



KRAMER ELECTRONICS LTD.

USER MANUAL

MODEL:

FC-1 DGH
DGKat to HDBT Converter

P/N: 2900-300279 Rev 3

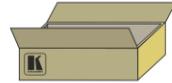
FC-1DGH DGKat to HDBT Converter Quick Start Guide



This guide helps you install and use your product for the first time. For more detailed information, go to http://www.kramerelectronics.com/support/product_downloads.asp to download the latest manual or scan the QR code on the left.

Step 1: Check what's in the box

- FC-1DGH DGKat to HDBT Converter
- Quick Start Guide
- Power adapter (12V DC)
- 4 Rubber feet

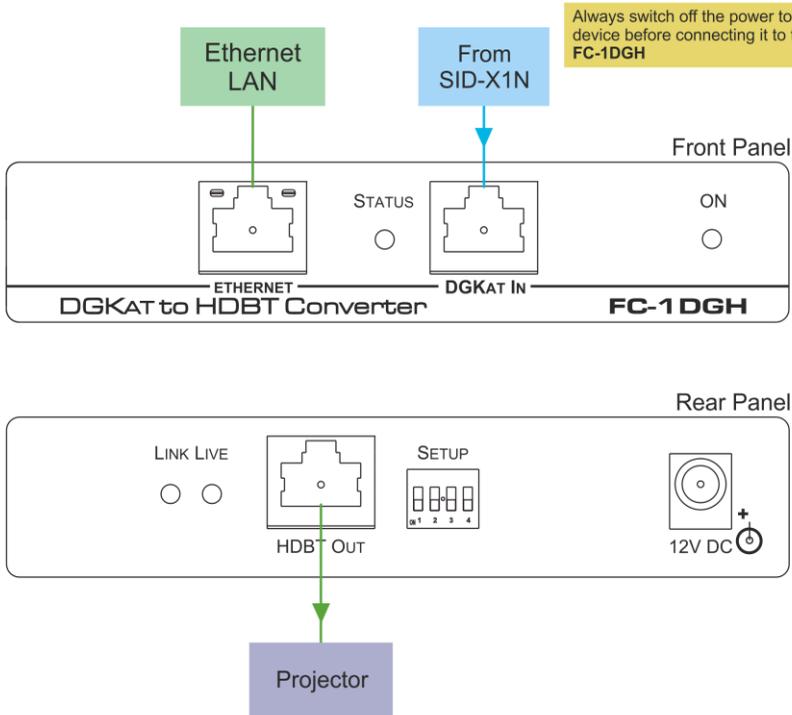


Save the original box and packaging materials in case you need to return your product for service.

Step 2: Install the FC-1DGH

Mount the units in a rack (using the optional **RK-T2B** Rack Adapter available for purchase) or attach the rubber feet and place it on a shelf.

Step 3: Connect inputs and output



For optimum range and performance use Kramer's **BC-DGKat524**, **BC-DGKat623** and **BC-DGKat7a23** DGKat cables, and **BC-HDKat6a** HDBaseT cable. The shields on both ends of the cable connected to the DGKaT input must be soldered to ground, (for details, see Sections 3 and 7 of the User Manual).

Step 4: Set the DIP-switches

Switch	Function	Setting
1	EDID control	Down—Passes the EDID (default) Up—Locks the current EDID
2	EDID deep color control (to enable this control switch 1 must be up)	Down—Passes the deep color parameter (default) Up—Limits the color depth to 8 bits
3	EDID audio control (to enable this control switch 1 must be up)	Down—Passes the audio EDID parameter (default) Up—Limits the audio to 2 channel LPCM
4	HDCP control	Down—Passes HDCP (default) Up—HDCP off

Step 5: Connect the power

Connect the power adapter to the **FC-1DGH** and plug the adapter into the mains electricity.



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1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront the video, audio, presentation, and broadcasting professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better!

Our 1,000-plus different models now appear in 13 groups that are clearly defined by function: GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Routers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters; GROUP 11: Sierra Products; GROUP 12: Digital Signage; GROUP 13: Audio and GROUP 14: Collaboration.

Congratulations on purchasing your Kramer **FC-1DGH DGKat to HDBT Converter**, which is ideal for the following typical applications:

- Home theater, presentation and multimedia applications
- Boardrooms and classrooms

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



Go to http://www.kramerelectronics.com/support/product_downloads.asp to check for up-to-date user manuals, application programs, and to check if firmware upgrades are available (where appropriate).

2.1 Achieving the Best Performance

To achieve the best performance:

- Use only good quality connection cables (we recommend Kramer high-performance, high-resolution cable) to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Do not secure the cables in tight bundles or roll the slack into tight coils
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality
- Position your Kramer **FC-1DGH** away from moisture, excessive sunlight and dust



This equipment is to be used only inside a building. It may only be connected to other equipment that is installed inside a building.

2.2 Safety Instructions



Caution: No operator serviceable parts inside the unit

Warning: Use only the Kramer Electronics input power wall adapter that is provided with the unit

Warning: Disconnect the power and unplug the unit from the wall before installing

2.3 Recycling Kramer Products

The Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC aims to reduce the amount of WEEE sent for disposal to landfill or incineration by requiring it to be collected and recycled. To comply with the WEEE Directive, Kramer Electronics has made arrangements with the European Advanced Recycling Network (EARN) and will cover any costs of treatment, recycling and recovery of waste Kramer Electronics branded equipment on arrival at the EARN facility. For details of Kramer's recycling arrangements in your particular country go to our recycling pages at <http://www.kramerelectronics.com/support/recycling/>.

3 Overview

The **FC-1DGH** is a DGKat and Ethernet to HDBaseT converter.

The **FC-1DGH** lets you connect any DGKat device and your Ethernet LAN over an extended distance to any HDBaseT compatible receiver, (for example, a projector with an HDBaseT input).

In particular, the **FC-1DGH** features:

- A maximum data rate of 4.95Gbps (1.65Gbps per data channel)
- System range on the DGKat side—up to 90m (295ft) at 1080i, or up to 30m (98ft) at 1080p on shielded **BC-DGKat524** cable; 90m (295ft) at 1080i, or up to 70m (230ft) at 1080p on shielded **BC-DGKat623** cable; 100m (330ft) at 1080i or up to 90m (295ft) at 1080p on shielded **BC-DGKat7a23** cable
- System range on the HDBaseT side—up to 130m (430ft) when using **BC-HDKat6a** cable and up to 180m when used in conjunction with devices that support long range mode
- HDTV compatibility with support for resolutions up to 1080p @60Hz
- HDCP compliance
- Intelligent EDID handling and processing algorithm that ensures Plug and Play operation for HDMI systems
- 12V DC power
- A Kramer DigiTOOLS® enclosure

4 Defining the FC-1DGH

[Figure 1](#) defines the front panel of the **FC-1DGH DGKat to HDBT Converter**.

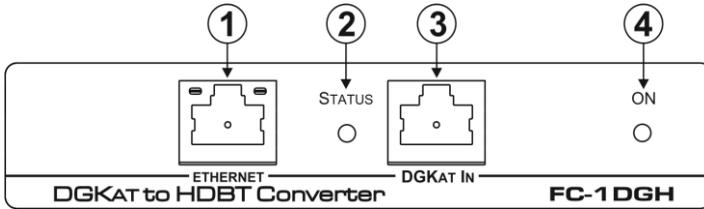


Figure 1: FC-1DGH DGKat to HDBT Converter Front Panel

#	Feature	Function
1	ETHERNET RJ-45 Connector	Connect to the Ethernet LAN
2	STATUS LED	Lights yellow/green when there is a DGKat signal present. Lights orange when there is no DGKat signal present
3	DGKAT IN RJ-45 Connector	Connect to the output of the DGKat source device, (see Section 5)
4	ON LED	Lights green when the device is powered on

[Figure 2](#) defines the rear panel of the **FC-1DGH DGKat to HDBT Converter**.

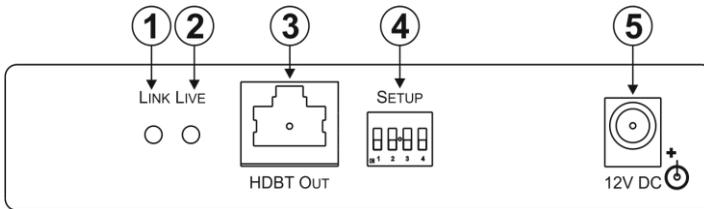


Figure 2: FC-1DGH DGKat to HDBT Converter Rear Panel

#	Feature	Function
1	LINK LED	Lights green when the HDBaseT link is valid
2	LIVE LED	Flashes green when there is an HDBaseT signal
3	HDBT OUT RJ-45 Connector	Connect to an HDBaseT-compatible receiver
4	SETUP 4-way DIP-switch	Sets the device behavior, (see Section 6)
5	12V DC	+12V DC connector for powering the unit, center positive

5 Connecting the FC-1DGH



Always disconnect/switch off the power to each device before connecting it to your **FC-1DGH**. After connecting your **FC-1DGH**, connect its power and then reconnect/switch on the power to each device.

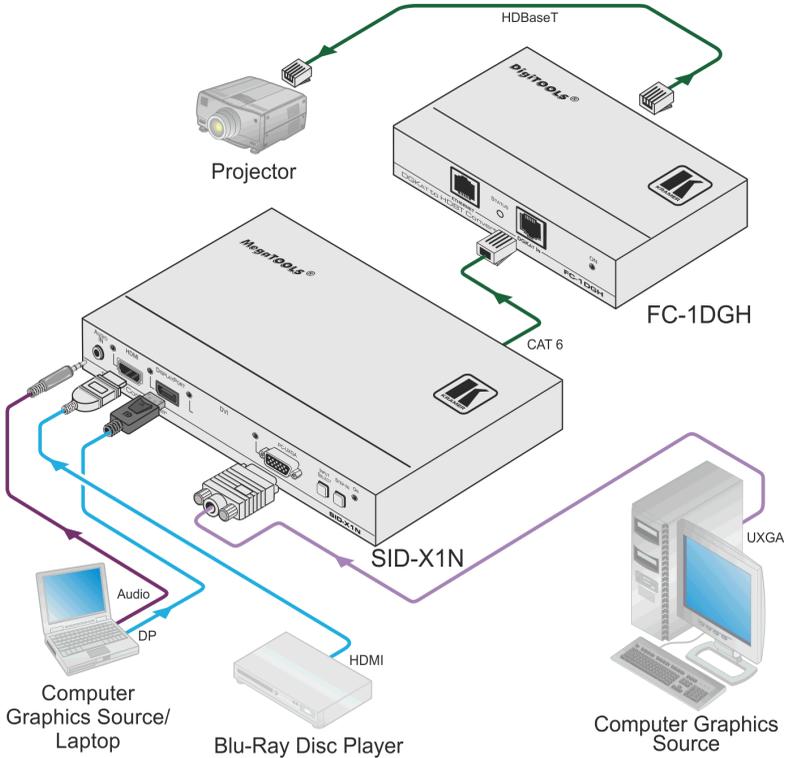


Figure 3: Connecting the FC-1DGH DGKat to HDBT Converter

To connect the FC-1DGH as illustrated in the example in [Figure 3](#):

1. Connect a video and audio source, (for example, a laptop) to the DisplayPort and Audio In connectors on the **SID-X1N**.
2. Connect an HDMI source, (for example, a Blu-ray Disc player) to the HDMI input on the **SID-X1N**.

3. Connect a video source, (for example, a computer graphics source) to the PC/UXGA input on the **SID-X1N**.
4. Connect the **SID-X1N** to the DGK In RJ-45 connector on **FC-1DGH**.
5. Connect the Ethernet LAN to the Ethernet RJ-45 connector on the **FC-1DGH**.
6. Connect the HDBT OUT RJ-45 connector on the **FC-1DGH** to the HDBT IN RJ-45 connector on the HDBT acceptor, (for example, a projector).

6 Configuring the FC-1DGH

The Setup DIP-switch on the rear panel is used to control the behavior of the device.

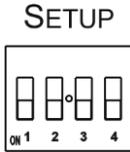


Figure 4: FC-1DGH Rear Panel DIP-switch

The following table describes the functions of the 4-way DIP-switch.

Switch	Function	Setting
1	EDID control	Down—Passes the EDID (default) Up—Locks the current EDID
2	EDID deep color control (to enable this control switch 1 must be up)	Down—Passes the deep color parameter (default) Up—Limits the color depth to 8 bits
3	EDID audio control (to enable this control switch 1 must be up)	Down—Passes the audio EDID parameter (default) Up—Limits the audio to 2 channel LPCM
4	HDCP control	Down—Passes HDCP (default) Up—HDCP off Note: After changing DIP-switch 4, a power cycle should be applied to the FC-1DGH

Note: Deep color and EDID audio control are only enabled when the current EDID is locked (DIP-switch 1 is up).

7 Wiring the DGKat TP RJ-45 Connectors

Connect/solder the cable shield to the RJ-45 connector shield at both ends of the cable.



Do not use a crossed TP cable with this product.

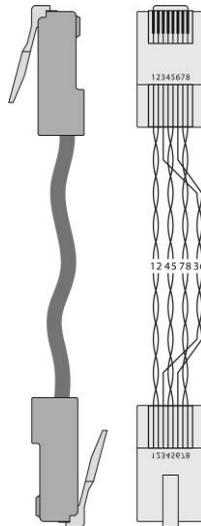
Using a TP cable that is incorrectly wired may cause permanent damage to the device

Do not use unshielded TP cables with this product

[Figure 5](#) defines the TP pinout using a straight pin-to-pin cable with RJ-45 connectors.

EIA /TIA 568B	
PIN	Wire Color
1	Orange / White
2	Orange
3	Green / White
4	Blue
5	Blue / White
6	Green
7	Brown / White
8	Brown
<hr/>	
Pair 1	4 and 5
Pair 2	1 and 2
Pair 3	3 and 6
Pair 4	7 and 8

Figure 5: TP Pinout Wiring



8 Technical Specifications

INPUTS:	1 DGMat on an RJ-45 connector 1 Ethernet LAN on an RJ-45 connector
OUTPUT:	1 HDBaseT on an RJ-45 connector
OPERATION FREQUENCY:	Supports up to 4.95Gbps (1.65Gbps per graphics channel 1080p @60Hz)
COMPLIANCE WITH HDMI STANDARD:	Supports HDMI, HDCP
INDICATOR LEDES:	ON, STATUS, LIVE, LINK
POWER SOURCE:	12V DC, 450mA
OPERATING TEMPERATURE:	0° to +40°C (32° to 104°F)
STORAGE TEMPERATURE:	-40° to +70°C (-40° to 158°F)
HUMIDITY:	10% to 90%, RHL non-condensing
COOLING:	Convection, vents
ENCLOSURE TYPE:	Aluminium
DIMENSIONS:	12.1cm x 6.99cm x 2.41cm (4.76" x 2.75" x 0.95") W, D, H
RACK MOUNT:	With optional adapter
FURNITURE MOUNT:	With included rubber feet
PRODUCT WEIGHT:	0.18kg (0.4lbs) approx.
SHIPPING WEIGHT:	0.68kg (1.5lbs) approx.
VIBRATION:	ISTA 1A in carton (International Safe Transit Association)
REGULATORY COMPLIANCE:	CE, UL
ENVIRONMENTAL REGULATORY COMPLIANCE:	Complies with appropriate requirements of RoHs and WEEE
INCLUDED ACCESSORIES:	Power supply
OPTIONS:	RK-3T 19" rack adapter
WARRANTY:	7 years parts and labor
Specifications are subject to change without notice at http://www.kramerelectronics.com	

LIMITED WARRANTY

The warranty obligations of Kramer Electronics for this product are limited to the terms set forth below:

What is Covered

This limited warranty covers defects in materials and workmanship in this product.

What is Not Covered

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Kramer Electronics to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover cartons, equipment enclosures, cables or accessories used in conjunction with this product.

Without limiting any other exclusion herein, Kramer Electronics does not warrant that the product covered hereby, including, without limitation, the technology and/or integrated circuit(s) included in the product, will not become obsolete or that such items are or will remain compatible with any other product or technology with which the product may be used.

How Long Does this Coverage Last

Seven years as of this printing; please check our Web site for the most current and accurate warranty information.

Who is Covered

Only the original purchaser of this product is covered under this limited warranty. This limited warranty is not transferable to subsequent purchasers or owners of this product.

What Kramer Electronics will do

Kramer Electronics will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

1. Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labor to complete the repair and restore this product to its proper operating condition. Kramer Electronics will also pay the shipping costs necessary to return this product once the repair is complete.
2. Replace this product with a direct replacement or with a similar product deemed by Kramer Electronics to perform substantially the same function as the original product.
3. Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

What Kramer Electronics will not do Under This Limited Warranty

If this product is returned to Kramer Electronics or the authorized dealer from which it was purchased or any other party authorized to repair Kramer Electronics products, this product must be insured during shipment, with the insurance and shipping charges prepaid by you. If this product is returned uninsured, you assume all risks of loss or damage during shipment. Kramer Electronics will not be responsible for any costs related to the removal or re-installation of this product from or into any installation. Kramer Electronics will not be responsible for any costs related to any setting up this product, any adjustment of user controls or any programming required for a specific installation of this product.

How to Obtain a Remedy under this Limited Warranty

To obtain a remedy under this limited warranty, you must contact either the authorized Kramer Electronics reseller from whom you purchased this product or the Kramer Electronics office nearest you. For a list of authorized Kramer Electronics resellers and/or Kramer Electronics authorized service providers, please visit our web site at www.kramerelectronics.com or contact the Kramer Electronics office nearest you.

In order to pursue any remedy under this limited warranty, you must possess an original, dated receipt as proof of purchase from an authorized Kramer Electronics reseller. If this product is returned under this limited warranty, a return authorization number, obtained from Kramer Electronics, will be required. You may also be directed to an authorized reseller or a person authorized by Kramer Electronics to repair the product.

If it is decided that this product should be returned directly to Kramer Electronics, this product should be properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization number will be refused.

Limitation on Liability

THE MAXIMUM LIABILITY OF KRAMER ELECTRONICS UNDER THIS LIMITED WARRANTY SHALL NOT EXCEED THE ACTUAL PURCHASE PRICE PAID FOR THE PRODUCT. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY. Some countries, districts or states do not allow the exclusion or limitation of relief, special, incidental, consequential or indirect damages, or the limitation of liability to specified amounts, so the above limitations or exclusions may not apply to you.

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TO THE MAXIMUM EXTENT PERMITTED BY LAW, THIS LIMITED WARRANTY AND THE REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IF KRAMER ELECTRONICS CANNOT LAWFULLY DISCLAIM OR EXCLUDE IMPLIED WARRANTIES UNDER APPLICABLE LAW, THEN ALL IMPLIED WARRANTIES COVERING THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY TO THIS PRODUCT AS PROVIDED UNDER APPLICABLE LAW.

IF ANY PRODUCT TO WHICH THIS LIMITED WARRANTY APPLIES IS A "CONSUMER PRODUCT" UNDER THE MAGNUSON-MOSS WARRANTY ACT (15 U.S.C.A. §2301, ET SEQ.) OR OTHER APPLICABLE LAW, THE FOREGOING DISCLAIMER OF IMPLIED WARRANTIES SHALL NOT APPLY TO YOU, AND ALL IMPLIED WARRANTIES ON THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR THE PARTICULAR PURPOSE, SHALL APPLY AS PROVIDED UNDER APPLICABLE LAW.

Other Conditions

This limited warranty gives you specific legal rights, and you may have other rights which vary from country to country or state to state.

This limited warranty is void if (i) the label bearing the serial number of this product has been removed or defaced, (ii) the product is not distributed by Kramer Electronics or (iii) this product is not purchased from an authorized Kramer Electronics reseller. If you are unsure whether a reseller is an authorized Kramer Electronics reseller, please visit our Web site at www.kramerelectronics.com or contact a Kramer Electronics office from the list at the end of this document.

Your rights under this limited warranty are not diminished if you do not complete and return the product registration form or complete and submit the online product registration form. Kramer Electronics thanks you for purchasing a Kramer Electronics product. We hope it will give you years of satisfaction.



For the latest information on our products and a list of Kramer distributors, visit our Web site where updates to this user manual may be found.

We welcome your questions, comments, and feedback.

Web site: www.kramerelectronics.com

E-mail: info@kramerel.com



SAFETY WARNING

Disconnect the unit from the power supply before opening and servicing



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