

PRL51X

ULN Programmable Any-Rate Family of XO/VCXO

Key Features

XO, VCXO & TS-XO Modes

Family of Products

- Single
- Dual
- Quad
- Any-Rate (I2C)

Any-Rate Programmable Frequency

- 0.2 to 3000 MHz

Ultra-Low Jitter

- 83 fs Typ RMS - PRL51X
- 120 fs Typ RMS - PRL51Xe

Tight Temperature Stability Option

- ± 3 ppm (-40 - +85 °C) - TS-XO Mode

Different Supply Voltages

- 3.3V
- 2.5V
- 1.8V
- Auto Detect

Different O/P Formats

- CMOS (Differential & Single Ended)
- LVDS
- CML
- LVPECL
- HCSL
- HCSL Fast

Different Package Sizes

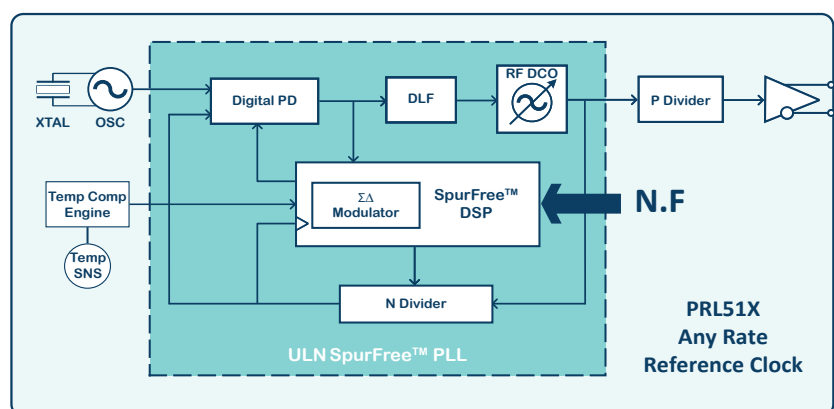
- 3225
- Custom

PRL51X is a Quartz Crystal based Ultra-Low Noise Programmable Any-Rate Family of XOs and VCXOs. **PRL51X** is based on Pearl's patented **SpurFree™** Technology; a novel Phase Locked Loop (PLL) architecture that enjoys all the merits of a Sigma-Delta Fractional-N PLL architecture yet behaves like an integer-N PLL. The result is outstanding spur-free phase noise behavior with extremely low integrated phase jitter.

PRL51X comes in a proprietary plastic package including the CMOS die and the quartz crystal.

PRL51Xe is a derivative product family from **PRL51X** utilizing a different quartz crystal thus achieving a slightly higher RMS jitter (120fs).

PRL51Xe is a more economical option catering for a different set of applications that are more sensitive to cost and still needs an ultra-low noise reference clock.



PRL51X supports XO, VCXO and DCXO Modes, Single, Dual, Quad and Any-Rate (I2C) Modes and a tight temperature stability option with a ± 3 ppm (-40 - +85 °C).

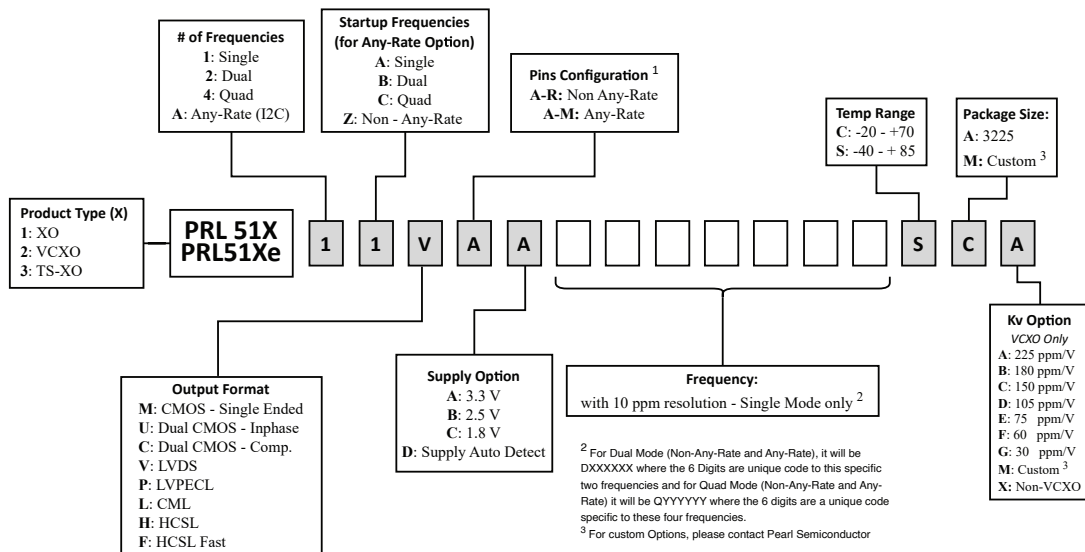
PRL51X has a superior noise performance with typical 90 fs integrated RMS phase jitter (12kHz to 20MHz) for any frequency up to 3GHz, thanks to the patented **SpurFree™** Technology.

Typical applications requiring ultra-low noise such as 100G/200G/400G OTN, Coherent Optics, 56G/112G/224G PAM Clocking, 12G-SDI/24G-SDI Broadcasting, Datacenter & FPGA/ASIC Clocking.

PRL51X - ULN Programmable Any-Rate Family of XO/VCXO

Ordering Guide

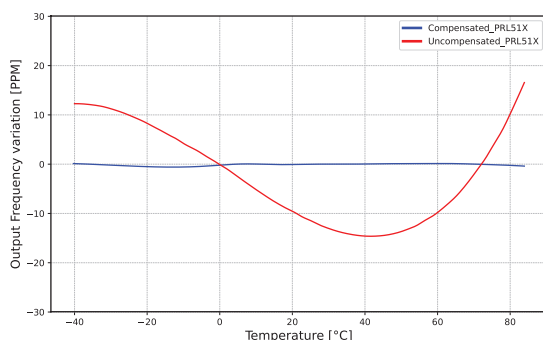
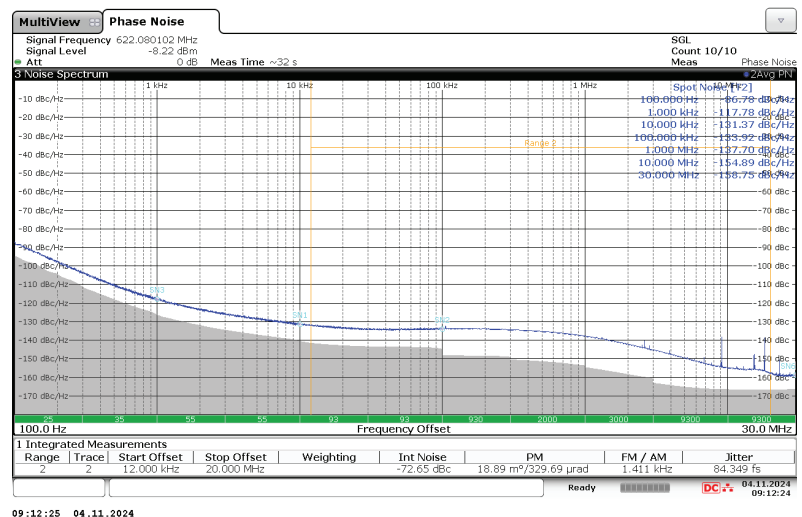
PRL51X/PRL51Xe families come with a vast programmability making it able to generate 100's of different part numbers. Customers can customize the part number using **PRL51X/PRL51Xe** ordering guide.



Superior Performance

PRL51X

- Output Frequency = 622.08 MHz
- LVDS Output
- Very Low Spur Power Levels
- Integrated RMS Phase Jitter = 84 fs (12kHz to 20MHz integration bandwidth)



PRL51X/PRL51Xe - TS-XO Mode

- Operating Temperature Range: -40 to +85 °C
- Frequency Stability without temperature compensation: ±20 ppm.
- Frequency Stability with temperature compensation: ±3 ppm.