THE TELOS ALLIANCE

PRECISION DELAY

YOUR STATION...IN SYNC AND ON TIME.

OVERVIEW

Your Station... In Sync And On Time

For nearly a decade, 25-Seven® has been helping you solve your station's time management problems. Now we've got something for your toughest challenges. Precision Delay, our fourth specialized product, addresses applications such as drift between analog and HD Radio transmission signals and broadcast repeater synchronization.

FEATURES

Keeping HD Radio in Sync with Analog

With more and more vehicles equipped with HD Radio receivers, stations can't afford confusing listener experiences due to blending out-of-sync analog and HD Radio signals.

Precision Delay lets you precisely set offset measurements by querying and retrieving them over IP from your BELAR FMHD1 or AUDEMAT Golden Eagle modulation monitor.

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BELAR FMHD1

Take Precision Delay Out to the Ballgame

When sports fans listen to radio play-by-play at the stadium, they may not know if they are in the right ballpark when HD Radio diversity delay is running. Getting your station into "ball-game mode" means switching the HD Radio signal on and off without annoying listeners or impacting ratings. Precision Delay lets you smoothly build in and out of delay.

Watermark Friendly

Protecting the integrity of ratings watermark codes during delay builds and exits presents special challenges. Precision Delay's unique Watermark Safe Mode helps accommodate the time-based structure of watermark encoding. Our algorithms never alter pitch, so unlike other time manipulation processes, they never undermine the critical frequencies upon which watermarking depends.

Small Delays: Keep Boosters In Sync

Proper time alignment is critical to keeping main signals in sync with boosters or other transmitters relaying on the same frequency. Precision Delay lets you adjust delays by increments as small as a single sample.

Large Delays: Shift Across Time Zones

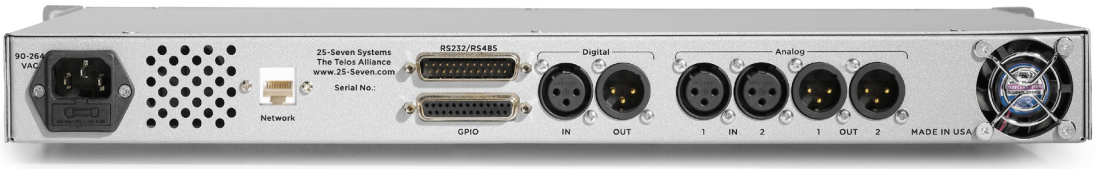
For facilities that need to delay content by several minutes to as much as four hours, Precision Delay provides a flexible solution with no spinning hard drives and no complicated programming. With "set and run" simplicity and solid-state reliability.

Delay Data & GPIO

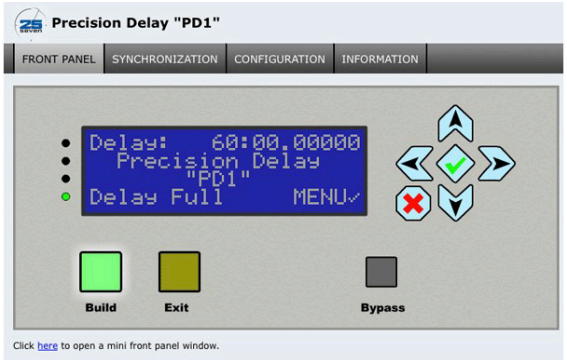
Precision delay supports up to 3 independent data delays. Serial data over IP or RS-232 such as "now playing" metadata can be delayed in sync with audio — even when delay time is in transition. Contact closures can also be delayed on input so that they trigger against the appropriate audio on output.

Control Precision Delay from Anywhere

In addition to controlling Precision Delay using GPIO (contract closures), Precision Delay offers complete configuration and control over a LAN or WAN using a common web browser. Navigating though parameters is a breeze with our internal password-protected web server. The server gives you five separate pages for complete and convenient control over your PD. The network interface also lets you remotely install software updates. Whether your unit is located in your main equipment room or at the transmitter, control is probably right where you're sitting now.



Front Panel



An Adobe Flash-based application replicates PD's front panel on your web browser, so every button and display is present and functions just like the real front panel. Through careful client-server communications management, round-trip latency is almost imperceptible, creating a seamless user experience. You can even control PD from multiple computers. Just open a web browser interface on each, and anything you do on one computer will be reflected on the others, as well as on PD's physical front panel.

Configuration

Tired of learning hieroglyphics just to configure a delay? Navigating though "set and forget" parameters is a breeze with the PD's Configuration page. You'll find obvious control with all your settings on one simple screen, so you don't waste time entering data though an ill-suited LCD interface.

SPECIFICATIONS

Power Input

Precision Delay comes with a standard IEC C14 power connector.

Network

Precision Delay connects to a standard 10/100Base-T network connection. This port is used for Axia® Livewire+™, synchronization to a network time server, and secure remote control via a web browser. If connected to the Internet, it should be behind a hardware firewall.

Analog Inputs and Outputs

Stereo inputs are electronically balanced XLR females, pin 2 hot, with a load of 20kΩ: this makes it compatible with all modern electronically-balanced outputs. If fed from a transformer-balanced output, we recommend bridging a 680Ω resistor between pins 2 and 3. Outputs are electronically balanced XLR males, pin 2 hot, designed to feed a load of 600Ω or greater. Input and output sensitivity default levels can be set from the front panel, and can range between +20dBu and -10dBu.

Digital Inputs and Outputs

When set to AES/EBU via the configuration menu, this input conforms to IEC 958 Professional (5v p-p, 110Ω balanced) on XLR connectors. When set to s/pdif, the voltage and impedance switches to IEC 958 Consumer (.5v p-p, 75Ω unbalanced): connect signal to pin 2 and shield to pins 1 and 3. Digital output (selectable AES or s/pdif) is always active, regardless of whether you are using analog or digital inputs. PD will lock to any valid 32 kHz, 44.1 kHz, or 48 kHz signal at the digital input connector, even if you have selected analog for the input. In that case, the digital input controls Precision Delay's internal sample rate. If Precision Delay is not connected to a digital input, it uses its own high-reliability 44.1 kHz sample clock.

GPIO

Eight parallel control inputs and eight parallel control outputs appear on a DB-25 connector. Input and output functions are assigned through a configuration menu on the front panel. Inputs and outputs are opto-isolated for easy interface to other equipment. A +5v supply and ground are also brought out to the DB-25 for simple remote controls using pushbuttons and LED status readouts. The +5v supply can carry 200 mA, more than adequate for 8 LEDs and 8 logic inputs. It is protected by an internal, self-resetting thermal circuit breaker.

Audio

S/N ≥ 84 dBA with 10 dB headroom (≥94 dB dynamic range); THD @1 kHz < .01%; IMD (IHF) < .01%; Frequency response ± 0.5 dB, 20 Hz – 20 kHz, measured analog input to analog output.

Dimensions

1RU (rack unit); 19" W (with rack ears) x 12" D x 1.75" H (483 x 305 x 44mm)

Delay range

10 ms to 4 hours; adjustable in 10 µs increments

Power

100-240 VAC, 50/60 Hz; typical consumption 32 VA.

Regulatory

North America: FCC and CE tested and compliant, power supply is UL approved.

Europe: Complies with the European Union Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS), as amended by Commission Decisions 2005/618/EC, 2005/717/ EC, 2005/747/EC (RoHS Directive), and WEEE.

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