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VGA Video Extender

ST1214T
ST1218T
ST121EXT / ST121EXTGB / ST121EXTEU
ST121R / ST121RGB / ST121REU

*ST121R shown

*actual product may vary from photos

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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/ ST1218T) 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 or eight separate remote locations. The VGA signal is extended using standard Cat5 UTP cable, with a maximum distance of up to 150m (492ft) or 250m (820ft) with a repeater.

Packaging Contents

• 1 x 4-port Transmitter Unit (ST1214T)

  or

  1 x 8-port Transmitter Unit (ST1218T)

  or

  1 x Receiver Unit (ST121R/ GB/ EU)

  or

  1 x Extender (Repeater) Unit (ST121EXT/ GB/ EU)

• 1 x Universal Power Adapter (ST1214T/ ST1218T only)
  or
  1 x Standard Power Adapter (NA or UK or EU plug)

• 1 x Mounting Bracket kit (ST121R/ GB/ EU and ST121EXT/ GB/ EU 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)

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ST1214T

RJ45

Power
connector

RJ45

VGA output
(female)

VGA input
(male)

ST121R / ST121RGB /ST121REU

Power
connector

RJ45
input

Signal Equalizer
switch

VGA output
(female)

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ST121EXT / ST121EXTGB / ST121EXTEU

Power connector

RJ45 input

RJ45 output

Signal Equalizer switch

VGA output (female)

ST1218T

RJ45 Output to Receiver Units

RJ45 Output to Receiver Units

Power connector

VGA Input (male)

VGA Output (female)

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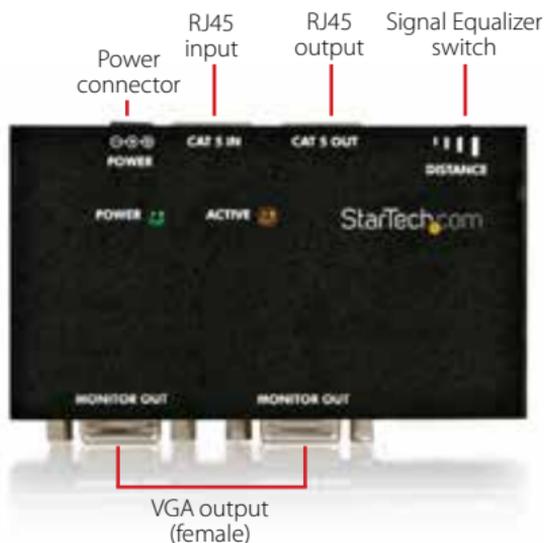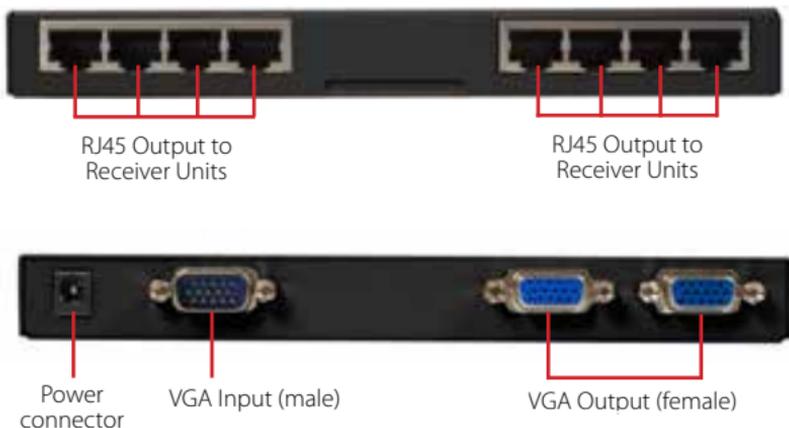
Installation

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, ST1218T, ST121R and ST121EXT units can be used to extend a VGA signal to remote displays, using a variety of different configurations.

ST1214T/ ST1218T (local) and ST121R (remote)

1. Using the Transmitter Unit, you can split the VGA signal from the source into 4/8 separate VGA signals, for reception at remote locations (up to 150m (492ft) away).

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

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

4. Connect the Transmitter to the power source, using the power adapter provided.

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

OPTIONAL: with the optional mounting brackets (**StarTech.com ID: ST121MOUNT**), any ST121 series receiver can be securely mounted to a wall or other surface.

6. Using the Monitor Out ports, connect the Receiver to the display. Note that 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 to a second display.

7. Connect the Receiver to the power source using the power adapter provided.

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

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The following diagram illustrates the connection between Transmitter and receiver units.
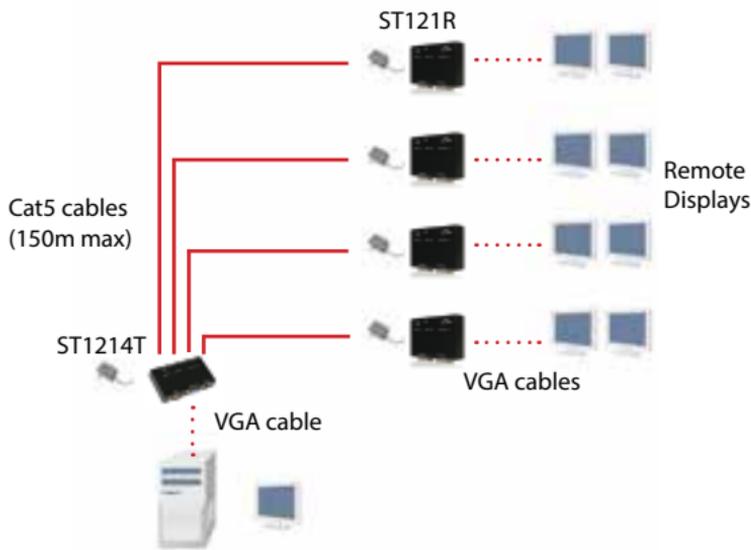
ST1214T/ ST1218T (local), ST121EXT (extender), ST121R (Remote)

Using the Transmitter Unit, 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 Transmitter is 150m (492ft), using the Extender Unit as a signal repeater adds another 100m (328ft) to the total transmission distance, for a total extension of 250m (820ft).

1. Situate the Transmitter Unit so that it is near your VGA video source as well as an available power source.

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

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

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

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OPTIONAL: with the optional mounting brackets (**StarTech.com ID: ST121MOUNT**), any ST121 series receiver can be securely mounted to a wall or other surface.

5. Using a standard UTP cable with RJ45 terminators on each end, connect the Cat5 OUT port provided by the Transmitter Unit to the Cat5 IN port provided by the Extender Unit.

6. Connect the Extender Unit to an available power outlet, using the adapter provided.

OPTIONAL: You can connect two monitors directly to the Extender Unit. To do so, simply connect the monitors to the MONITOR OUT ports on the Extender Unit.

7. Repeat step 4 to 7 for each Receiver Unit that will be used in conjunction with an Extender (up to 8).

8. Situate the Receiver Unit up to 150m (492ft) away from the Extender Unit, so that it is near the intended display(s) as well as an available power source.

9. Connect the Receiver Unit to the power source using the power adapter provided.

10. Using a standard UTP cable with RJ45 terminators on each end, connect the Cat5 OUT port provided by the Extender Unit to the Cat5 IN port provided by Receiver Unit.

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.

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The following diagram illustrates the connection between Transmitter and Receiver units, with the addition of an Extender Unit. Please note that although only one Extender is used in this illustration, up to four can be used simultaneously.
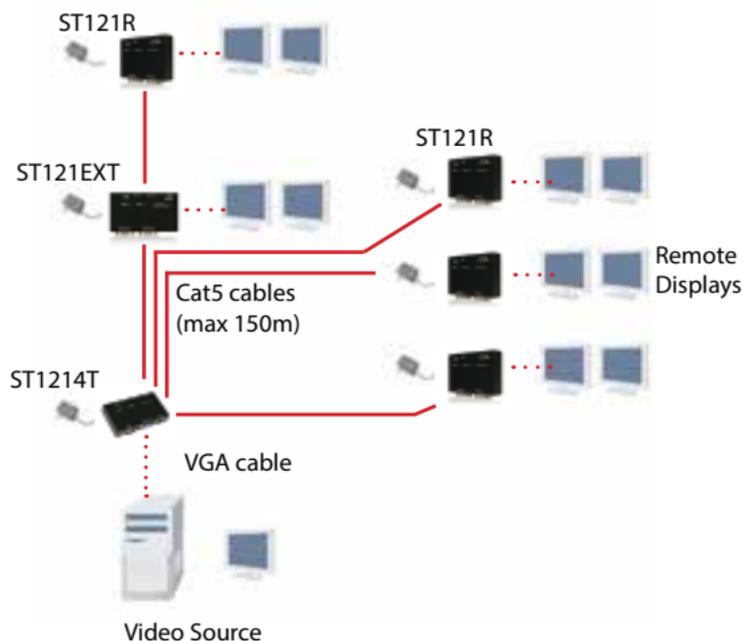
Driver Installation

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

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Operation

ST1214T/ ST1218T, 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 Extender 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

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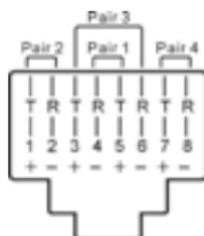
Specifications

	ST1214T	ST1218T
Connectors	1 x DE-15 VGA male 1 x DE-15 VGA female 4 x RJ45 Ethernet female 1 x Power Connector	1 x DE-15 VGA male 2 x DE-15 VGA female 8 x RJ45 Ethernet female 1 x Power Connector
LEDs	Power, Active	
Maximum Distance	150m (492 ft) @ 1024x768	
Power Supply	9 ~ 12V DC	
Dimensions	63.89mm x 103.0mm x 20.58mm	180.0mm x 85.0mm 20.0mm
Weight	246g	1300g

	ST121R / ST121RGB / ST121REU	ST121EXT / ST121EXTGB / ST121EXTEU
Connectors	2 x DE-15 VGA female 1 x RJ45 Ethernet female 1 x Power Connector	2 x DE-15 VGA female 2 x RJ45 Ethernet female 1 x Power Connector
LEDs	Power, Active	
Power Supply	9 ~ 12V DC	
Dimensions	84.2mm x 65.0mm x 20.5mm	64.0mm x 103.0mm x 20.6mm
Weight	171g	204g

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This product is backed by a two year warranty.

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