

XT2G201 DATASHEET

Ver-1.0

General Description

The XT2G201 is a programmable clock generator intended for high-performance consumer, networking, industrial, computing, and data-communication applications. Configurations may be stored in on-chip efuse or changed using I2C interface. The device may be configured to use one of two I2C addresses to allow multiple devices to be used in a system.

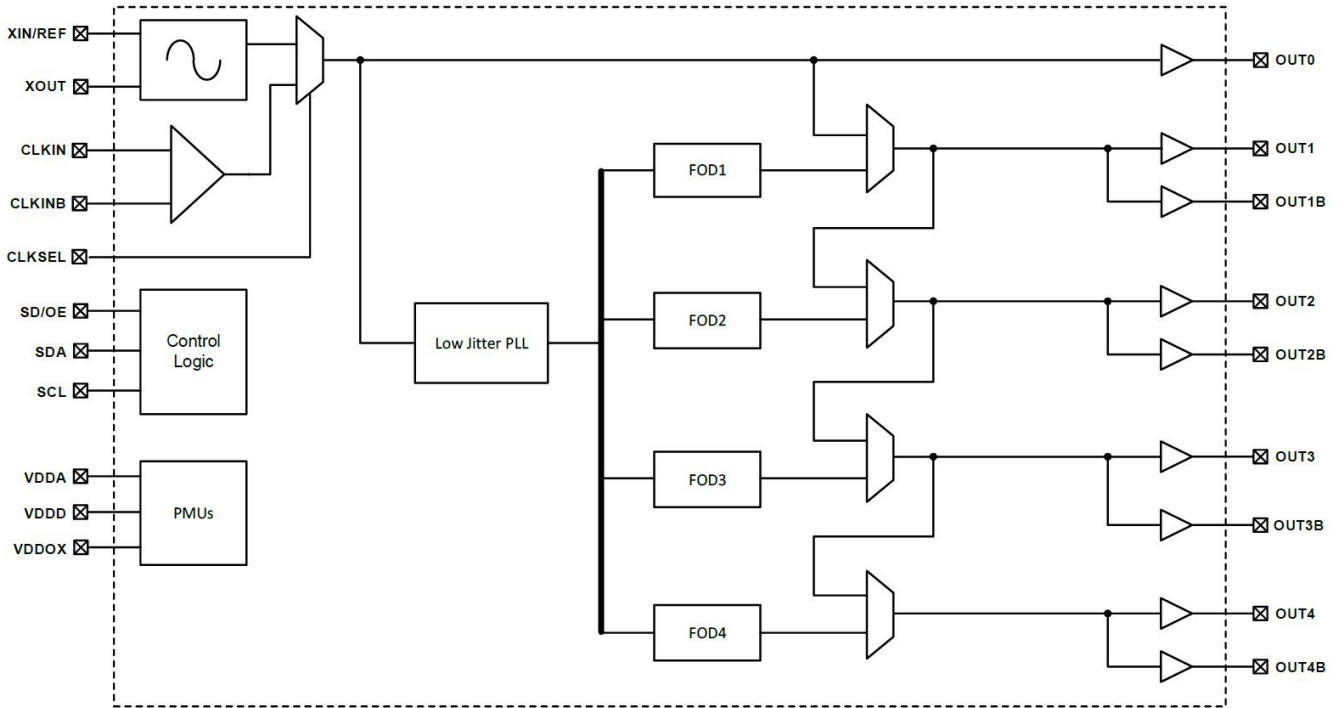
Applications

- Ethernet switch/router
- PCI Express 1.0/2.0/3.0/4.0/5.0/6.0 Spread Spectrum on
- Broadcast video/audio timing
- Multi-function printer
- Processor and FPGA clocking
- Any-frequency clock conversion
- MSAN/DSLAM/PON
- Fiber Channel, SAN
- Telecom line cards
- 1 GbE and 10 GbE

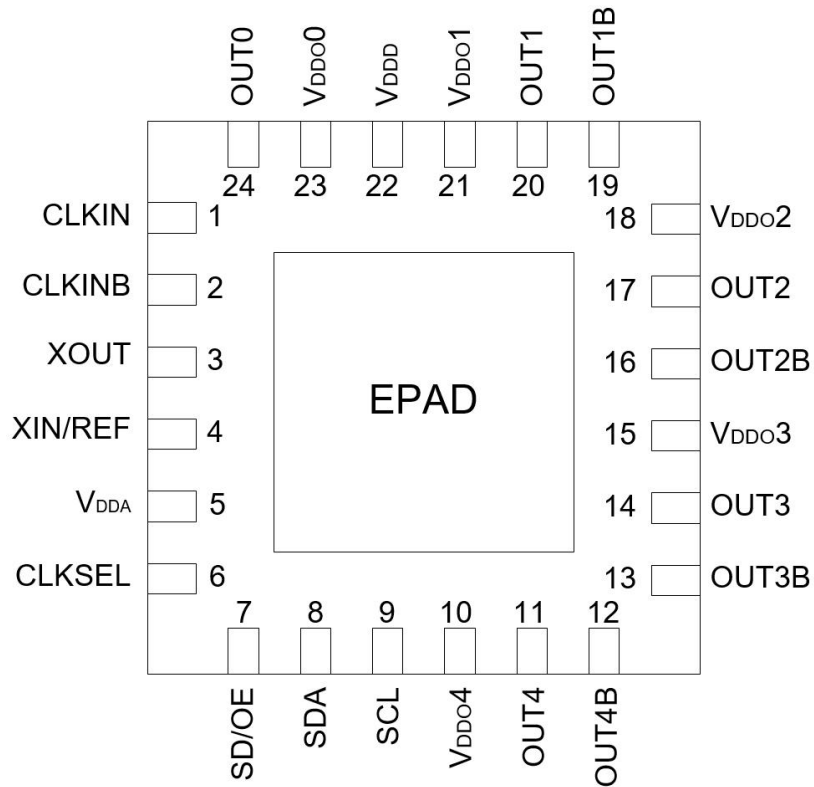
Features

- Flexible 1.8V, 2.5V, 3.3V power-rails
- High-performance, low phase noise PLL, <0.5ps RMS typical phase jitter on outputs
- Reference LVCMOS output clock
- Four universal output pairs individually configurable:
 - Differential (LVPECL, LVDS or HCSL)
 - 2 single-ended (2 LVCMOS in-phase or 180 degrees out of phase)
- I/O VDDs can be mixed and matched,
- supporting 1.8V(LVDS and LVCMOS), 2.5V, or 3.3V
- Redundant clock inputs with manual switchover
- Input frequency range:
 - Crystal frequency range: 8MHz to 100MHz
- Output frequency ranges:
 - LVCMOS Clock Outputs - 1MHz to 200MHz
 - LP-HCSL Clock Outputs - 1MHz to 200MHz
 - Other Differential Clock Outputs - 1MHz to 300MHz
- Programmable crystal load capacitance
- Power-down mode
- I2C serial programming interface
- Available in 4 × 4 mm 24-pin QFN package
- -40° to +85°C industrial temperature operation applications

Block Diagram:



Pin Configuration:



4 X 4 mm 24-QFN

Pin Descriptions:

Number	Name	Type	Description
1	CLKIN	Input	Differential clock input. Weak 200kΩ internal pull-down.
2	CLKINB	Input	Complementary differential clock input. Weak 200kΩ internal pull-down.
3	XOUT	Output	Crystal oscillator interface output.
4	XIN/REF	Input	Crystal oscillator interface input, or single-ended LVCMOS clock input. Input voltage needs to be below 1.8V.
5	VDDA	Power	Analog functions power supply pin. Connect to 1.8V to 3.3V. VDDA and VDDD should have the same voltage applied.
6	CLKSEL	Input	Input clock select. Selects the active input reference source in manual switchover mode. 0 = XIN/REF, XOUT (default). 1 = CLKIN, CLKINB.
7	SD/OE	Input	Enables/disables the outputs (OE) or powers down the chip (SD).
8	SDA	Input	I2C SDA input.
9	SCL	Input	I2C SCL input.
10	VDDO4	Power	Output power supply. Connect to 1.8 to 3.3V. Sets output voltage levels for OUT4/OUT4B.
11	OUT4	Output	Output clock 4.
12	OUT4B	Output	Complementary output clock 4.
13	OUT3B	Output	Complementary output clock 3.
14	OUT3	Output	Output clock 3.
15	VDDO3	Power	Output power supply. Connect to 1.8 to 3.3V. Sets output voltage levels for OUT3/OUT3B.
16	OUT2B	Output	Complementary output clock 2.
17	OUT2	Output	Output clock 2.
18	VDDO2	Power	Output power supply. Connect to 1.8 to 3.3V. Sets output voltage levels for OUT2/OUT2B.
19	OUT1B	Output	Complementary output clock 1.
20	OUT1	Output	Output clock 1.
21	VDDO1	Power	Output power supply. Connect to 1.8 to 3.3V. Sets output voltage levels for OUT1/OUT1B.
22	VDDD	Power	Connect to 1.8 to 3.3V. VDDA and VDDD should have the same voltage applied.
23	VDDO0	Power	Power supply pin for OUT0. Connect to 1.8 to 3.3V. Sets output voltage levels for OUT0.
24	OUT0	Output	Output clock 0, the pin acts as a LVCMOS reference output.
25	GND	GND	Connect to ground pad.