

What is a VGA Connector : Pin Configuration & Its Applications

A **Computer Port** is a connection point between the peripheral device & the computer. Here, devices are the keyboard, printer, mouse, flash drive, speaker, etc. There are different types of ports available where the cable from the peripheral device is connected to the port to allow data to flow from device to device. This article discusses one of the types of computer port like **VGA connector** and how it is working.

What is a VGA Connector?

VGA (Video Graphics Array/ Video Graphics Adapter) **connector** is one kind of computer port used to connect the peripheral devices for transferring video signals as an output. It is a very famous display technology invented by IBM & launched in the year 1987.

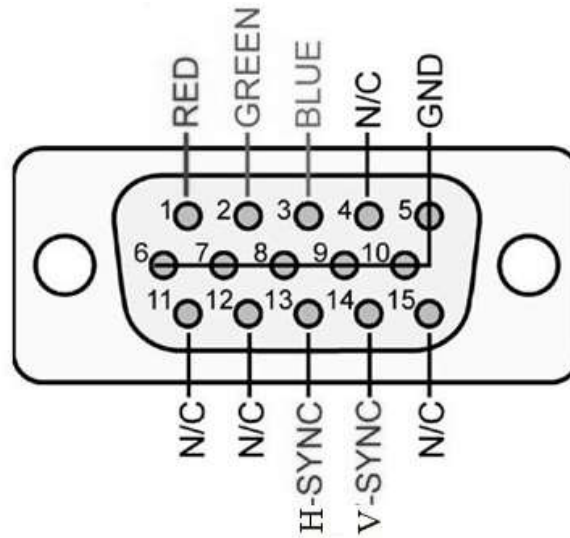


VGA Connector

VGA connector provides color display screens with 640 x 480 resolution, 60 Hz refresh rate exhibited at a time. If the screen resolution is reduced to 320 x 200 pixels, then 256 colors v displayed. VGA uses analog signals for fewer resolutions & less quality display over screen

VGA Connector Pin Configuration

The pin configuration of a VGA Connector includes 15 pins where each pin & its function is below.



VGA Connector Pin Configuration

- Pin1 (RED): Red video (75 ohm, 0.7V peak-to-peak)
- Pin2 (GREEN): Green video
- Pin3 (BLUE): Blue video
- Pin4 (ID2 / RES) : Monitor ID Bit-2 or Reserved
- Pin5 (GND): Ground Pin
- Pin6 (RGND): Red Ground
- Pin7 (GGND): Green Ground
- Pin8 (BGND): Blue Ground
- Pin9 (KEY): +5V DC output from graphic card
- Pin10 (SGND): Sync Ground
- Pin11 (ID0 / RES): Monitor ID Bit0 or Reserved
- Pin12 (ID1 / SDA): Monitor ID Bit-1 / Data line with I2C bi-directional
- Pin13 (HSYNC): Horizontal Sync
- Pin14 (VSYNC): Vertical Sync
- Pin15 (ID3 / SCL): Monitor ID Bit-3 or I2C data clock

Features & Specifications

The **features & specifications of the VGA connector** include the following.

- Type of connector is – Computer Analog Video
- Data Signal is an I2C data channel used for DDC data
- Video signal is RGB with H & V sync

- 15 Connector Pins
- DE15 Connector
- Designer – IBM in 1987
- Superseded through DVI in 1999
- It is not hot-pluggable

Usually, a VGA connector includes a screw-on any face of the plug for connecting it to a sir computer's backside. The plug inside includes different pins in three tows which are placed within the computer backside.



The identification of VGA cables can be done by observing **the plug** inside because most of connectors include 14-pins by showing the 15th hole. Based on the system setup, some pir appear.

Different Types

There are **different types of VGA connectors** available in the market. Alternate names of connectors are the RGB connector, Mini 015, HD15, Mini D15, HDB-15, DB15 & Mini sub D

The male connector's best examples are DB13W3, HD15, 5BNC, 4BNC, etc. So, these type called 'connector one'. Alternatively, the next connectors are HD15 female, HD15 male, HD 6PIN Mini-Din PS2 male, 4BNC male, 5BNC female, HD 15 female or USE B male cables.

Some other VGA connector types are the VGAs splitter, sun DB13W3, VGA adapter, the K\ BNC breakout, SVGA, VGA to RCA breakout, BNC to BNC breakout cables. These cables with some different connections.

Properties

The **properties of the VGA Connector** include the following.

VGA connectors or cables are available in different sizes in the market that ranges from 0.7 30 feet. Additionally, these cables are also available in various colors like Beige & Black.

In addition, these cables include shielding either double or triple. These connectors are available at different prices depending on the type & length. There are different cables used for different applications based on the requirement. The price of these cables ranges from low to high like 10\$ to 400\$ for a VGA connector.

How to choose a VGA Connector?

The selection of a VGA connector can be done based on different parameters like the follow

Based on the Quality

The quality of the connector can be decided through the brand name that will affect the quality. The popular brands of VGA connectors are cable power, RS Pro, Matrox & StarTech.

Based on the Length

The length of the connector depends on the video signals from dropping quality, so short cables are preferred as much as possible. So that cable can be protected from the interference of signal.

Pins of Connector Layered with Gold

The pins of the connector can be coated with gold color and it works like a better conductor than copper. The gold coating gives assurance that the data transfer speed is very quick & signals are clear.

Protection of Signal Interference

The signals like RF & EM can interfere with the signals flowing throughout the VGA connector. So to reduce this trouble, designers must design the cable with different layer coats for protection. This quality guarantees that any signal does not interrupt while transferring data in the wires.

Male to Female/ Male to Male Cable

Select the cable carefully based on the requirement like male to female or male to male. For male to male cable like HD15 SVGA is used with ferrite bead whereas male-to-female cable is used for a laptop whereas a male-to-female connector is required when you need to extend the cable from an existing cable.

Genders of VGA Connector

VGA connectors are available in both male and female genders where pins or plug is called connector and socket or holes are called female. VGA connectors are recognized in terms of gender toward the connector gender.

Based on the exact cable type in use & the exact pattern of the connection you require to be made at the computer otherwise end of the monitor, you may need the different VGA adapters, splitters & make a functioning connection for a specific system.

The available gender VGA connectors include the following.

- Male to Male
- Male to Female
- Female to Male
- Female to Female

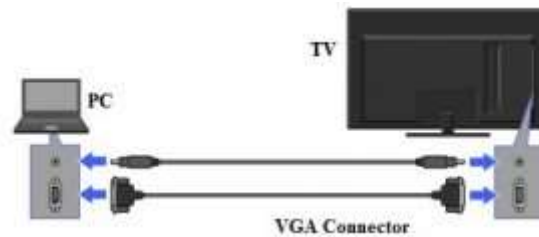
How to use a VGA Connector to Connect PC & TV

A desktop computer can be used through a monitor by a user. The desktop monitor permits the OS GUI & different software applications such as document typing, game playing, etc.

There are two kinds of displays available with flat-panel like LED & LCD. These displays can be connected through a VGA, HDMI, DVI, USB-C, or Display Port connector to unite to the computer. The older connections are DVI & VGA whereas USB-C, Display Port, & HDMI are newer.

The connection of a PC to a TV using a VGA connector can be done like the following. The procedure is discussed below.

The connection of a TV and PC can be done using a VGA connector. Connect one end of the cable to a TV port and another end to a PC.



VGA Connector to Connect PC & TV

- Attach the audio cable with 3.5 mm toward the PC's headphone jack. Connect the one end of the cable to the audio port of the TV or otherwise speakers.
- Click on the Start button on your computer, select "Control Panel."
- Click on the display option and adjust the resolution.
- Choose TV & this option will be accessible on the drop-down box of the display.

Advantages

The **advantages of the VGA connector** include the following.

- By using a VGA cable, the connection of various kinds of electronic devices can be done like computers, CRT monitors, etc.
- It also gives support and assists you by giving quick responses & smoother motion.

Disadvantages

The **disadvantages of the VGA connector** include the following.

- It gives less resolution
- It does not support audio & 4K Ultra HD media player
- For modern computers and laptops, it is outdated

When to Use/Applications

The VGA connector is mainly used for multiple purposes within the field of electronics. The **applications of the VGA connector** include the following.

- It is most frequently used whenever you need to fix your laptop to your projector or TV. But if your monitor includes an HDMI/ DVI output after that it would generally be better to fix it through those ports.

connection. If the output device simply includes a VGA port, then this cable will give you a perfect reflection.

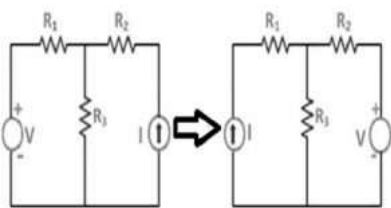
- In different electronic devices, VGA is used as a connector for connecting & transmit signals between monitors & computers, TVs & computers & laptops & computers.
- It is used as a connector in televisions, video cards, laptops, monitors, etc.

Thus, this is all about **an overview of the VGA connector** and the main function of this connector is used for display devices by connecting a computer to a projector, TV, or monitor. At present, you can commonly find this connector and it is being changed through the HDMI, DVI, Connector & cable. Here is a question for you, what is the difference between a VGA connector & HDMI?

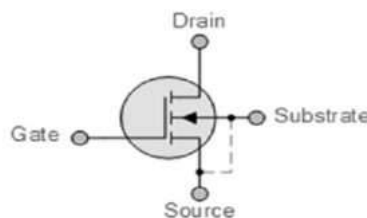
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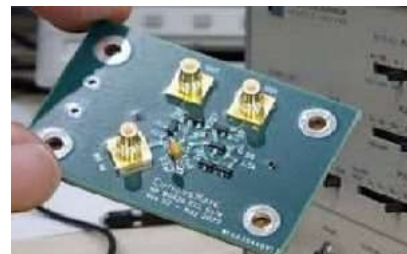
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