

# Single-Channel Passive Transceiver Installation Sheet

GEC-1PVT-C-F GEC-PVTC-M GEC-PVTC-MC GEC-PVTC-MRTSP GEC-PVTC-MCSP GEC-PVTC-FCSP GEC-PVTC-MSP

## Introduction

GE Security Single Channel Passive Transceivers transmit or receive base-band video signals over point-to-point unshielded twisted pair (UTP) wires, category 2-7. They support distances up to 750 feet (228 m) when they are used with any single or multi-channel GE passive transceiver and up to 3,500 feet (1,067 m) when used with a GE active transmitter. These transceivers are compact in size, easy to install and do not require power. They also feature excellent crosstalk and noise immunity, which ensures quality video up to the maximum distance.

All GE passive transceivers are bidirectional and support Up-the-Coax Pan/Tilt/Zoom telemetry signals. Any unused pair of UTP cables can also be used for transporting other telemetry signals.

Models GEC-PVTC-MRTSP, GEC-PVTC-MCSP, GEC-PVTC-FCSP, and GEC-PVTC-MSP have built-in surge suppression on the UTP input to protect video equipment against damaging voltage spikes.

The following model numbers are covered in this document:

- GEC-1PVT-C-F
- GEC-PVTC-M
- GEC-PVTC-MC
- GEC-PVTC-MRTSP
- GEC-PVTC-MCSP
- GEC-PVTC-FCSP
- GEC-PVTC-MSP

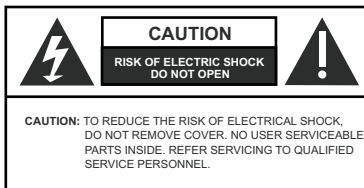
## Wiring Technical Notes

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

- Use point to point unshielded twisted pair wire 24-16 AWG (10, 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 Security 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 Security transmitters or receivers. Passive GE Security 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 when applicable.
- GE Security 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 Security UTP equipment.
- All measured distances should include any coax cables in the path.
- Verify camera current requirement and wire resistance limits for the maximum distance that power can travel. Use the **Power Distance Chart** to verify the wire distance.
- GE Security VPD products require Unshielded Twisted-Pair (UTP) wires Category 2 or better, 24 AWG (0.5 mm) or thicker.

## 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) Only use attachments/accessories specified by the manufacturer.
- 11) 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.

## Camera End Installation

UTP:

- Connect the UTP wire to the terminal block of the passive transceiver. Make sure to observe the color-coding of the selected pair and its polarity. It is necessary to use the same pair and polarity on the receiving end.
- If the camera has a qualified built-in UTP transceiver, connect the UTP wire directly to the UTP connector of the camera.

Video:

- Connect the baseband Video signal output of the camera to the BNC connector of the transceiver.

**Ground (GEC-PVTC-FCSP and GEC-PVTC-MSP only):**

- Connect the ground screw connector to a qualified earth ground using a short thick wire.

## Control Room Installation

UTP:

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

Video:

- Connect the passive transceiver's BNC output to the baseband video input of a video receiver such as a matrix switch, a DVR or a monitor.
- Make sure that the same UTP pair and polarity are used on both the transmit and receiver sides.
- Confirm that the device receiving video is terminated with a single 75 ohm terminator.

**Ground (GEC-PVTC-FCSP and GEC-PVTC-MSP only):**

- Connect the ground screw connector to a qualified earth ground using a short thick wire.
- If the picture is scrambled change the polarity of the twisted pair wires of the corresponding terminal block.

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

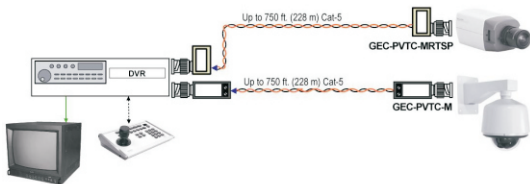
Table 2: Power Distance Chart

Power Supply Voltage		12 VDC	24 VAC	28 VAC
Voltage at the Camera		10.8 VDC	21.6 VAC	21.6 VAC
100 mA Camera	Dual 24 AWG	448 ft. / 137 m	896 ft. / 273 m	2,388 ft. / 728 m
	Dual 23 AWG	564 ft. / 172 m	1,130 ft. / 345 m	3,012 ft. / 918 m
300 mA Camera	Dual 24 AWG	150 ft. / 46 m	300 ft. / 92 m	796 ft. / 243 m
	Dual 23 AWG	190 ft. / 58 m	378 ft. / 115 m	1,004 ft. / 306 m
1 AMP Camera	Dual 24 AWG	46 ft. / 14 m	90 ft. / 28 m	240 ft. / 73 m
	Dual 23 AWG	58 ft. / 18 m	114 ft. / 35 m	300 ft. / 92 m

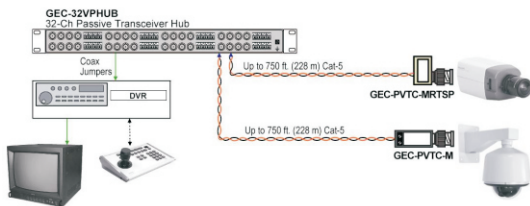


## Application Diagrams

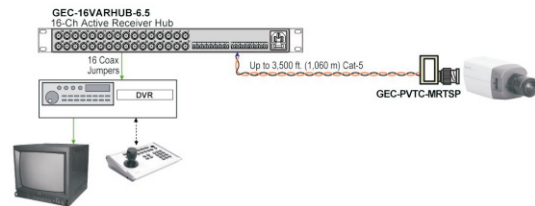
### Single-Channel Short-Range, Passive to Passive Application



### Multi-Channel Short-Range, Passive to Passive Application



### Multi-Channel Mid Range, Passive to Active Application



## Technical Specifications\*

### Electrical

Video Format	NTSC, PAL, SECAM
Frequency	20 to 10 MHz
Coax	75 Ohm
Twisted Pair	100 Ohms +/- 20%, 24 AWG MINIMUM Category 2-7 up to 750 ft. (228 m)
Power	No power required
CMRR	60 dB
Connectors	<b>UTP:</b> Screw terminal blocks or screw-less connectors <b>Video Outputs:</b> BNC connector <b>GND:</b> Ground screw

### Mechanical



Material	ABS plastic, UL rating of 94V-0 41 (excluding GEC-1PVTC-F and GEC-PVTC-M)
Dimensions (W x H x D)	<b>GEC-1PVTC-F:</b> 0.63 x 0.60 x 1.82 in. (1.6 x 1.5 x 4.7 cm) <b>GEC-PVTC-M:</b> 0.63 x 0.60 x 1.82 in. (1.6 x 1.5 x 4.7 cm) <b>GEC-PVTC-MC:</b> 0.54 x 0.54 x 1.85 in. (1.4 x 1.4 x 4.7 cm) <b>GEC-PVTC-MRTSP:</b> 0.94 x 0.55 x 1.26 in. (2.4 x 1.4 x 3.2 cm) <b>GEC-PVTC-MCSP:</b> 0.54 x 0.54 x 1.85 in. (1.4 x 1.4 x 4.7 cm) <b>GEC-PVTC-FCSP:</b> 0.54 x 0.54 x 1.85 in. (1.4 x 1.4 x 4.7 cm) <b>GEC-PVTC-MSP:</b> 0.54 x 0.54 x 1.85 in. (1.4 x 1.4 x 4.7 cm)
Weight	<b>GEC-1PVTC-F:</b> 0.04 lb. (18 g) <b>GEC-PVTC-M:</b> 0.04 lb. (18 g) <b>GEC-PVTC-MC:</b> 0.06 lb. (26 g) <b>GEC-PVTC-MRTSP:</b> 0.04 lb. (18 g) <b>GEC-PVTC-MCSP:</b> 0.06 lb. (26 g) <b>GEC-PVTC-FCSP:</b> 0.04 lb. (18 g) <b>GEC-PVTC-MSP:</b> 0.04 lb. (18 g)

### Environmental

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

\*Specifications are subject to change without notice.

## 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	 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: <ul style="list-style-type: none"> <li>• Reorient or relocate the receiving antenna.</li> <li>• Increase the separation between the equipment and receiver.</li> <li>• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.</li> <li>• Consult the dealer or an experienced radio/TV technician for help.</li> </ul>
	 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: <a href="http://www.recyclethis.info">www.recyclethis.info</a> .

## Contact information

For contact information see our Web site: [www.gesecurity.com](http://www.gesecurity.com).

For contact information see our Web site: [www.gesecurity.eu](http://www.gesecurity.eu).