

# Technical Application Note TAN2006007

*Wiring configuration for Firefly® MV miniature IEEE-1394 connector  
Revised March 4, 2010*

## 1.1. Subject

Technical Application Note (TAN2006007): Wiring configuration for Firefly MV miniature IEEE-1394 connector.

## 1.2. Applicable Product(s)

- *Firefly MV* part numbers **97-00100-06900** (mono) and **97-00100-07300** (color)

## 1.3. Application Note Description

The purpose of this Technical Application Note is to document the part number and pin configuration of the connector used on the *Firefly MV* model listed above. This will allow users to create their own custom IEEE-1394 cable for connecting to the miniature IEEE-1394 connector.



*Always power down all system components before connecting to the 6-pin IEEE-1394 connector. Do not 'hot plug.' Unlike standard IEEE connectors, the ground pin of this connector does not make contact before other circuits. If components are not powered down before connecting, power may make contact before ground, which may cause damage to the camera.*



*Do not de-solder the 6-pin IEEE-1394 connector from standard Firefly MV FFMV-03MT-XX models. Modifying the Firefly MV printed circuit board (PCB) in any way will void your Hardware Warranty.*

There are two connectors mounted on the back of the *Firefly MV* PCB, as shown Figure 1 below. Both connectors are made by JST Sales America and are available through [Digikey](#).

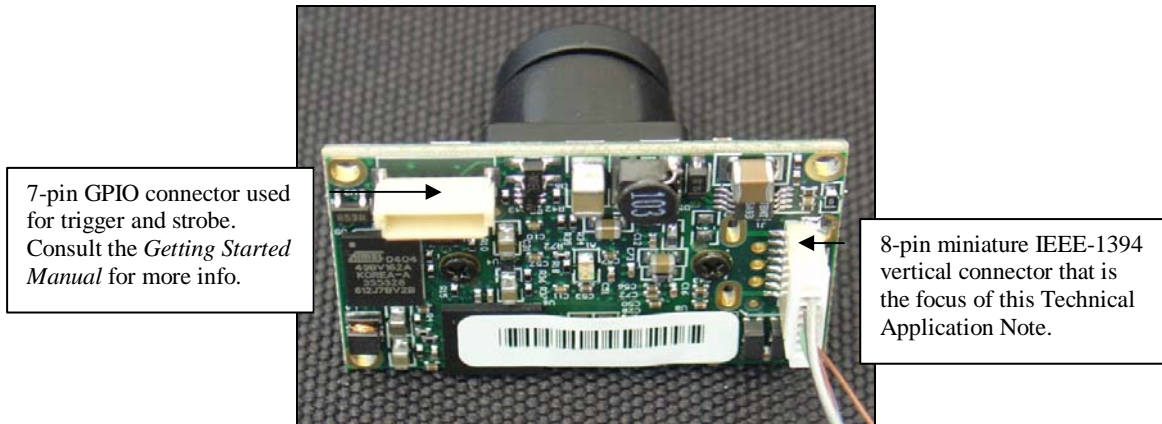


Figure 1: Back face of the Firefly MV printed circuit board

### 1.3.1. Part Numbers

The part number for the miniature 8-pin vertical IEEE-1394 connector that is connected to the Firefly MV printed circuit board is BM08B-SRSS-TB(LF)(SN). It is made by JST Sales America. The female JST counterpart for this connector, which users must source and purchase themselves, is part number SHR-08V-S-B. This can be purchased through [Digikey](#) using Digikey part number is 455-1383-ND. Users will also require JST crimping part number SSH-003T-PO.2 in order to wire into the female connector as shown in Figure 1 above. This can also be purchased through Digikey using Digikey part number 455-1561-1-ND.

### 1.3.2. Pin Configurations

#### 1.3.2.1. Miniature Vertical IEEE-1394 Connector

The pin configuration for the miniature vertical 8-pin IEEE-1394 JST connector, starting from the top (Pin 1) of the connector shown in Figure 1, is as follows:

Pin	Function
1	Shield
2	Power Input (+8 to +32 VDC)
3	DC GND
4	TPB-
5	TPB+
6	TPA-
7	TPA+
8	Shield

#### 1.3.2.2. Standard IEEE-1394 Connector

For user reference, the pin configuration for the standard 6-pin IEEE-1394 connector is shown below, as it appears on a cable:

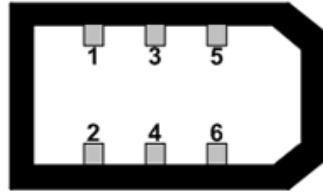


Figure 2: IEEE-1394 connector pin configuration (as it appears on cable)

Pin	Function
1	Power Input (+8 to +32 VDC)
2	DC GND
3	TPB-
4	TPB+
5	TPA-
6	TPA+

The signal on the Twisted Pair A is 1.0V DC. This voltage is then detected on the Twisted Pair B signal line; levels of 0.6 to 1.0V DC are used to determine when a device has been removed or added i.e. device attached  $\geq 1.0V$ , device not attached  $\leq 0.6V$

### 1.3.3. Mapping the Connection from Camera to Host

In a standard 1394 cable, the Twisted Pair A and Twisted Pair B connections transpose from camera to host in the following manner:

TPA-  $\rightarrow$  TPB-  
 TPA+  $\rightarrow$  TPB+  
 TPB-  $\rightarrow$  TPA-  
 TPB+  $\rightarrow$  TPA+

The following table shows how the connections should map from one end of a custom cable to another end. The left column shows the pins on the cable that connect to the 8-pin JST connector on the camera. The right column shows the pins on the cable that connect to a standard IEEE-1394 6-pin interface card connector.

Cable configuration for JST connector on camera		Cable configuration for host side
Pin 1 Shield	$\rightarrow$	Shield
Pin 2 Power Input	$\rightarrow$	Pin 1 Power Input
Pin 3 DC GND	$\rightarrow$	Pin 2 DC GND
Pin 4 TPB-	$\rightarrow$	Pin 5 TPA-
Pin 5 TPB+	$\rightarrow$	Pin 6 TPA+
Pin 6 TPA-	$\rightarrow$	Pin 3 TPB-
Pin 7 TPA+	$\rightarrow$	Pin 4 TPB+
Pin 8 Shield	$\rightarrow$	Shield

## 1.4. Additional Downloads and Support

Access more Technical Application Notes on the web at [www.ptgrey.com/support/downloads](http://www.ptgrey.com/support/downloads).

Point Grey Research Inc. endeavors to provide the highest level of technical support possible to our customers. Most support resources can be accessed through the Product Support section of our website: [www.ptgrey.com/support](http://www.ptgrey.com/support).

### Creating a Customer Login Account

The first step in accessing our technical support resources is to obtain a Customer Login Account. This requires a valid name, e-mail address, and camera serial number. To apply for a Customer Login Account go to [www.ptgrey.com/support/downloads/](http://www.ptgrey.com/support/downloads/).

### Knowledge Base

Our on-line knowledge base at [www.ptgrey.com/support/kb/](http://www.ptgrey.com/support/kb/) contains answers to some of the most common support questions. It is constantly updated, expanded, and refined to ensure that our customers have access to the latest information.

### Product Downloads

Customers with a Customer Login Account can access the latest software and firmware for their cameras from our downloads site at [www.ptgrey.com/support/downloads](http://www.ptgrey.com/support/downloads). We encourage our customers to keep their software and firmware up-to-date by downloading and installing the latest versions.

### Contacting Technical Support

Before contacting Technical Support, have you:

1. *Read the product documentation and user manual?*
2. *Searched the Knowledge Base?*
3. *Downloaded and installed the latest version of software and/or firmware?*

If you have done all the above and still can't find an answer to your question, contact our Technical Support team at [www.ptgrey.com/support/contact/](http://www.ptgrey.com/support/contact/).