

HDMI® EXTENDER

over single Cat5e/Cat6 Cable with ARC



**Vanco Part Number
EVEX2007**

**HDMI® Extender over
Single Category 5e/6
Cable with ARC**

EVOLUTION
BY 

www.vanco1.com • 800.626.6445

DEAR CUSTOMER

Thank you for purchasing this product.
For optimum performance and safety, please
read these instructions carefully before connecting, operating or
adjusting this product. Please keep this manual for future reference.

This product is 100% inspected and tested in the United States to verify
HDMI performance parameters.

WARNING

1. Do not expose this unit to water, moisture, or excessive humidity.
2. Do not install or place this unit in a built-in cabinet, or other confined space without adequate ventilation.
3. To prevent risk of electrical shock or fire hazard, due to overheating do not obstruct unit's ventilation openings.
4. Do not install near any source of heat, including other units that may produce heat.
5. Do not place unit near flames.
6. Only clean unit with a dry cloth.
7. Unplug unit during lightening storms or when not used for an extended period of time. A surge protector is strongly recommended.
8. Protect the power cord from being walked on or pinched, particularly at the plugs.
9. Use unit only with accessories specified by the manufacturer.
10. Refer all servicing to qualified personnel.

CAUTION

HDMI is a very complex technology requiring continuous authentication of the signal and the same video resolution and audio settings on all electronic equipment in the system. When there are multiple sources and displays, the video resolution and audio setting on all connected units must be adjusted to correspond with that of the display having the lowest video and audio capability.

INTRODUCTION

The Evolution EVEX2007 HDMI Extender with ARC transmits HDMI video, audio and control signals, over a single Cat5e/6/7 up to 164ft/50m. It also supports bi-directional IR control, EDID call back, CEC pass through and ARC (audio return channel). The special ARC pass through feature supports stereo ARC audio channel transmitting from a connected TV to an audio video receiver or soundbar. The EVEX2007 can also be configured to break audio out from a local source. This product can achieve all functions through single CAT5e cable. Extending distance is 50 meters for 1080p 60Hz HD signal.

HDMI® over Single Cat5e/Cat6 Cable Extender with ARC

Part # EVEX2007

- Transmits HDMI video, audio and control signals over a single Cat5e/6 cable up to 164ft/50m at 1080p 60 Hz
- Supports Bi-directional IR control, Dual-Band IR (20-60KHz), EDID call back, CEC pass through and ARC (audio return channel)
- ARC pass through feature supports stereo ARC audio channel transmitting from a connected TV to an audio video receiver or sound bar
- ARC support for audio being returned from the TV (receiver end) to the transmitter
- Allows audio break out from a local source
- Support audio formats, Dolby True HD, DTS-master, etc.
- Support 3D signals such as Frame Packing, Side-by-Side, Top-to-Bottom, etc.
- VESA DDC and hot swap technology (HPD)
- SPDIF output by standard Toslink optical port
- HDCP 2.0 compatible
- Slim and compact design
- Allows cascading to create a larger distribution system
- Fully compatible with any Evolution by Vanco product
- Dimensions: 2.7" (68.58mm) W x .7" (17.78mm) H x 3.25" (82.55mm) D

SPECIFICATIONS

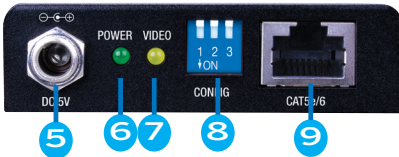
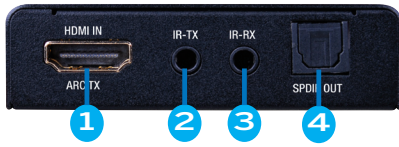
Interface	Transmitter: HDMI input, IR output (3.5mm), IR input (3.5mm), RJ45 Ethernet interface, 5V DC in, Toslink port, 1 audio output config switch. Receiver: HDMI output, IR output (3.5mm), IR input (3.5mm), RJ45 Ethernet interface, 5V DC in
Dimension	(L x W x H): 78.4 x 67 x 19 mm
Net weight	0.2kg per unit
Video bandwidth	Maximum TMDS clock frequency 165MHz 4.95Gbps
Resolution and distance	1080P 170ft (50 meters)-CAT5e/ 270ft (80 meters)-CAT6
	720P/1080i 270ft (80 meters)-CAT5e/ 330ft (100 meters)-CAT6
Audio formats	8-channel, support Dolby True HD and DTS Master
TMDS input signal	1.2 volts (point to point)
DDC input signal	5 volts (point to point)
Indicator	Power-Green, video link-Yellow
HDMI interface standard	HDMI 1.3 standard (HDMI 1.4 3D function), HDCP 2.0, support CEC, EDID
Remote IR	20-60 KHz wide frequency carrier
ESD level	HBM ± 4 kV (Contact Discharge)
Temperature range	0 ~ 40°C (operation), -20~60°C(stock)
Compliance	FCC; CE; RoHS

PACKAGE CONTENTS

- EVEX2007 (TX & RX)
- (2) IR Blasters (TX)
- (2) IR Receivers (RX)
- (2) DC 5V in line power supply
- Product Manual

PANEL DESCRIPTIONS

Transmitting Unit



1. HDMI Input port, connect to Video source
2. IR-TX, IR blaster output
3. IR-RX, IR receiver input
4. SPDIF Toslink optical output
5. 5V DC power input
6. Power on indicator
7. Video link indicator
8. CONFIG switch
9. CAT5e/6 cable RJ45 port

Receiving Unit



10. 5V DC power input
11. Power on indicator
12. Video link indicator
13. CAT5e/6 cable RJ45 port
14. HDMI Output port, connect to Video Sink
15. IR-TX, IR blaster output
16. IR-RX, IR receiver input

CONFIG SWITCH

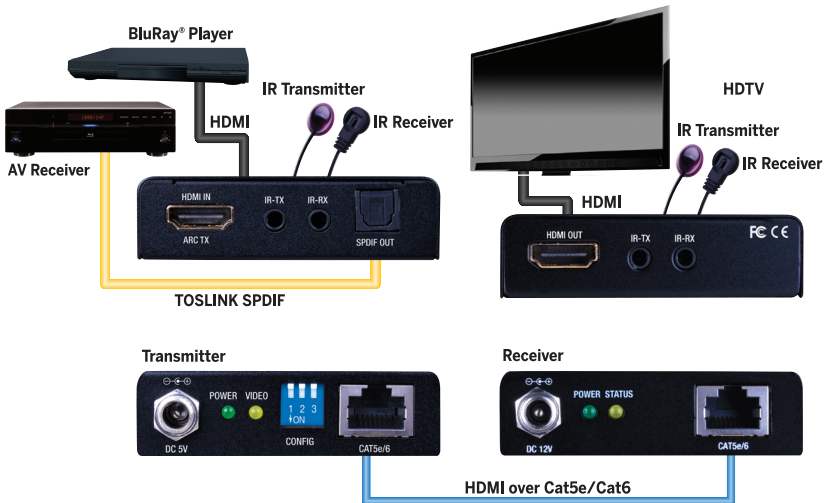
Refer to below table for "CONFIG" switch definition.

Switch No.	ON	OFF
1	ARC on	ARC off
2	SPDIF output with ARC audio	SPDIF output with HDMI In Extracting Audio
3	CEC on	CEC off

Feature Clarification

1. HDMI ARC Receiver: The HDMI port of the EVEX2007 receiver supports HDMI 1.4 ARC RX feature, which means its HDMI port can negotiate with a connected LCD TV or other HDMI sink device using CEC and accept ARC audio input. Please note that the connected HDMI sink device must be with ARC and CEC supported also, and EVEX2007 CONFIG DIP switch 1 and 3 (CEC and ARC setting) must be set to 'ON' so that ARC feature is constructed. All HDMI cables must be rated as HIGH SPEED or HIGH SPEED with ETHERNET so that it can provide ARC and CEC functionality.
2. HDMI ARC Transmitter: The HDMI port of EVEX2007 transmitter supports the HDMI 1.4 ARC feature, which means its HDMI port can negotiate with connected AVR or other HDMI source device (by CEC) and send ARC audio received from CAT5e cable out. Please note that the connected HDMI source device must be with ARC and CEC supported also, and the EVEX2007 CONFIG DIP switches 1 and 3 (CEC and ARC setting) must be set to 'ON'. All HDMI cables must be rated as HIGH SPEED or HIGH SPEED with ETHERNET so that it can provide ARC and CEC functionality.
3. ARC SPDIF Toslink output (extender transmitter side): The EVEX2007 transmitter has 1 SPDIF Toslink port, which can also send audio received from the receiving end and send it to an external audio device. This requires the switch configuration mentioned above. The SPDIF Toslink port can also be selected to extract audio from the HDMI connected source and send it to an external audio device. This is done by having the 2nd CONFIG SWITCH in the ON position.

CONNECTION DIAGRAM



CONNECT AND OPERATE

1. Set the dip switches according to the mode or feature you would like to achieve.
2. Connect a source such as a Bluray player, game console, A/V receiver, Cable/Satellite Receiver, etc. to the HDMI input on the transmitter.
3. Connect a display such as an HDTV or HD projector to the HDMI output on the receiving unit.
4. Connect a single Category 5e/6/7 cable up to 164ft/50m to the UTP output of transmitting unit and the UTP input of the receiving unit.
5. To break audio out from the transmitting source or have the ARC audio used outside of the HDMI between the transmitter and source, connect an Optical Audio cable to the SPDIF output on the transmitter to the device you want the audio to be sent to. (Optional)
6. Connect the IR cables provided with the unit to the correct direction which IR is needed to be received and transmitter. (OPTIONAL)
7. For power, connect the transmitter and receiver to the included power supplies.
8. Power on the source and display components. At this point audio, video and control functionality should be achieved.

IR

IR PASS-THROUGH

The bi-directional IR system allows you to control the source that is connected to the extender unit, from the display; or the display from the source, not simultaneously. There are two important things to note when setting up the IR system:

1. The IR Receiver (IR RX) is always what you point your remote at to send an IR signal. This pigtail is placed at the display for controlling the source; or at the source for controlling the display.
2. The IR Blaster (IR TX) is what sends the IR signal to what you are intending to control, whether it's the source or the display. This pigtail is placed at the source; either pointed at the source, or placed on the front panel of the source, see below for placement tips. Or placed at the display to control the display from the source.

IR RECEIVER



IR BLASTER



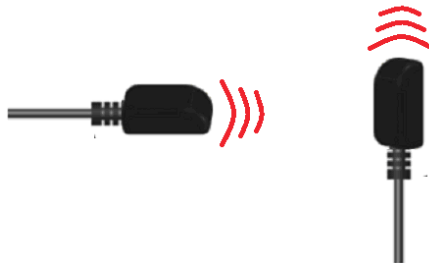
IR BLASTER (TX)

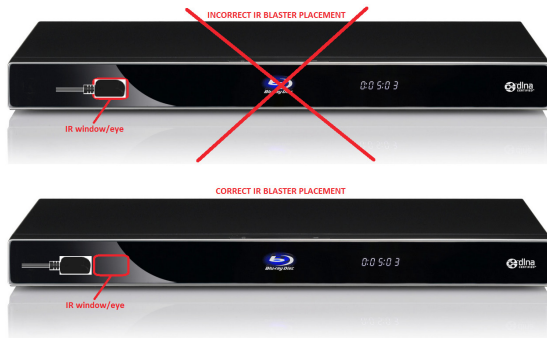
To control the source: Plug IR Blaster into IR TX port of transmitter unit (EVEX2007-TX); place blaster in front of the IR eye of the source.

To control the display: Plug IR Blaster into IR TX port of receiver unit (EVEX2007-RX); place blaster in front of the IR eye of the display.

Note: Placement of the IR Blaster is important and can result in the IR system not working if improperly placed.

- First, locate the IR eye or window on the source
- If placing the IR blaster right on the front panel of the source, do not stick right on top of the IR eye or IR window. The IR signal cannot travel through the double-sided tape on the Blaster. Instead place the blaster on either side, or on the top or bottom of the IR eye or window, with the tip of the blaster facing the IR eye or window. See below for illustration of where IR signal shoots from on IR Blaster:





IR RECEIVER (RX)

- To control the source: Plug IR Receiver into IR RX port of receiver unit (EVEX2006-RX); place receiver at or near display.
- To control the display: Plug IR Receiver into IR RX port of transmitter unit (EVEX2006-TX); place receiver in position where it is able to receive remote signals.

To Control the Source:

1. Plug the IR Blaster into the IR TX Port on the Transmitter



2. Plug the IR Receiver into the IR RX Port on the Receiver



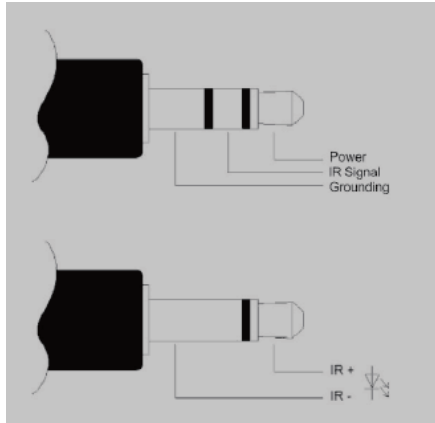
To Control the Display:

1. Plug the IR Receiver into the IR RX Port on the Transmitter



2. Plug the IR Blaster into the IR TX Port on the Receiver





NOTICE

1. Vanco HDMI and Cat5e/6 cables are strongly recommended for use with this product to ensure best results.
2. Incorrect placement of IR Blaster and Receiver may result in the failure of the IR extenders. Please check carefully before plugging in the IR extender to the respective IR sockets.
3. The transmission length is largely affected by the type of Cat5e/6 cables utilized, the type of HDMI sources, and the type of HDMI display. The testing result shows solid UTP cables (usually in the form of 300m (1,000ft) bulk cables) can transmit a lot longer signals than stranded UTP cables (usually in the form of fixed length patch cords). Shielded STP cables are better suited than unshielded UTP cables. A solid UTP Cat5e/6 cable shows longer transmission range than stranded STP Cat-6 cable. For long extension applications, use solid UTP/STP category cables.
4. EIA/TIA-568-B termination (T568B) for Cat5e/6 cables is recommended for better performance.
5. To reduce the interference among the unshielded twisted pairs of wires in Cat5e/6 cables, one can use shielded STP cables to improve EMI problems, which worsens in long cable transmission.
6. The quality of Cat5e/6 cables can have a major effect on how long the transmission limit can achieve and quality of picture, the actual transmission range is subject to the Cat5e/6 cable utilized. For the best results, Cat6 is recommended.
7. If your HDMI display has multiple HDMI inputs, it is found that the first HDMI input [HDMI input #1] generally can produce better transmission performance among all HDMI inputs.



Performance Guide for HDMI over Category Cable Transmission

Performance rating		Type of category cable		
Wiring	Shielding	CAT5	CAT5e	CAT6
Solid	Unshielded (UTP)	***	*****	*****
	Shielded (STP)	***	***	****
Stranded	Unshielded (UTP)	*	**	**
	Shielded (STP)	*	*	**
Termination		Please use EIA/TIA-568-B termination (T568B) at any time		

TROUBLE-SHOOTING

1. Best results are usually achieved when the source and display resolutions are the same. If resolutions differ, the extenders will try to adjust the signal to match the resolution of the HDTV with the lowest resolution. This will result in a picture with a lower resolution on the other HDTV sets.
2. If you do not get audio and video, access the "setup" menu on the TV to adjust the audio and video settings. If the HDMI control circuit cannot establish a handshake, then there usually will be no audio or video in addition to a blue or black screen with a statement similar to "this protocol not supported" or "weak signal".
3. If the above mentioned messages display, reset the receiver by disconnecting the power supply. You can also disconnect all of the HDMI and power cables, wait 15 minutes for any voltages to decay and then reconnect all of the cables.
4. If you are still encountering issues, attempt the "hot-plug concept. With all of the HDMI cables disconnected, turn on the source and plug in the HDMI cable into it's output, then power up the Vanco unit and plug the HDMI cable into it's input, finally turn on the display and plug the HDMI cable from the receiver into it. This activates all of the devices in corresponding order and results in a signal being plugged into a device that is on and will attempt to connect the signal.
5. Most of the major source and display manufacturers employ a proprietary control channel to communicate between devices from the same manufacturer. Sometimes this can interfere with the HDMI control circuit or the authentication of the signal. Call the manufacturer if you experience this issue. Sometimes a player, an audio/video receiver, or a cable/satellite box may not have the latest software update, usually this can be downloaded from the manufacturer's website.
6. If you have problems with the IR control circuit, make sure that the IR RX pigtail is plugged into extender receiver and pointed at the display, and the IR TX pigtail is attached to the extender sender and pointed at the source.

SAFETY AND NOTICE

The EVEX2007 HDMI Extender over Single Cat5e/6 with ARC has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the EVEX2007 should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.
- Do not attempt to service this unit yourself, except where explained in this manual.
- Provide proper ventilation and air circulation and do not use near water.
- Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.
- Use only the power adapter and power cords and connection cables designed for this unit.
- Do not use liquid or aerosol cleaners to clean this unit.
- Always unplug the power to the device before cleaning.

LIMITED WARRANTY

With the exceptions noted in the next paragraph, Vanco warrants to the original purchaser that the equipment it manufactures or sells will be free from defects in materials and workmanship for a period of two years from the date of purchase. Should this product, in Vanco's opinion, prove defective within this warranty period, Vanco, at its option, will repair or replace this product without charge. Any defective parts replaced become the property of Vanco. This warranty does not apply to those products which have been damaged due to accident, unauthorized alterations, improper repair, modifications, inadequate maintenance and care, or use in any manner for which the product was not originally intended.

Items integrated into Vanco products that are made by other manufacturers, notably computer hard drives and liquid crystal display panels, are limited to the term of the warranty offered by the respective manufacturers. Such specific warranties are available upon request to Vanco. A surge protector, power conditioner unit, or an uninterruptible power supply must be installed in the electrical circuit to protect against power surges.

If repairs are needed during the warranty period the purchaser will be required to provide a sales receipt/sales invoice or other acceptable proof of purchase to the seller of this equipment. The seller will then contact Vanco regarding warranty repair or replacement.

TECHNICAL SUPPORT

In case of problems, please contact Vanco Technical Support by dialing 1-800-626-6445. You can also email technical support issues to techsupport@vanco1.com.

When calling, please have the Model Number, Serial Number (affixed to the bottom of the unit) and Invoice available for reference during the call.

Please read this Instruction Manual prior to calling or installing this unit, since it will familiarize you with the capabilities of this product and its proper installation.

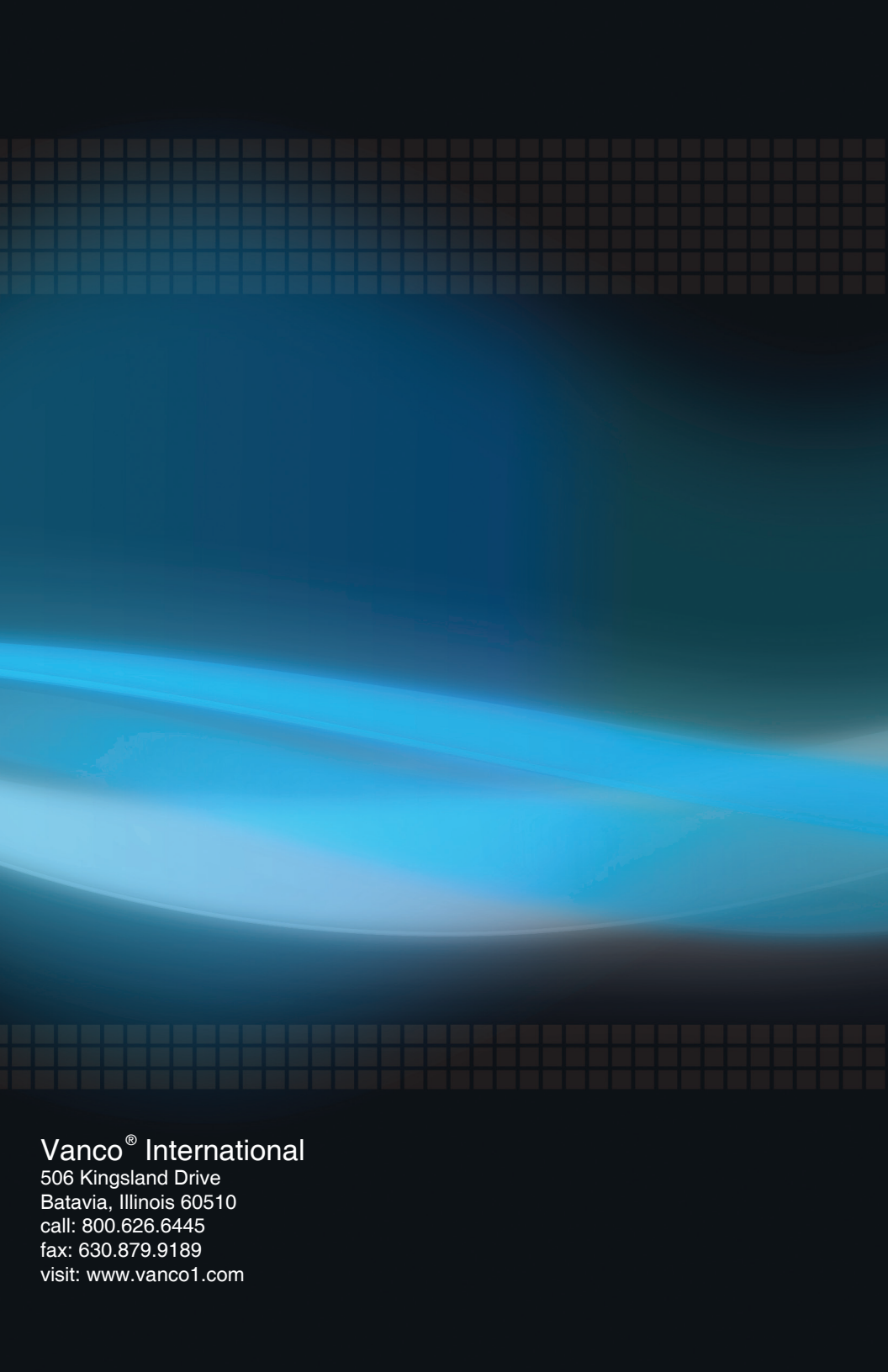
All active electronic products are 100% inspected and tested to insure highest product quality and trouble-free installation and operation. The testing process utilizes the types of high-definition sources and displays typically installed for entertainment and home theater applications.

For additional information, such as helpful installation videos, etc. please visit www.vanco1.com

LIABILITY STATEMENT

Every effort has been made to ensure that this product is free of defects. The manufacturer of this product cannot be held liable for the use of this hardware or any direct or indirect consequential damages arising from its use. It is the responsibility of the user and installer of the hardware to check that it is suitable for their requirements and that it is installed correctly. All rights are reserved. No parts of this manual may be reproduced or transmitted by any form or means electronic or mechanical, including photocopying, recording or by any information storage or retrieval system without the written consent of the publisher.

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