | Illuminated switch for turning the unit ON or OFF |
| 2 | AUDIO - Button | Press to decrease the signal amplitude |
| 3 | | Press to increase the signal amplitude |
| 4 | | AMPLITUDE 7-segment Display |
| 5 | | Press to decrease the audio frequency |
| 6 | | Press to increase the audio frequency |
| 7 | | FREQUENCY 7-segment Display |
| 8 | VIDEO - Button | Press to select the previous pattern number |
| 9 | | Press to select the next pattern number |
| 10 | | PATTERN ¹ 7-segment Display |
| 11 | | STANDARD Button |
| 12 | NTSC LED | Illuminates when the NTSC video standard is selected |
| 13 | PAL LED | Illuminates when the PAL video standard is selected |

Table 2: Rear Panel 811 Video / Audio Generator Features

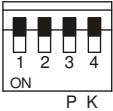
| # | Feature | Function |
|--|--|--|
| 14 | BLACK BURST OUT BNC Connectors | Connect the black burst outputs (from 1 to 6) to the video acceptors |
| 15 | V BNC Connector | Connect to the component ² video acceptor |
| 16 | U BNC Connector | |
| 17 | Y BNC Connector | |
| 18 | CV BNC Connector | Connect to the composite video acceptor |
| 19 | SDI BNC Connector | Connect to the SDI acceptor |
| 20 | AUDIO OUT 5-PIN Terminal Block Connector | Connect to the balanced (or unbalanced) audio acceptor |
| 21 | YC OUT 4p Connector | Connect to the s-Video acceptor |
| 22 | PK Dipswitches ³ | DIP 3 (P): ON for pedestal (7.5 IRE offset selection for NTSC); OFF for no pedestal DIP 4 (K): OFF for activating the Kramer logo; ON for deactivating it |
|  | | |
| 23 | Power Connector with Fuse | AC connector enabling power supply to the unit |

Figure 2 and Table 3 define the **811** underside BB trimmers (lower right side):

1 Several pattern numbers (specified in Table 5) freeze the moving pattern on the screen

2 For component video, connect all three connectors: Y, U, and V (also known as: Y, B-Y, and R-Y, and sometimes called Y, Cb, and Cr)

3 DIPs 1 and 2 are not used. By default, all DIPs are set to OFF

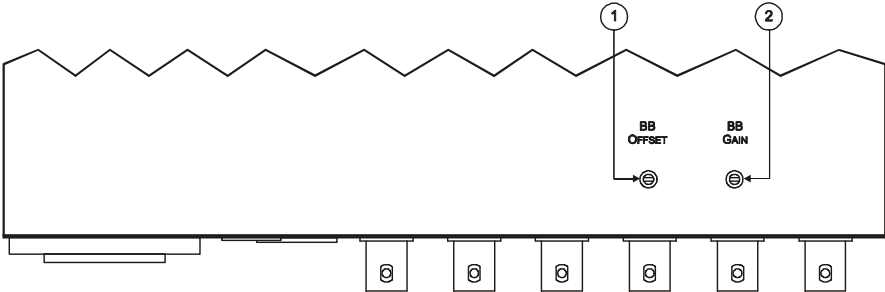


Figure 2: 811 Video / Audio Generator Underside

Table 3: Front Panel 811 Video / Audio Generator Underside Features

| # | Feature | Function |
|---|-------------------|---|
| 1 | BB OFFSET Trimmer | Adjusts ¹ the black burst offset level |
| 2 | BB GAIN Trimmer | Adjusts ¹ the black burst gain |

¹ Insert a screwdriver into the small hole and carefully rotate it to adjust the level

5 Installing on a Rack

This section describes what to do before installing on a rack (see section 5.1) and how to install on a rack (see section 5.2).

5.1 Before Installing on a Rack

Before installing the machine in a 19" rack, be sure that the environment is within the recommended range:

Table 4: Recommended Ambient Temperature and Humidity Range

| | |
|-----------------------------|-------------------------------|
| Operating temperature range | +5 to +45 Deg. Centigrade |
| Operating humidity range | 5 to 65 % RHL, non-condensing |
| Storage temperature range | -20 to +70 Deg. Centigrade |
| Storage humidity range | 5 to 95% RHL, non-condensing |

5.1.1 CAUTION!!

When installing the **811** in a 19" rack, avoid hazards by taking care that:

1. It is located within the recommended environmental conditions, as the operating ambient temperature of a closed or multi-unit rack assembly may exceed the room ambient temperature.
2. Once rack-mounted, enough air will still flow around the machine.
3. The machine is placed straight in the correct horizontal position.
4. You do not overload the circuit(s). When connecting the machine to the supply circuit, overloading the circuits might have a detrimental effect on overcurrent protection and supply wiring. Refer to the appropriate nameplate ratings for information. For example, for fuse replacement, see the value printed on the product label.
5. The machine is earthed (grounded) in a reliable way and is connected only to an electricity socket with grounding. Pay particular attention to supply connections other than direct connections to the branch circuit (for example, the use of power strips), and that you use only the power cord that is supplied with the machine.

5.2 Instructions for Rack-Mounting

To install the **811** in a 19" rack, place the rack ears of the rack adapter¹ against the rack rails of the rack, and insert the proper rack screws through each of the four holes in the rack ears.

¹ Always mount the machine in the rack before you attach any cables or connect the machine to the power. If you are using a Kramer rack adapter kit (for a machine that is not 19"), refer to the Rack Adapters user manual (download it at: <http://www.kramerelectronics.com>) for installation instructions

6 Connecting the 811 Video / Audio Generator

To use your **811 Video / Audio Generator**, connect one or more of the outputs¹, as the example in Figure 3 illustrates:

1. Connect the BLACK BURST OUT 1 BNC connector to a black burst acceptor (for example, a genlockable camera).
2. Connect the CV BNC connector to the composite video acceptor (for example, a display).
3. Connect the COMP. (component video) Y, U and V BNC connectors to the component video acceptor (for example, a Betacam recorder).
4. Connect the SDI 1 BNC connector to the SDI acceptor (for example, an SDI display).
5. Connect the s-Video (Y/C) 4p YC OUT connector to the s-Video (Y/C) acceptor (for example, an AV Switcher (Diagnostic)).
6. Connect the AUDIO OUT terminal block to the audio acceptor (for example, an AV Switcher (Diagnostic)), see section 6.1.
7. Connect the power cord (not illustrated in Figure 3).

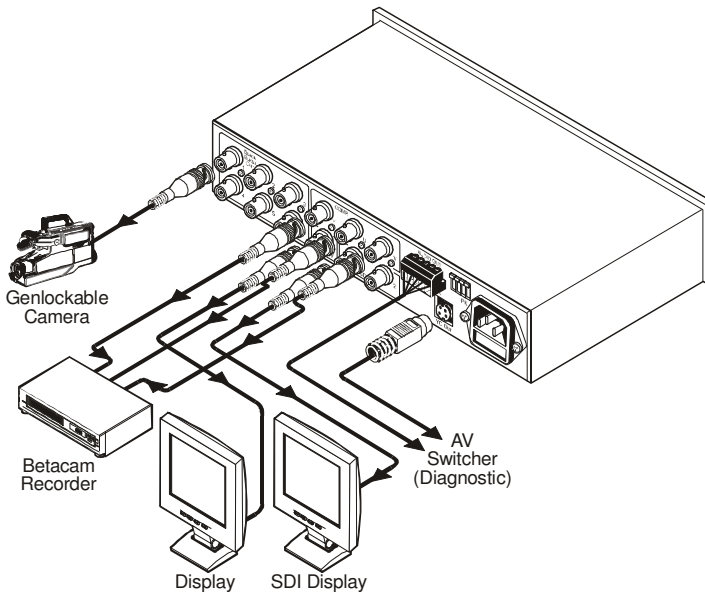


Figure 3: Connecting the 811 Video / Audio Generator

¹ You do not have to connect all the outputs

6.1 Connecting the Balanced/Unbalanced Stereo Audio Output

This section illustrates how to wire:

- A balanced output connection, see Figure 4
- An unbalanced audio output, see Figure 5

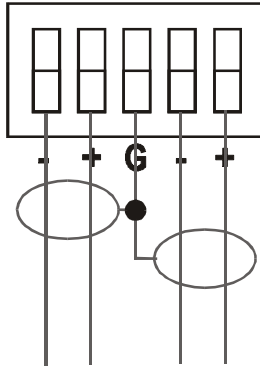


Figure 4: Connecting the Balanced Stereo Audio Output

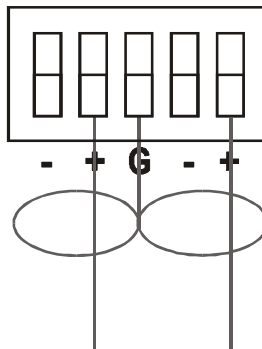


Figure 5: Connecting an Unbalanced Output

7 Operating the 811 Video / Audio Generator

This section describes how to adjust your video and audio equipment.

7.1 Adjusting your Video Equipment

To adjust your video equipment using the **811**, do the following:

1. Press the VIDEO PATTERN + or - buttons¹ to generate the required pattern.
The VIDEO PATTERN 7-segment display shows the selected pattern number.
2. Observe the output on the acceptors (see Table 5 for reference).
3. Adjust the video equipment, as required.

You can only select one video pattern at a time for all the connected outputs

7.2 Adjusting your Audio Equipment

To adjust your audio equipment using the **811**, do the following:


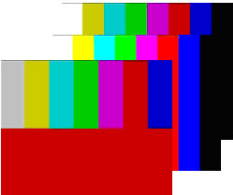
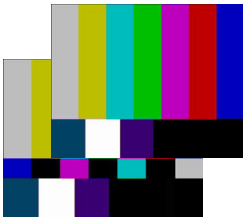

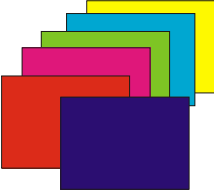
1. Press the AUDIO AMPLITUDE + or – buttons, and/or the AUDIO FREQUENCY + or – buttons to set the desired audio amplitude and frequency.
2. Adjust your audio equipment, as required.

¹ To display the next pattern or the previous pattern, respectively

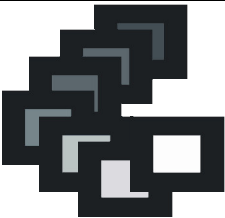
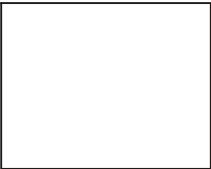

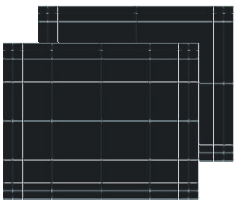
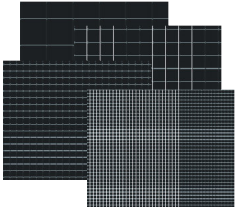
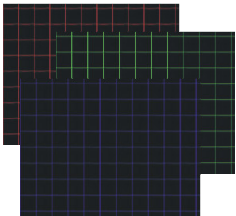
8 Defining the 811 Test Patterns

Table 5 describes the **811** test Patterns:


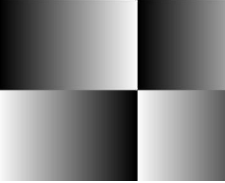
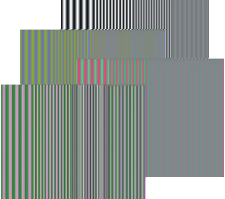
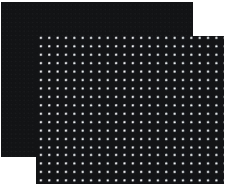
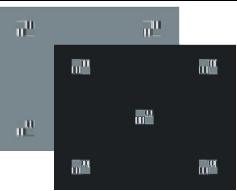
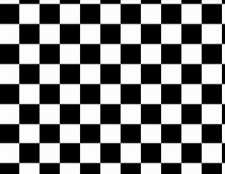
Table 5: Test Pattern Definitions

| Pattern # | Name | Display | Can be used to: |
|-----------|---|---|---|
| 0 | Black burst |  | <ul style="list-style-type: none"> Synchronize machines Check for noise in the picture |
| 1-3 | Color Bars |  | <ul style="list-style-type: none"> Check the capability of the device to create fully saturated primary and secondary colors and check video and TV monitors |
| 4-5 | SMPTE Bars |  | <ul style="list-style-type: none"> Align the NTSC color transmission system Adjust color and hue through a blue filter Adjust brightness and contrast |
| 6-8 | Gray Scale bar and Chart |  | <ul style="list-style-type: none"> Check the contrast, the brightness and the linearity of the video amplifiers and D/A converters Check the precision of the color-coding and beam focusing (color shifts from gray) Fine-tune the color balance Control contrast |
| 9-14 | Full field color raster patterns at 75% amplitude |  | <ul style="list-style-type: none"> Check color purity and display chrominance uniformity Check for missing pixels on a TFT or LCD Monitor (switch to Red, Green and Blue, and observe the screen for missing pixels, which look dark or stuck) Check power supply stability, and video processing circuits noise |

Defining the 811 Test Patterns


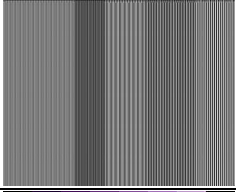
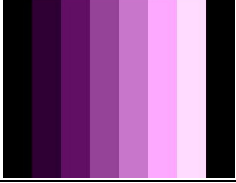
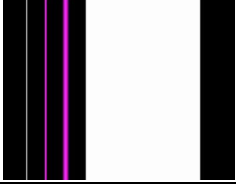
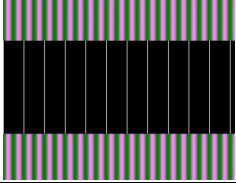
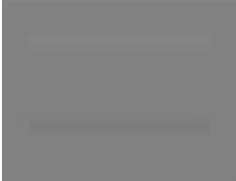
| Pattern # | Name | Display | Can be used to: |
|--------------------|-----------------------------|---|---|
| 15-21 | Gray shades in a box |  | <ul style="list-style-type: none"> Check the contrast and power stability of the video amplifiers and geometry artifacts at different brightness steps on the screen Adjust the contrast |
| 22 | White screen |  | <ul style="list-style-type: none"> Set the white color Evaluate white field uniformity Measure the display light output |
| 23-25 | SDI, PLL and equalizer test |  | <ul style="list-style-type: none"> Test for the equalizer and PLL in SDI systems |
| 26-27 | Center cross |  | <ul style="list-style-type: none"> Indicate the screen safe zone for text, subtitles, logo and title placement (5% and 10%) Center align screen for text and pictures |
| 28, 29, 33, 34, 35 | Crosshatch |  | <ul style="list-style-type: none"> Adjust the linearity and convergence Perform an overall check of the display's capability of producing fully saturated primary and secondary colors Estimate the quality of the projector lens (for the fine crosshatch pattern) Check the quality of video scalars and de-interlacers |
| 30, 31, 32 | Colored Crosshatch |  | <ul style="list-style-type: none"> Evaluate the quality and adjustment of each color channel, especially useful for guns and masks for CRT |

Defining the 811 Test Patterns

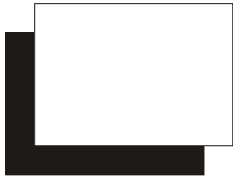

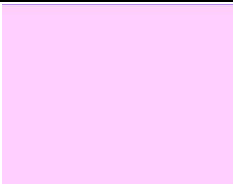

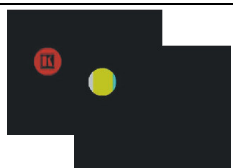
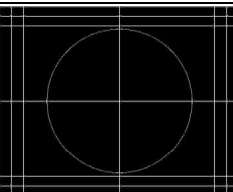
| Pattern # | Name | Display | Can be used to: |
|-----------|--|---|--|
| 36-37 | PLUGE ¹ |  | <ul style="list-style-type: none"> • Check the black level (brightness control) • Estimate the response time of the color amplifiers in the CRT monitor |
| 38 | Continuous Grayscale Image |  | <ul style="list-style-type: none"> • Check the quality of the video amplifier, D/A converter and video processing circuits, as well as the linearity, dynamic range, noise and number of bits for D/A |
| 39-43 | Gray and colored vertical bands Multiburst |  | <ul style="list-style-type: none"> • Check the frequency response for Y, U and V separated, and YUV combined |
| 44-45 | Fine squares and dots |  | <ul style="list-style-type: none"> • Check static convergence and focus • Check shadowing |
| 46, 47 | Focus |  | <ul style="list-style-type: none"> • Test the focus in the corners and the center of the screen |
| 48 | Checker-board |  | <ul style="list-style-type: none"> • Check the regulation of the CRT video drive power supply circuits • Check horizontal and vertical deflection and linearity |

¹ PLUGE is Picture Line-Up Generation Equipment. The PLUGE pattern checks the black level on the video screen

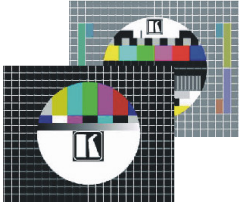
Defining the 811 Test Patterns

| Pattern # | Name | Display | Can be used to: |
|-----------|---|---|---|
| 49-50 | Black and white vertical and horizontal |  | <ul style="list-style-type: none"> • Check the regulation of the CRT video drive power supply circuits • Check horizontal and vertical deflection and linearity |
| 51 | Black and white pixels |  | <ul style="list-style-type: none"> • Perform high frequency testing for luminance |
| 52 | Modulated steps |  | <ul style="list-style-type: none"> • Check chrominance response with respect to luminance level |
| 53 | Pulse and bar |  | <ul style="list-style-type: none"> • Check hue response • Check chroma-luma delay |
| 54 | Bowtie |  | <ul style="list-style-type: none"> • Check timing and gain error |
| 55 | Hum bar pattern |  | <ul style="list-style-type: none"> • Locate and evaluate low level ground loop type signal interference |

Defining the 811 Test Patterns

| Pattern # | Name | Display | Can be used to: |
|-----------|---|---|---|
| 56 | Black and white – Flashing |  | <ul style="list-style-type: none"> Check the screen and power-supply response time |
| 57, 58 | Changing Gray levels (black to white) |  | <ul style="list-style-type: none"> Check the minimum to maximum Y level <p>Note: Press pattern 58 to freeze the test pattern on the screen</p> |
| 59, 60 | Changing colors in motion |  | <ul style="list-style-type: none"> Check the changing of colors on screen <p>Note: Press pattern 60 to freeze the moving test pattern on the screen</p> |
| 61,63,65 | Moving horizontal, vertical and diagonal lines |  | <ul style="list-style-type: none"> Evaluate the time of pixel switching for LCD monitors (the length and brightness of the "white tail" following the moving line) The diagonal pattern tests the anti aliasing performance of scalers and video devices <p>Note: Press patterns 62, 64 and 66 to freeze the moving test pattern on the screen</p> |
| 67, 69 | Aperture moving over color bar background and bouncing circle with or without the Kramer logo |  | <ul style="list-style-type: none"> Evaluate the time needed for pixel switching for LCD monitors (the brightness and length of the "tail" for different colors) Function as screen saver <p>Note: Press patterns 68, 70 to freeze the moving test pattern on the screen</p> |
| 71 | Circles (aspect ratio) |  | <ul style="list-style-type: none"> Adjust the aspect ratio of your monitor Adjust the safe zones (5% and 10%) and the center of the image |

Technical Specifications

| Pattern # | Name | Display | Can be used to: |
|-----------|---------------|---|--|
| 72-73 | Test patterns |  | <ul style="list-style-type: none"> Evaluate a large number of parameters on one screen (color, brightness, contrast, geometry and so on). <p>The Kramer logo can be activated/deactivated via the rear panel dipswitches, see Table 2</p> |

9 Technical Specifications

Table 6: Technical Specifications¹ of the 811 Video / Audio Generator

| | | |
|-------------------------|---|---------------------|
| VIDEO OUTPUTS: | 6 x Black Burst: 1Vpp/75Ω on BNC connectors; 1 x CV: 1Vpp/75Ω on a BNC connector; 1 x YC: 1Vpp/75Ω (Y); 0.3Vpp/75Ω (C) on a 4p connector; 1 x Component: (R, R-Y, B-Y): 1V, 0.7V, 0.7 Vpp/75Ω on BNC connectors; 2 x SDI: SMPTE-259M, ITU-R BT.601 serial video, 75Ω on a BNC connector | |
| AUDIO OUTPUTS: | 1 balanced audio on a detachable terminal block | |
| MAX. OUTPUT LEVEL: | VIDEO: 1Vpp for CV, YC and YUV; SDI: 800mV | AUDIO: 3.5V |
| DIFF. GAIN (PAL/NTSC): | CV: 1.2/1.2%; YC: 0.2/0.1% | |
| DIFF. PHASE (PAL/NTSC): | CV: 0.6/0.3Deg.; YC: 0.4/0.1Deg. | |
| K-FACTOR (PAL/NTSC): | CV: 0.5/0.5%; YC: 0.5/0.4%; YUV: 0.5/0.4% | |
| S/N RATIO (PAL/NTSC): | VIDEO: CV: 81/80dB; YC: 80/80dB; YUV: 77/78dB | AUDIO: 66dB (19kHz) |
| SDI Jitter: | < 0.2Vl | |
| CONTROLS: | Black level ² : -0.28V to +0.44V; Black Gain: -1.9dB to +1.6dB Freq. Range: 20Hz to 20kHz; Level: 128mV to 3.5V | AUDIO: AC |
| COUPLING: | VIDEO: DC | |
| AUDIO THD + NOISE: | 0.06% (8kHz) | |
| AUDIO 2nd HARMONIC: | 0.13% (8kHz) | |
| POWER SOURCE: | 13.8VA | |
| DIMENSIONS: | 22cm x 18cm x 4.5cm (8.7" x 7" x 1.7", W, D, H) | |
| WEIGHT: | 1.3 kg. (2.9 lbs.) approx. | |
| ACCESSORIES: | Power cord | |
| OPTIONS: | Rack adapter RK-80 | |

¹ Specifications are subject to change without notice

² Active only at black burst outputs

LIMITED WARRANTY

Kramer Electronics (hereafter *Kramer*) warrants this product free from defects in material and workmanship under the following terms.

HOW LONG IS THE WARRANTY

Labor and parts are warranted for seven years from the date of the first customer purchase.

WHO IS PROTECTED?

Only the first purchase customer may enforce this warranty.

WHAT IS COVERED AND WHAT IS NOT COVERED

Except as below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by Kramer, or which is not purchased from an authorized Kramer dealer. If you are uncertain as to whether a dealer is authorized, please contact Kramer at one of the agents listed in the web site www.kramerelectronics.com.
2. Any product, on which the serial number has been defaced, modified or removed.
3. Damage, deterioration or malfunction resulting from:
 - i) Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature
 - ii) Product modification, or failure to follow instructions supplied with the product
 - iii) Repair or attempted repair by anyone not authorized by Kramer
 - iv) Any shipment of the product (claims must be presented to the carrier)
 - v) Removal or installation of the product
 - vi) Any other cause, which does not relate to a product defect
 - vii) Cartons, equipment enclosures, cables or accessories used in conjunction with the product

WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay labor and material expenses for covered items. We will not pay for the following:

1. Removal or installations charges.
2. Costs of initial technical adjustments (set-up), including adjustment of user controls or programming. These costs are the responsibility of the Kramer dealer from whom the product was purchased.
3. Shipping charges.

HOW YOU CAN GET WARRANTY SERVICE

1. To obtain service on you product, you must take or ship it prepaid to any authorized Kramer service center.
2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing a contact name, company, address, and a description of the problem(s).
3. For the name of the nearest Kramer authorized service center, consult your authorized dealer.

LIMITATION OF IMPLIED WARRANTIES

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

EXCLUSION OF DAMAGES

The liability of Kramer for any effective products is limited to the repair or replacement of the product at our option. Kramer shall not be liable for:

1. Damage to other property caused by defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or:
2. Any other damages, whether incidental, consequential or otherwise. Some countries may not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from place to place.

NOTE: All products returned to Kramer for service must have prior approval. This may be obtained from your dealer. This equipment has been tested to determine compliance with the requirements of:

- EN-50081: "Electromagnetic compatibility (EMC);
generic emission standard.
Part 1: Residential, commercial and light industry"
- EN-50082: "Electromagnetic compatibility (EMC) generic immunity standard.
Part 1: Residential, commercial and light industry environment".
- CFR-47: FCC Rules and Regulations:
Part 15: "Radio frequency devices
Subpart B – Unintentional radiators"

CAUTION!

- ☒ Servicing the machines can only be done by an authorized Kramer technician. Any user who makes changes or modifications to the unit without the expressed approval of the manufacturer will void user authority to operate the equipment.
- ☒ Use the supplied DC power supply to feed power to the machine.
- ☒ Please use recommended interconnection cables to connect the machine to other components.





For the latest information on our products and a list of Kramer distributors, visit our Web site: www.kramerelectronics.com, where updates to this user manual may be found. We welcome your questions, comments and feedback.



Caution

Safety Warning:

Disconnect the unit from the power supply before opening/servicing.



Kramer Electronics, Ltd.

Web site: www.kramerelectronics.com

E-mail: info@kramerel.com

P/N: 2900-000060 REV 1