RENESAS

BIG IDEAS FOR EVERY SPACE

JITTER ATTENUATORS WITH FREQUENCY TRANSLATION

Renesas jitter attenuation products use a low-jitter external reference and control circuitry to remove unwanted noise from one or more input clock signals. Some devices use VCXOs or simple crystals for this reference. Innovative techniques allow the use of fixed-frequency crystals rather than hard-to-find pullable crystal devices. In addition, our jitter attenuators also include a frequency translation stage that allows the output frequency or frequencies to be different than the input frequency.

The integration of a jitter attenuator and frequency translator simplifies the circuit and minimizes the BOM. Renesas''s rich portfolio of jitter attenuators and frequency translators come in varying levels of performance, power, and programmability to address the needs of virtually any application. The portfolio supports various single-ended and differential signaling levels.

Benefits

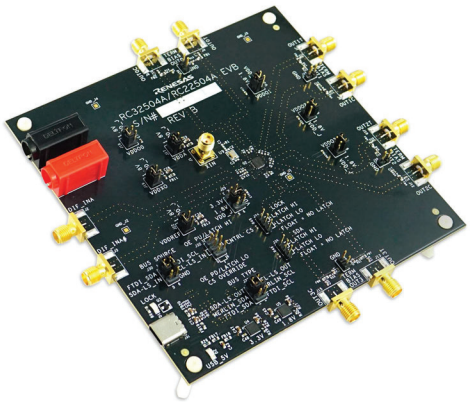
- Combines flexibility with high performance
- Simplifies solving complex timing problems
- Enables last minute changes to clocking frequency without disrupting design cycle
- Reduces BOM cost, saves board space
- Powers up in user defined configuration

Features

- RMS phase jitter <100 fs (12 kHz to 20 MHz)
- Up to four input clocks ranging from 8 kHz up to 1000 MHz
- Input clocks standards: LVPECL, LVDS, LVHSTL, HCSL or LVCMOS
- Output frequency range: 8 kHz to 2.5 GHz
- I^2C / SPI interfaces and external I2C memory access to registers

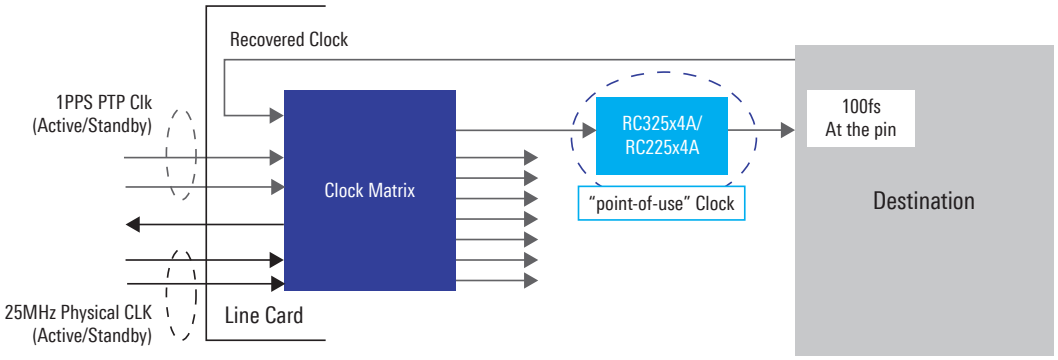
Applications

- Networking equipment
- High-end audio / video systems
- 10 / 40 / 100 / 400 GbE line cards



JITTER ATTENUATORS

Typical Application Diagram

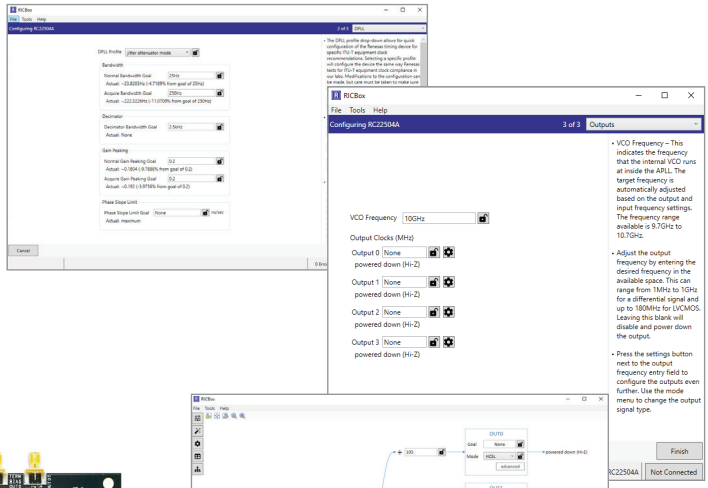


Featured Jitter Attenuator Products

Part #	Jitter	Inputs	Outputs	Output Freq.	Output type	Package
8V41NS0412	95 fs	2	12	5MHz-1GHz	HCSL	10x10 mm QFN
RC32504/14	79 fs	1	4	5MHz-1GHz	HCSL, LVCMOS	4x4mm QFN
RC32012	150 fs	10	24	0.5Hz-1GHz	HSTL, LVCMOS, LVDS, LVHSTL, LVPECL, LVTTL	10x10 mm QFN
8V19N492-39	46 fs	2	15	20MHz-3.9GHz	LVDS, LVPECL	10x10 mm QFN

Making Complex Configurations Simple

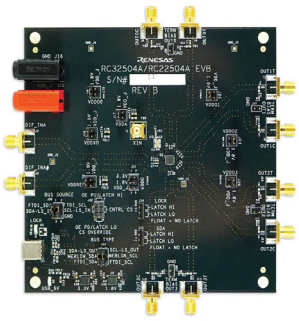
Renesas RICBox is an easy-to-use Windows®-based software platform enabling system designers to configure, program and monitor sophisticated Renesas devices with an intuitive and flexible GUI.



FemtoClock™2 Evaluation Kit

Features

- Stand-alone evaluation board configuration
- Phase noise and power estimation
- PLL gain and phase transfer plots
- Input and output termination generator



To request samples, download documentation or learn more visit: **renesas.com/ja**

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