



DIGITAL DISPLAY WORKING GROUP

DELIVERS *DVI*

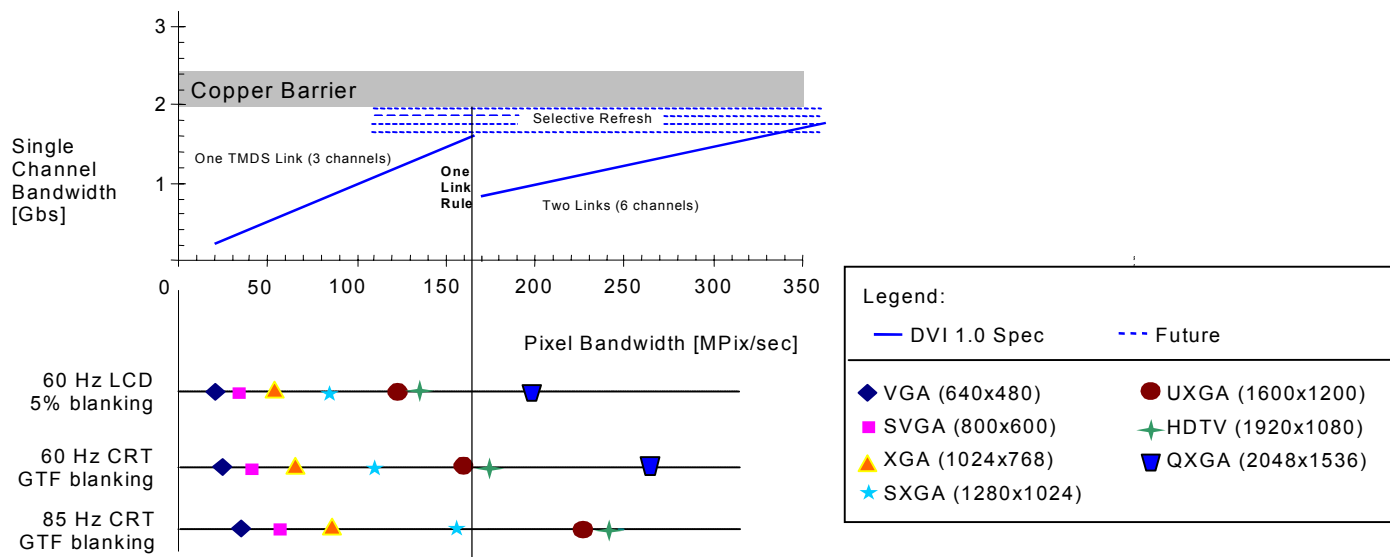
The Digital Visual Interface (DVI) specification provides a high-speed digital connection for visual data types that are display technology independent. The interface is primarily focused at providing a connection between a computer and its display device. The DVI specification meets the needs of all segments of the PC industry (workstation, desktop, laptop, etc) and will enable these different segments to unite around one monitor interface standard. This industry standard is non-royalty-bearing license.

The DVI interface enables:

1. Content to remain in the loss-less digital domain from creation to consumption
2. Higher than VGA bandwidths
3. Display technology independence
4. Plug and play through hot plug detection, EDID and DDC
5. Digital and Analog support in a single connector.

The digital only DVI connector is designed to coexist with the standard VGA connector. With the combined connector or the digital only connector the opportunity exists for the removal of the legacy VGA connector. The removal of the legacy VGA connector is anticipated to be driven strictly by business demands.

A digital interface for the computer to monitor interconnect has several benefits over the standard VGA connector. The new DVI connector manufactured with today's technology provides for a higher bandwidth interface more capable of meeting the high-resolution requirements of large displays. A digital interface ensures all content transferred over this interface remains in the loss-less digital domain from creation to consumption. The digital interface is developed with no assumption made as to the attached display technology.

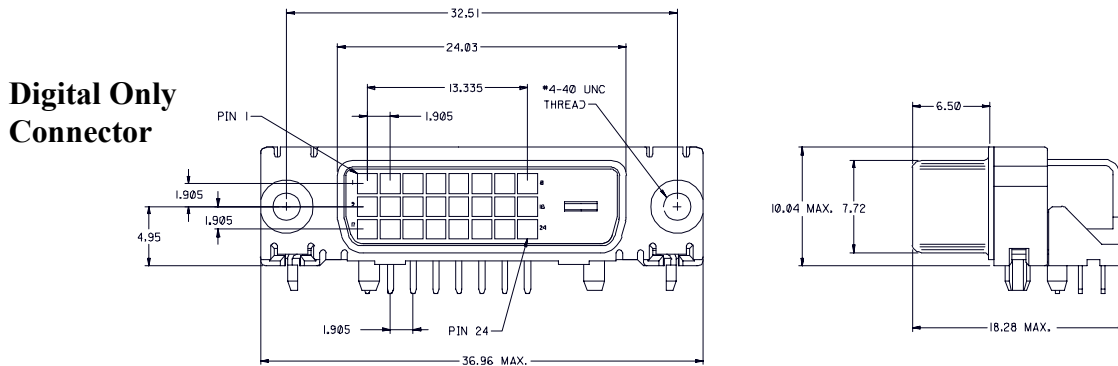


This figure represents the raw bandwidth available from each Transition Minimized Differential Signaling (TMDS) link. The three horizontal axes across the bottom of the figure represent the different overhead requirements of the various display technologies. To determine the number of links required for a specific application simply use the legend on the right to select the resolution, and then find the resolution on the horizontal axis that represents the display technology of interest. Once the resolution has been identified draw a vertical line to intersect the T.M.D.S. bandwidth curve, this is the bandwidth required for the resolution and display technology selected.

Digital Only Connector

The digital only connector contains 24 signal contacts organized in three rows of eight contacts. Signal pin assignments are listed

Pin	Signal Assignment	Pin	Signal Assignment	Pin	Signal Assignment
1	T.M.D.S. Data2-	9	T.M.D.S. Data1-	17	T.M.D.S. Data0-
2	T.M.D.S. Data2+	10	T.M.D.S. Data1+	18	T.M.D.S. Data0+
3	T.M.D.S. Data2/4 Shield	11	T.M.D.S. Data1/3 Shield	19	T.M.D.S. Data0/5 Shield
4	T.M.D.S. Data4-	12	T.M.D.S. Data3-	20	T.M.D.S. Data5-
5	T.M.D.S. Data4+	13	T.M.D.S. Data3+	21	T.M.D.S. Data5+
6	DDC Clock	14	+5V Power	22	T.M.D.S. Clock Shield
7	DDC Data	15	Ground (for +5V)	23	T.M.D.S. Clock+
8	No Connect	16	Hot Plug Detect	24	T.M.D.S. Clock-



Combined Connector (with micro-cross)

The mechanical interconnect includes 29 signal contacts, which are divided into two sections. The first section is organized as three rows of eight contacts. The second section contains five signals that are designed specifically for analog video signals. Horizontal sync, Vertical sync, R, G, and B are all required for analog implementations. Signal pin assignments are listed below

Pin	Signal Assignment	Pin	Signal Assignment	Pin	Signal Assignment
1	T.M.D.S. Data2-	9	T.M.D.S. Data1-	17	T.M.D.S. Data0-
2	T.M.D.S. Data2+	10	T.M.D.S. Data1+	18	T.M.D.S. Data0+
3	T.M.D.S. Data2/4 Shield	11	T.M.D.S. Data1/3 Shield	19	T.M.D.S. Data0/5 Shield
4	T.M.D.S. Data4-	12	T.M.D.S. Data3-	20	T.M.D.S. Data5-
5	T.M.D.S. Data4+	13	T.M.D.S. Data3+	21	T.M.D.S. Data5+
6	DDC Clock	14	+5V Power	22	T.M.D.S. Clock Shield
7	DDC Data	15	Ground (return for +5V, HSync, and VSync)	23	T.M.D.S. Clock+
8	Analog Vertical Sync	16	Hot Plug Detect	24	T.M.D.S. Clock-
C1	Analog Red	C2	Analog Green	C3	Analog Blue
C4	Analog Horizontal Sync	C5	Analog Ground (analog R, G, & B return)		