



On-Time PPS

autonomously synchronized time distribution

REMOTE 1 PPS SYNCHRONIZED TO LOCAL/INPUT

UP TO 25 km

<0.5 ns ACCURACY

IFL PLATFORM PLUG-AND-PLAY

CONTROLLABLE OFFSET DELAY

CONTINUOUS CORRECTION FOR
PATH LENGTH AND DISPERSION

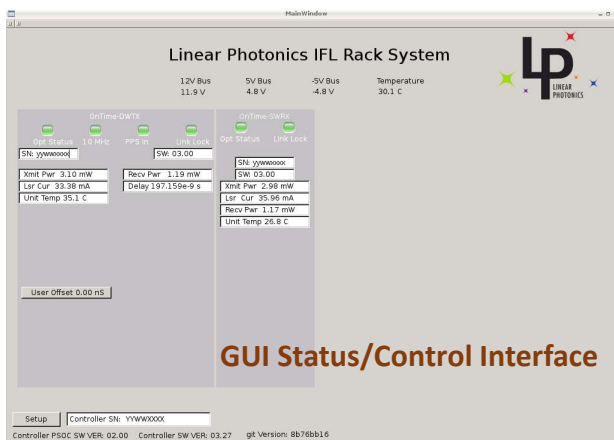
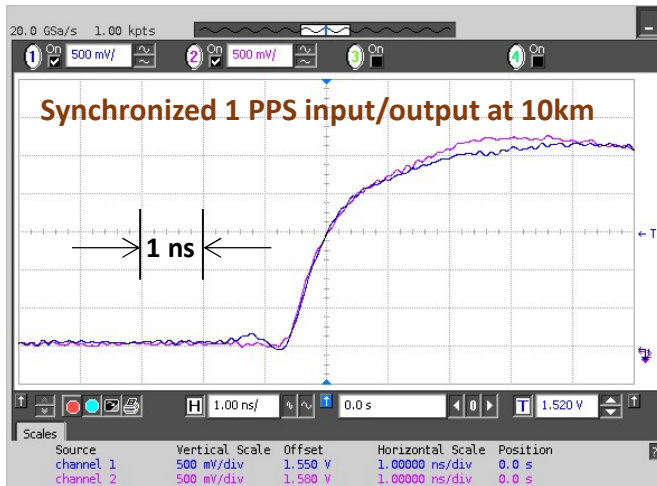
Linear Photonics On-Time Pulse-per-Second fiber optic links provide autonomously synchronized 1 PPS distribution up to 25 km.

Bidirectional optical signal transfer over a single fiber optic cable allows for accurate correction of path length. The output 1 PPS is continuously locked to the input 1 PPS within an accuracy of 0.5 ns, correcting for thermal and other path length variations.

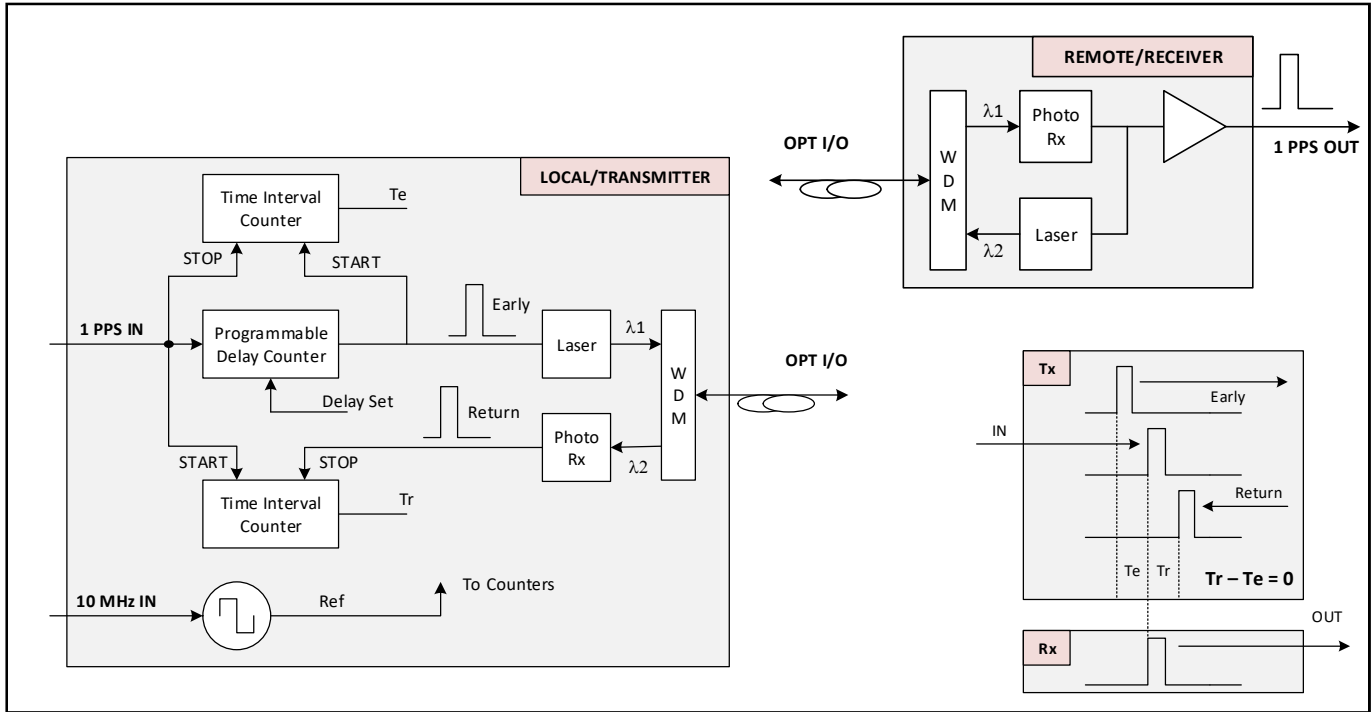
The local/transmitter requires a 1 PPS standard input, along with a 10 MHz reference. The transmitter generates and transmits an “early” 1 PPS pulse to the remote/receiver. The receiver returns the pulse to the transmitter. Timing of the “early” pulse is controlled so that it arrives at the receiver at the same instant as the input 1 PPS into the transmitter.

All equipment operate as plug-and-play inserts into the Linear Photonics 19” 1RU IFL Platform.

Linear Photonics’ On-Time system eliminates the need for complicated two-way time transfer for distances to 25 km.



On-Time FUNCTIONAL BLOCK DIAGRAM



On-Time INTERFACE AND PERFORMANCE

Transmitter		
Signal Interfaces	1 PPS IN 10 MHz IN Optical I/O	1 PPS Standard TTL / 50 Ω / SMA (note 1) Input Reference / 0 to +10 dBm / SMA (note 1) To/From Remote Receiver / SMF-28e / FC/APC
Indicators	OPTICAL STATUS	GRN: Valid optical and PPS signals AMBER: Valid optical but no PPS detected RED: No optical link established
	10 MHz	GRN: Valid 10 MHz input detected
	PPS IN	GRN: Valid 1 PPS Input detected
	LINK LOCK	GRN/RED Heartbeat: Link is Locked RED: Alarm
Module Size	Double-wide IFL Plug-in	
Optical Wavelength	1550 nm	
Receiver		
Signal Interfaces	Optical I/O 1 PPS OUT	From/To Remote Receiver / SMF-28e / FC/APC 1 PPS Standard TTL / 50 Ω / SMA
Indicators	OPTICAL STATUS	GRN: Valid optical and PPS signals AMBER: Valid optical but no PPS detected RED: No optical link established
	LINK LOCK	GRN/RED Heartbeat: Link is Locked RED: Alarm
Module Size	Single-wide IFL Plug-in	
Environmental		
Operating Temp Range	5 to 45°C	
Link Length	25 km or 8 dB optical loss	

note 1: 10 MHz reference and 1 PPS input should be derived from the same source. Lead-in cables from source to On-Time input should be of equal length to within 0.5 m.