

## TP1K-100 / TP1K-200 CAT5 VIDEO RECEIVER DATASHEET

**Extends VGA video signals up to 300m along Cat. 5 TP cable to drive VGA monitors**

Boxed units joined by Cat. 5 UTP / FTP cable with RJ45 ends wired to EIA568B

**C.A. Designs** twisted-pair video distribution amplifier products comprise a collection of modules capable of high quality picture and data transmission over category 5 (4-pair) UTP or FTP cables. This typically allows the transport of PC video signals using twisted-pair cables throughout office complexes (wired with structured cable systems) to remote monitor screens.

Each video link has a line-driving module and line-receiving module. Available versions cover different distances, number of outputs, signal formats, power supply, enclosures, etc.

A line transmitter module, such as the **TP1E-0** is required at the PC end of the Cat 5/6 extension cable, to provide a suitable signal for the receiver.

The **TP1K-100** and **TP1K-200** receivers are similar to the **TP1V-100** receiver, with the addition of skew compensation, which allows a better picture to be obtained, as the skew between colours can be corrected (see below).

The **TP1K-100** and **TP1K-200** line receiving modules are used at the display end of the Cat.5/6 extension cable to reconstruct the video signal from the transmission line into a compatible output signal for an appropriate monitor.

Typically **TP1K-100** receivers are used which output VGA type monitor signals with switchable TTL sync polarity (some monitors sense this to set picture size)

Balanced differential input amplifiers reduce unwanted common-mode interference and have externally adjustable frequency and gain compensation for cable lengths up to 100 metres (in addition to the line driver compensation). Differential delay compensation (sometimes called SKEW compensation) is provided on **TP1K-100** modules – see below.

Cat 5 cable has four separate twisted pairs each with a different number of turns per unit length to reduce crosstalk between pairs. This results in each pair being a slightly different overall length which may have a significant effect on the video signal passed down the cable, similar to misconvergence, as signals take a slightly different time to arrive at the receiver and as a result suffer visible colour separation between Red, Green and Blue. This distortion is worse for higher resolution signals and Cat.5e & Cat.6 spec. cables tend to have even greater differential delays.

**TP1K-100** includes a passive wide bandwidth video delay system, designed to compensate for the varying path lengths often found in UTP and STP cable.

One colour is left undelayed and the other two may each be delayed.

Selection of the delay is via switches which select delays of 2, 4, 8, 16 and 32 nanoseconds which may be added - resulting in delays from 0 to 62nS in 2nS increments.

These line-receiving units take their power from the twisted-pair line and require no external power supply. The twisted-pair cable used must be category 5 (or above) grade cable. Foil screening is recommended for optimum EMC.

Excellent picture quality is obtainable with resolutions up to 1280x1024 (non-interlaced), depending on cable length and quality.

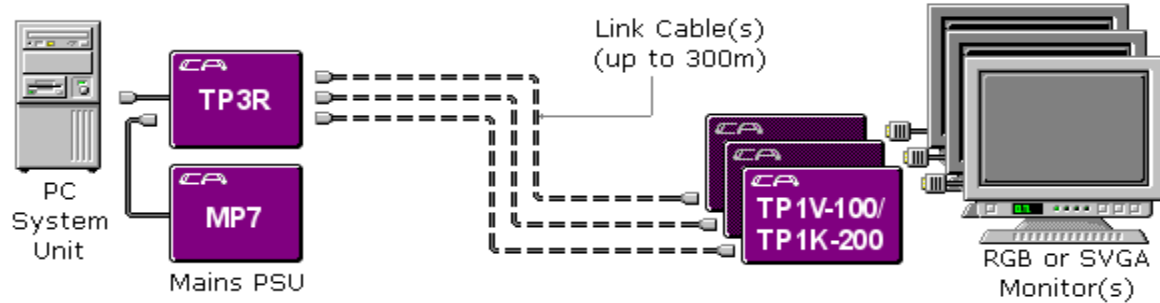
Examples:

A **TP1E-0** with **TP1K-100** allows extension up to 100m.

A **TP1E-0** with **TP1K-200** allows extension up to 200m.

A **TP3R-100** with **TP1K-200** allows extensions up to 300m.

## Typical Configuration



### Specifications

<b>General:</b>	
<b>Video Bandwidth</b>	<ul style="list-style-type: none"> <li>&gt; 100Mhz</li> </ul>
<b>Input Signals:</b>	
<b>TP1K-100</b>	<ul style="list-style-type: none"> <li>3 analogue channels (red, green and blue)</li> <li>0.7v positive, 100 ohm termination</li> <li>0.3v negative composite Sync mixed on green</li> <li>RJ45 connector (shielded)</li> </ul>
<b>Output Signals:</b>	
<b>TP1K-100</b>	<ul style="list-style-type: none"> <li>Analogue RGB (256) levels</li> <li>0.7v positive, 75 ohm termination</li> <li>Separate TTL horizontal and vertical syncs</li> <li>Polarity switchable (+ or -)</li> <li>15 pin High Density D socket</li> </ul>
<b>Power:</b>	
<b>TP1K-100</b>	<ul style="list-style-type: none"> <li>12v @ 0.06A supplied from driver down TP cable</li> <li>(optional external input on <b>TP1K-100</b>)</li> </ul>
<b>Mechanical:</b>	
<b>TP1K-100</b>	<ul style="list-style-type: none"> <li>Beige ABS plastic box, flame retardant to UL94-V0</li> <li>30mm high x 130mm wide x 100mm deep</li> </ul>
<b>INTERCONNECTING CABLE:</b>	
<b>Description</b>	<ul style="list-style-type: none"> <li>4-pair twisted pair EIA568B Category 5/5e (UTP or FTP)</li> <li>Pairing: 1/2 3/6 4/5 7/8 EIA568B or AT&amp;T 258A</li> </ul>