

TP3B-0 TRIPLE VIDEO DISTRIBUTION AMPLIFIER **DATASHEET**

Extends VGA video signals up to 100m 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-driver (the **TP3B-0** has three per case) and a line-receiving module. Versions are available to cover different distances, number of outputs, signal formats, power supply, enclosures, etc.

The **TP3B-0** has three, independent, line driving modules which transform the video signal into a form matched to Cat.5 UTP or FTP cable.

It accepts inputs of VGA type monitor signals from which a proprietary video output is constructed, modified by gating and time delays then amplified to differentially drive a balanced transmission line.

Enclosed in a small, flame retardant, plastic case, it takes power from an external power supply (**MP7**).

Line receiving modules are required 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 **TP1V-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.

The 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 cat.5e) 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.

Alternative receiver modules are available with differential delay compensation (sometimes called SKEW compensation) – see below.

This additional compensation is provided on **TP1K-100** modules and is normally only necessary for high resolutions and/or long cables.

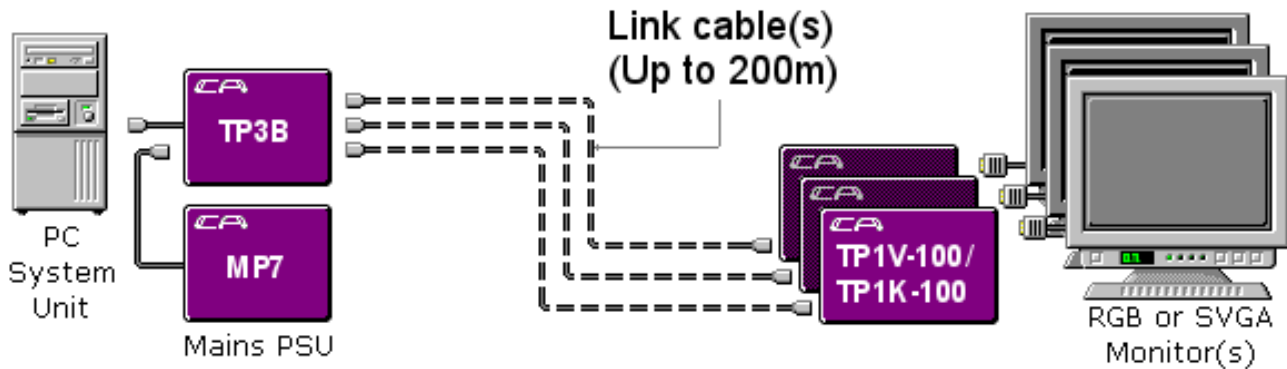
Cat 5 cable has four separate twisted pairs each with a different number of turns per unit length to reduce crosstalk between pairs. This results in each pair being a slightly different overall length which may have a significant effect on the video signal passed down the cable, similar to misconvergence, 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, which 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.

Typical Configuration



Specifications

General:	
Video Bandwidth	<ul style="list-style-type: none"> > 100Mhz
Input Signals:	
TP3B-0 (3 channels)	<ul style="list-style-type: none"> Analogue RGB (256) levels 0.7v positive, 75 ohm termination Separate TTL horizontal and vertical syncs (+ or -) 15 pin High Density D socket
Output Signals:	
TP3B-0 (3 outputs)	<ul style="list-style-type: none"> 3 analogue channels (red, green and blue) 0.7v positive, 100 ohm termination 0.3v negative composite Sync mixed on green RJ45 connector (shielded)
Power:	
TP3B-0	<ul style="list-style-type: none"> 12v @ 0.5A max.
Mechanical:	
TP3B-0	<ul style="list-style-type: none"> Beige ABS plastic box, flame retardant to UL94-V0 30mm high x 180mm wide x 100mm deep
INTERCONNECTING CABLE:	
Description	<ul style="list-style-type: none"> 4-pair twisted pair EIA568B Category 5/5e (UTP or FTP) Pairing: 1/2 3/6 4/5 7/8 EIA568B or AT&T 258A