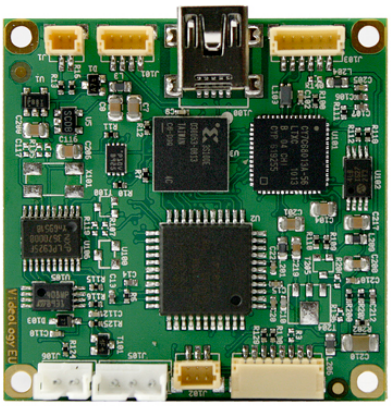
VIDEOLOGY

IMAGING SOLUTIONS INC.

Original Equipment Manufacturer

User Manual
Video Interface Board
60V002USB-C



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For technical assistance with this product, please contact the supplier from whom the product was purchased.

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1. Document History

Revision	Issue Date	Reason	CN#
Rev C	09-16-2014	Updated cable model number (60C1147), pg5	14-0087
Rev B	06-21-2011	Corrected board connecters and pin outs	11-0081
Rev A	02-10-2011	Added VLD-72V0xxx FG USB-C diagrams, put more connector information, added the power and signal type jumper matrix.	11-0003
Rev 1.0	03-01-2010	Initial release from Videology Europe b.v.	

2. Introduction

With the USB video interface board from Videology, an analog video signal can be taken in and be displayed on a PC via a USB2.0 interface. The board can accept either a CVBS signal or a Y/C signal in either PAL or NTSC format. A camera can be powered from the board's power supply (5V or 3.3 V), or an external power voltage can be connected to the board, to power a camera on a different voltage or higher current requirement (>200mA).

Also equipped with the board is a hardware snapshot trigger interface. By connecting the snap shot interface to ground for a short period a BMP file will be stored in the pc on a destination set in the viewer.

Several board parameters can be set via I^2C (in a later release this will be possible via the viewer). Items that can be set are:

- Contrast
- Color saturation
- Additional board settings
- PAL/NTSC mode
- CVBS/YC input

3. Board connectors

The board is equipped with several interface connectors. In the figure below you can find a simple drawing together with the connector number.

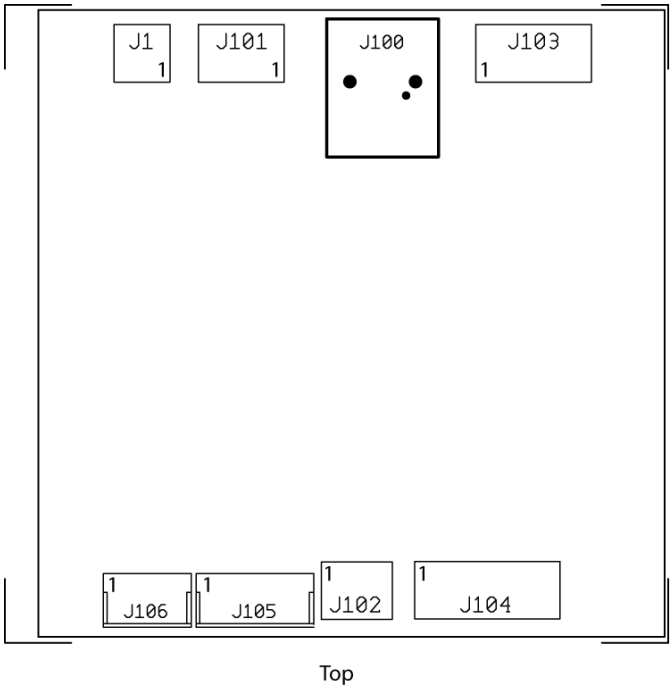

Figure 1: board connectors

The connectors have the following Function and pin out:

Connector J1 SNAP Shot Interface	
Pin #	Function
1	GND
2	Snap Trigger

Connector J101 GPIO Lines	
Pin #	Function
1	GND
2	GPIO 1
3	GPIO 2
4	3.3VDC

Connector J102 Micro IO Reserved – Not user accessible	
Pin #	Function
1	Tbd
2	GND
3	Tbd

Connector J104 Camera Board Interface	
Pin #	Function
1	Color signal from camera
2	GND
3	I2C data to board
4	I^2C clock to board
5	Ground I^2C
6	CVBS or Y from camera
7	GND
8	Power to camera (see note below)

Connector J106 External Power Interface	
Pin #	Function
1	GND
2	Optional external power for camera(see note below)

Connector J2 – Reserved – Not user accessible	
Pin #	Function
1	2.5VDC
2	TPT-D0
3	TPT-DI
4	TPTCK
5	TPTMS
6	GND

Connector J103 USB Interface	
Pin #	Function
1	+5 V power in USB
2	D-min
3	D-plus
4	GND
5	Shielding
6	Shielding

Connector J105 Camera Input Connector (CVBS only)	
Pin #	Function
1	Power to camera (see note below)
2	GND
3	CVBS IN

Connector J100 Micro USB Connector	
Pin #	Function
1	5VDC
2	D Minus
3	D Plus
4	GND – through resistor
5	GND
6	GND – through inductor
7	GND – through inductor
8	GND – through inductor

J100 Mini USB connector is optional

Note: *The use of an external power source is only required if the power voltage is different from 3.3V or 5V, or when the current to supply the camera is more than 200mA. In all other cases the camera can be supplied from the USB power. Note that for +3.3V jumper must be in and jumper R124 must be out.*

For +5V supply jumper R124 must be in and jumper R136 and R137 must be out (See figure 2).

If the board is powered by an external voltage R124 and R136 must be out.

Very carefully, please verify that this is the case, otherwise the board and or camera can be damaged.

Power to Camera			
Power	**R124 Jumper**	**R136 Jumper**	**R137 Jumper**
3.3V	OUT	IN	OUT
5V	IN	OUT	OUT
External or >200mA	OUT	OUT	IN

Video Signal Source to Camera					
Camera Mode		**R1**	**R2**	**R3**	**R17**
Y/C	Y from camera	OUT	IN	IN	IN
	Color from camera	OUT	IN	IN	IN
CVBS	via J105	IN	OUT	OUT	OUT
	via J104	OUT	OUT	OUT	IN

Note: Resistors R124, R136, and R137 are 0Ω 0402 size.
Resistors R1, R2, R3, and R7 are 39Ω 0402 size.

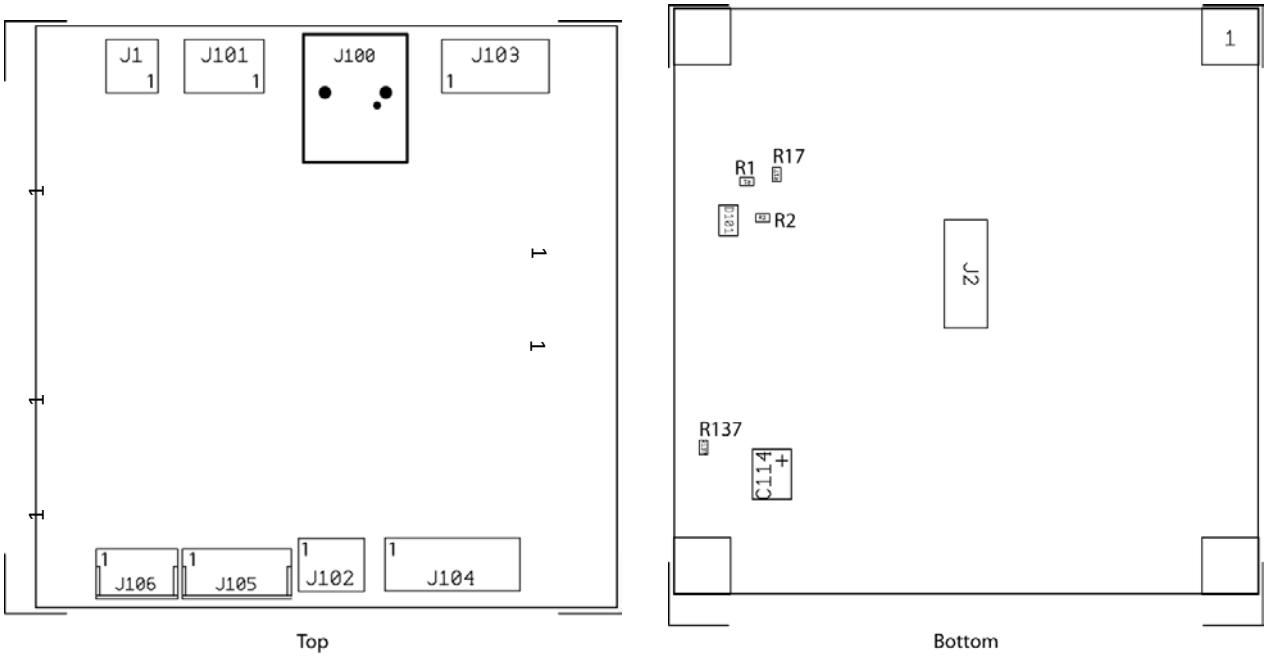

Figure 2: Position jumpers R124 (others tbd!)

Connector types		
Connector #	**Type number**	**Opposite side (wire side)**
J1	JST: BM02B-SRSS-TBT(LF)(SN)	SHR-02V-S - crimp SSH-003T-P0.2
J2	Not User Accessible	
J100	Wurth 65100516121	60C1147
J101	JST: BM04B-SRSS-TBT(LF)(SN)	SHR-04V-S - crimp SSH-003T-P0.2
J102	JST: BM03B-SRSS-TBT(LF)(SN)	SHR-03V-S - crimp SSH-003T-P0.2
J103	JST: BM06B-SRSS-TBT(LF)(SN)	SHR-06V-S - crimp SSH-003T-P0.2
J104	JST: SM08B-SRSS-TBT(LF)(SN)	SHR-02V-S - crimp SSH-003T-P0.2
J105	TYCO AMP: 292161-3	TYCO AMP 173977-3 CT 2 mm series
J106	TYCO AMP: 292161-2	TYCO AMP 173977-2 CT 2 mm series

4. I²C interface

Via connector J104 a I²C connection can be made with the board. The board will behave as a slave I²C device with the slave addresses:

- Write: 0x68
- Read: 0x69

The board only supports single read and write actions.

A command string for a write action:

Start	0x68	A	Register addr	A	Data	A	Stop

A command string for a read action:

Start	0x68	A	Register addr	Start	0x69	A	Data	N	Stop

Register address	Function	Read/ write
0x00-0x1f	Direct SAA7113 registers (write values are not stored!)	R/W
0x20-0x3f	Direct SAA7113 registers but value will be stored in board EEPROM	W
0x50	Store current setting in EEPROM	W
0x51	Restore factory settings	W
0x70	Switch between CVBS and YC as input (0/1)	W
0x71	Switch between PAL/NTSC (0/1)	W
0x72	Gain control Y	W
0x73	Gain control color	W

5. Contact Information

For technical assistance with this product, please contact the supplier from whom the product was purchased.

For OEM inquiries, contact Videology Imaging Solutions:

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