Kentech Instruments Ltd.

HMP2 Solid State Pulser

The HMP2 provides two ultrafast kilovolt pulse outputs of identical or opposite polarity from a single TTL trigger input. Each output has an amplitude of >4kV into a 50Ω load and will withstand open circuit, short circuit and arcing loads. The waveform is a fast rising edge with a 10 to 90% risetime of ~100ps, and a slower exponential decay typically with a time constant of ~5ns. Various shaped output waveforms (with reduced output voltage) including rectangular pulses down to 100ps fwhm can be provided.
The trigger to pulse out timing jitter is <10ps rms, and the timing jitter between the two outputs is <10ps peak to peak. The timing delay between the outputs may be varied by up to +/-10ns by changing timing cables or using an external delay generator. Maximum repetition rate is 1kHz. The unit is fully CE compatible. Options include an internal repetition rate and trigger delay generator, <90ps risetime and various output impedances.
The device is well suited to many electro-optic applications requiring pulse collision or differential driving techniques including driving Pockels cells and sweep plates for electron/ion optics. The two outputs also lend themselves to various pulse transmitting applications including ultra wideband radar and emc vulnerability testing. The architecture is easily extendable to 16 or more channels to drive a phased array antenna or for building into arbitrary waveform generators for laser pulse shaping.

Specifications

Amplitude	≥ 4kV into 50Ω load on two channels
PRF	Standard 100Hz optional 1kHz for faster decay pulses
Amplitude jitter, shot to shot	<5%, 1% typical , shot to shot
Trigger to Pulse output Delay	<30ns
Timing jitter	< 10ps rms
Trigger input	5 to 20 volts, t_r in < 5ns, 50Ω
Load tolerance	open or short circuit or arc at output indefinitely
Rise time	< 100ps (10 to 90%) typical
Pulse Shape	Fast rise followed by decay over a few ns. The decay can be modified at the factory but faster decays will be necessary for high repetiton rates.
Power requirements	120/240 volts ac, 50/60 Hz
Lifetime	> 10^{10} shots
Operating temperature	10° to 35°C non condensing.

HIGH VOLTAGE PULSER SUMMARY

Pulser	Amplitude	T_{rise}/PW	PRF	RMS Jitter	Features	Options
APG1	>100V	150ps/150ps	10kHz	10ps	S/D	
ASG1	>200V	100ps/8ns step	1kHz	10ps	St/D	
SPSV	>1kV	0.7ns/1,2,4,8,10 & 12ns	100Hz	10ps	S/D	
CPS1	>2kV	150ps/2ns decay	1kHz	20ps		/S
CPS2	>4kV	150ps/2ns decay	100Hz	20ps		/S
CPS3	>6kV	150ps/2ns decay	10Hz	20ps		/S
HMP1	>4kV	100ps/5ns	100Hz	10ps		S/D/Q/V/F
HMP2	>4kV x 2	100ps/5ns	100Hz	10ps		S/D/Q/V/F
PBG1	>6.5kV	100ps/5ns	100Hz	10ps		S/D/V/F
PBG2	>8.5kV	100ps/5ns	100Hz	10ps		S/D/V/F
PBG3	>12.5kV	100ps/5ns	100Hz	10ps		S/D/V/F
PBG5	>24kV	150ps/3ns	1kHz	20ps		S/D/V/F/B
PBG7	> 45kV	150ps/3ns	500Hz	20ps		/B

Features and Options

S	Shaped pulse
St	Step pulse
D	Internal switchable delay, rate generator, trigger indicator, auxiliary low level outputs
Q	Fast rise time (quick) down to 90ps on some units
V	Variable output (approximately 60% to 100%)
F	1kHz repetition rate (some pulsers can achieve this without this option, consult factory)
B	Balanced outputs Units are available with multiple synchronous outputs, e.g. a PBG5 will drive sixteen 50Ω outputs to 6.4kV

Voltages are into 50Ω, both positive and negative outputs are available.

Visit Our Web Site at :
http://www.kentech.co.uk

Overseas Agents

France
Armexel,
3 Rue de la Gauchère,
BP 20,
92151 Suresnes,
France.
Contact Name Yves le Ruyet
Tel: 1 42 04 20 97
Fax: 1 40 99 99 16

Germany
L A Vision,
Gerhard-Gerdes-Str.3,
D-37079
Göttingen
Germany
Contact Name Thomas Seelemann
Tel: (0) 551 50549-21
Fax: (0) 551 50549-11
e-mail 100600.433@compuserve.com

India
Scientific Solutions,
ADI Business Center,
C-10 Ashoka Tower,
C-Block Community Center, Janak Puri,
New Delhi - 110058,
India
Contact Name Sanjeev Bavejas
Tel 91-11-5508557
Fax: 91-11-5555938
e-mail sangs@delnet.ren.nic.in

Italy
Teleid s.a.s.
Via Tremiti,
1 ROMA 00141,
Italy.
Contact Name Andrea Marin
Tel: 06-8172532
Fax: 06-8170401

Japan
Science Laboratories Inc.,
2 - 73 Makinoharau,
Matsudo City,
Chiba Pref,
270 Japan.
Contact Name Kazy Maeda
Tel: 473 87 1711
Fax: 473 87 7661
scilab@ppp.bekkoame.or.jp

Netherlands
Arstec.
Neck 7a
1456 AA Wijdewormer
Holland.
Contact Name Hans Bonson
Tel 02990 28908
Fax 02990 70482

U.S.A.
Grant Applied Physics, Inc.,
101 Lombard Street ,
#912W,
San Francisco
CA 94111-1151,
U.S.A.
Contact Names Richard W. Lee
Tel: (415) 421-4739
Fax: (415) 421-4739
grantappliedphys@hotmail.com

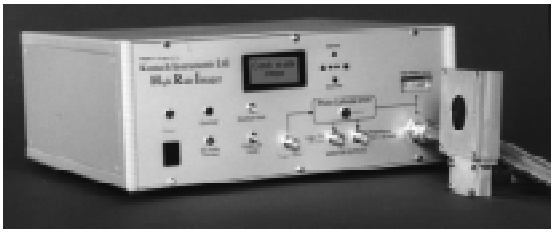
All other enquiries should be addressed directly to:-
Kentech Instruments Limited,
Unit 9, Hall Farm Workshops, South Moreton, Didcot, Oxfordshire OX11 9AG, U.K.
International Tel: +44 1235 510 748 International Fax: +44 1235 510 722
e-mail info@kentech.co.uk web: //www.kentech.co.uk

From small to very large; custom built pulsers are available for a wide range of applications.

Kentech Instruments Ltd. manufactures a large range of pulse generators and builds systems to customer specification. If you do not see a suitable instrument listed here please consult the factory to discuss your requirements.

Kentech Instruments Ltd. also make a range of time resolving and imaging devices for both X-ray and Optical wavelengths. In particular we manufacture gated optical image intensifier systems with gate widths down to 50ps and high repetition rate systems with bandwidths to GHz.

For X-rays we can offer gated imager and streak cameras.



The Kentech HRI (High Rate Imager)
Optical image modulation to 1GHz,
gate widths to 300ps at 110MHz
repetition rate