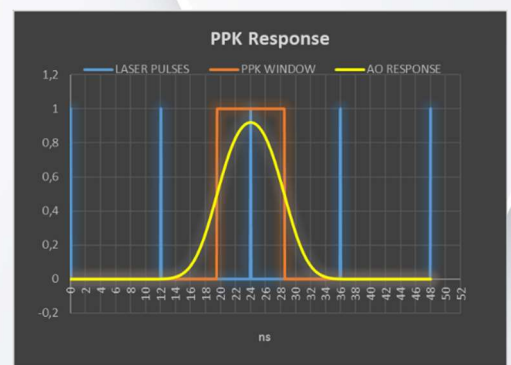## Product Overview

These drivers have been designed in order to easily control free space or fiber pigtailed pulse pickers, in order to extract pulses from an incoming high repetition rate laser. Depending on the models, they can cover applications with repetition rates from 0.01 to 90MHz.

Control signals are synchronized on the external clock provided by user. Window gate and delay adjustments are available to optimize efficiency and extinction ratio; Pulse picking ratio is set by user for automatic picking.
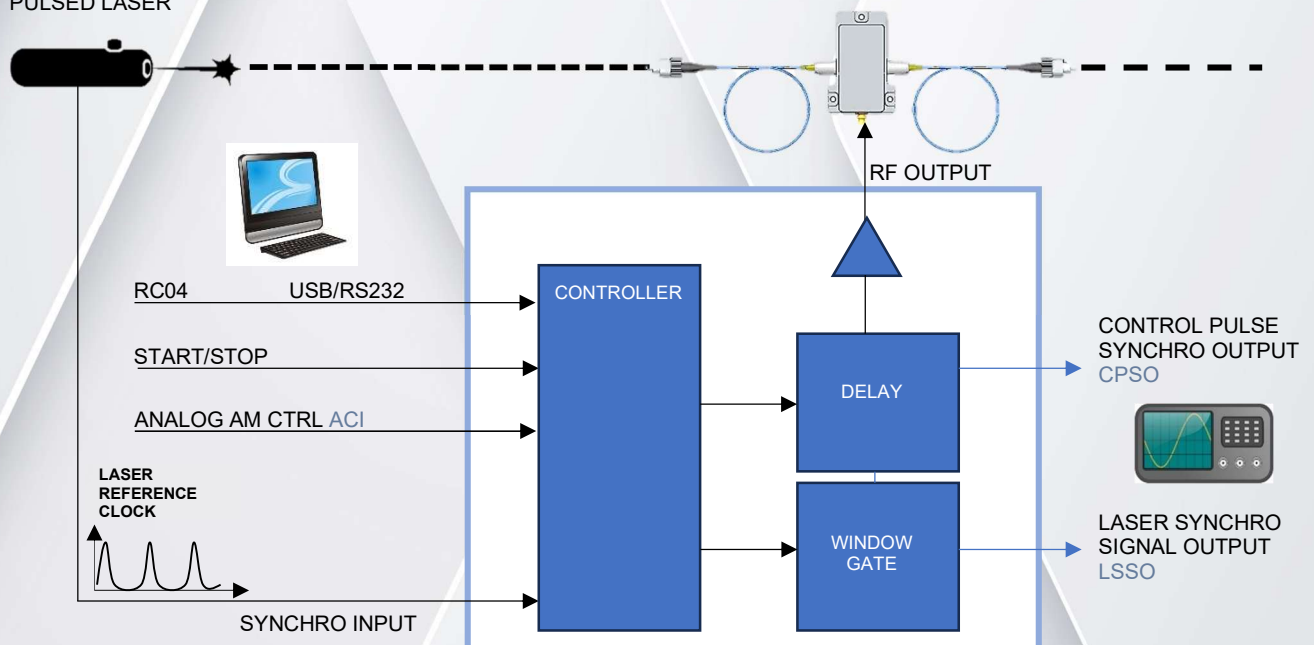
FEATURES

- High stability system with superior Pulse to Pulse Stability
- Input reference clock from Laser. Repetition rate in 0.01-90MHz (depending on model)
- Pulse picking ratio up to 1/16 millions.
- With Built-in High accuracy signal generator
- Including Digital delay and window gate adjustments
- Consecutive pulse extinction ratio (CPER) optimisation
- Remote control, USB, RS32 communication for set up
- RoHS compliant

PPK Response

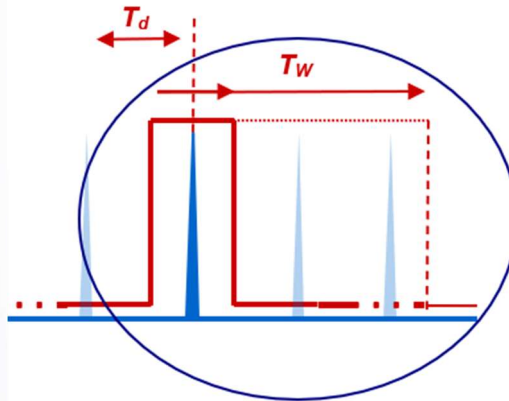## SYNOPTICS

PULSED LASER

RF OUTPUT

RC04 — USB/RS232

START/STOP

ANALOG AM CTRL ACI

LASER REFERENCE CLOCK

SYNCHRO INPUT

CONTROLLER

DELAY

WINDOW GATE

CONTROL PULSE SYNCHRO OUTPUT
CPSO

LASER SYNCHRO SIGNAL OUTPUT
LSSO

SPECIFICATIONS (T=25°C)

Parameters	Specifications
Reference Input Signal from Laser Synchro Input	**LASER Repetition Rate** RR in [0.01-85] MHz – Level TTL/50 Ohms (On request=Peak Voltage max 5 Volts, min 100mV, duty cycle in [10-90%], nom 50 Ohms), SMA Connector, T_{RR}= Time between 2 Laser pulses = 1/RR – SMA connector
Reference Output Signals from Driver	**LSSO:** Shaped Analog 0-3,5V/50 Ohms reference Output – Laser repetition Rate – DB15 connector [0.01-85MHz] **CPSO:** Shaped Analog 0-3,5V/50 Ohms trig Output – AOM control signal – DB15 connector
Internal Pulse generator Picking control	**Number of picked pulses:** N / M, N pulses picked out of M pulses, N in [1-1022], M in [2-1023] (Option: N, M up to 16 millions) **Optical window gate duration:** T_w, Adjustable as: $T_W = N*T_{RR} + T_A$, T_A=Time Adjust in [0-yyns] by typ steps of 0.1-5ns (yy is version dependent) **Pulse Delay time:** T_D, Adjustable in [0-zzns] by typ steps of 0.25-5ns (zz is version dependent) **Start/Stop control:** SSTI: Enable/Disable digital signal TTL level (1=OFF), TRIG INPUT, Response time nom 10ns
Parameters set-up	**Method of control:** RC04 (Remote control, Android), USB, RS232 (SDK and Apps available) **Adjustable parameters by user:** N, M, TW, TD, Max RF power level **Store:** Parameters stored in EEPROM, Automatic reload of stored parameters
Carrier frequency	40, 80, 110, 180, 200, 250 MHz, Adapted to laser/AO device
Power supply	24 VDC – Option Laboratory 110-230VAC
Output RF Power	1, 2, 4W max, other power with external power amplifier
Rise time/Fall time	<3ns @200-250MHz
External AM control	**ACI:** Analog 0-5Volts/1KOhms - Rise/Fall time nom 10ns, Dynamic 40dB
Extinction ratio	>50dB (internal pulse generator)
Output impedance	50 Ohms
V.S.W.R.	<1.5/1
Input connectors	USB, DB9 (RS232), DB15 (power supply & signals), SMA (Laser Synchro IN, REF)
Output connectors	SMA (RF OUT), DB15 (signals)
Size	OEM: 207 x 99 x 26.1mm³, Option 110-230VAC: Rack 19", 1U
Weight	Nom 0.6, Option 110-230VAC: 4 kg
Heat Exchange	Conduction through baseplate, Option 110-230VAC: standalone
Operating temperature	10 – 40°C -Attention, for best stability of the system, it is recommended to operate in a +/- 1°C environment
Maximum Case temperature	50°C (OEM version)

T_d= Delay time – T_w= Optical Window Gate duration

VERSIONS

Model	Carrier frequency	Fiber pigtailed Repetition rate	Free space Repetition rate*	Delay Range/step	Pulse width range
PPKAc250-B-xx-32	Rep rate synchronized	In [75-85] MHz	In [75-85] MHz	44ns (0.25ns)	20ns (0.25ns)
PPKSxx-B-xx-32	In [180-250] MHz	In [25-85] MHz	In [0.01-85] MHz	44ns (0.25ns)	20ns (0.25ns)
PPKSxx-B-xx-128	In [80-250] MHz	In [6.5-60] MHz	In [0.01-60] MHz	156ns (1ns)	100ns (1ns)
PPKSxx-B-xx-640	In [40-250] MHz	In [1-20] MHz	In [0.01-20] MHz	1080ns (5ns)	200ns (5ns)

*with crystal translation
**Option Picking ratio up to 16 millions on request
***Option Low repetition rate available on request

OUTLINE DRAWING (IN PRO 93), mm