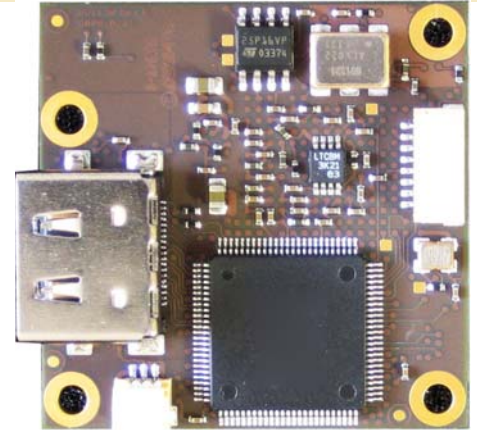


NanoConverter is a family of small form factor solutions for transmitting and receiving standard based video signals over different physical media such as coaxial cables and optical fibre.

Different video formats and interface standards are supported from the transmitter and receiver side including DVI, HDMI, CVBS, YPbPr, RGB, 3G-SDI, HD-SDI and SD-SDI.

NA1012 - Features

- + One HDMI input, HDMI 1.4a/DVI 1.0 compliant
- + RGB444, YCbCr444 and 422 input format support
- + Two SDI outputs supporting the following bit rates due to SMPTE292M and SMPTE424M
 - + 1.485 Gbps
 - + 1.485/1.001 Gbps
 - + 2.97 Gbps
 - + 2.97/1.001 Gbps
- + Supported output video formats
 - + 1080i at 50/59.94/60
 - + 1080p at 50/25/24/59.94/29.97/23.98/60/30
 - + 720p at 50/ 59.94/60
- + Output connectors: 75 ohms MCX jacks
- + Native video signal processing and formatting only. No image scaling, no format conversion.
- + Power input + 12V DC regulated
- + PCB dimensions 38mm x 38mm
- + NA1012-ET, extended operating temperature range version



NANOCONVERTER PRODUCTS are RoHS, REACH and UL/UR compliant.

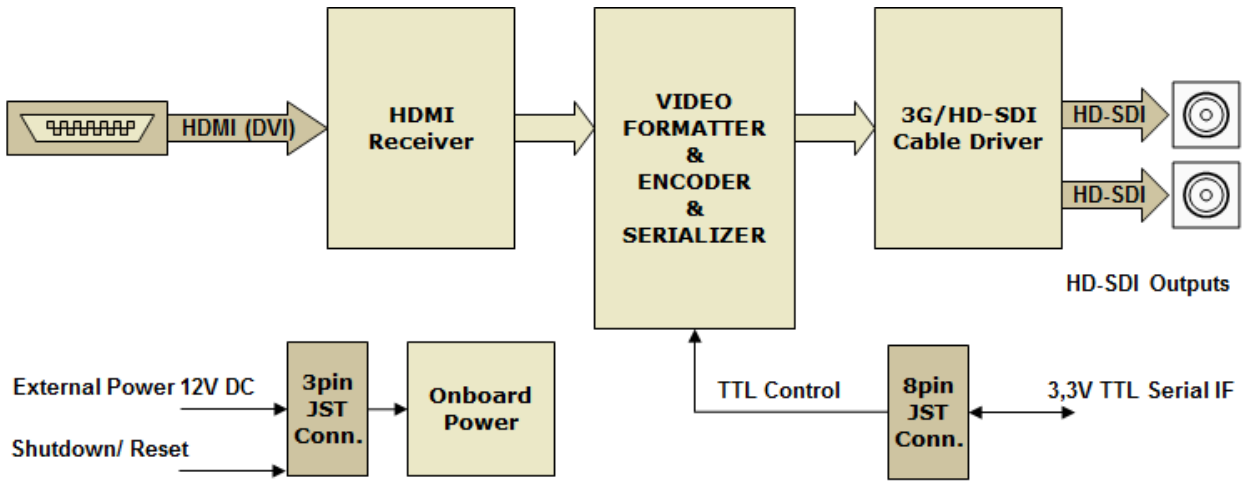
Important Note:

The NA1012 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 or other consumer devices are used as signal source.

The HDMI/DVI TMDS input clock requirements are:

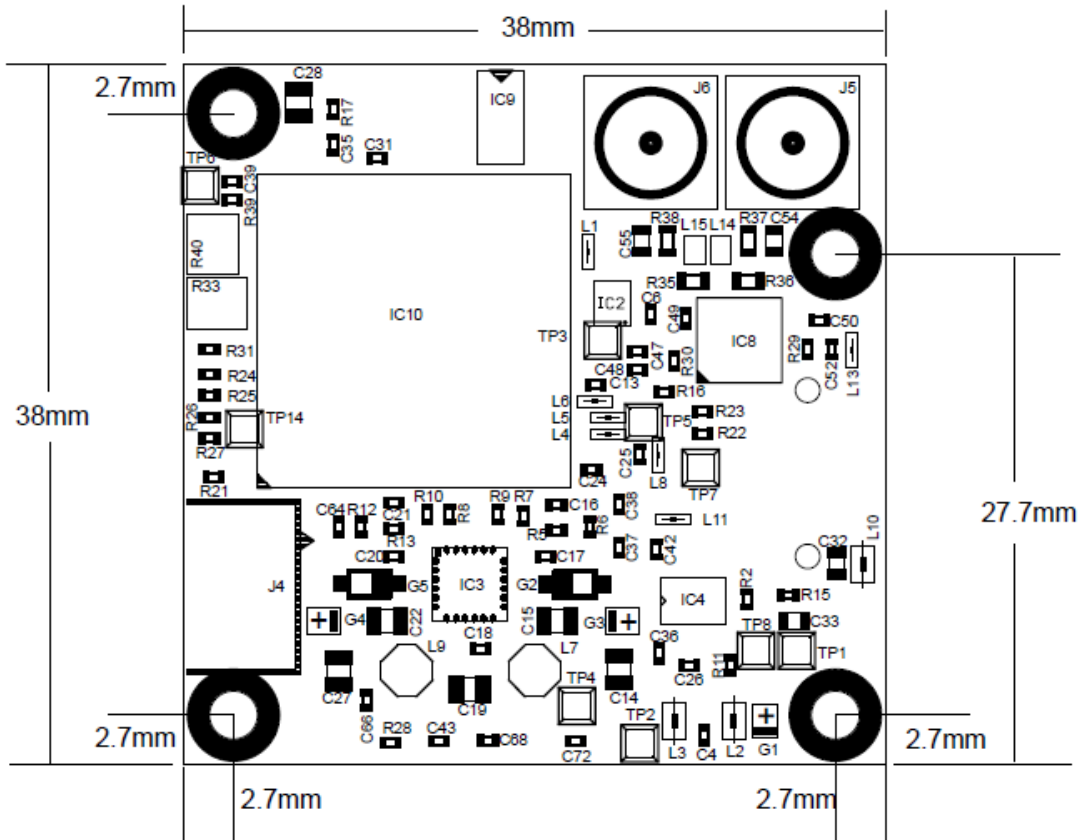
3G mode:	148.5MHz or 148.5 MHz/1.001	+/- 60ppm
HD mode:	74.25MHz or 74.25MHz/1.001	+/- 80 ppm

Block Diagram

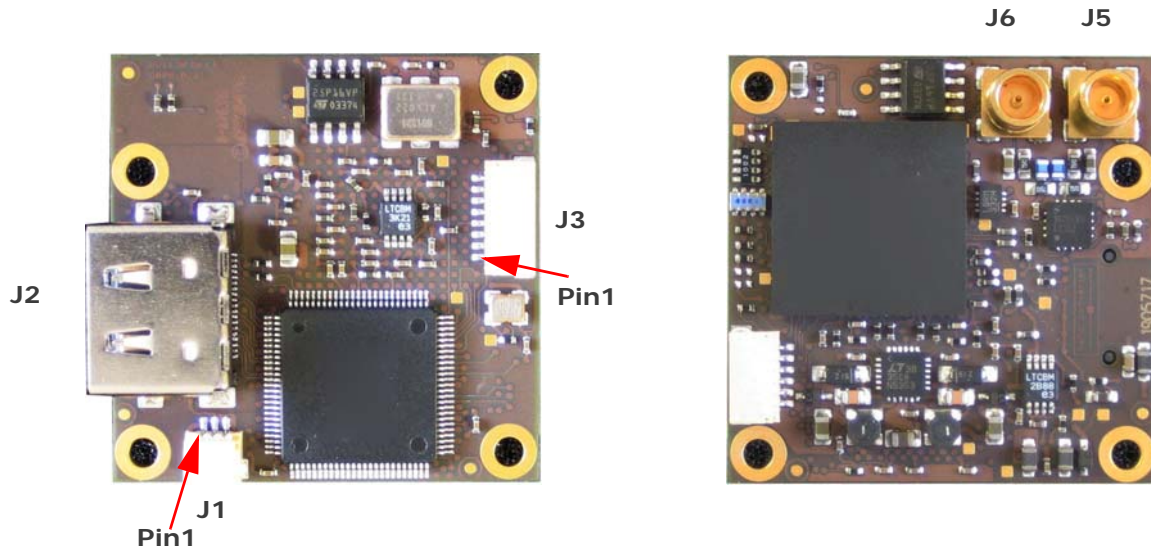


PCB Outline

4 Mounting Holes
Drill Diameter 2.6mm
Land Diameter 5.0mm



PCB Connectors



Power Connector J1 (JST SM03B-SRSS-TB)

Pin	Signal
1	Vin DC input, 5V to 18V
2*	Shutdown/Reset, has pull up resistor of 4,7kOhm to Vin
3	GND (0V)

*For device shutdown pull pin 2 to GND. Keep open or pull to Vin for normal operation. For device reset pull pin 2 to GND for a minimum of 1ms.

HDMI Input Connector J2 (Samtec HDMI-19-02-F-SM-PF)

(Pin assignment due to HDMI standard)

3G/HD-SDI Output Connectors J5, J6

(MCX 75Ohm)



Serial Control Interface J3 (JST SM08B-SRSS-TB)

Pin	Signal
1	reserved, do not connect
2	reserved, do not connect
3	reserved, do not connect
4	GND
5	RX data (host to device), 3.3V TTL, 4V max.
6	TX data (device to host), 3.3V TTL, 4V max.
7	GND
8	reserved, do not connect

Operating Range

Supply Voltage (Tolerance +/- 5%.) :

Vin (DC)	min	typ	max
	5V	12V	18V

Ambient operating temperature:

NA1012: 0°C to +50°C (32°F to 122°F), Humidity 20% to 70%

NA1012-ET: -25°C to +70°C (-13°F to 158°F), Humidity 20% to 70%

Input Current Requirements (at 25°C ambient temperature)

Vin	3G Operation	HD Operation	Condition
5V	510mA	450mA	Shutdown = Vin or OPEN
12V	220mA	200mA	Shutdown = Vin or OPEN
18V	160mA	145mA	Shutdown = Vin or OPEN
5-18V	<10mA	<10mA	Shutdown = GND

Notes:

1. 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. Any terminal software 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.
2. The current device version does not support audio.
3. The device version does not process HDCP encrypted HDMI input signals.