GE
Security

Single-Channel AVC Active Receiver and Transmitter Installation Sheet

GEC-1AVT GEC-1AVR-AVC-4

Introduction

The **GEC-1AVR-AVC-4** is a single-channel active UTP receiver that provides high resolution color or black and white video over unshielded twisted pair wires of category 2-7, at distances up to 4,000 feet (1,220 m) when is paired with GEC-1AVT, GE active transmitter. It can be used with any GE passive transceiver for distances up to 2,000 feet (610 m).

The GEC-1AVR-AVC-4 features GE's Automatic Video Compensation (AVC) technology. The AVC incorporates a sophisticated microprocessor controlled analog circuit that continuously analyzes the incoming video signal and compensates for cable attenuation independent of video signal content. It has a built-in distribution amplifier to provide two independent video outputs.

The **GEC-1AVT** is an active UTP transmitter. It is equipped with a 2-position switch to adjust for distance.

These single-channel active devices are compact in size and easy to install. Their integrated ground loop isolation prevents disturbing "hum-bars" common with long distance installations and its excellent crosstalk and noise immunity provides quality video up to the maximum distance. They are equipped with built-in surge suppression on the UTP input to protect video equipment against damaging voltage spikes.

These active devices are unidirectional and do not support Up-the-Coax Pan/Tilt/Zoom telemetry signals. Any unused pair of UTP cable can be used for transporting telemetry signals.

IMPORTANT SAFETY INSTRUCTIONS

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with a dry cloth.

7) Do not block any ventilation openings.

8) Install in accordance with the manufacturer's instructions.

9) Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including DVRs) that produce heat.

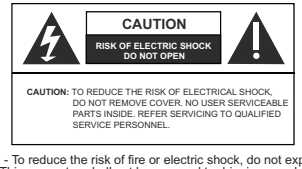
10) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

11) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

12) Only use attachments/accessories specified by the manufacturer.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.

14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as a power supply cord or plug is damaged, liquid has been spilled, or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



WARNING! - To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. This apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases shall be placed on the apparatus.

WARNING! - This apparatus is a Class I product. This product must be connected to a mains socket outlet with a protective earthing connection.

WARNING! - The mains plug is used as the disconnect device and shall remain readily operable.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the appliance.

Important Safety Warnings

- Installation should be made by a qualified service person and should conform to all local codes.
- DO NOT bundle UTP signals in the same conduit as high-voltage wiring.
- To reduce the risk of fire or electrical shock, do not expose these products to rain, moisture, dripping or splashing.
- No objects filled with liquids, such as vases, shall be placed on GE equipment.
- DO NOT block ventilation openings to let sufficient airflow to the UTP devices.
- DO NOT install the unit in a place where the operating ambient temperature exceeds 122° F (50° C).
- Only unplugging the power cord is considered as a main power disconnect.
- Make sure that the mains Voltage input is set to the proper local voltage.
- Before powering up the unit connect the ground terminal to a qualified earth ground through a short thick wire.

Wiring Technical Notes

These technical notes should all be considered prior to installing these devices.

- Use point-to-point unshielded twisted pair wire 24-16 AWG (0, 5-1, 3 mm) stranded or solid, Category 2 or better.
- The video signal may coexist in the same wire bundle as other video, telephone, data, control signals, or low-voltage power. You can run GE video signals in or near electromagnetic fields (in accordance with National Electrical Code, local or other local safety requirements).
- DO NOT USE SHIELDED TWISTED PAIR WIRE. Multi-pair (8 pair or more) wires with an overall shield are fine.
- DO NOT USE UN-TWISTED WIRE.
- DO NOT place a transmit and a receive signal in the same wire bundle. It may cause interference.
- DO NOT send **Up-the-Coax** Pan/Tilt/Zoom signals through active (amplified) GE transmitters or receivers. Passive GE transceivers can transmit video and **Up-the-Coax** P/T/Z control signals up to 750 ft. (228 m).
- We recommend using short 18 AWG solid wires for ground connections.
- GE VPD products follow the EIA/TIA 568 standard. There are two wire color-code standards: EIA/TIA 568A and EIA/TIA 568B. Either standard can be used for making connections as long as the RJ-45 jacks at both ends of each cable follow the same standard.
- Measure wire distance by:
  1. Shorting the two conductors together at the far end, and measuring the loop-resistance by an Ohmmeter.
  2. Use the **Loop Resistance** table to calculate the distance.
- DO NOT connect coax cables longer than 100 ft. (30 M) to the BNC connectors of any GE UTP equipment.
- All measured distances should include any coax cables in the path.
- Verify camera current requirements and wire resistance limits for the maximum distance that power can travel. Use the **Power Distance Chart** to verify the wire distance.
- GE VPD products require Unshielded Twisted-Pair (UTP) wires Category 2 or better, 24 AWG (0,5 mm) or thicker.

Table 1: Loop Resistance per 1000 feet

Wire Type	Resistance
24 AWG /0,53 mm	52 ohms
23 AWG /0,57 mm	42 ohms
22 AWG /0,64 mm	33 ohms

Camera End Installation

Video:

Passive Transceiver

- Connect the baseband video signal output of the camera to the BNC input of the GE passive transceiver.
- Connect the ground screw connector to a qualified earth ground using a short thick wire (GEC-PVTC-FCSP, GEC-PVTC-MSP).
- Connect the UTP to the terminal block of the GE transceiver.

Active Transmitter

- Connect the baseband video output of the camera to the BNC input of the GE active transmitter.
- Connect the UTP to the terminal block of transmitter.
- Connect the ground screw connector to a qualified earth ground using a short thick wire.
- Set the distance switch to **HI** for distances longer than 3,000 feet and set it to **Low** for distances equal or less than 3,000 feet.

Power:

- Connect a qualified 12 VDC or 24 VAC power supply cable to the transmitter's input power terminal block for the **GEC-1AVT**.

Control Room Installation

UTP:

- Connect the UTP wires carrying video signals to the terminal block input of the active receiver.
- Make sure that the same UTP pair and polarity are used on both transmit and receive sides.

Video:

- Use the provided 75 ohm patch cord to connect the BNC video inputs of video receiving devices such as DVRs or matrix switches. Make sure that your video receiver device's input is set to 75 ohm.

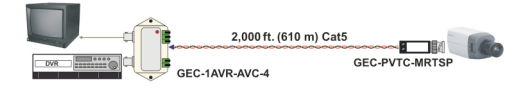
Power:

- Connect the ground screw connector to a qualified earth ground using a short thick wire.
- Connect a qualified 12 VDC or 24 VAC power supply cable to the input power terminal block for the **GEC-1AVR-AVC-4**

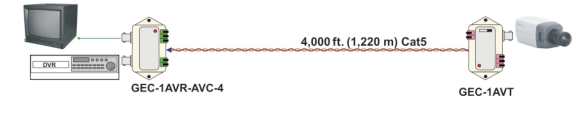
Note: This product is intended to be supplied by a UL Listed Direct Plug-In Power Unit marked "Class 2" or "LPS" and output rated 12 VDC, 1 Amp minimum.

Application Drawings

Single-Channel Passive to Active (Mid Range) Application



Single-Channel Active to Active (Long Range) Application



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Technical Specifications*

Electrical

Video Format	NTSC, PAL, SECAM
Frequency	20 Hz to 6 MHz
Adjustment	Automatically controlled by internal microprocessor
Coax	75 Ohm
Twisted Pair	100 Ohms +/- 20%, 24 AWG min., unshielded Category 2-7 up to 750 ft. (228m)
CMRR	70 dB
Power	12 VDC / 24 VAC, 140 mA max.
Power Indicator	Red LED
Connectors	UTP Inputs: Screw less terminal blocks Video Outputs: BNC Power: Screw less terminal blocks

Mechanical

Material	ABS plastic, UL rating of 94V-0
Dimensions (W x H x D)	2.9 x 1.69 x 1 in. (74 x 41 x 25 mm)
Weight	1.5 oz. (40 g)

Environmental

Humidity	0 to 95%, noncondensing
Temperature	Operating: -10° to +50° C
	Storage: -30° to +70° C

*Specifications are subject to change without notice.

Included Accessories

- UL Listed Direct Power Unit, output rated 12VDC, 1 Amp minimum
- 2 Philips mounting screws

Regulatory information

Manufacturer	GE Security, Inc. HQ and regulatory responsibility: GE Security, Inc., 8985 Town Center Parkway, Bradenton, FL 34202, USA EU authorized manufacturing representative: GE Security B.V., Kelvinstraat 7, 6003 DH Weert, The Netherlands
Regulatory information	CE N4131
North American standards	UL 60065
FCC Compliance	This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: • Reorient or relocate the receiving antenna. • Increase the separation between the equipment and receiver. • Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. • Consult the dealer or an experienced radio/TV technician for help.
	2002/96/EC (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.