SOFTHARD

MR family

Trigger Connector Specification

December 7, 2011

Lesna 52, 900 33 Marianka
Slovak Republic
http://www.softhard.sk

1 Table of Contents

2 Revision History

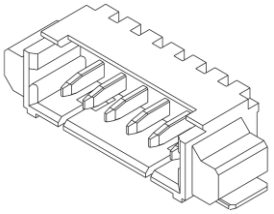
Revision	Date	Who	What
0.10	20.11.2007	SL	Initial draft created
0.20	04.04.2009	ML	Template added, electrical specification
0.30	05.04.2009	ML	GX3 and GX4 wording

3 Description

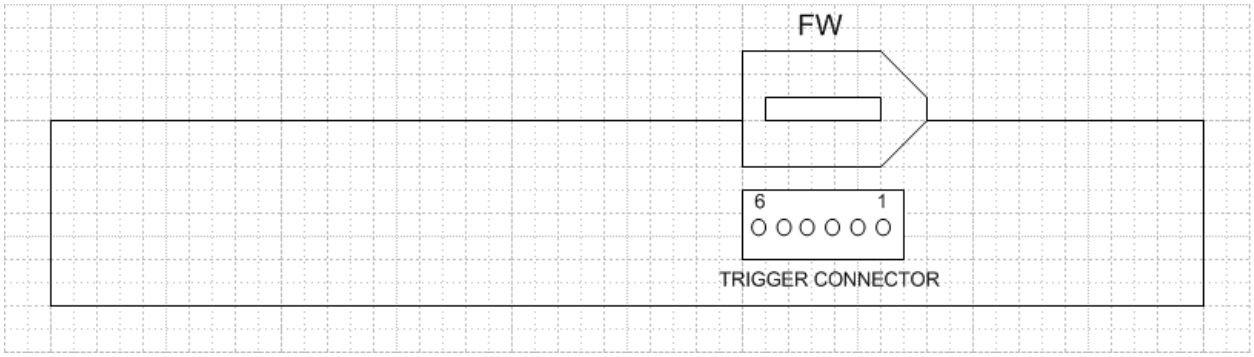
The document describes trigger connector of MR family of cameras.
Connector provides signals required for camera synchronization.

4 Connector type and location

Connector mounted on the camera PCB is:
Molex PN: 0532610671, or equivalent:



Schematically connector location and pin numbering shown on the image below:



Recommended mating parts are:
Molex PN: 0510210600 – Female Housing
Molex PN: 0500588000 – Crimp Terminal, Reel, AWG28…32, or
Molex PN: 0500798000 – Crimp Terminal, Reel, AWG26…28

5 Signal descriptions and parameters

5.1 Signal Table

pin	Name	description	Function
1	GND	Ground	Signal Ground
2	+3V	Internal power supply +3V	No external connection allowed, used for testing purposes only
3	GX2	Strobe Output	Output to trigger flash, or other use
4	GX1	Trigger Input	Input to Trigger exposure
5	GX4	Programmable IO	Function of this pin defined by firmware
6	GX3	Programmable IO	Function of this pin defined by firmware

5.2 Signal description

5.2.1 Ground

This signal connected to the internal signal ground

5.2.2 +3V

Connected internally to the camera +3V power supply. Used only for testing purposes. This pin must be left open and no load can be connected to it.

5.2.3 GX2 – Strobe Output

This pin connected to the FPGA output via serial resistor of 1KΩ. No additional ESD protection. Normal signal functionality is to represent the camera busy state. During the exposure and readout time the signal is low and it is high all other time.

5.2.4 GX1 – Trigger Input

This pin connected to the FPGA input via serial resistor of 1KΩ. No additional ESD protection. Normal signal functionality is to start the acquisition in triggering modes on signal edge. Software can select either positive or negative edge for triggering.

5.2.5 GX3 and GX4 – Programmable IO

These pins are connected to the FPGA pins via serial resistors of 1KΩ. No additional ESD protection. Functionality of these pins is defined by firmware. Generic camera firmware puts pins into high impedance state.

5.3 Electrical parameters

5.3.1 GXn DC characteristics

Parameter	Symbol	Min	Nom	Max	Units
Input voltage that indicates a Low logic level	V_{IL}	-	-	0.8	V
Input voltage that indicates a High logic level	V_{IH}	2.0	-	-	V
Input leakage current	I_L	-10	-	+10	µA
Input voltage extremes to avoid turning on I/O protection diodes	V_{IN}	-0.5	-	3.8	W
Output voltage that indicates a Low logic level	V_{OL}			0.4	V
Output voltage that indicates a High logic level	V_{OH}	2.9			V
Output current condition under which V_{OL} is tested	I_{OL}		0.4		mA
Output current condition under which V_{OH} is tested	I_{OH}		-1.0		mA