Kentech Instruments Ltd.

PG750 Nanosecond Pulser
Serial No. J12*****

Last Modified 2 Apr 2013 04:20

Kentech Instruments Ltd.,

Isis Building, Howbery Park, Wallingford, Oxfordshire, OX10 8BA, U.K.

Tel: +44 (0) 1491 82 1601 Fax: +44 (0) 1491 82 1602

E-mail info@kentech.co.uk

Web http://www.kentech.co.uk/

Contents

Figure Captions

1 CAUTION

With an appropriate load, this unit is safe for use by an educated user in a laboratory environment. You are warned however that the radiation from the system with an antenna or inappropriate load attached can damage sensitive equipment and corrupt data stored in computer and microprocessor based systems. It can cause terminal failure of vital medical electronic systems such as pacemakers. This equipment is supplied on the understanding that the user will analyse these risks, accept responsibility for them and take appropriate precautions in the use of this instrument.

The output from this pulse generator will destroy many types of power attenuators and electronic test equipment. It is the users responsibility to ensure that any apparatus connected to the output is suitably rated.

Kentech Instruments Ltd accepts no responsibility for any damage or liabilities incurred in the operation of this equipment.

Please read the manual before applying power.

There are high voltages (4kV) present in this Pulser when the unit is operating. Do not remove the covers and return to Kentech Instruments Ltd or its appointed agent for servicing.

The accessible terminals of this instrument are protected from hazardous voltages by basic insulation and protective grounding via the IEC power input connector. It is essential that the ground terminal of this connector is earthed via the power lead to maintain this protection.

If cleaning is necessary this should be performed with a soft dry cloth or tissue only.

2 RF EMISSIONS AND EC DIRECTIVE 89/336/EEC

This equipment is a research tool that has been intentionally designed to generate short high energy electromagnetic pulses and the EM emissions will be highly sensitive to the load applied by the user; for example the radiation just from using certain types of output cable may exceed EC permitted levels.

The level of RF radiation generated by the circuit boards within the instrument is inevitably high but the emissions are largely contained by the instrument enclosure. It is therefore very important that all fasteners are securely fastened - do not operate the pulser with the covers removed. The pulser may still interfere with sensitive equipment at short range.

We believe that with this type of unit it has to be the system builders responsibility to verify that his pulser/load system complies with the EC directive unless the system is used in a screened electromagnetic environment.

3 INTRODUCTION

This system comprises a driver and suitable cables. The driver generates a pulse of adjustable length and amplitude with fast (<1ns) edges. The output is designed to drive 50Ω and is AC coupled. The AC coupling will allow dc biases of ± 1kV maximum to be applied to the output.

The pulse is made by combining four individual pulses, a fast turn on, a fast turn off, a slow turn on and a slow turn off.

4 SPECIFICATION

Polarity	Negative AC coupled.
Bias	The output can be biased between ±1kV with an external supply.
Amplitude	adjustable from 300 to 750V in steps of ≤ 50V
Pulse shape	rectangular
Pulse width	1.5 to 40ns
Flatness	±10%
Post pulse noise	±10%
Maximum rep rate	50Hz
Jitter	~ 20ps
Trigger requirement	5V into 50Ω, < 5ns rise time.
Input trigger:	5V into 50Ω, < 5ns rise time.
Trigger delay	106ns in internal mode and 114ns in slave mode.
Power supply:	90-240V AC 50/60 Hz
Outputs:	
Pulse output:	N Type Female
Monitor output:	BNC 50:1 divided from main output
Inputs:	
Trigger input:	BNC Female
Controls:	
Power:	Switches AC power in the pulser.
Pulse length:	Fine 0-5ns, 0.5 ns steps, Coarse 0-35ns, 5ns steps.
Mode:	Internal or Slave. In Normal mode the pulse length is set by the pulse length control, In slave mode it is set by the trigger pulse length. There is an offset so that short output pulses can be obtained with a reasonable length trigger pulse. The slave mode is described in section 5.1 on page 6. Amplitude: A variable stepped attenuator giving a monotonically adjustable output amplitude.
Indicators:	
Power:	Shows that AC power is applied and the unit is switched on.
Triggered:	Illuminates while the unit is being triggered.
Network	
Ethernet	10BASE-T, 100BASE-T
MAC address	00-20-4A-EA-F7-9F

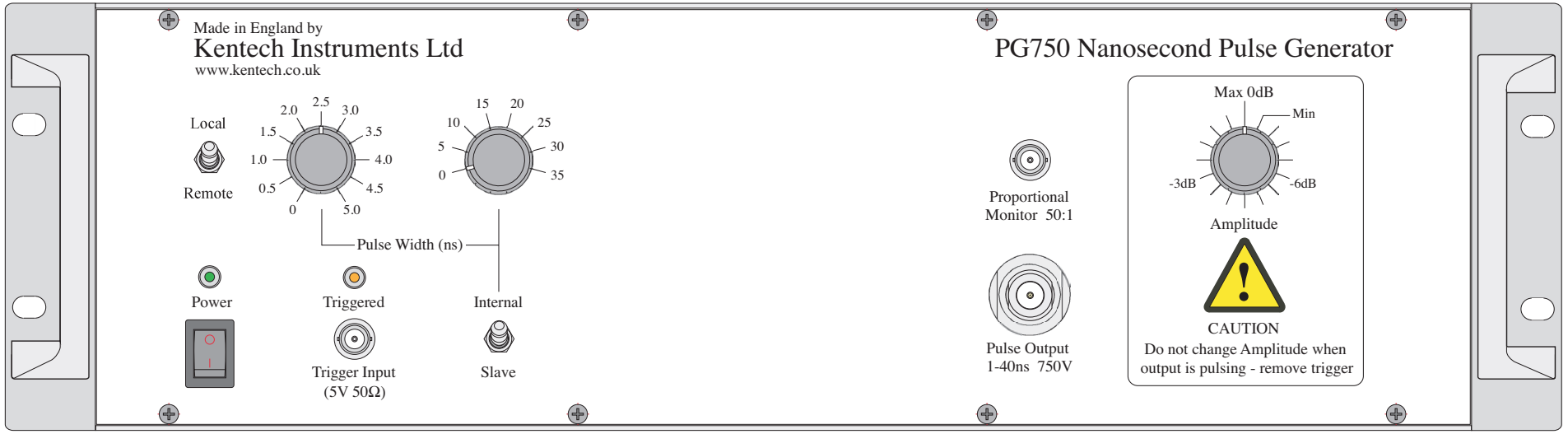


Figure 1 Front Panel controls, indicators and connections

5 USE

The driver requires an AC supply and a trigger signal to operate. The trigger signal should be 5V into 50Ω with a rise time of less than 5ns in order to achieve minimum output jitter.

The driver should be connected to the load using the N to N lead supplied.

Although the unit is optimised for driving a 50Ω load, it is quite well reverse terminated and can be used to drive other load impedances without significant reflections from the pulser, i.e. secondary pulses will be of small amplitude. Note that the source impedance is about 50Ω so when driving loads other than 50Ω the output voltage will be different. If driving reactive loads the wave shapes will also be different.

The driver is also AC coupled to allow the addition of a bias voltage to the pulse of up to ±1kV.

5.1 PULSE LENGTH CONTROL

The pulse length can be set over the range ~ 1.5ns to 40ns. It can either be set internally with the mode switch set to "Internal" and the pulse set by the two front panel knobs, or set to "Slave" see Figure 1.

In SLAVE mode the pulse width is set by the trigger pulse duration. The minimum trigger pulse length for the minimum pulse width output at full amplitude is 4ns. The maximum trigger pulse width for a 40ns output is 26ns

The unit will not trigger for trigger pulse durations of 3ns or less.

see Figure 6

5.2 AMPLITUDE CONTROL

The amplitude is set using a variable attenuator placed in the output circuit of the pulser. The pulser uses a combination of avalanche and FET pulser technology and variation of the amplitude of each is difficult and also difficult to make them follow each other. Hence an attenuator is used. This is a switched system using relays to swap resistor networks. The relays are not rated to switch the pulse current and so the attenuator should not be changed whilst the pulser is being triggered. The variation of amplitude is monotonic with the position of the attenuator switch. Figure 4 shows the variation over the whole range available.

5.3 MONITOR

The monitor output is a divided down version (~50:1) of the main output pulse. It should be run into a 50Ω load for optimum calibration. Figure 5 shows a comparison of the monitor output and the true output.

5.4 OUTPUT TIMING UNCERTAINTY [JITTER]

The output jitter is dependent upon the quality of the trigger pulse. For optimum jitter the trigger should have no variation in amplitude or shape. The jitter shown in Figure 6 was obtained using a Highland P400 pulse generator, this has particularly low shot to shot variation.

5.5 PULSE SHAPE

The pulse is formed from a combination of four pulses and consequently marrying these up to deliver a high fidelity pulse shape is difficult. Timing circuits on the main control board are used to set the shape to optimum. Figure 7 shows the pulser output when set to maximum amplitude and pulse length. Flatness is indicated by bars at ±10% around the pulse waveform.

5.6 NOTES ABOUT TEST MEASUREMENTS

In the measurements shown below the pulser was triggered with a Highland P400 pulse generator and the measurements were made with an Agilent oscilloscope DSO DSO80604B S/N MY46000902. The attenuators used on the main output were Barth s/n 561 plus Weinschel 24-40-34 s/n BN9220 (40dB) on the main output and 12dB on the monitor output (2x 6dB SMA).

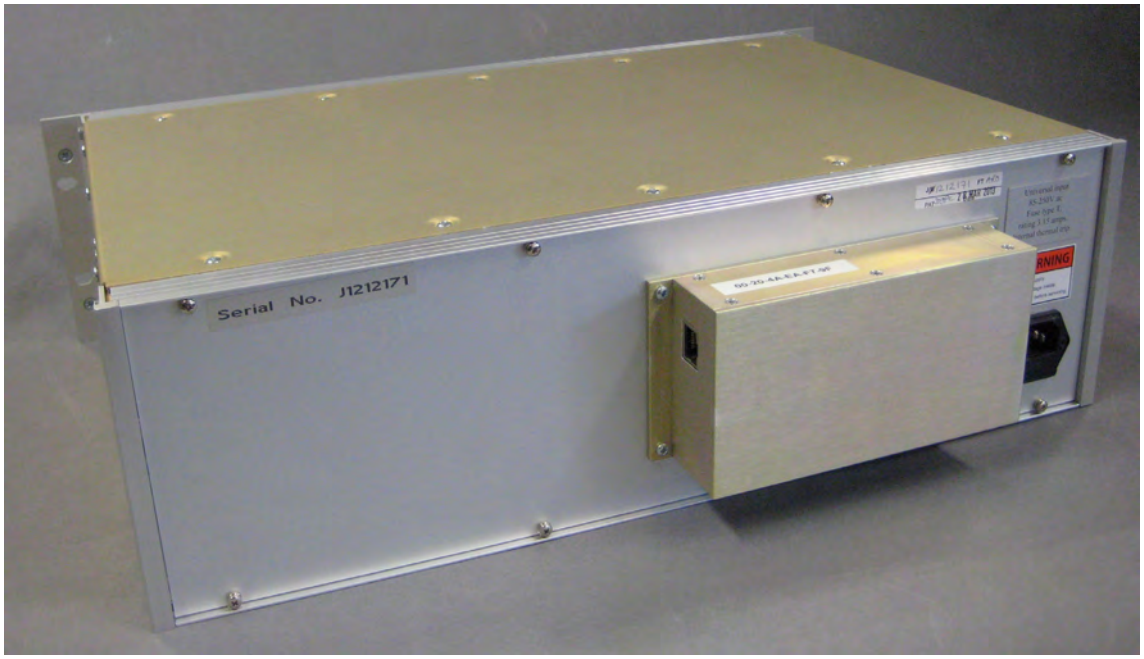


Figure 2 The ethernet adaptor is mounted on the rear panel.

6 SOFTWARE INTERFACE

J12***** software interface

6.1 REVISIONS

0.0 28 March 2013 PK

6.2 INTRODUCTION

The software provides a comprehensive set of commands to control the pulser remotely using a simple ascii text protocol. Communication with the processor is by means of an ethernet connection implemented by a Lantronix Xport XP1001000-04R. Serial comms uses 9600 baud, 1 stop bit, no parity, no handshake.

6.3 PULSER SYSTEM CONTROL

The pulser has a local/remote manual switch on the front panel. With the switch in the manual position, the operation of the pulser is controlled by the front panel switches only and can be monitored but not controlled via the ethernet link.

With the switch in the remote position, the operation is controlled via the ethernet link on the box mounted on the rear panel (see Figure 2 on page 7). The front panel switches (other than the local/ remote switch) have no effect.

The remote settings are stored in a set of variables:-

r_fine - fine width setting, default 0

r_coarse - coarsewidth setting, default 0

r_amp - amplitude setting range, default 0

r_trigen - trigger enable flag, true or false, default true

r_slavef - slave flag, true or false, default false

Commands are provided to read and write these variables. This can be done in both local and remote modes. In local mode changing these values has no immediate effect but when the mode switch is moved from local to remote position, the data is read from these variables and written to the hardware.

In remote mode the data is immediately written to the hardware. The variables are volatile, they will be set to the default values at power up.

Due to limitations in the hardware in remote mode it is not possible to read back the state of the local front panel switches.

Commands are provided to read back the current hardware status in either local or remote modes.

In local mode this will reflect the state of the front panel settings, in remote mode it will reflect the state of the remote control variables listed above.

The readable values are:-

i) fine width

ii) coarse width

iii) amplitude

iv) trigger enable flag

v) slave flag

vi) remote flag

vii) triggered flag

viii) triggered latch

Fine Width

This is the fine width setting in steps of 500ps. Range is 0 to 10.

Note that in slave mode, where the pulse width is defined by the trigger signal, the fine width will read back -1.

Coarse Width

This is the coarse delay setting in steps of 5ns. Range is 0 to 7.

Note that in slave mode, where the pulse width is defined by the trigger signal, the coarse width will read back -1.

Amplitude

This is the amplitude setting in nominal steps of 0.5dB. Range is 0 to 15.

Trigger Enable Flag

If true (-1) the pulser trigger is enable, if false (0) the trigger is disabled.

In local mode there is no local control to enable or disable the trigger so in local mode this will always read true.

Slave flag

If true (-1) the pulser is in slave mode and the pulse width is determined by the width of the trigger pulse. Note that if the salve flag is set, fine and coarse width will both read -1.

Remote flag

If true (-1) the pulser is in remote mode, if false (0) it is in local mode. This is determined by the state of the local/remote switch on the front panel.

Triggered flag

This is driven by a monostable on the trigger input. This flag will be true for a second or so after the pulser is triggered. There is a latched trigger signal available, see below.

Triggered Latch

This flag is latched. It is set when the pulser is triggered. It remains set until explicitly reset by the remote interface. See commands below.

6.4 THE PROTOCOL

The pulser will generate responses to valid commands and will not generate any unsolicited output. Invalid commands will be ignored. All commands and response will be in ASCII characters. Commands are case sensitive.

In the interest of simplicity all commands are parsed by the pulser using the Forth interpreter, so the parameters need to be delimited by spaces and the command line will be terminated by carriage return and linefeed characters. The Forth interpreter will not recognise commands other than those defined in the command set.

The pulser will not echo command characters as they are received, no output will be generated until a valid command is recognised. When a valid command is recognised, the pulser will output a response.

Responses are preceded with a cr and lf, then an ascii { character and end with an ascii }. The response will be delimited into fields by an ascii ; character. The first field in the response will be a repeat of the command. If the command cannot be completed the pulser will return an error code in the second field. The possible error codes are:

?stack - the command interpreter has detected a wrong stack depth error, i.e. the wrong number of parameters have been received.

?param - the command interpreter has detected an out of range parameter

After any error, the command is not executed, the stack is cleared and no values are returned other than the error code. Following a stack error, the stack is cleared, then dummy parameters (generally -1 or 65536) are added for the purpose of formatting the response only.

All status commands expect and deliver data as decimal numbers and all numeric data should be decimal, no decimal points or other punctuation is to be used.

For example:-

1) To set the pulser to maximum amplitude the command would be

0 !r_am

and the response would be

{0 !r_am}

2) as above but with a missing parameter

!c_mod

and the response would be

{-1 !r_am;?stack}

The command interpreter detects the wrong stack depth, corrects this by clearing the stack and adding some dummy parameters then flags the error. No execution will result.

3) as above with invalid parameter

16 !r_am;?param

and the response would be

{16 !r_am;?param}

Again no execution will result.

6.5 COMMANDS

Explanatory notes:-

1) In Forth terminology a @ character implies a fetch or read operation, a ! character implies a store or write operation.

2) For returned parameters, true = -1, false = 0.

Name	**!r_fine**
Explanation	write remote fine width setting
Format	**p1 !r_fi**
parameter 1	p1 = fine setting, range 0 to 10
return value	none

Name	**!r_coarse**
Explanation	write remote coarse width setting
Format	**p1 !r_co**
parameter 1	p1 = coarse setting, range 0 to 7
return value	none

Name	**!r_amp**
Explanation	write remote amplitude setting
Format	**p1 !r_am**
parameter 1	p1 = amplitude setting, range 0 to 15
return value	none

Name	**+r_slave**
Explanation	set remote slave flag
Format	**+r_sl**
parameter	none
return value	none

Name	**-r_slave**
Explanation	reset remote slave flag
Format	**-r_sl**
parameter	none
return value	none

Name	**+r_trigen**
Explanation	set remote trigger enable flag
Format	**+r_tr**
parameter	none
return value	none

Name	**-r_trigen**
Explanation	reset remote trigger enable flag

Format	**-r_tr**
parameter	none
return value	none

Name	**!r_all**
Explanation	write all remote settings
Format	**!r_al**
parameter 1	p1 = remote fine width setting
parameter 2	p2 = remote coarse width setting
parameter 3	p3 = remote amplitude setting
parameter 4	p4 = remote trigger enable flag
parameter 5	p5 = remote slave flag
returned value	none

Name	**@r_fine**
Explanation	read remote fine width setting
Format	**@r_fi**
parameter	none
returned value 1	r1 = fine setting, range 0 to 10
Notes	this is just a readback of the written value

Name	**@r_coarse**
Explanation	read remote coarse width setting
Format	**@r_co**
parameter	none
returned value 1	r1 = coarse setting, range 0 to 7
Notes	this is just a readback of the written value

Name	**@r_amp**
Explanation	read remote amplitude setting
Format	**@r_am**
parameter	none
returned value 1	r1 = amplitude setting, range 0 to 15
Notes	this is just a readback of the written value

Name	**@r_slavef**
Explanation	read remote slave flag
Format	**@r_sl**
parameter	none
returned value 1	r1 = remote slave flag, true (-1) or false (0)
Notes	this is just a readback of the written value

Name	**@r_trigen**
Explanation	read remote trigger enable flag
Format	**@r_tr**
parameter	none
returned value 1	r1 = remote trigger enable flag, true (-1) or false (0)
Notes	this is just a readback of the written value

Name	**@r_all**
Explanation	read all remote settings
Format	**@r_al**
parameter	none
returned value 1	r1 = remote fine width setting
returned value 2	r2 = remote coarse width setting
returned value 3	r3 = remote amplitude setting
returned value 4	r4 = remote trigger enable flag
returned value 5	r5 = remote slave flag
Notes	this is just a readback of the written values

Name	**@remf**
Explanation	read remote mode flag
Format	**@rmfl**
parameter	none
returned value 1	r1 = remote mode flag, true (-1) or false (0)
Notes	the remote flag reflects the state of the local/remote switch

Name	**@trigf**
Explanation	read triggered flag
Format	**@trfl**
parameter	none
returned value 1	r1 = triggered flag, true (-1) or false (0)
Notes	reads the trigger monostable

Name	**@trigl**
Explanation	read triggered latch flag
Format	**@trla**
parameter	none
returned value 1	r1 = triggered latch flag, true (-1) or false (0)
Notes	reads the latched trigger signal

Name	**@slavef**
Explanation	read slave flag
Format	**@slfl**
parameter	none
returned value 1	r1 = slave flag, true (-1) or false (0)

Name	**@fine**
Explanation	read current fine width setting
Format	**@l_fi**
parameter	none
returned value 1	r1 = fine setting, range 0 to 10
Notes	returns -1 in slave mode

Name	**@coarse**
Explanation	read current coarse width setting
Format	**@l_co**

parameter	none
returned value 1	r1 = coarse setting, range 0 to 7
Notes	returns -1 in slave mode

Name	**@amp**
Explanation	read current amplitude setting
Format	**@l_am**
parameter	none
returned value 1	r1 = amplitude setting, range 0 to 15

Name	**@stat**
Explanation	read all current status
Format	**@r_al**
parameter	none
returned value 1	r1 = current fine width setting
returned value 2	r2 = current coarse width setting
returned value 3	r3 = current amplitude setting
returned value 4	r4 = current slave flag
returned value 5	r5 = remote flag
returned value 6	r6 = triggered flag
returned value 7	r7 = riggered latch flag

Name	**0trigl**
Explanation	reset triggered latch flag
Format	**0trgl**
parameter	none
return value	none

6.6 EXAMPLES

The following is an example from a comms unit test.

Transmitted characters are in blue, response from the pulser is in red.

@r_fi

{@r_fi;0 }

@r_co

{@r_co;0 }

@r_am

{@r_am;0 }

10 !r_fi

{10 !r_fi}

7 !r_co

{7 !r_co}

15 !r_am

{15 !r_am}

@r_sl

{@r_sl;0 }

@r_tr

{@r_tr;-1 }

@r_al

{@r_al;10 ;7 ;15 ;-1 ;0 }

@rmfl

{@rmfl;0 }

@trfl

{@trfl;-1 }

@trla

{@trla;-1 }

@slfl

{@slfl;-1 }

@slfl

{@slfl;0 }

@l_fi

{@l_fi;10 }

@l_co

{@l_co;7 }

@l_am

{@l_am;15 }

@stat

{@stat;10 ;7 ;15 ;0 ;0 ;-1 ;-1 }

@trfl

{@trfl;0 }

@trla

{@trla;-1 }

0trgl

{0trgl}

@trla

{@trla;0 }

@trla

{@trla;-1 }

@rmfl

{@rmfl;-1 }

5 3 8 -1 0 !r_al

{5 3 8 -1 0 !r_al}

@r_al

{@r_al;5 ;3 ;8 ;-1 ;0 }

@stat

{@stat;5 ;3 ;8 ;0 ;-1 ;-1 ;-1 }

+r_sl

{+r_sl}

@stat

{@stat;-1 ;-1 ;8 ;-1 ;-1 ;-1 ;-1 }

-r_sl

{-r_sl}

@stat

{@stat;15 ;7 ;8 ;0 ;-1 ;-1 ;-1 }

-r_tr

{-r_tr}

@stat

{@stat;5 ;3 ;8 ;0 ;-1 ;0 ;-1 }

@stat

{@stat;10 ;6 ;15 ;0 ;0 ;-1 ;-1 }

@stat

{@stat;5 ;3 ;8 ;0 ;-1 ;0 ;-1 }

+r_tr

{+r_tr}

@stat

{@stat;5 ;3 ;8 ;0 ;-1 ;-1 ;-1 }

0 !r_am

{0 !r_am}

16 !r_am

{16 !r_am;?param}

-1 !r_am

{-1 !r_am;?param}

-1 !r_fi

{-1 !r_fi;?param}

0 !r_fi

{0 !r_fi}

10 !r_fi

{10 !r_fi}

11 !r_fi

{11 !r_fi;?param}

-1 !r_fi

{-1 !r_fi;?param}

-1 !r_co

{-1 !r_co;?param}

0 !r_co

{0 !r_co}

15 !r_co

{15 !r_co;?param}

7 !r_co

{7 !r_co}

3 !r_co

{3 !r_co}

1 3 !r_co

{-1 !r_co;?stack}

!r_co

{-1 !r_co;?stack}

7 DECLARATION OF CONFORMITY

We:

Kentech Instruments Ltd
Isis Building
Howbery Park
Wallingford
Oxfordshire OX10 8BA, UK

Certify that this apparatus:-

Kentech PG750 Nanosecond Pulse Generator

Serial no. J12***** only.

Conforms with the protection requirements of European Community Directives:-

73/23/EEC Low Voltage Directive
89/336/EEC Electromagnetic Compatibility Directive
93/68/EEC CE Marking Directive

The following harmonized standards have been applied:-

BS EN55011 Emissions Specification (Group 2 Class A)
Industrial, Scientific and Medical equipment
BS EN50082-2 Generic Immunity Standard
Part 2 Industrial
BS EN 61010-1 Safety Requirements for Electrical
Equipment for Measurement, Control, and Laboratory Use

The following documents contain additional relevant information:-

Kentech file reference J12*****

Name: A.K.L. Dymoke-Bradshaw

Signature: 

On behalf of Kentech Instruments Ltd

Position: Director Issued 2-4-2013

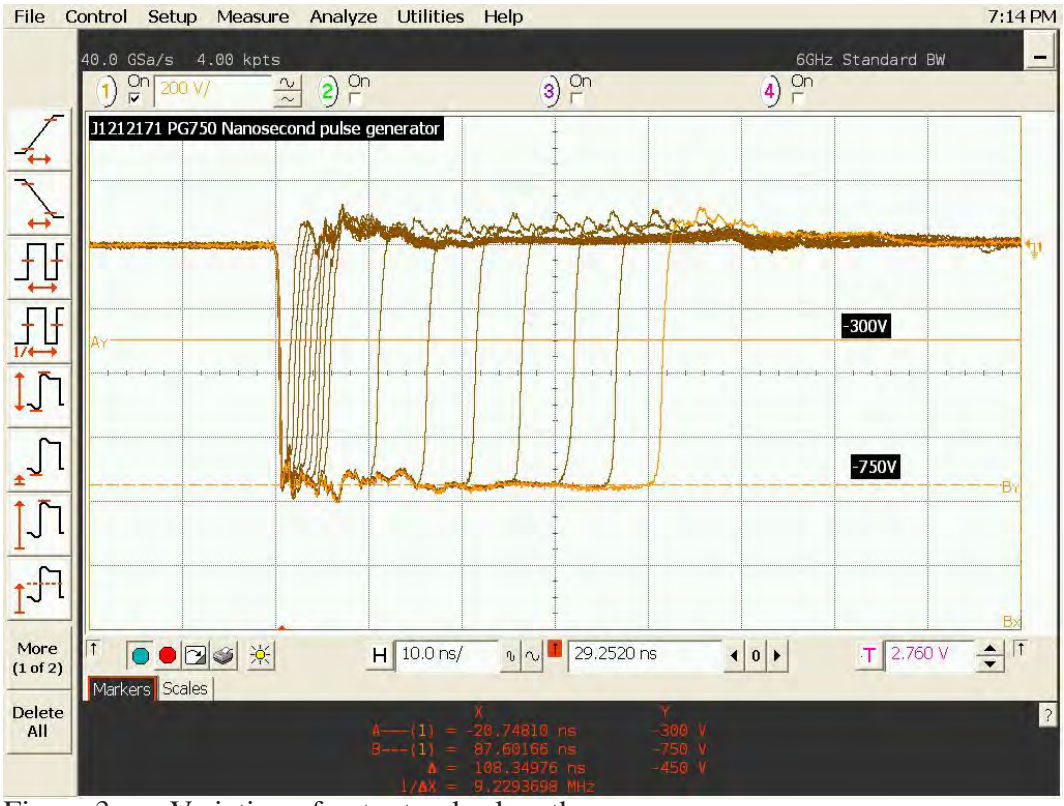


Figure 3 Variation of output pulse length

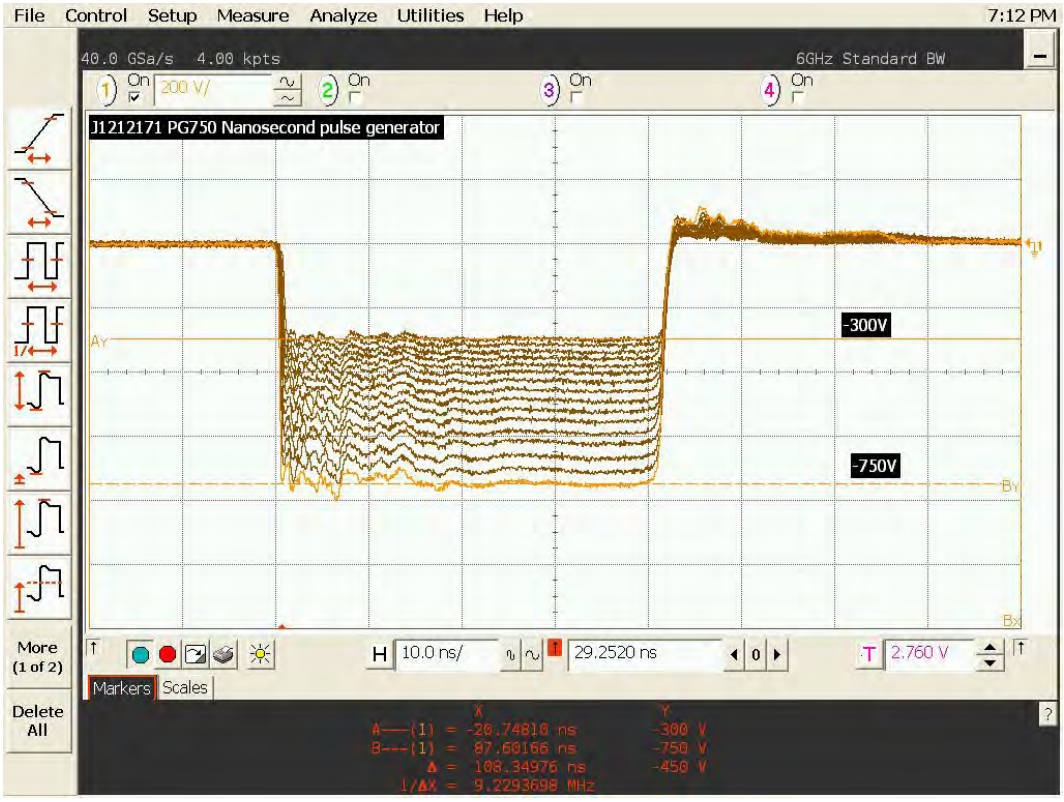


Figure 4 Variation of output pulse amplitude

Figure 5 Comparison of monitor output (green) to main output

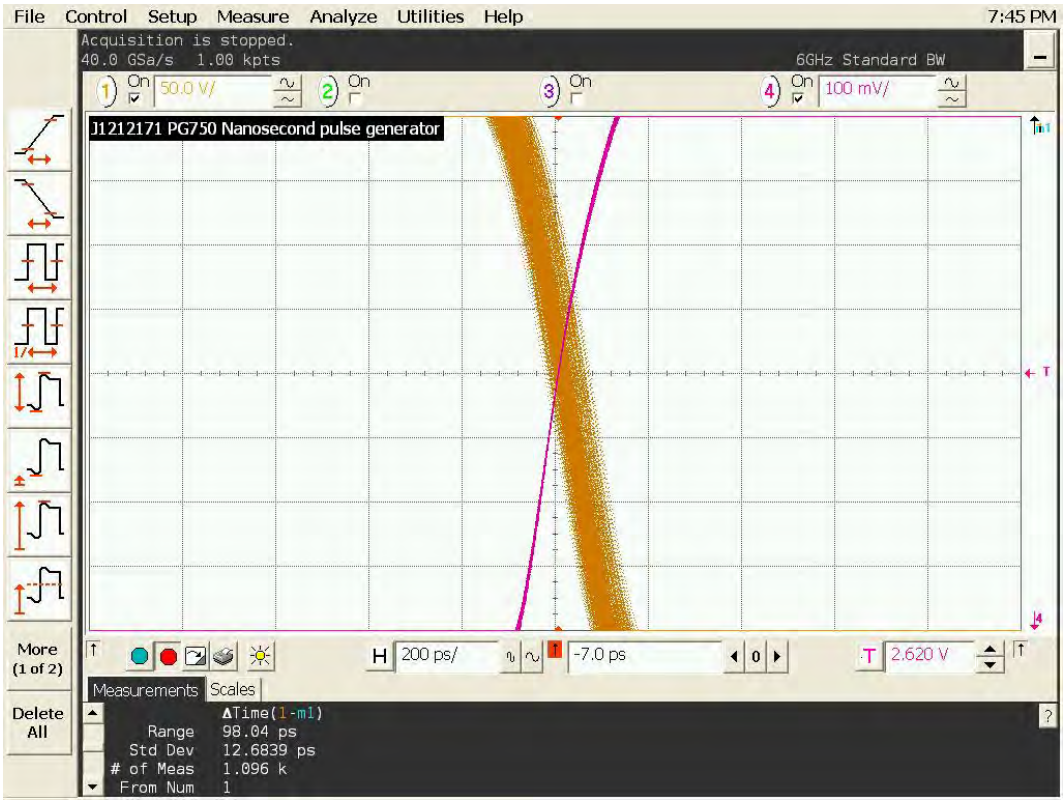


Figure 6 Output timing uncertainty, jitter at 200ps/div. RMS jitter ~ 15.4ps.

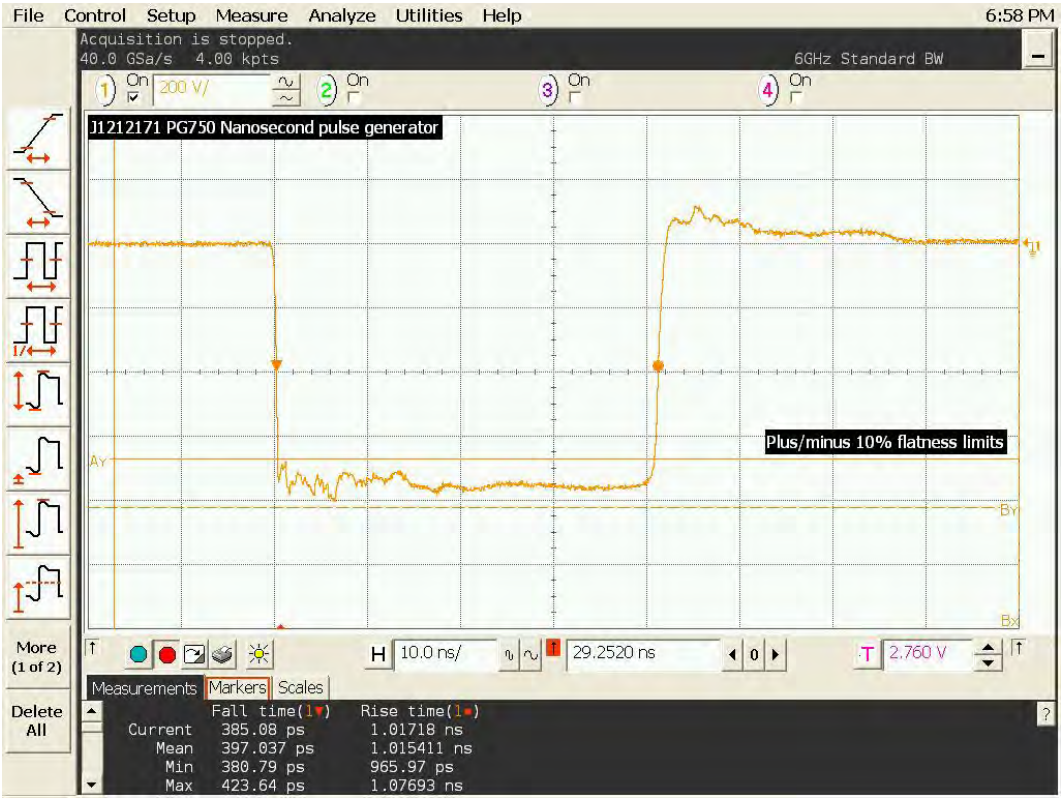


Figure 7 Output at maximum amplitude and pulse width showing flatness.

Figure 8 10ns pulse parameters showing rise and fall times at max amplitude.

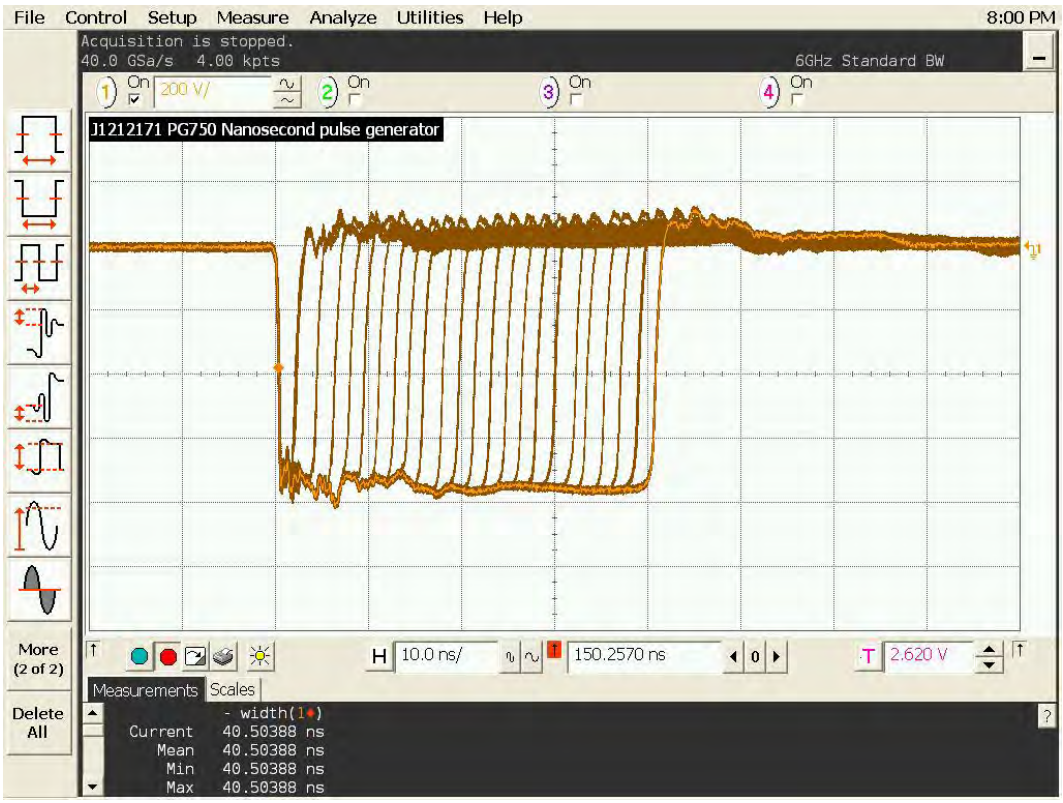


Figure 9 Slave mode control of pulse width 1ns trigger increments

Notes regarding the Netport LAN06 RS232 to Ethernet adapter

Ethernet communications is accomplished with Netport adapters which are purchased from Alpha Micro, see http://www.alphamicro.net/

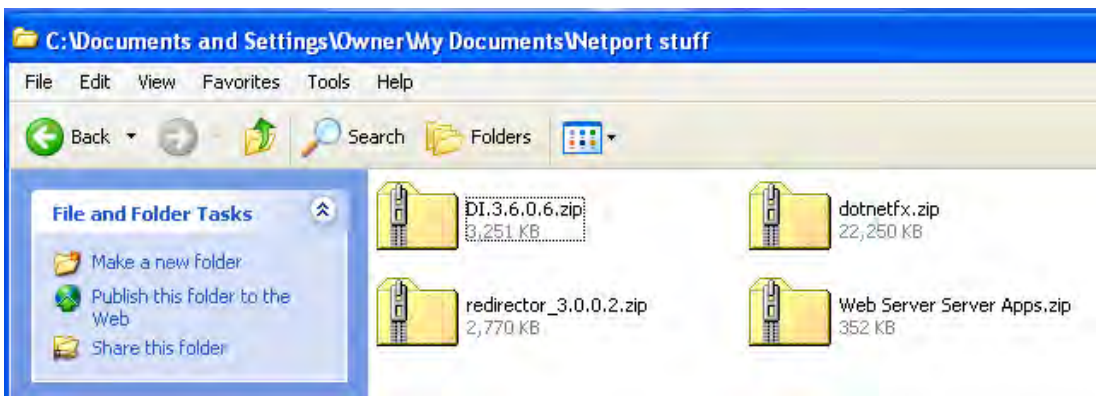
The LAN06 is identical to the LAN01 except that it is powered from the RS232 port on pin 9 of the 9 way D sub connector. These instructions also apply to XPORT.

Some Kentech equipment that uses the Netport externally has been modified to supply this power through the RS232 port. If the Netport is internal then the adapter is powered by the unit.

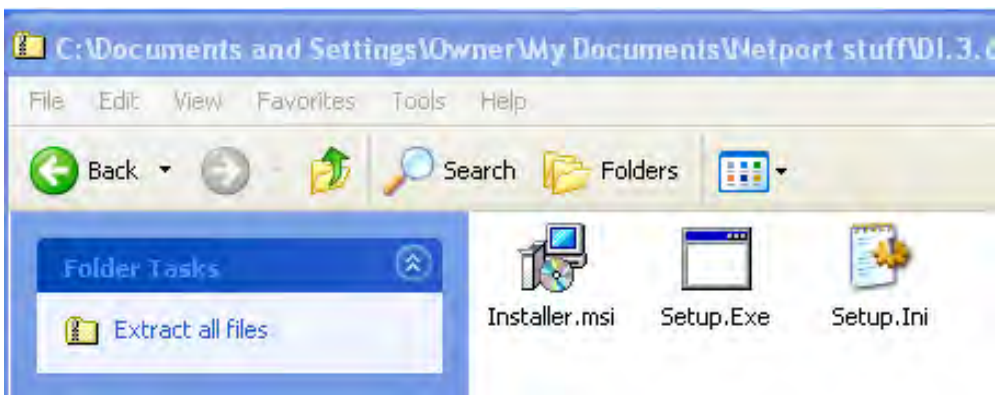
All the installation files and manuals for the LAN01/06 are available at the Alpha Micro web site.
http://www.alphamicro.net/components/product~line~4~id~223.asp

A set of current ones may be included here on a CD. Some need unzipping.

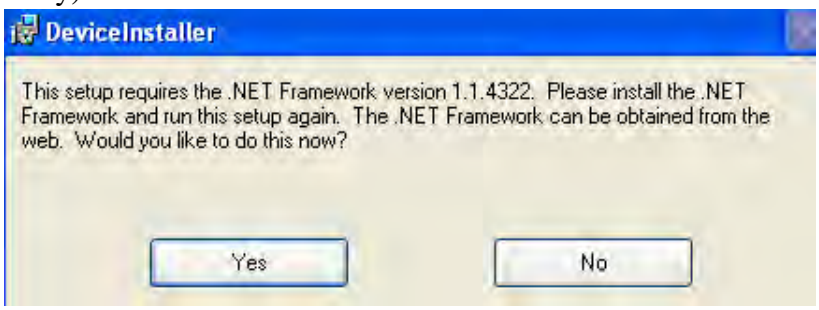
Install the device installer.
Download the files from Alpha Micro and then proceed as below.
Double click on DI.3.6.0.zip



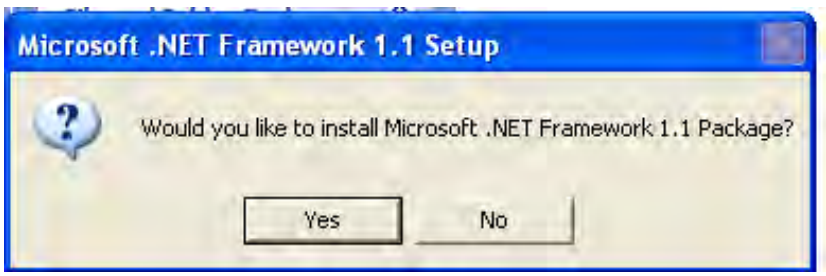
Double click on Installer.msi



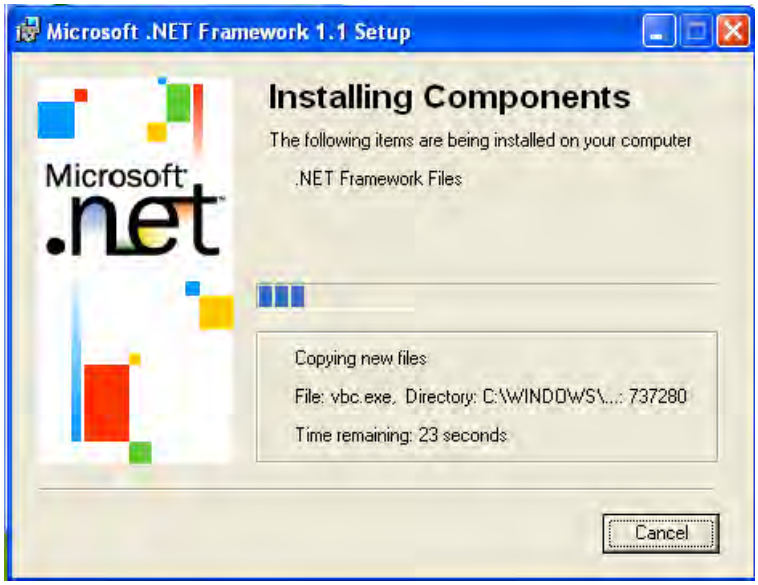
If you receive the following message click No (assuming you have downloaded the file all ready).



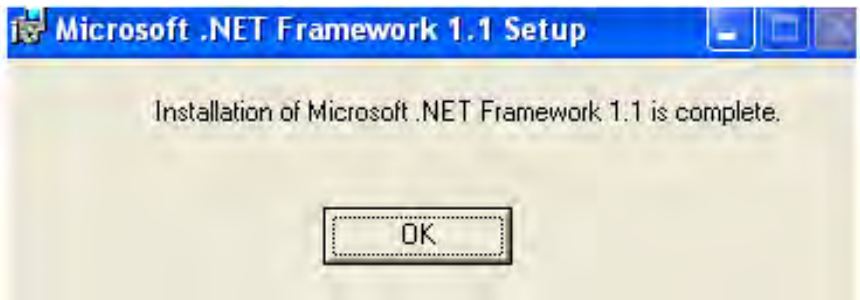
Go back to the downloaded files and double click on click on dotnetfx.zip



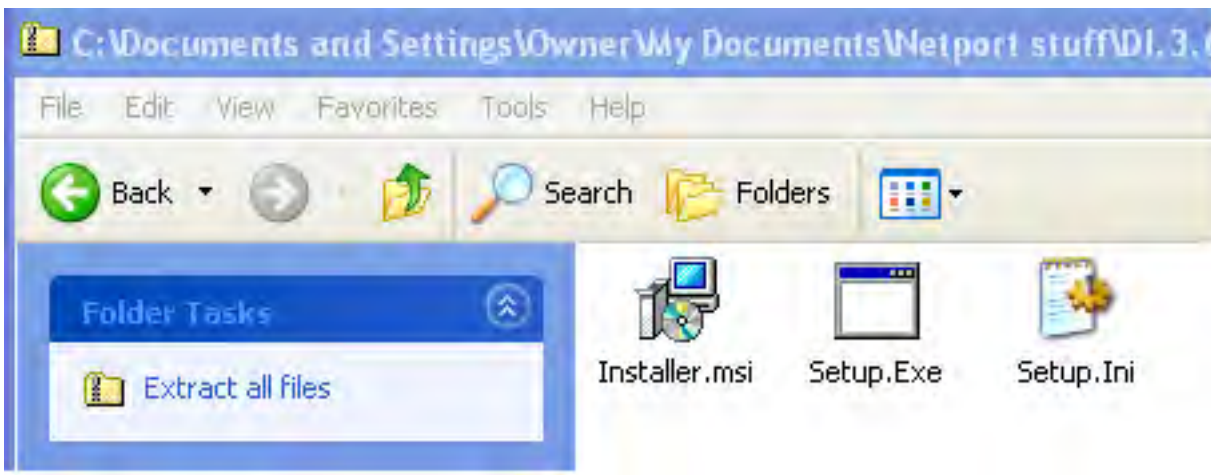
Click “Yes”



Eventually you will get to:

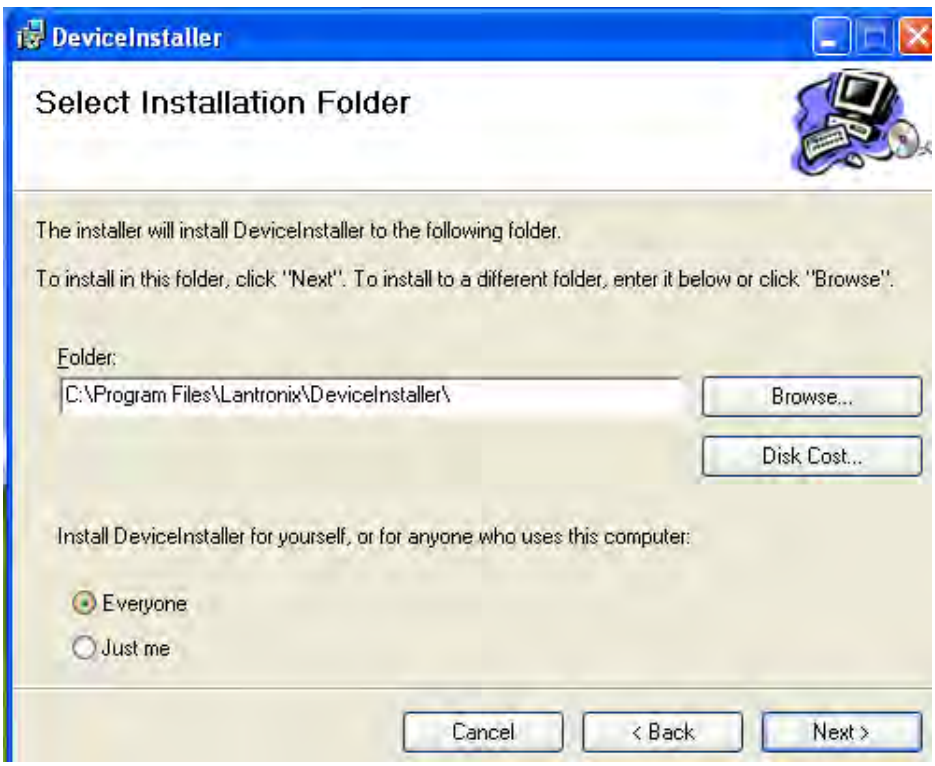


Click OK
Go back to the downloaded files and try installing the installer again.



If you get the following click “Run”

Install the installer where you would like it to be.

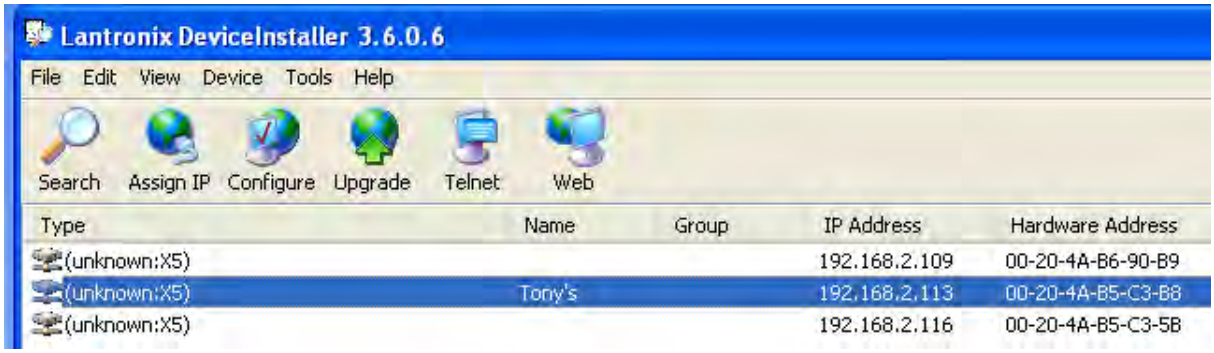


Connect the LAN01/06 (or your Kentech unit with ethernet) to a Local Area Network. Power up the unit. if necessary switch the unit to make the ethernet port active (may a be a switch next to the ethernet socket).

Go to the “Start” menu and select,
All programs/Lantronix/DeviceInstaller/DeviceInstaller
[pin it to the start menu if you are going to use it often]

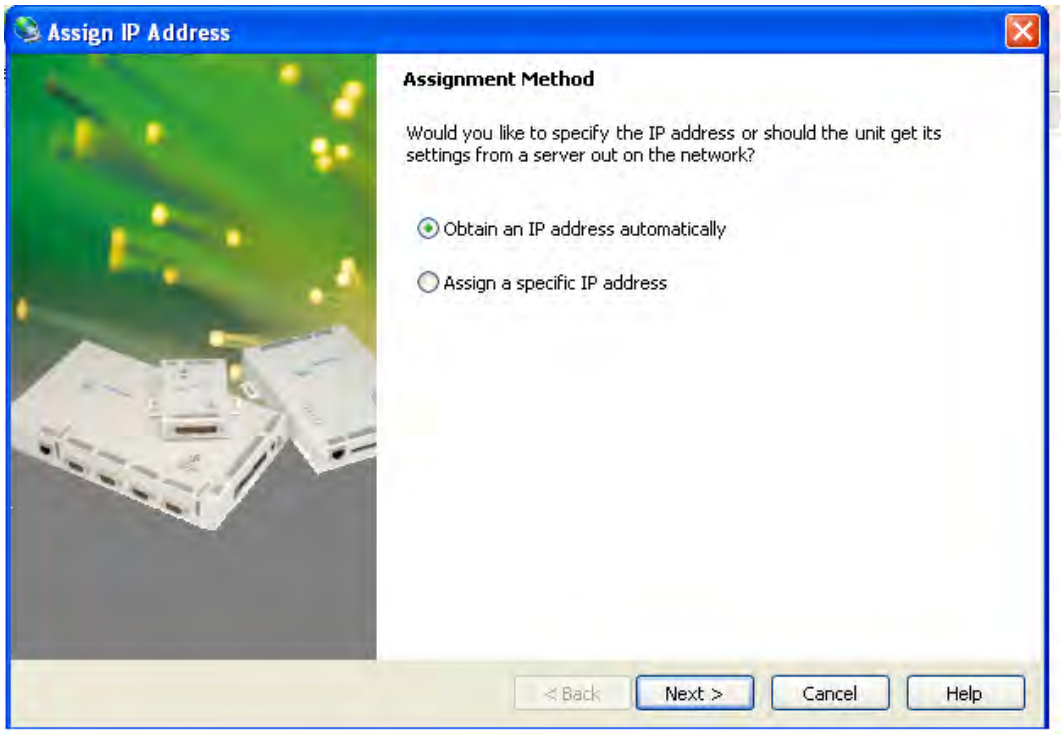
If you stored the program somewhere else you will need to go to that location instead.

Device installer will launch, click on “search” if necessary.

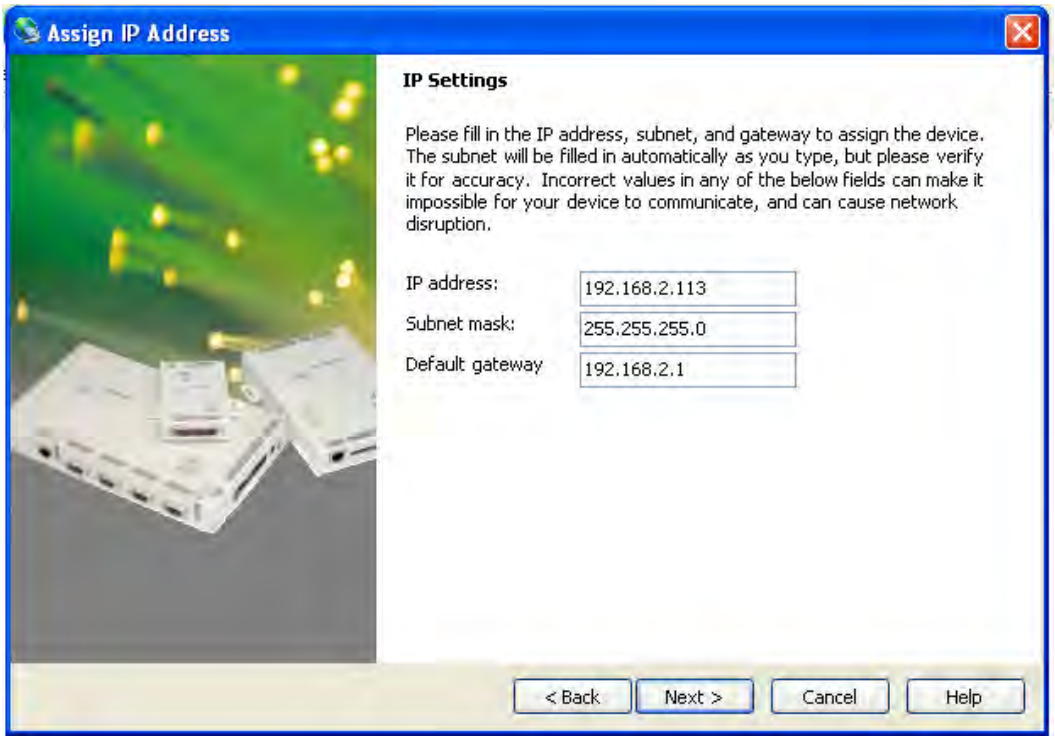


Select the adapter you wish to configure, check the MAC number with that printed on the unit if necessary.

Click Assign IP

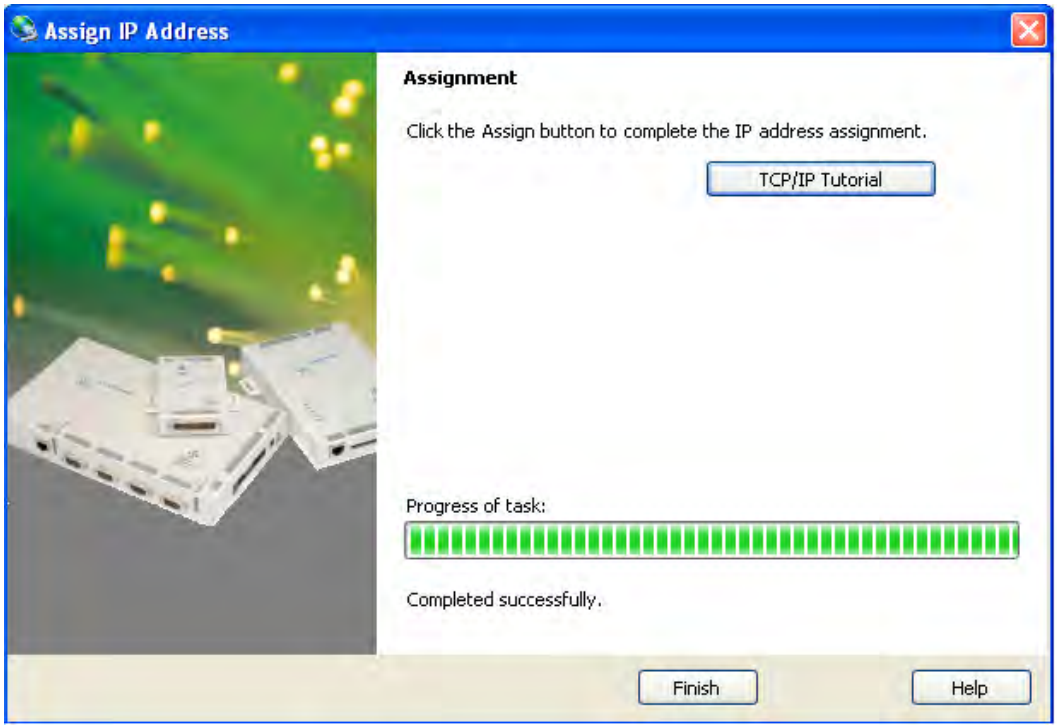


Generally we find it better to assign a fixed IP address as one then knows what it is. Select “Assign a specific IP address” and click “Next”



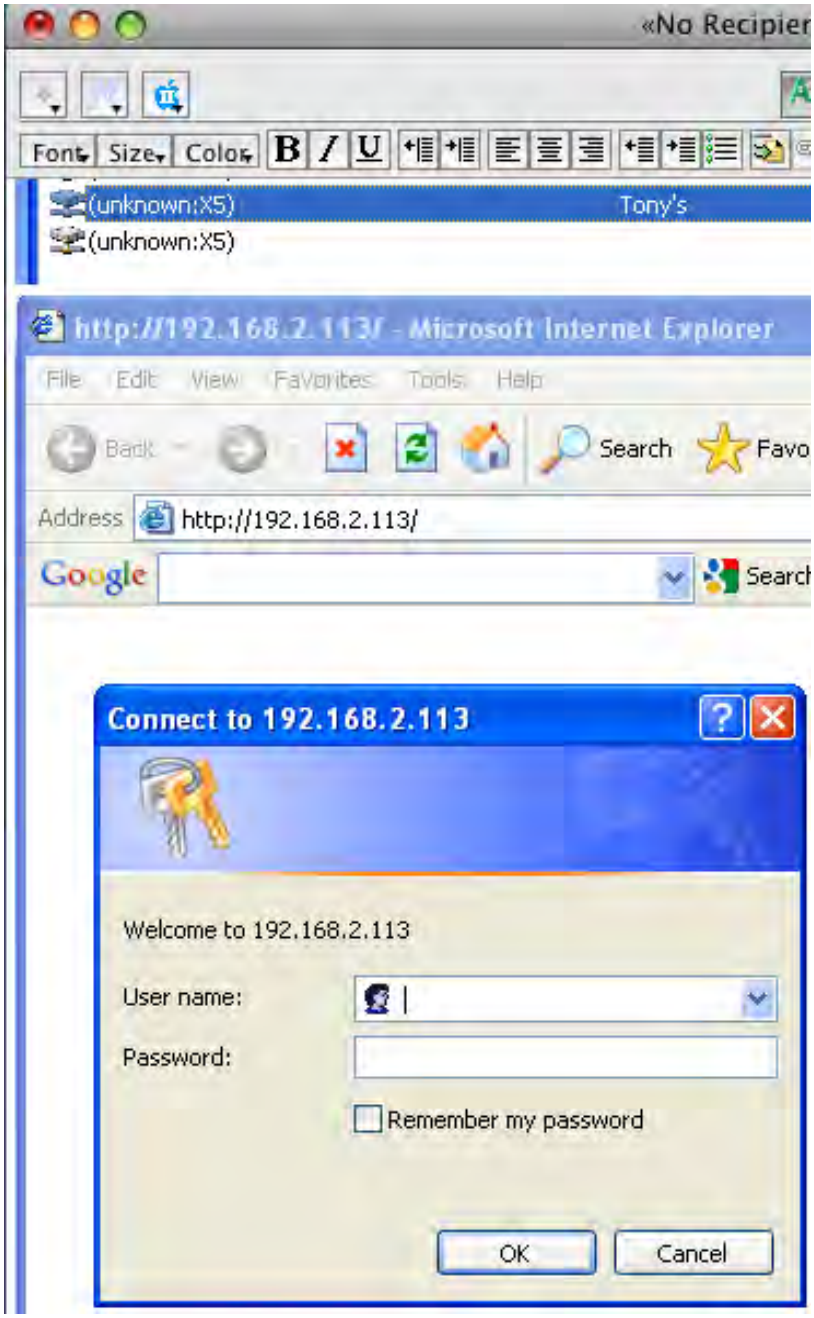
You will need to know what IP addressees are available to you, the IP address of the router and the subnet mask. The figures shown are typical only.

If you are connecting directly to a PC (or Mac) the router address is not necessary but the PC will have to be on a different fixed IP address on the same subnet.
Click “Next”



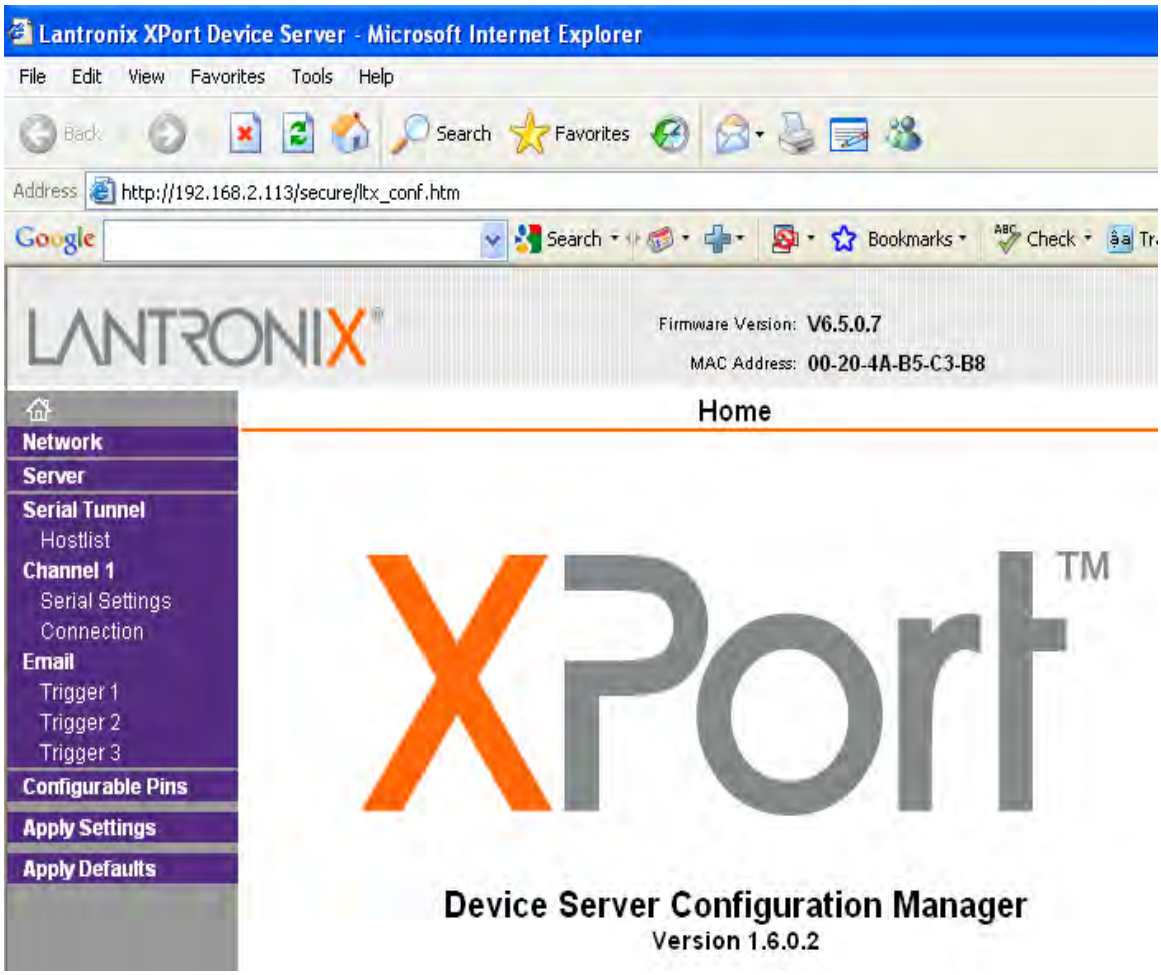
Click “Finish”
You now need to set up the serial RS232 port of the Netport.
To do this select the adapter in the search window again

This time click “Web” to open your browser.
The browser will put up a logon window:

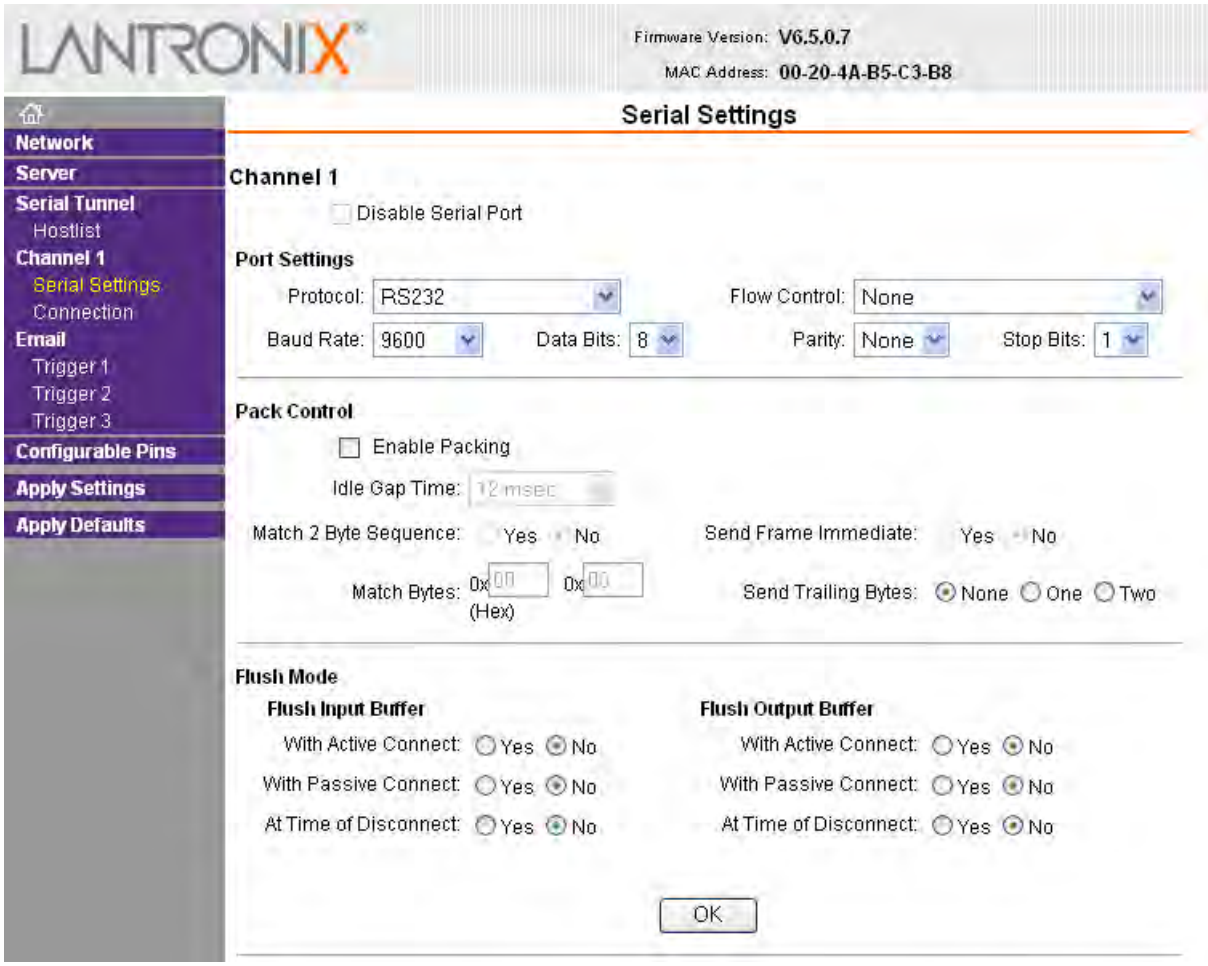


Click OK without filling in any fields.

You should see the following:

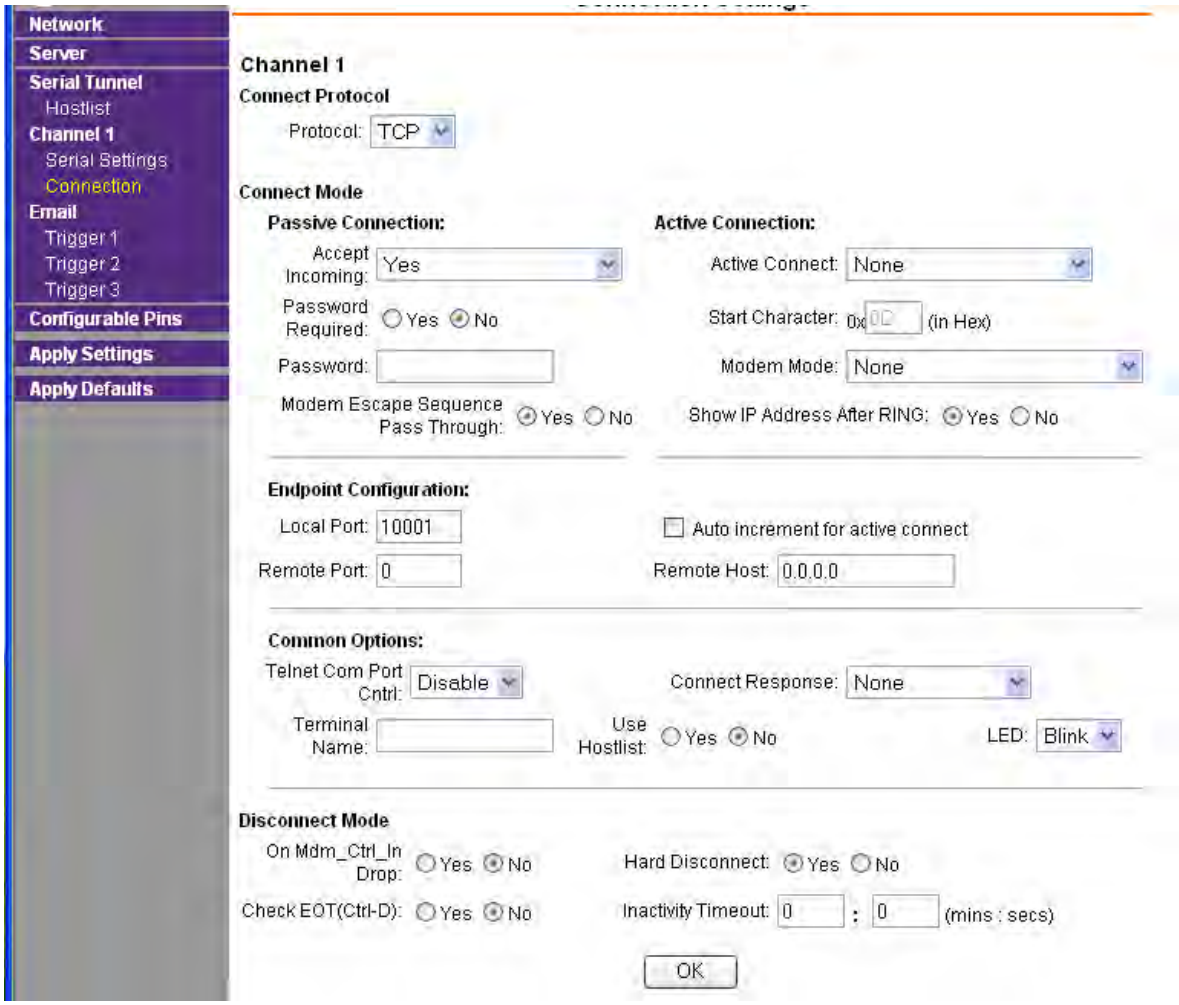


Click on “Serial Settings” to produce the following screen.



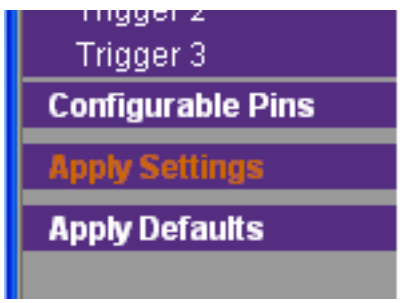
Set The protocol, baud rate, flow control, Data bits, Parity and stop bits as shown.
Click OK

Click on “Connection” in the left bar.
You should see:



Make sure the Endpoint configuration Local port is set to 10001 and click OK.

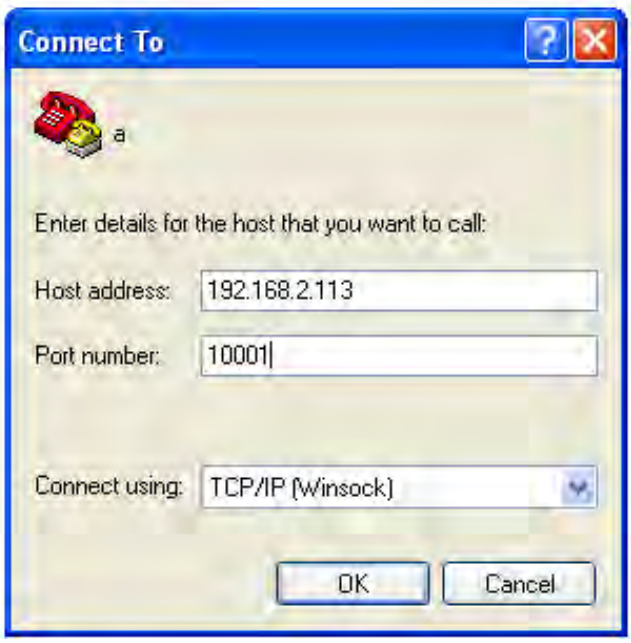
Click “Apply Settings” from the bar on the left.
This is very important as otherwise nothing gets changed.



Close the browser window.

Open Hyperterminal and if necessary open a new connection.
Give the connection a name if you want to use it again.
Select a different Icon if you wish.

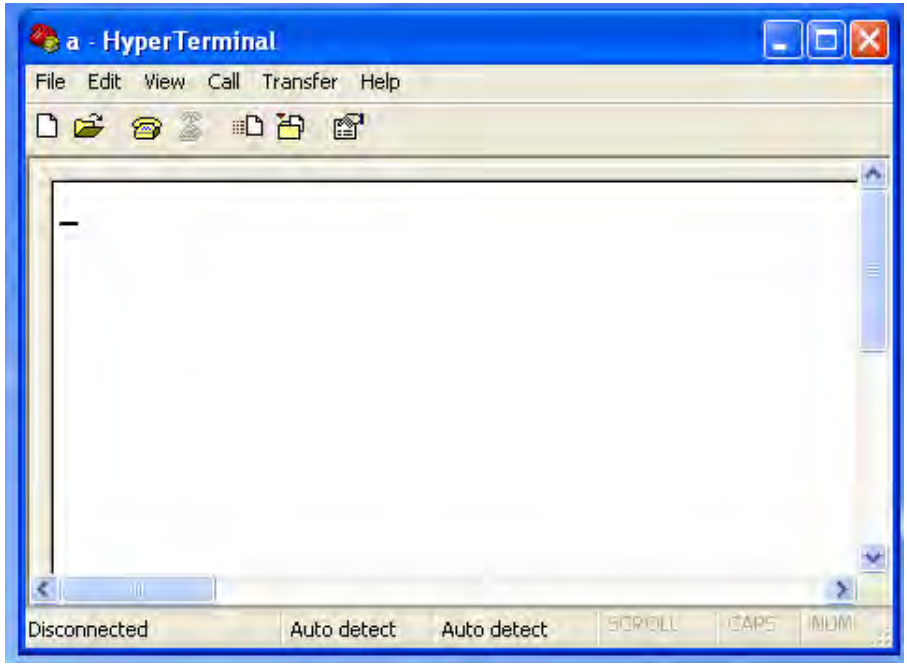
Click OK



Select TCP/IP (Wincsock) from the pop up menu then fill in the two higher fields with the relevant data.
The host address is the IP address you have set your adapter to.
The Port is set to 10001, assuming that this is what you set it to on the web page.

Click OK.

You should now have a flashing cursor



If not you have probably made a mistake.

You should now be able to type commands at your Kentech device.

Note that now the adapter is installed you can just go straight to Hyperterminal to access it on other occasions.
Should you need to change the IP address or other settings these can be done with a browser. Note that you can access the web page from a Mac as well as a PC but Safari is not compatible with the Netport, use Firefox.

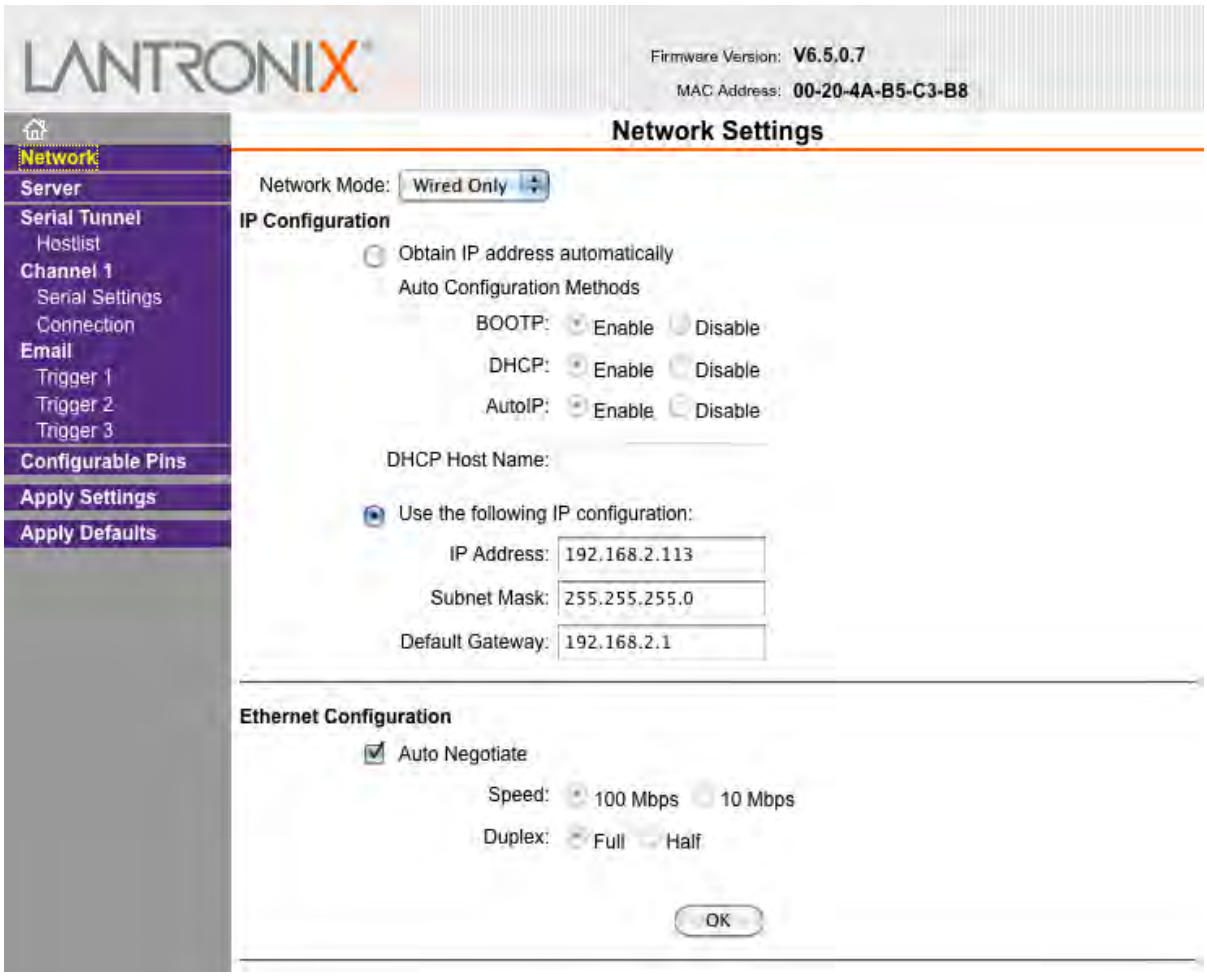
As far as we are aware there is no software for the first full setting up of the Netport on a Mac except under Windows (works fine with VM Fusion).

If you set the IP address outside the subnet of the LAN you will have to either use Device installer to change it back or you can connect the device directly to a machine set up with a fixed IP address on the same new subnet.

Note that Lantronix also supply a COMM port redirector. This is suitable for most PC applications that can talk to a serial port and makes them talk to the Ethernet port via TCP/IP instead. Hyperterminal does not need this redirector.

Changing the IP address to something outside your subnet.

This can be done from the browser interface by clicking on “Network”
You will get the following window:



Set the IP address, subnet mask and gateway IP address (if needed).

Click OK and then click “Apply Settings” from the navigation bar.

Note that if you change the IP address to something outside your subnet, you will not be able to communicate with the unit unless you have a tunnel to the relevant LAN or you change the IP address on your computer to something within your subnet .

It is possible to communicate with the unit over a VPN link with the endpoints in different subnets.