

AWP1 Arbitrary Waveform Pockels Cell Driver

Applications

Laser pulse shaping

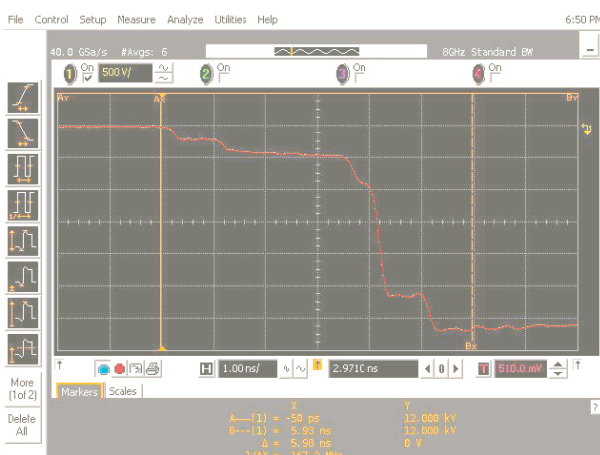
Amplifier gain depletion compensation

Eliminates the need for fibre-optic modulator and high gain re-generative amplifier.

Wavelengths to 1 μ m

Typical waveforms

500V and 1ns per division



Summary

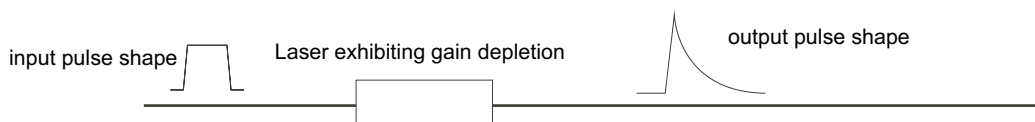
- Output amplitude approx 3.6kV maximum Monotonically increasing waveform
- Programmable over 7ns window
- Output summed from 48 step generators
- 12 different size steps
- step rise time < 300ps [typically < ~220ps]
- Each step position programmable to a few ps
- Millions of waveforms downloadable by RS232 or Ethernet
- 3 waveform non-volatile memory for stand-alone use
- 110/240 V AC power

See www.kentech.co.uk

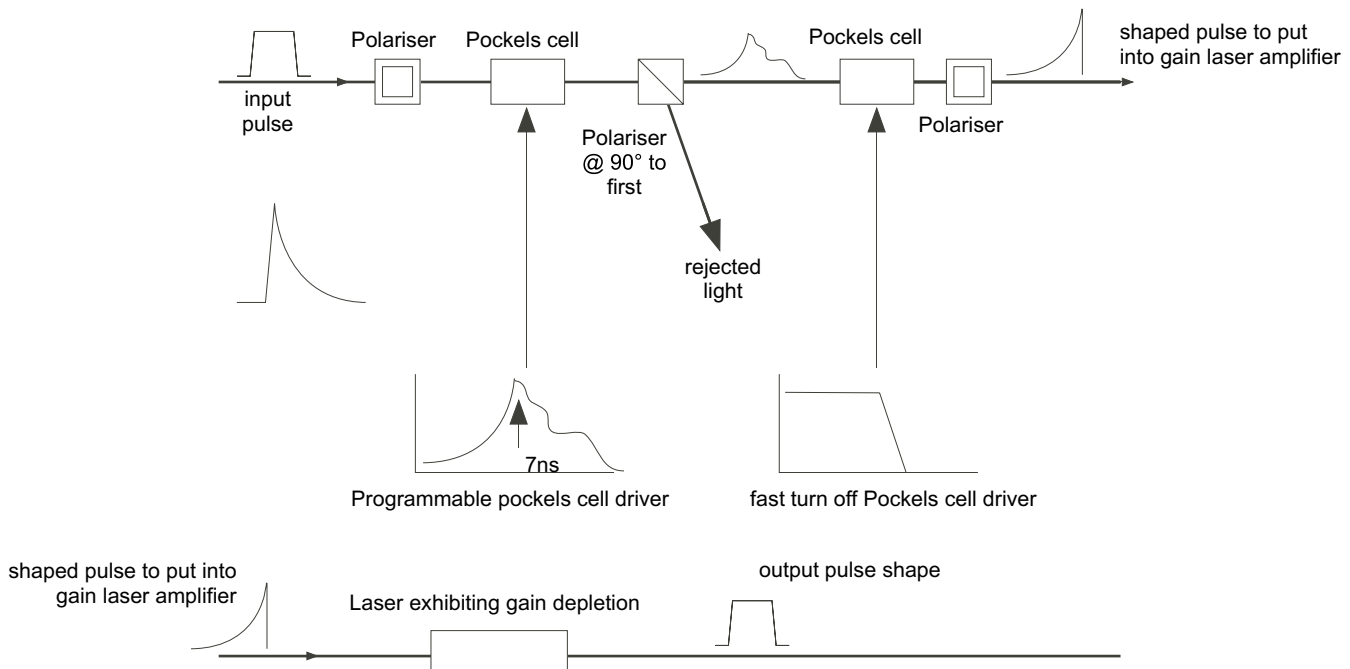
Typical Application

Producing a flat topped pulse from a laser pulse generated by a gain depleted amplifier

Problem laser exhibits gain depletion resulting in a decaying output shape for a flat top input shape.



Solution preshape the laser input to compensate for the gain depletion. Makes good use of laser energy and gives flat top pulse.



This schematic does not show the \sin^2 transmission effects of the pockels cell and polarisers but does indicate the technique.

See www.kentech.co.uk

SPECIFICATIONS

General

Amplitude	approx 0 to -3.7kV into 50Ω
Maximum repetition rate	40Hz.
Jitter	<40 ps [<10ps rms typically]
step rise time	< 300ps [typically < ~220ps]
Trigger requirement	5 volts 10ns risetime into 50Ω
Synchronisation Output	3.9 volts 14ns wide pulse into 50Ω approx 10.4ns after trigger pulse.
Trigger delay	Approx 38ns All delays set to zero
Power input	85 to 264 volts A.C. at 47 to 440Hz. 3.15 amp fuse, type T (anti-surge)
Average power consumption	< 25watts.

LED Indicators	Power	Green
	Triggered	Yellow
	Trigger Enabled	Yellow
	RS232 Active	Green
	Ethernet Active	Green

Front Panel Connections

Trigger input BNC
Synchronisation output BNC
Trigger enable Lemo Series 00
Short to enable, 5V on centre.
Main output N type
Control interface
RS232 15 way D type
Ethernet RJ45

Rear Panel Connections

Power inlet IEC

Front Panel Controls

Power Rocker switch
Control interface
Lockable toggle switch
Power Up Waveform
4 position Rotary switch

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