

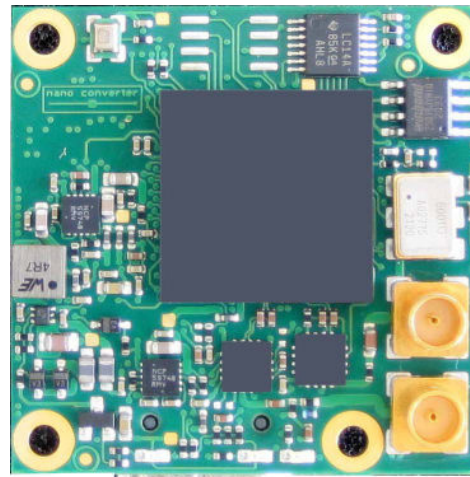
3G/HD-SDI to HDMI Converter
Extended Operating Temperature Range

Data Sheet

PCB Rev.C

Features

- + One 3G/HD-SDI input supporting the following bit rates due to SMPTE292M and SMPTE424M (level A)
 - + 1.485 Gbps, 1.485/1.001 Gbps
 - + 2.97 Gbps, 2.97/1.001 Gbps
- + 3G/HD-SDI loop out with reclocking
- + HDMI RGB444 video output
- + Supported input and output 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
- + SDI input/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

NA1011-ET is a very small form factor SDI to HDMI converter module. It is designed for applications where minimum size and a wide operating temperature range have highest priority.

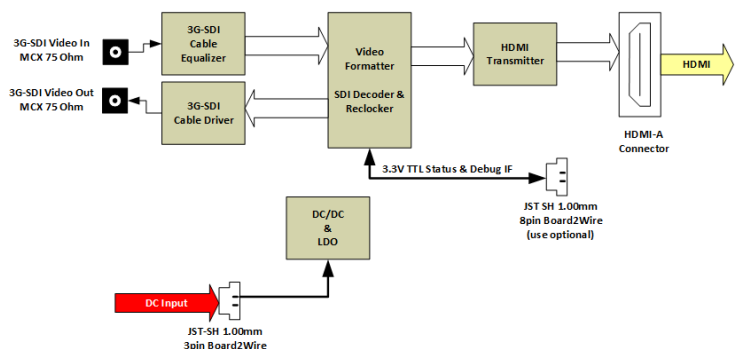
SDI video input and reclocked SDI output are available on two straight MCX coaxial connectors. HDMI output is available on a full size HDMI-A connector. HDMI output is always in RGB444 format.

Applications

- + Integrated, very small sized SDI to HDMI conversion
- + Applications having -25C to +85C extended temperature range requirements
- + Industrial, medical, security, law enforcement, professional video

Quick Specification

- HDMI output over full size HDMI-A connector
- Video support up to 1920x1080@60fps
- Reclocked SDI output
- Supply voltage 12V DC typ.
- Operating ambient temperature range -25°C to +85°C
- Operating humidity range 20% to 80%
- Power consumption 3W (12V DC supply, 1080p50 video)
- Board size (L x W) 38mm x 38mm
- RoHS compliant (2002/05/EG and 2011/65/EU)
- UL/UR compliant

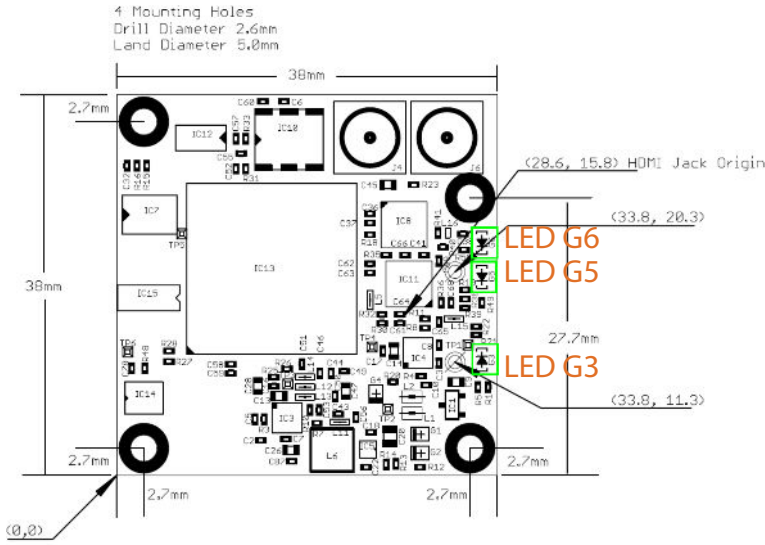


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Board Mechanical (top view)



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.
- J2:
- 2 SDI input status: present (>2,4V) or missing (<0,4V)
 - 5 RXD_TTL (3,3V debug interface data input)
 - 6 TXD_TTL (3,3V debug interface data output)
 - 4 GND (0V)
 - 1,3,7,8 Do not connect
- J5: Do not connect.
- J4: Reclocked SDI output connector
- J6: SDI input connector

I/O connector types on top side:

- J4: MCX 75 ohms, Samtec MCX7-J-P-H-RA-TH1
- J6: MCX 75 ohms, Samtec MCX7-J-P-H-RA-TH1

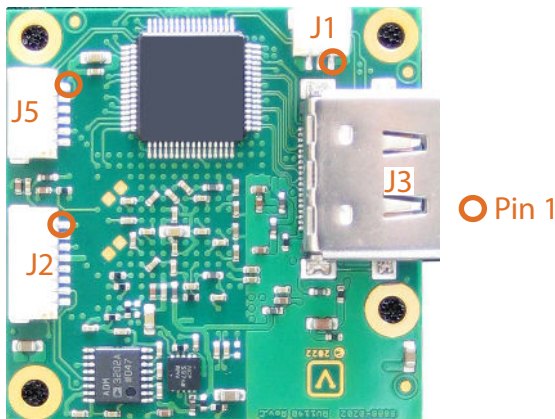
I/O connector types on bottom side:

- J1: JST SH 1.00mm 3pin, SM03B-SRSS-TB
- J2: JST SH 1.00mm 8pin, SM08B-SRSS-TB
- J3: HDMI-A Connector
- J5: JST SH 1.00mm 6pin, SM06B-SRSS-TB

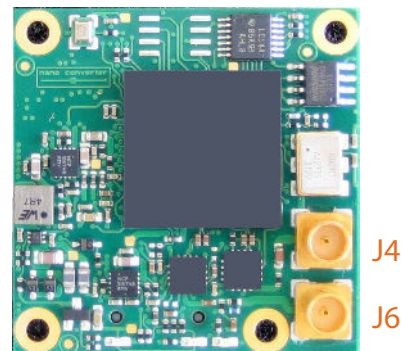
LED indicators on top side:

- LED G3: ON = Power supply voltage applied
- LED G5: ON = SDI input signal present
- LED G6: ON = Video input format valid

Board Bottom Side



Board Top Side



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

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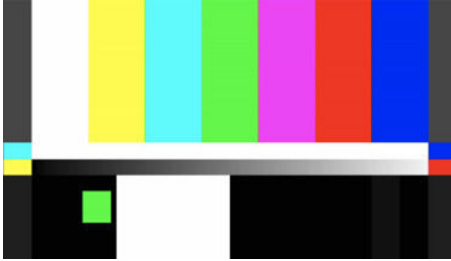
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Important Notes

1. The current device version does not support audio.
2. NA1011-ET does not encrypt video with HDCP.
3. In case of missing SDI input no SDI output is available.
4. In case of missing SDI input there will be a test pattern image on the HDMI output in 1920x1080p60 format.



5. 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.

6. 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:

V_{in} = 12V DC typ.

5V to 18V DC regulated supply input voltage range

CHARACTERISTICS:

P_D = 3W (12V DC, video 1080p50), I_{DD} = 0.25A typ.

(T_A = 25°C, Humidity = 40%)

OPERATING CONDITIONS:

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

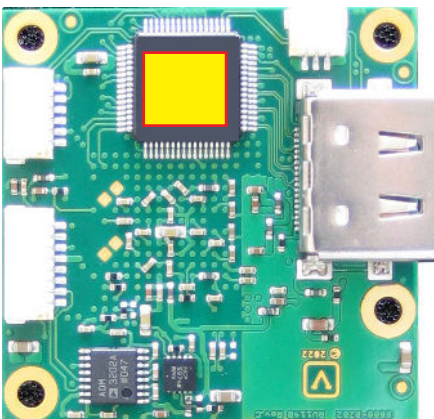
Humidity: 20% - 80%

STORAGE CONDITIONS

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

Humidity: 20% - 80%

Board Bottom Side



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Board Top Side

