

Quantis

True randomness upon request



Quantis-OEM
(4 Mbit/s/sec)

QUANTIS APPLICATION NOTE



光技術をサポートする
株式会社オプトサイエンス

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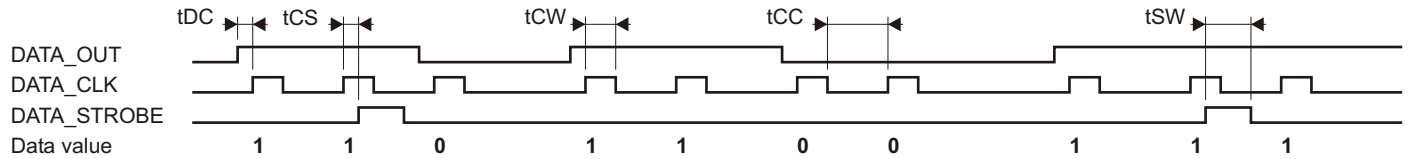


Functional description

The output pin DATA_OUT provides a random bit stream at an average rate of 4Mbit/s. The output pin DATA_CLK indicates a valid bit on DATA_OUT. A pulse is inserted on output pin DATA_STROBE every eighth DATA_CLK pulses. It allows to latch an external shift register (see below). The output pin STATUS is at logical high level under normal operation. In case of system failure, it goes to low level and the bit stream is inhibited. When output pin SHDN (shutdown) is at low level, the module is stopped and power consumption is reduced. SHDN is also used to reinitialize the module if STATUS is at low level. SHDN should be left open if not in use. MODULE_DETECTION is always at low level. It can be used to detect the presence of a module when several modules are used in a circuit.

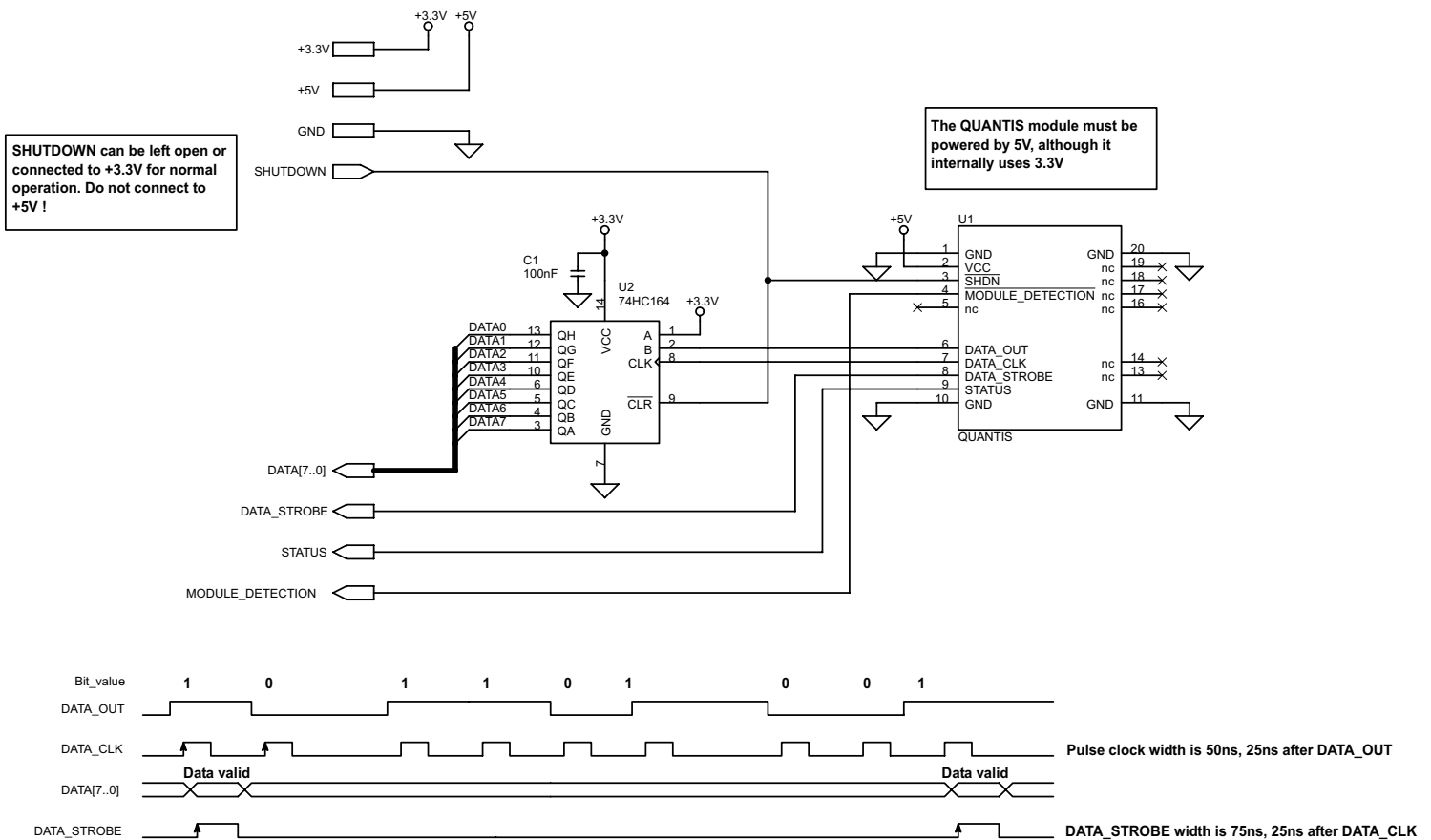
Switching characteristics

tDC	25ns	DATA_OUT before DATA_CLK
tCS	25ns	DATA_CLK before DATA_STROBE
tCW	50ns	DATA_CLK pulse width
tCC	100ns	Minimum time between two DATA_CLK pulses
tSW	75ns	DATA_STROBE pulse width



Read-out example

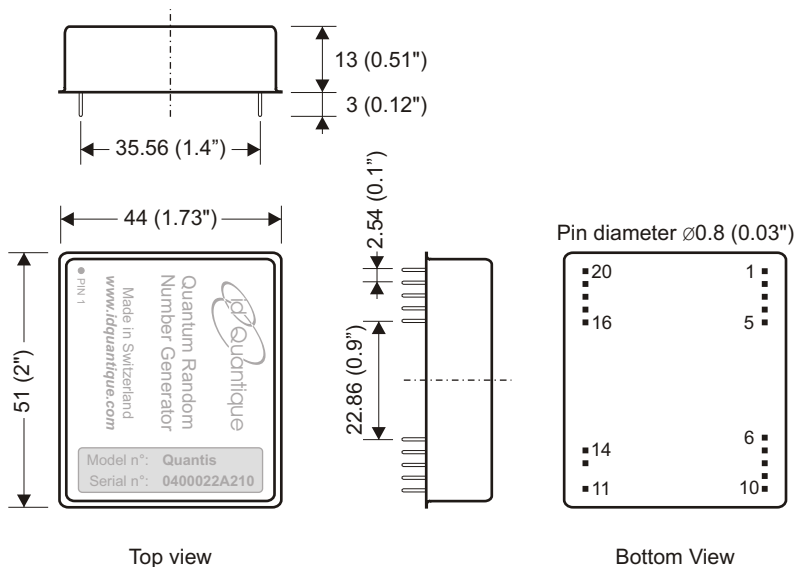
The schematic below shows a simple way to access the random bit stream generated by the Quantis module. A Quantis module is connected to an 8-bit Serial-In, Parallel-Out Shift Register. Shutdown can be left open or can be connected to +3.3V.



General specifications

Random bit rate	4 Mbit/s \pm 10%
Thermal noise contribution	< 1% (Fraction of random bits arising from thermal noise)
Input and output	LVTTTL max. 3.3V
Operating temperature	0 to +70°C
Storage temperature	-25 to +85°C
Weight	30g
Case	Metallic and shielded
Power supply (VCC)	+5V 10%
Power supply	< 40mA
Power supply (SHDN connected to GND)	< 500 A

Outline dimensions in mm (inches)



Pin Lay-out

1	GND	20	GND
2	VCC	19	NC (Reserved)
3	SHDN	18	NC (Reserved)
4	Module_Detection	17	NC (Reserved)
5	NC (Reserved)	16	NC (Reserved)
6	DATA_OUT	15	NO PIN
7	DATA_CLK	14	NC
8	DATA_STROBE	13	NC
9	STATUS	12	NO PIN
10	GND	11	GND

NC: No connection - Do not connect.

Ordering information and sales contact

Quantis-OEM:	OEM module generating a random bit stream of 4 Mbits/s
Quantis-PCI-1:	PCI card with 1 module generating a random bit stream of 4 Mbits/s
Quantis-PCI-4:	PCI card with 4 modules generating a random bit stream of 16 Mbits/s

For further information on this or other products, please contact *id Quantique* by phone: +41 (0)22 301 83 71, fax: +41 (0)22 301 83 79, or email: sales@idquantique.com.

Disclaimer

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