

Technical Description of LVDS to DVI Adapter (104607-)

This adapter is designed to convert single or dual LVDS video into DVI-I format video. It will accept LVDS inputs from 20-85MHz (in dual pixel input mode, the effective maximum pixel rate is 170MHz).

Inputs:

A 10 pin Hirose DF11 connector is used to bring in 9–24 VDC from a lab supply. 300mA is required @12VDC.

Power Input Connector J4: Hirose DF11-10DP-2DSA(20)
 Mating Connector: Hirose DF11-10DS-2C
 Mating Contacts: Hirose DF11-2428SC
 Tool: Hirose DF11-TA2428HC

1	+12V	2	+12V
3	+12V	4	+12V
5	No Connect	6	No Connect
7	Ground	8	Ground
9	Ground	10	Ground

There are two choices of input connectors for the input LVDS video, either a 26 pin MDR connector or a 30 pin Samtec QSH series connector. The pin assignment for the MDR connector follows the Camera Link standard (in the Medium and Full configuration).

Connector J2: 3M 10226-55G3VC 26 pin MDR
 Mating Cable: 3M Cable 14T26-SZLB-xxx-0LC

1	Ground	14	Ground
2	Odd RX IN3+	15	Odd RX IN3-
3	Odd RX CLK+	16	Odd RX CLK-
4	Odd RX IN2+	17	Odd RX IN2-
5	Odd RX IN1+	18	Odd RX IN1-
6	Odd RX IN0+	19	Odd RX IN0-
7	Reserved	20	Reserved
8	Even RX IN3+	21	Even RX IN3-
9	Even RX CLK+	22	Even RX CLK-
10	Even RX IN2+	23	Even RX IN2-
11	Even RX IN1+	24	Even RX IN1-
12	Even RX IN0+	25	Even RX IN0-
13	Ground	26	Ground

Connector J6: Samtec QSH-030-01-H-D-EM2
Mating Connector: See Samtec website for choices

A1	Ground	B1	Ground
A2	Ground	B2	Ground
A3	Ground	B3	Ground
A4	Odd RX IN3+	B4	Even RX IN3+
A5	Odd RX IN3-	B5	Even RX IN3-
A6	Ground	B6	Ground
A7	Odd RX CLK+	B7	Even RX CLK+
A8	Odd RX CLK-	B8	Even RX CLK-
A9	Ground	B9	Ground
A10	Odd RX IN2+	B10	Even RX IN2+
A11	Odd RX IN2-	B11	Even RX IN2-
A12	Ground	B12	Ground
A13	Odd RX IN1+	B13	Even RX IN1+
A14	Odd RX IN1-	B14	Even RX IN1-
A15	Ground	B15	Ground
A16	Odd RX IN0+	B16	Even RX IN0+
A17	Odd RX IN0-	B17	Even RX IN0-
A18	Ground	B18	Ground
A19	No Connect	B19	No Connect
A20	No Connect	B20	No Connect
A21	Ground	B21	Ground
A22	No Connect	B22	No Connect
A23	No Connect	B23	No Connect
A24	Ground	B24	Ground
A25	Ground	B25	Ground
A26	Ground	B26	Ground
A27	Ground	B27	Ground
A28	No Connect	B28	No Connect
A29	No Connect	B29	No Connect
A30	Ground	B30	Ground

Note: When using dual channel LVDS inputs, connect the first pixel to the EVEN channel LVDS receivers, and the second pixel to the ODD channel receivers (i.e. the LVDS to TMDS converter board starts the pixel count at zero).

Outputs:

The adapter has a DVI-I connector (P1) on it to bring out digital video in DVI format as well as analog video in RGBHV format. See the DVI specification for pinout information.

Connector J5 is a 6 pin connector for 2 external LED indicators. Choose an LED that works with a 180 ohm current limiting resistor to 3.3Volts. The 2 indicators are +3.3V power and video detect. These LEDs are duplicated on the PWB.

LED Connector J5: Hirose DF11-06DP-2DSA(20)
Mating Connector: Hirose DF11-6DS-2C
Mating Contacts: Hirose DF11-2428SC
Tool: Hirose DF11-TA2428HC

1	180ohm to GND	2	+3.3V
3	180ohm to GND	4	Video Detect
5	Reserved	6	Reserved

Jumpers:

Header J3 is used to configure the adapter board. Three items can be configured: the LVDS mapping, single/dual channel inputs, and 6/8 bit input video.

LVDS mapping: Four LVDS mappings are selectable via jumpers on the adapter board. These mappings are the same as the mappings available in T-Drive. Please reference Appendix A in the T-Drive Documentation for further information.

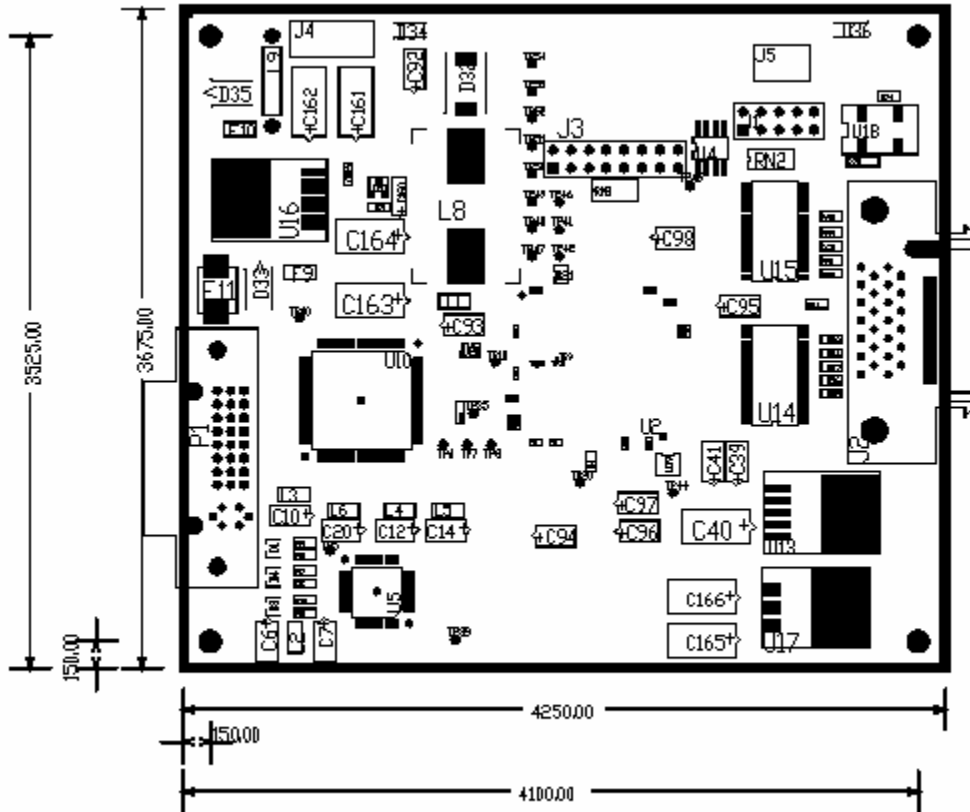
Map1 (pins 1 and 2)	Map0 (pins 3 and 4)	Function
Short	Short	Reserved
Short	Open	Westar Mapping
Open	Short	8 Bit (Channel 3=MSB)
Open	Open	6/8 Bit (Channel 3= LSB)

Single/Dual Pixel Inputs: Short pins 5 and 6 for single pixel operation. Leave open for dual pixel operation.

6/8 Bit Video: Short pins 7 and 8 for six bit operation. This jumper is required to force the LSBs low since the LVDS receiver sets the LSBs high when it detects the LVDS channel carrying the LSBs as unconnected or floating. Leave this jumper open for eight bit operation. Note this jumper is marked “TEST 1” on the circuit board.

Format:

The adapter is an exposed board and not enclosed in a box. The adapter is 4.25" x 3.675".



Ordering Information:

Part Number	Description
104607-	Samtec input connector installed
104607A	Vertical 3M MDR input connector installed
104607B	Right angle 3M MDR input connector installed
104607C	Both Samtec and vertical 3M input connectors installed
104607D	No input connector, no DVI connector, no analog output
104607E	Right angle 3M MDR input connector installed, no analog output
104607F	Samtec input connector installed, no analog output