Adaptive Linear Power™ 12 V ADSL-CO Line Driver

AD8393

FEATURES

Low 600 mW Total Power Consumption
- **Includes 19.8 dBm Line Power**
- **MTPR –73 dBc, 12 V Supply**

Requires Only a Single 12 V Power Supply
- **Can Achieve over 36 V p-p Differential Output while Processing Signals with Occasional Peaks (Such as Discrete Multitone)**
- **Analog Devices' Adaptive Linear Power Architecture Enables High Port Density Central Office Line Cards**

Current Feedback Amplifier (CFB)
Greater than 500 mA Peak Output Drive Current Capability
4 Power Modes Controlled by 2 Logic Pins
AD8393-1 Input Range of 0.75 V to 1.2 V
AD8393-2 Input Range of 0.3 V to 0.75 V

APPLICATIONS

ADSL DSLAMs, DLC
xDSL Line Cards using DMT Signals
Other Application Signals with Occasional Peaks

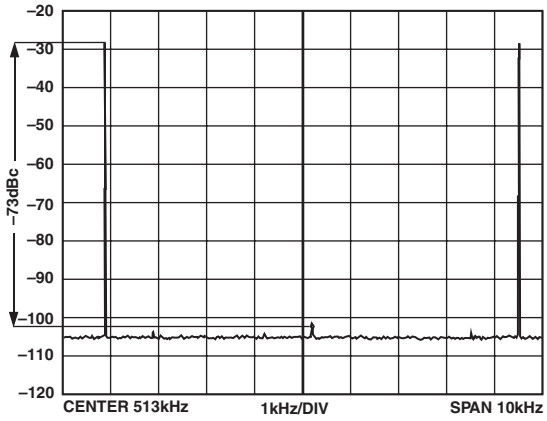

Figure 1. AD8393-1 MTPR Performance (DMT Waveform, 5.5 CF, Line Power = 19.8 dBm)

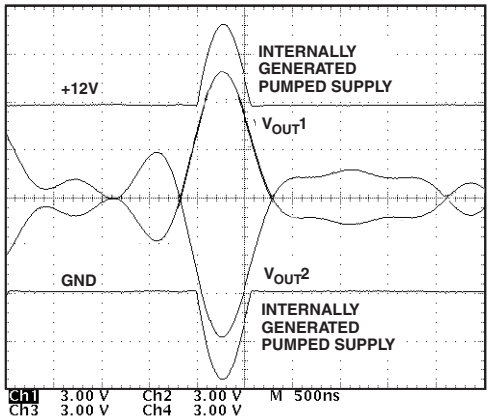

Figure 2. Typical Output and Pumped Supplies Processing a 5.5 CF Waveform

GENERAL DESCRIPTION

The AD8393 is a low power, high output current, single-supply, ADSL-CO line driver that features ADI's patent pending Adaptive Linear Power (ALP) architecture. The AD8393 ALP architecture offers increased port density in ADSL Central Office (CO) line card designs through improved line driver efficiency and simplified system design by operating from a single 12 V supply. The AD8393 ALP amplifier can provide 20.4 dBm of line power from a single 12 V dc supply, surpassing the efficiency of typical class AB line drivers. ADSL signals applied to the inputs of the AD8393 modulate internal driver supplies coincidentally with the peak voltages contained in Discrete Multitone (DMT) signals. The internal supplies modulated by the ALP circuit allow the AD8393 to operate from a lower supply voltage that improves efficiency and simplifies CO line card designs. Crest factors (CF) up to 6.5 can be accommodated by the AD8393.

Potentially useful in non-DSL applications, the ALP architecture dramatically improves power efficiency when processing signals with occasional peaks by responding to these signal peaks and instantaneously raising the internal supply voltage when peak power is needed. The AD8393 is capable of delivering over 36 V p–p of signal to a differential load, while operating on a single 12 V supply.

To inquire about AD8393 samples and an evaluation board, contact Analog Devices via email at: high_current_drivers.com@analog.com

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