VGA Video Extender

4-Port VGA over Cat5 Transmitter

VGA over Cat5 Receiver

VGA over Cat5 Extender

CONVERGE**AV** **StarTech.com**
Making hard-to-find easy!®

FCC Compliance Statement

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.

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Introduction

The StarTech.com Converge A/V VGA over Cat5 Video Extender system is comprised of a transmitter unit (ST1214T) and a receiver unit (ST121R) and optionally a repeater unit (ST121EXT). This video extender system allows you to split and extend a single VGA source signal to up to four separate remote locations. The VGA signal is extended using standard Cat5 UTP cable, with a maximum distance of up to 150m (492ft) or 300m (984ft) with a repeater.
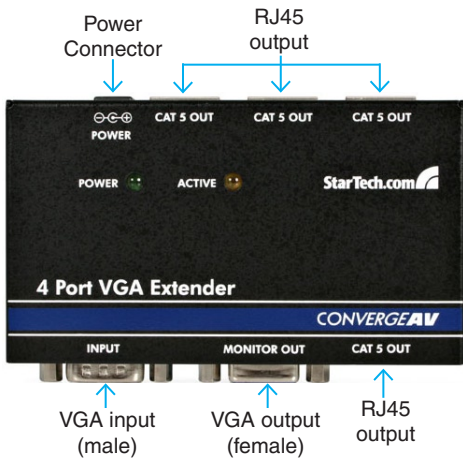
Packaging Contents

- 1 x ST1214T Transmitter Unit
    or
  1 x ST121R Receiver Unit
    or
  1 x ST121EXT Extender Unit
- 1 x Universal Power Adapter
- 1 x Mounting Bracket kit (ST121R and ST121EXT only)
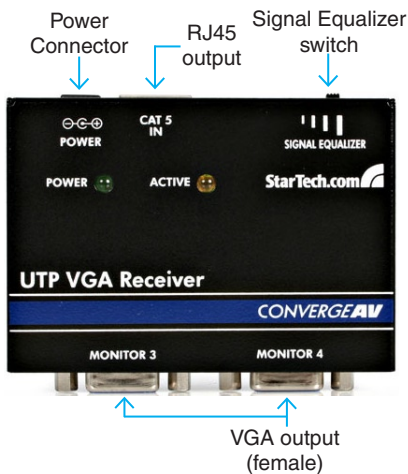- 1 x Instruction Manual

System Requirements

- VGA enabled video source and display
- Available power outlet at local and remote locations
- Both a Transmitter Unit and Receiver Unit(s)

ST1214T

Power Connector

RJ45 output

- ⊖–◐–⊕ CAT 5 OUT   CAT 5 OUT   CAT 5 OUT
- POWER
- POWER   ACTIVE   **StarTech.com**
- **4 Port VGA Extender**
- **CONVERGE**AV
- INPUT   MONITOR OUT   CAT 5 OUT

VGA input (male)

VGA output (female)

RJ45 output

ST121R

Power Connector

RJ45 output

Signal Equalizer switch

- ⊖–◐–⊕ CAT 5 IN
- POWER
- SIGNAL EQUALIZER
- POWER   ACTIVE   **StarTech.com**
- **UTP VGA Receiver**
- **CONVERGE**AV
- MONITOR 3   MONITOR 4

VGA output (female)

ST121EXT

Power Connector

RJ45 input

RJ45 output

Signal Equalizer switch

POWER

CAT 5 IN

CAT 5 OUT

DISTANCE

POWER   ACTIVE   StarTech.com

UTP VGA Repeater

CONVERGE**AV**

MONITOR OUT   MONITOR OUT

VGA output (female)
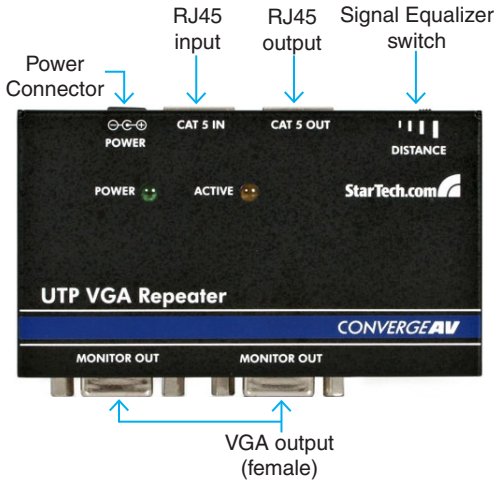
Installation

NOTE: To prevent potential electrical damage to the units in some environments, ensure that the chassis is properly grounded.
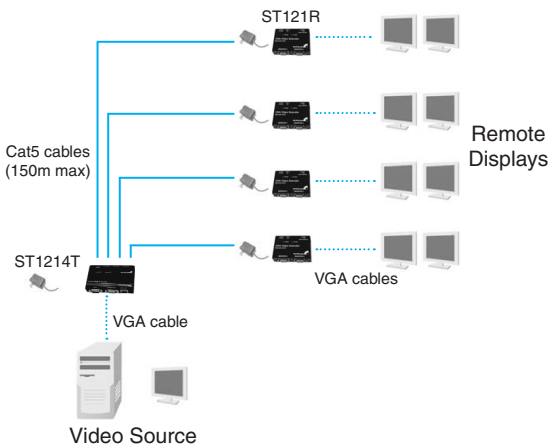
Hardware Installation

The following instructions detail how ST1214T, ST121R and ST121EXT can be used to extend a VGA signal to remote displays, using a variety of different configurations.

ST1214T (local) and ST121R (remote)

1. Using the ST1214T, you can split the VGA signal from the source into 4 separate VGA signals, for reception at remote locations (up to 150m (492ft) away).

2. Situate the ST1214T so that it is near your VGA video source as well as an available power source.

3. Connect the ST1214T to the power source, using the power adapter provided.

4. Connect the VGA video source to the VGA IN port on the ST1214T, using a male-female VGA cable.

5. Situate the ST121R so that it is near the intended remote display(s) and an available power source.

6. Connect the ST1214R to the power source using the power adapter provided.

7. Using the Monitor Out ports, connect the ST121R to the display(s). Please note that each remote unit can be connected to two separate displays simultaneously. To connect two monitors, simply connect a VGA cable from the second Monitor Out port to a second display.

8. Once the Transmitter and Receiver unit(s) have been positioned, connect the Cat5 OUT ports provided by the transmitter unit (ST1214T) to each receiver unit, using standard UTP cable, with RJ45 connectors on each end.

The following diagram illustrates the connection between transmitter (ST1214T) and receiver (ST121R) units.

ST1214T (local), ST121EXT (extender) and ST121R (Remote)

Using the ST1214T, you can split the VGA signal from the source into 4 separate VGA signals, for reception at remote locations. While the maximum transmission distance of the ST1214T is 150m (492ft), using ST121EXT as a signal repeater adds another 150m (492ft) to the total transmission distance, for a total extension of 300m (984ft).
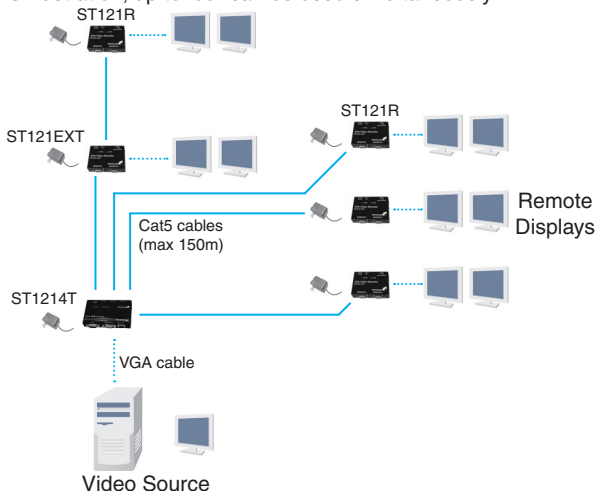
1. Situate theST1214T so that it is near your VGA video source as well as an available power source.

2. Connect the ST1214T to the power source, using the power adapter provided.

3. Connect the VGA video source to the VGA IN port on the ST1214T, using a standard male-female VGA cable.

4. Situate the repeater unit (ST121EXT) up to 150m (492ft) away from the ST1214T unit, ensuring that the repeater unit is able to connect to an available power outlet.

5. Using a standard UTP cable with RJ45 terminators on each end, connect the Cat5 OUT port provided by the transmitter unit(ST1214T) to the Cat5 IN port provided by ST121EXT.

6. Connect the repeater unit (ST121EXT) to an available power outlet, using the adapter provided.

7. Optional: You can connect two monitors directly to the repeater. To do so, simply connect the monitors to the MONITOR OUT ports on the repeater unit.

8. Repeat step 4 to 7 for each remote unit that will be used in conjunction with a repeater (up to 4).

9. Situate the receiver unit (ST121R) up to 150m (492ft) away from the repeater unit (ST121EXT), so that it is near the intended display(s) as well as an available power source.

10. Connect the ST121R Receiver Unit to the power source using the power adapter provided.

11. Using a standard UTP cable with RJ45 terminators on each end, connect the Cat5 OUT port provided by the repeater (ST121EXT) to the Cat5 IN port provided by ST121EXT.

Note: Each receiver unit can be connected to two separate displays simultaneously. To connect two monitors, simply connect a VGA cable from the second Monitor Out port to a second display.

The following diagram illustrates the connection between transmitter (ST1214T) and receiver (ST121R) units, with the addition of a repeater unit (ST121EXT). Please note that although only one repeater is used in this illustration, up to four can be used simultaneously.

Driver Installation

No driver installation is required for this video extender as it is an external hardware only solution, invisible to the computer system.

Operation

ST1214T, ST121EXT and ST121R all provide LED indicators, allowing simple operating status monitoring. Once the power adapter has been connected, the Power LED will become illuminated; similarly, when the unit is in use (i.e. transmitting a video signal), the Active LED will become illuminated.
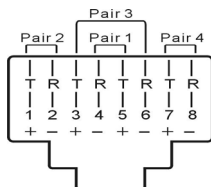
Signal Equalizer Selector (ST121R, ST121EXT)

The Signal Equalizer Selector on the Receiver and Repeater Units can be adjusted to obtain the optimal video signal for various cable lengths. There are four settings on the selector switch, indicating cables of different lengths. The following table can be used as a reference for selecting the appropriate setting:

| CAT5 cable length | | Equalizer position |
meter	feet	
0 ~ 40	0 ~ 131	▬
40 ~ 80	131 ~ 262	▬
80 ~ 120	262 ~ 394	▬
120 ~ 160	394 ~ 525	▬

Wiring Diagram

The Video Extenders requires an unshielded twisted pair Cat5 cable no longer than 150m (492ft). The cable must be wired according to the EIA/TIA 568B industry standard as shown below.

Pin	Wire Color	Pair
1	White/Orange	2
2	Orange	2
3	White/Green	3
4	Blue	1
5	White/Blue	1
6	Green	3
7	White/Brown	4
8	Brown	4

Specifications

	ST1214T
Connectors	1 x DE-15 VGA male 1 x DE-15 VGA female 4 x RJ45 1 x Power Connector
LEDs	Power, Active
Maximum Distance	150m (492 ft) @ 1024x768
Power Supply	12VDC, 1.5A
Dimensions	63.89mm x 103.0mm x 20.58mm
Weight	246g

	ST121R	**ST121EXT**
Connectors	2 x DE-15 female 1 x RJ45 1 x Power Connector	2 x DE-15 female 2 x RJ45 1 x Power Connector
LEDs	Power, Active	
Power Supply	12VDC, 1.5A	
Dimensions	84.2mm x 65.0mm x 20.5mm	64.0mm x 103.0mm x 20.6mm
Weight	171g	204g

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