NA1012-ET

nano - converter

AIVION ®

HDMI to 3G/HD-SDI Converter
Extended Operating Temperature Range

Data Sheet
PCB Rev.C

Features

+ HDMI 1.4a video input

+ Resolution up to 1920x1080p @ 60fps

+ RGB444, YCbCr444 and YCbCr422 input format support

+ Two SDI outputs supporting bit rates due to SMPTE292M and SMPTE424M,1.485 Gbps, 1.485/1.001 Gbps, 2.97 Gbps, 2.97/1.001 Gbps

+ Supported HDMI/DVI input video formats

    + 1920x1080i at 50/59.94/60

    + 1920x1080p at 50/25/24/59.94/29.97/23.98/60/30

    + 1280x720p at 50/ 59.94/60

+ Video output connectors: 75 ohms MCX jacks

+ Native video signal processing and encoding only. No image scaling, no format conversion.

+ Power input + 5V up to +18V DC regulated

+ PCB dimensions 38mm x 38mm

General Description

NA1012-ET is a very small form factor HDMI to SDI converter module. It is designed for applications where minimum size and a wide operating temperature range have highest priority. SDI video output is available on two straight MCX coaxial connectors.
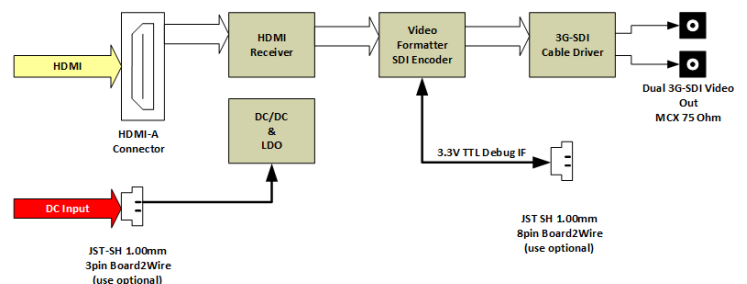
Applications

+ Integrated, very small sized HDMI to SDI conversion

+ Applications having -25C to +85C extended temperature range requirements

+ Industrial, medical, security, law enforcement, professional video

Important Note:

NA1012-ET converts video signals received from a DVI or HDMI source for transmission over an 3G/HD-SDI interface which requires clock signals to be in a well defined range. This might not be the case when standard HDMI or DVI output of desktop computers, laptop computers ot other consumer devices are used as signal source.

Quick Specification

• HDMI input over full size HDMI-A connector
• Video support up to 1920x1080@60fps
• Dual SDI output
• Supply voltage 12V DC typ.
• Operating ambient temperature range -25°C to +85°C
• Operating humidity range 20% to 80%
• Power consumption 2.3W (12V DC supply, 1080p60 video)
• Board size (L x W) 38mm x 38mm
• RoHS compliant (2002/05/EG and 2011/65/EU)
• UL/UR compliant

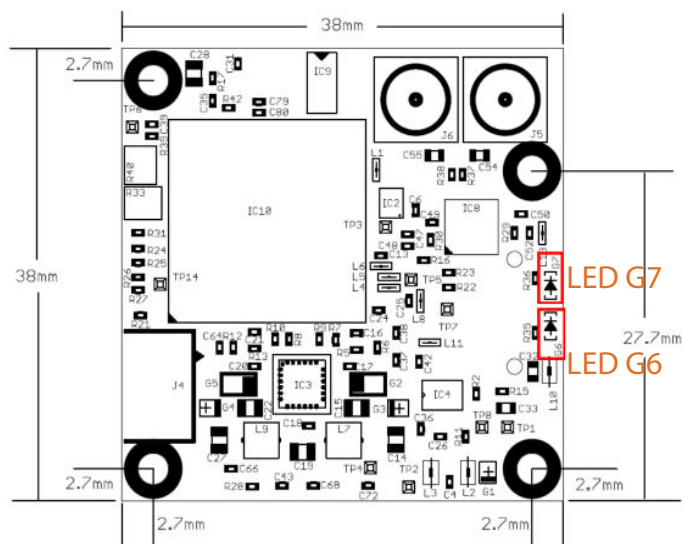**Internet:** www.aivion.com
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Board Mechanical (top view)

Connector Signal Pin Assignment

J1:

1	VIN, DC Supply voltage input
2*	Reset (has 4k7 pullup to VIN)
3	GND (0V)

*Pull pin 2 to GND(0V) for 1ms or longer for reset, leave open for normal operation.

J3:

5	RXD_TTL (3,3V debug interface data input)
6	TXD_TTL (3,3V debug interface data output)
4, 7	GND (0V)
1,2,3,8	Do not connect

J4:   Do not connect.

J5, J6:   SDI output connectors

I/O connector types on top side:
   J4: JST SH 1.00mm 6pin, SM06B-SRSS-TB
   J5: MCX 75 ohms, Samtec MCX7-J-P-H-RA-TH1
   J6: MCX 75 ohms, Samtec MCX7-J-P-H-RA-TH1
I/O connector types on bottom side:
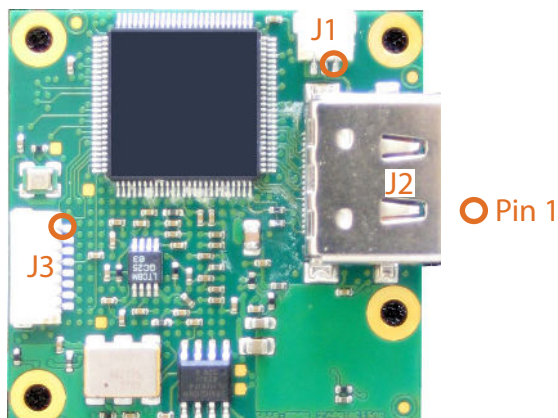   J1: JST SH 1.00mm 3pin, SM03B-SRSS-TB
   J2: HDMI-A Connector
   J3: JST SH 1.00mm 8pin, SM08B-SRSS-TB

LED indicators on top side:
   LED G6: ON = Power supply voltage applied
   LED G7: ON = Video input format valid

Board Bottom Side

Board Top Side

3D CAD model (Step Format) is available on request.

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Important Notes

1. NA1012-ET converts video signals received from a DVI or HDMI source for transmission over an 3G/HD-SDI interface which requires clock signals to be in a well defined range. This might not be the case when standard HDMI or DVI output of desktop computers, laptop computers ot other consumer devices are used as signal source.
The HDMI/DVI TMDS input clock requirements are:

3G mode:

148.5MHz or 148.5 MHz/1.001 +/- 60ppm

HD mode:

74.25MHz or 74.25MHz/1.001 +/- 80 ppm

2. The current device version does not support audio.

3. NA1012-ET does not process HDCP encrypted HDMI input signals.

4. The device detects and measures video input parameter and adjusts all necessary settings accordingly. Manual control is not required. However, the serial control interface can be used for status checking. Terminal software like TeraTerm can be used, whereas parameters have to be set to 38400bps, 8 data bits, no parity and 1 stop bit (8N1). No handshake must be used.

5. Depending on the system configuration and thermal as well as mechanical design of the system board, a heat sink might be required. In such a case the heat sink or heat pipe should contact to one of the devices marked with a yellow square (see images below),

Power and Environment

POWER INPUT:

Vin = 12V DC typ.

5V to 18V DC regulated supply input voltage range

CHARACTERISTICS:

P_D = 2.3W (12V DC, video 1080p60), I_{DD} = 0.19A typ. (T_A = 25°C, Humididty = 40%)

OPERATING CONDITIONS:

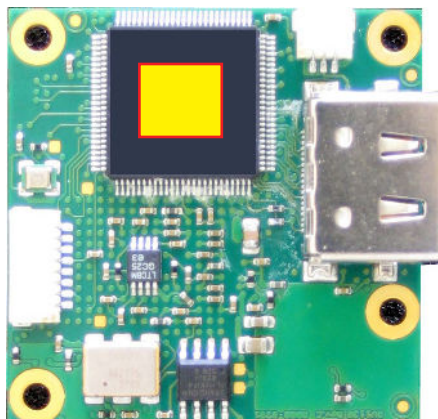Ambient temperature (min/max) -25°C/+85°C = -13°F/185°F

Humidity: 20% - 80%

STORAGE CONDITIONS

Ambient temperature (min/max) -25°C/+60°C = 14°F/140°F

Humidity: 20% - 80%

Board Bottom Side

Board Top Side

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