



# Converting CRT to LCD

## VectorVGA

In the past 20 years, CRT's (Cathode Ray Tube) have been replaced by other displays, such as LCD's (Liquid Crystal Display) and OLEDs (Organic LED). As a result, CRTs are not generally produced anymore and are becoming harder to maintain in existing applications. There are 2 types of CRT's, Stroke and Raster. Each has a different way of converting an input signal and then displaying it on the CRT.

Trelleborg saw a need for a cost-effective and reliable method to replace the older CRTs, with modern displays. Trelleborg developed VectorVGA to convert a Stroke signal to a Raster signal. The system can be rack-mounted, and accepts a Raster signal, processes the signal, and outputs a standard VGA (Video Graphics Array) signal, that can be plugged into a standard LCD monitor. If needed, VectorVGA can be incorporated into a form fit function in situations where the monitor is an integral part of the system. VectorVGA can accommodate many types of raster signals including color or monochrome signals.

Using a Stroke (Vector) CRT the images are put on the screen with a beam that traces an outline of the images.

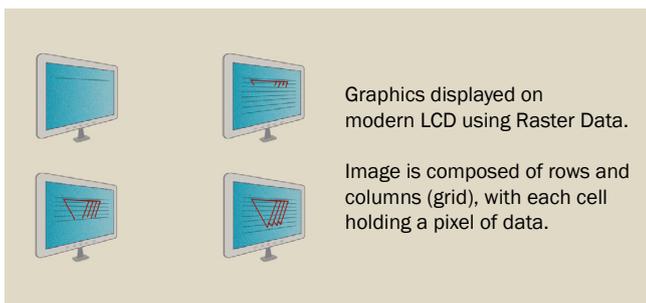
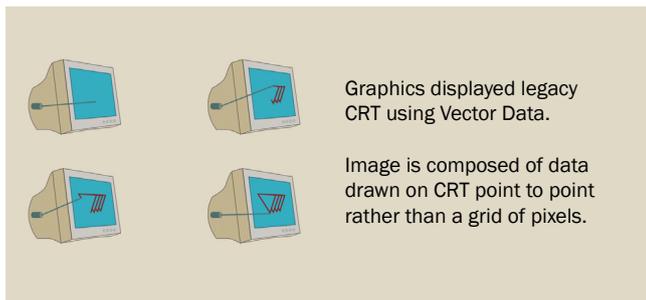
1. Stroke images show only minimal data, generally only outlines of objects and very limited text. A Stroke CRT is not suited to handle intensive graphics.
2. It requires very little memory. Coordinates are sent to the display – and data is not retained.
3. Once an image is drawn on the screen no changes can be made.
4. Stroke CRTs can be much brighter than other displays, as the device that draws on the screen moves very slowly, making the display brightness.
5. Stroke CRTs were less expensive than Raster CRT.

A Stroke CRT is mainly used in certain military applications and oscilloscope displays. Stroke CRTs were perfectly suited for use in heads up displays and Air Traffic Control. These applications did not need a lot of graphics, and the brighter display was desired by a pilot for use in bright sunlight.

A Raster CRT is the most popular type of input signal used; old TV sets were Raster CRTs. Modern displays like an LCD or OLED use Raster algorithms to put data on the screen. A Raster display draws an entire image one line at a time. As soon as the screen is drawn, it starts over from the top and redraws the image.

1. Raster Images allow for high-resolution graphics.
2. Raster images required a lot of memory since the entire image is stored in memory.
3. Images can be drawn and amended.
4. Raster images sometimes are not easily viewable in bright daylight.

CRTs that use Raster graphics can be migrated to LCDs or other displays since they use a similar method to put graphics on the screen. Stroke CRTs are not as easily replaced, since they have a completely different method for displaying data. Since Stroke CRTs were generally used in military applications, an entire system can be rendered useless if the display fails, and it cannot be repaired or replaced.



**Benefits:**

- Cost effective replacement method
- Reliable and proven
- Rack mounted
- Can be form fitted
- Accommodate color and monochrome signals

**Applications**

- Aircraft
- Military
- Control towers



Form Fit Function (FFF) solutions.

Providing a custom solution with a direct replacement of a CRT with an LCD and directly integrated



Bench top or rack mount solution are the most popular and economical solution.

Raster CRT inputs are used by VectorVGA and Video signal compatible with LCD's is output.

**Contact us**

Contact Us Trelleborg Applied Technologies delivers innovative and reliable solutions, materials and smart systems that maximizes performance for our customers. Our dedicated and highly skilled staff are always on hand to provide seamless process support from initial idea, through to delivery and beyond.



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