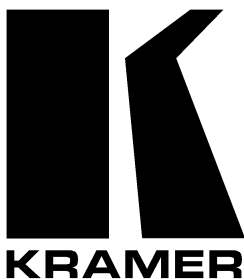


Kramer Electronics, Ltd.



USER MANUAL

Model:

Cobra Skew Module Board

For the Cobra R1300A / R1300S2

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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 500-plus different models now appear in 8 Groups¹, which are clearly defined by function.

Congratulations on purchasing your Kramer **Cobra Accessory**, the **Cobra Skew Module Board**. It is designed for the Kramer **Cobra R1300A** and/or **R1300S2**.

The Kramer **Cobra** Series System extends video, audio and serial signals over ordinary Category 5 cable. The Kramer **Cobra R1300A Video / Audio Receiver** and **Cobra R1300S2 Universal Receiver** feature optional integrated skew compensation that can be varied in 2 ns increments to 65 ns total per color channel to cancel the effects of skew in Category cables. This feature allows you to use CAT5e and reduced-skew CAT6 cables to lengths up to 1300ft. For information on the respective transmitter unit, refer to the appropriate manual included with the transmitter. All models support refresh rates/resolutions up to 1920 x 1200 @ 60 Hz to 1300feet (396m). The package includes the **Cobra Skew Module Board** and this user manual².

The Kramer **Cobra** series products are not compatible with Kramer non-**Cobra** series products.

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. You may also need CAT5 cable⁴

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 In addition, you may also need audio cable with RCA jacks, serial cable with DB9 connectors, and video cable with HD15 connectors

3 Overview

Our Kramer **Cobra** series products are compatible with CAT5/5e/6 data cabling as well as skew free CAT5/5e cabling manufactured for video applications. Note that some skew free CAT5 is specific to a particular vendor and is not compatible with our products. Ensure any skew free CAT5 cable is non-proprietary prior to purchase / installation.

We recommend using our Kramer **Cobra** ultra low skew/skew free cable—**BC-HDTP** (solid bulk) or **BCP-HDTP** (solid plenum bulk)—available in lengths of 700' (210m) and 1300' (390m).

CAT6 cable, due to the manufacture method, can exhibit much greater skew than standard CAT5/5e and may require skew compensation beyond what the standard product offers. Contact Kramer Electronics for assistance.

CAT5/5e/6 cabling for this product must be pinned to the TIA-EIA T568B wiring specification (see appendix A). We also highly recommend that all CAT5 cables be pre-terminated and tested. Cables terminated on-site or in an existing infrastructure should be tested before use to ensure compliance with the TIA-EIA T568B specification. Using incorrectly terminated CAT5 cables can damage this product.

Achieving the best performance means:

- Connecting 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)
- Avoiding interference from neighboring electrical appliances that may adversely influence signal quality and positioning your **Cobra Skew Module Board** in a location free from moisture and away from excessive sunlight and dust



Caution – No operator-serviceable parts inside unit.

Warning – Use only the Kramer Electronics input power wall adapter that is provided with this unit¹.

Warning – Disconnect power and unplug unit from wall before installing or removing device or servicing unit.

Warning –This equipment is not intended for, nor does it support, distribution through an Ethernet network. Do not connect these devices to any sort of networking or telecommunications equipment!

¹ For example: model number AD2512C, part number 2535-000251

4 Cobra Skew Module Board

The **Cobra Skew Module Board** is an accessory that can be installed inside the **Cobra R1300A / R1300S2** receivers.

To install the **Cobra Skew Module Board**:

1. Remove top cover of the **Cobra R1300A / R1300S2**.
2. Remove the 3 jumpers from J16 pins 1-2, 4-5, 7-8.
3. Insert the Skew assembly onto the PCB using 11 pin headers J16 and J17.
4. The correct orientation of the skew board is to place the side with the logo into header J17.
5. Reassemble the **Cobra R1300A / R1300S2** unit.

Removal is the opposite of the above. Ensure 3 jumpers are installed in locations shown in Figure 1:

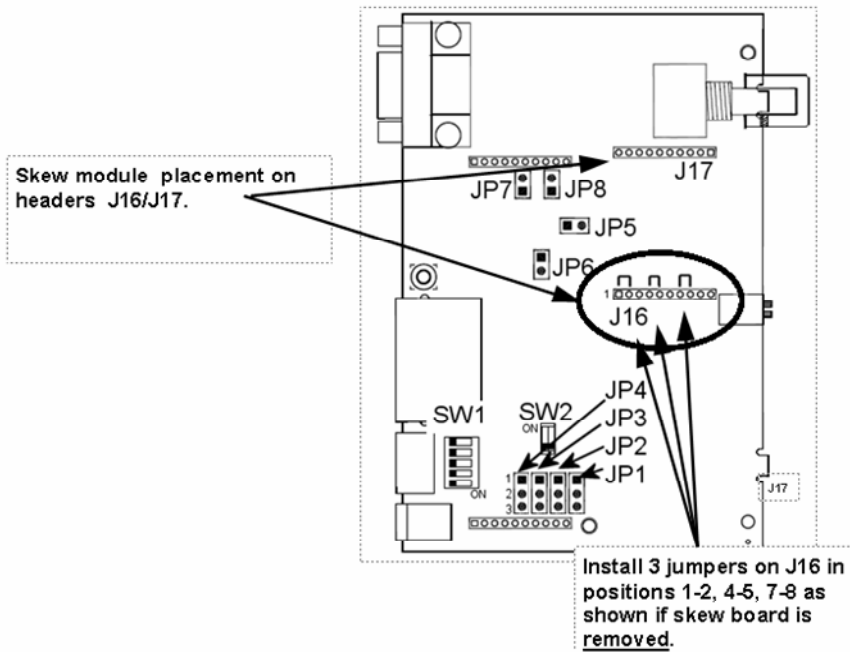


Figure 1: Skew Module

5 Skew Compensation Settings

The **Cobra Skew Module Board** that fits inside the **R1300A / R1300S2** is an optional skew compensation module for adjusting for signal timing differences due to differing pair lengths within the CAT5 cable. Using the delay signals, skew may be compensated from 2 to 65 nanoseconds in 2 nanosecond increments on each individual color pair. If skew compensation is required, but the skew comp module is not installed, call for technical assistance.

1. To adjust individual colors, press the EQ/Skew knob until the desired color LED is on for the R/G/B LED. The LED color corresponds to the color channel being adjusted.
2. Using the image utility, turn knob to add/subtract delay timing until a single vertically aligned line of red, green, blue is obtained.
3. When complete press EQ/Skew knob until R/G/B LED is off.

Not all colors will have the same delay settings.

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 three 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

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