MANUAL
Connection of a decoflame® e-Ribbon Fire™ to a Smart Home System (or another controller)

User Manual

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English

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Please read this manual
Keep the manual in a safe place for future reference

English

User Manual

**Connection of a decoflame®
e-Ribbon Fire™ to a
Smart Home System
(or another controller)**

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GENERAL INFORMATION

Your made to measure bioethanol fireplace with decoflame® e-Ribbon Fire is equipped with hardware and software which allows connection to and controlling it via a Smart Home System (or any other suitable computer system) in three different ways –

1. using wireless communication over Telnet (provided that your fire is equipped with a WiFi Adapter)
2. wired Ethernet (provided that your fire is equipped with an Ethernet Adapter)
3. using the RS-232 port (provided that your fire is equipped with an RS-232 Card)

1. WIRELESS CONNECTION TO A SMART HOME SYSTEM VIA TELNET PROTOCOL

Provided that your decoflame® e-Ribbon Fire has been equipped with a WiFi Adapter featuring a Telnet gateway, you can connect your fire to your Smart Home System wirelessly.

First, please use your system (this might be your Smart Home Server or PC) and ***connect*** it to the wireless network of your e-Ribbon Fire choosing either AD-HOC or INTRASTRUCTURE (ROUTER) MODE as discribed in the following steps.

NB - The fireplace will only switch on, if its status shows as "READY". Should an error message show (e.g. fuel empty, fuel lid open, spill top, etc.), the e-Ribbon Fire has to be RESET by turning the fire off and on again at the ON/OFF button below the display.

CONNECTION TO THE NETWORK OF YOUR e-RIBBON FIRE

Switch on the electronics of your e-Ribbon Fire by opening the display lid, flipping the display over and switching the ON/OFF button underneath into the ON position. Position yourself in close proximity to your fire.

Enabling WiFi on your System, select and connect to the e-Ribbon Fire network ***DECOFLAME***. No password is needed.

Open the web browser and enter ***192.168.2.1*** and confirm by return.

SELECT CONNECTION MODE

AD-HOC MODE

In the next window appearing on your device you can select your preferred connection mode in order to initialise the WiFi adapter: ***ad-hoc*** or ***infrastructure mode***. You can choose freely between those two modes as Telnet will work with both.

If you wish to control you decoflame® e-Ribbon Fire directly in peer-to-peer mode choose *ADHOC*.

In the field *SSID*, please enter a network name of choice for your fire, e.g. *MY FIRE*. No password is required. Select *SUBMIT*.

NB: do not choose an already existing network name for your fire.

Exit your browser and return to the Wi-Fi Network List. You will see that ***MY+FIRE*** has been added to the list of available wireless networks.

Select ***MY+FIRE*** from the list of networks. In this instant, the network ***DECOFLAME*** will disappear from the list.

Open your browser again and enter the address ***192.168.2.1/1.htm*** and confirm. You might notice that it will take a short while until the connection has been established, however, this short delay is only experienced during the first connection attempt.

You only need to enter this address once i.e. the first time you use your system wirelessly to control your decoflame® e-Ribbon Fire.

NB: Remember to select ***MY+FIRE*** as network from the list on your device once again, should your device have been out of range of this network.

The next window you will see is the operating panel.

INFRASTRUCTURE (ROUTER) MODE

Once you have entered the IP Address as described above, in the next window which appears, please enter the network name of your router in the field ***SSID*** and its password (if required) underneath. NB: both are case sensitive and do not allow entering blanks. Select ***ROUTER*** and confirm by return.

The connection might take a short while to establish.

Briefly return to your network settings in order to check that your device is again connected to your router network. The network ***DECOFLAME*** has disappeared from the list of available wireless networks.

Open the display lid of your decoflame® e-Ribbon Fire and press the ***+ button*** until you see a several digit number on the display above the fuel level indicator bar (you will hear a beeping sound whilst you hold the button down). This number is the ***IP address*** which your router has dedicated for your e-Ribbon Fire. Make a note of this IP address.

Open your browser and enter this IP address followed by ***/1.htm*** in the address field then confirm by return. This extension is only necessary the first time you connect to the fire via your network router.

You will notice that the extension ***/1.htm*** disappears once the connection is being established.

The next window you will see is the operating panel.

CHANGE BETWEEN CONNECTION MODES

Once you have decided for a first time connection mode i.e. either ad-hoc or infrastructure/router mode, you can change this at a later stage by erasing the IP configuration. This sounds more difficult than it actually is:

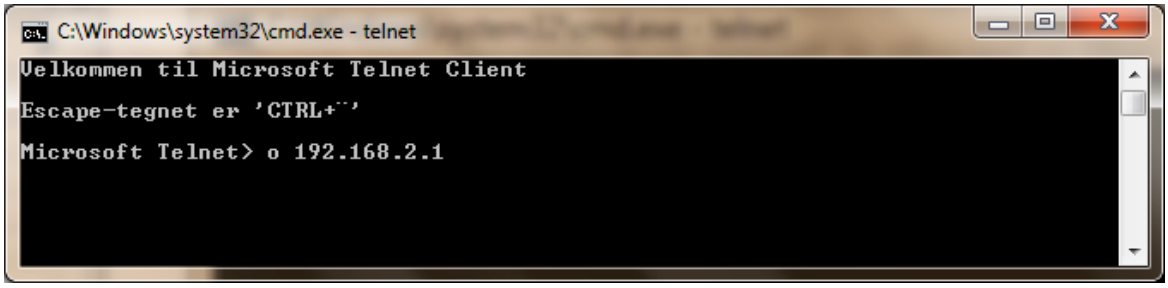
Open your browser. Enter the known IP address for the previous connection type you had chosen e.g. 192.168.2.1 or 10.0.0.11 (example used in this context only!) followed by ***/EraseConfig1856***, confirm return.

This erases the memory of the any earlier IP configuration for the decoflame® e-Ribbon Fire network and enables you to choose a different connection mode as described under *AD-HOC CONNECTION MODE* and *INFRASTRUCTURE (ROUTER) CONNECTION MODE* above.

CONNECTION VIA TELNET

For illustration purposes, we have used here the Telnet protocol with a command line client on a PC. Should your system use Windows 7 or later, Telnet will not be enabled by default. Your can enable it by accessing your Control Panel – Programs – Turn Windows Features on or off – and choosing TELNET CLIENT.

Start telnet.exe in a dos promt (default gateway 192.168.2.1 on port 23).



When the connection has been established you will be prompted for your ***LOGIN***. Enter ***admin*** (all lower case) and confirm with return.
You will be prompted for a ***PASSWORD***. Enter ***Decoflame2088*** and confirm with return.

The following case ***sensitive*** commands are supported:

Command	*Response of -Ribbon Fire*
"FLAME_ON"	turns flame on
"FLAME_OFF"	turns flame off
"FLAME_UP"	increases flame intensity by one step
"FLAME_DOWN"	decreases flame intensity by one step
"SET_TIMER0"	turn timer off
"SET_TIMER1"	sets turn off timer to 1 hour
"SET_TIMER2"	sets turn off timer to 2 hours

“SET_TIMER3”	sets turn off timer to 3 hours
“SET_TIMER4”	sets turn off timer to 4 hours
“SET_TIMER5”	sets turn off timer to 5 hours
“GET_TIMER”	returns remaining minutes to set turn off time
“GET_STATUS”	returns statistics on consumption, heat output and fuel level

Misspells are returned with the response ***"unknown".***

The following case ***insensitive*** commands are supported:

Command	***Response of -Ribbon Fire***
“HELP”	shows help screen
“QUIT”	quits the Telnet session

Most of these commands are self-explanatory and the controller responds with the given command in lower case.

NOTE: The command is entered without the quotation marks.

TIMER FUNCTION

The TIMER FUNCTION can only be set if the e-Ribbon Fire is showing ***WARMING UP*** or ***FLAME1*** to ***FLAME6*** on the display. It cannot be set if the displays shows ***READY*** or an ***ERROR*** message.

The command **GET_TIMER** will return with **timer=nnn**, whereby **nnn** shows the minutes left until the fire turns off automatically.

STATISTICS

The command **GET_STATUS** will return with the following response:

status shows the current flame setting (here FLAME6 as is shown on the display of the fireplace).
consumption1 shows the approximate consumtion of bioethanol in ml/hour.
consumption2 shows the heat output in percent of maximum heat output.
fuel refers to percentage of fuel remaining in the tank.

As Telnet is a client-based protocol (100% pulling), the client must poll the controller in order to fetch data updates. Corresponding with the messages shown on the display of the fireplace, these are the possible status responses:

"FLAME 1"
"FLAME 2"
"FLAME 3"
"FLAME 4"
"FLAME 5"
"FLAME 6"
"READY"
"FUEL LID OPEN"

"FUEL EMPTY"
"FLAME TRAY HOT"
"SPILL TOP"
"SPILL BOTTOM"
"NO FLAME"
"WARMING UP"
"TURN OFF"

2. CONNECTION VIA WIRED ETHERNET

Enabling a wired Ethernet connection, your decoflame® e-Ribbon Fire™ is equipped with a programmable Ethernet Adapter which is a Lantronix XPort.

The XPort is factory-set to default whereby the baud rate for the communication down to the controller is set to ***19200 baud***, and this value ***must not*** be changed.

Usually, connection to the adapter is established by allowing a router to assign an IP address to the XPort by the computer/controller, but here Lantronix setup software allows you to assign a static IP address to the XPORT (for further information please refer to the Lantronix manual which can be downloaded at www. Lantronix.com).

Establish a TCP/IP connection to the XPort at the given IP address on port 10001 (this default port ***can*** be changed).

3. CONNECTION VIA RS-232 port

Connecting your system to the decoflame® e-Ribbon fire using its RS-232 port with the following parameters:

19200 baud (bits per second)
8 data bit
No parity bit
1 stop bit
No handshake

PROTOCOL FOR BOTH WIRED ETHERNET AND RS-232 CONNECTION

The protocol for ***both*** the wired Ethernet and the RS-232 connection is a simple 5 byte protocol:

<start byte> <data high byte> <data low byte> <checksum> <end byte>

where:
<start byte> = 0x01
<checksum> = ~ ((<data high byte> + <data lowbyte byte>) & 0xFF)
<end byte> = 0x04

Note: The value of the data byte specifies the command.

The following are the FLAME CONTROL commands:

<0x0010> = ON
<0x0020> = OFF
<0x0030> = UP
<0x0040> = DOWN
<0x0001> = FLAME 1
<0x0002> = FLAME 2
<0x0003> = FLAME 3
<0x0004> = FLAME 4

<0x0005> = FLAME 5
<0x0006> = FLAME 6
The control will reply with the same command.

The following are the commands for setting the TIMER of the e-Ribbon Fire:

<0xA000> = clear timer
<0xA001> = set timer for 1 hour
<0xA002> = set timer for 2 hours
<0xA003> = set timer for 3 hours
<0xA004> = set timer for 4 hours
<0xA005> = set timer for 5 hours
The control will reply with the same command.

Please be aware that the reply of the controller only indicates that the command is understood. Whether the command will be actioned by the fire depends on the STATUS of the fire, which has to be READY.

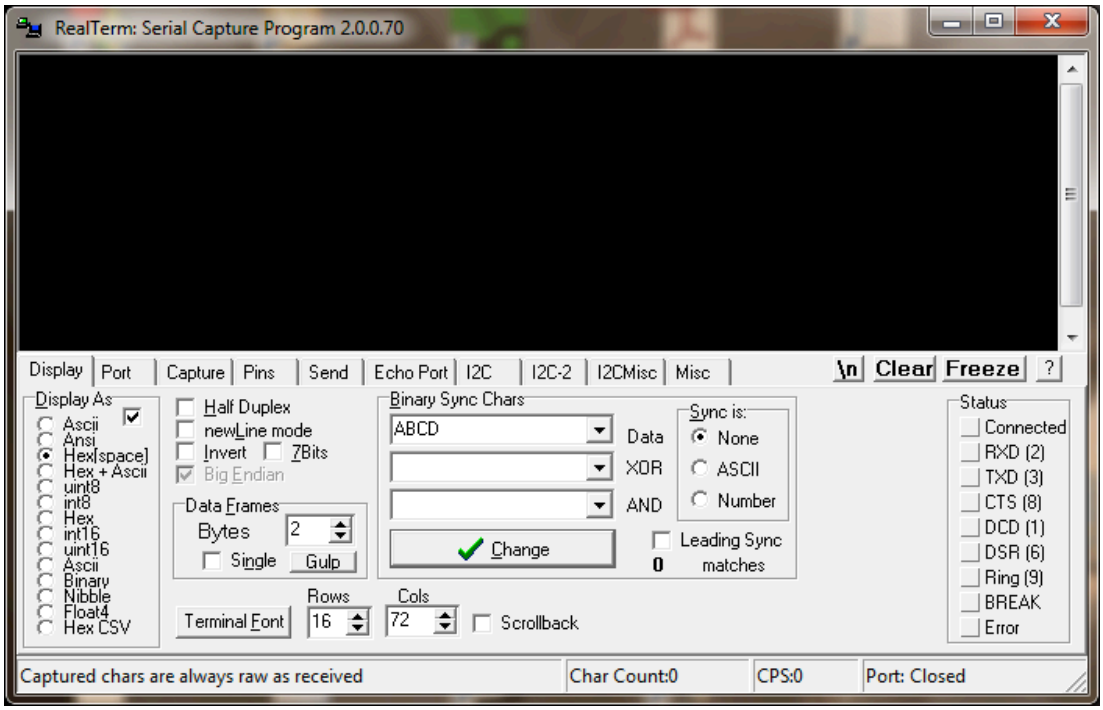
Connecting to the e-Ribbon Fire via Ethernet or RS-232 Adapter works with a client-based protocol (100% pulling), which implies that the client must poll the controller in order to fetch data updates.

The following comments allow you to request STATUS information from the decoflame® e-Ribbon Fire – i.e. the set currently set flame level or any error messages -, the remaining fuel level in the tank, the fuel consumption, the heat output and the remaining operation time set by engaging the timer function:

<0x9000>= Get tank level in % of full
Reply <0x9nnn> where nnn in [0..100]
<0xB000>=Get fuel consupmtion in ml/hour
Reply <0xBnnn> where nnn in [0..4000]
<0xE000>=Get output effect in % of max
Reply <0xEnnn> where nnn in [0..100]
<0xAFFF>=Get timer value
Reply <0xAnnn> where nnn is the time left to turn off in 3 minutes ticks
<0xD000>=Get status text
Reply <0xDnnn> where the value of n is decoded as:
1: "FLAME 1"
2: "FLAME 2"
3: "FLAME 3"
4: "FLAME 4"
5: "FLAME 5"
6: "FLAME 6"
7: "READY"
8: "FUEL LID OPEN"
9: "FUEL EMPTY "
10:"FLAME TRAY HOT"
11:"SPILL TOP"
12:"SPILL BOTTOM"
13:"HOT EVAPORATOR"
15:"NO FLAME"
16:"WARMING UP"
17:"TURN OFF"

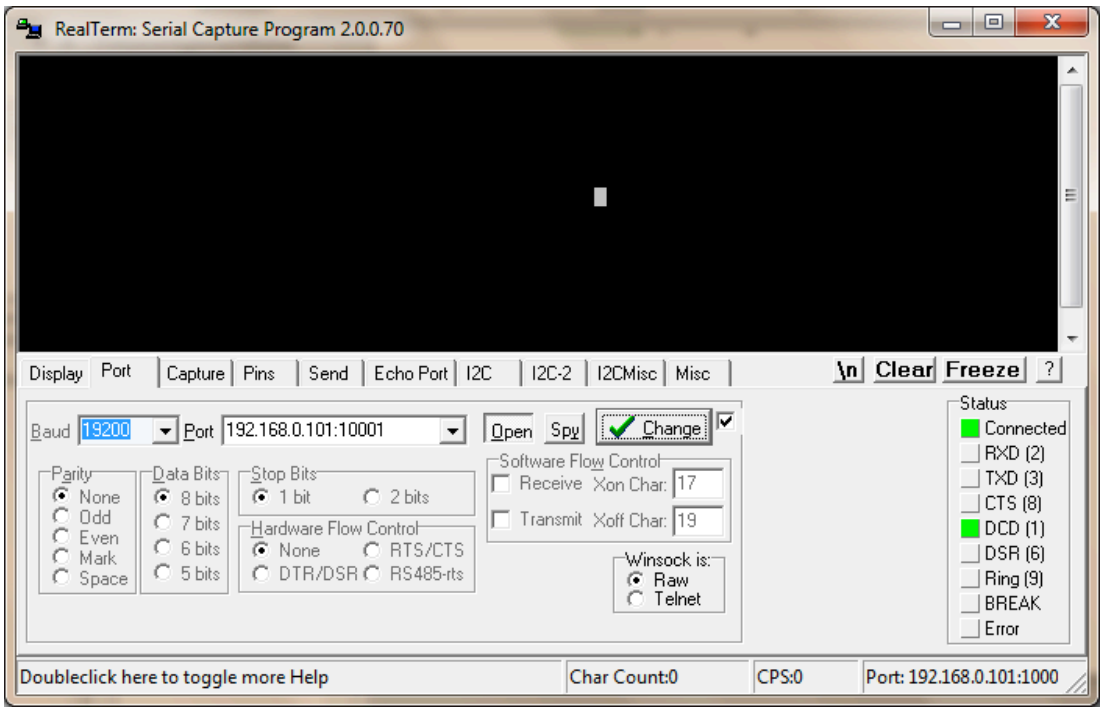
EXAMPLE OF HOW TO USE THE PROTOCOL FOR WIRED ETHERNET

We would like to show here how to start the fireplace from RealTerm, which is a terminal program which can be downloaded free of charge.



Display

Select <Hex[space]> so the received characters can be read in the same format as described.

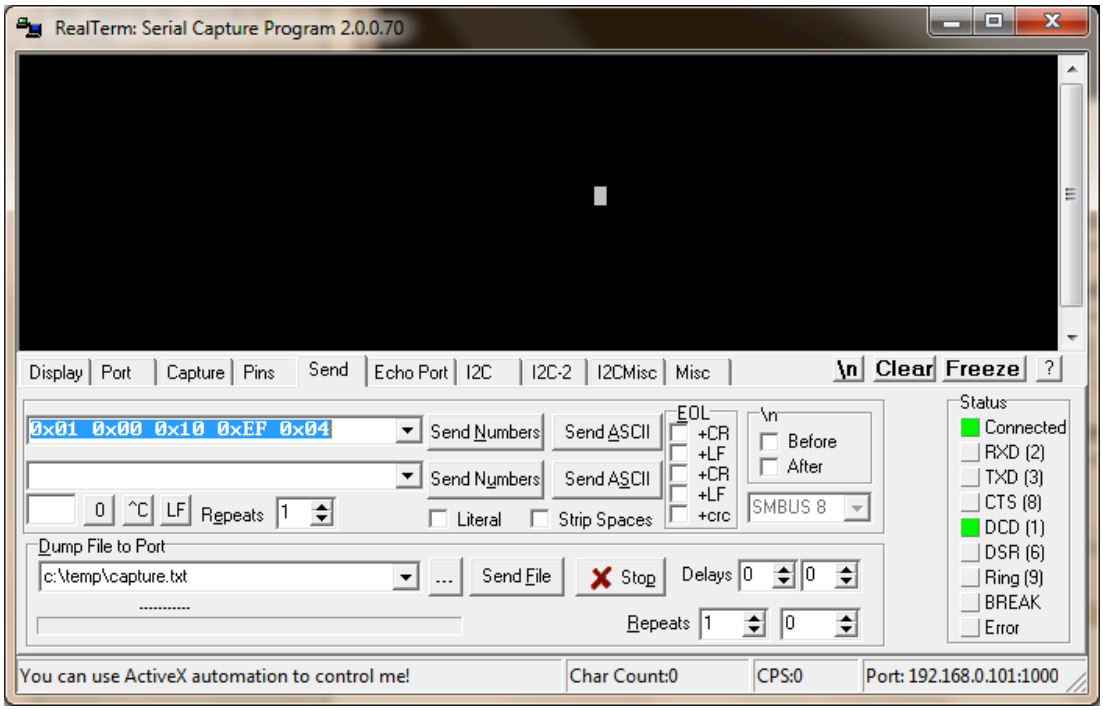


Port

Mark <Winsock> to ***Raw***

and select the correct ***IP address*** (here we used 192.168.0.101) and port (the Lantronix uses default port ***10001***).

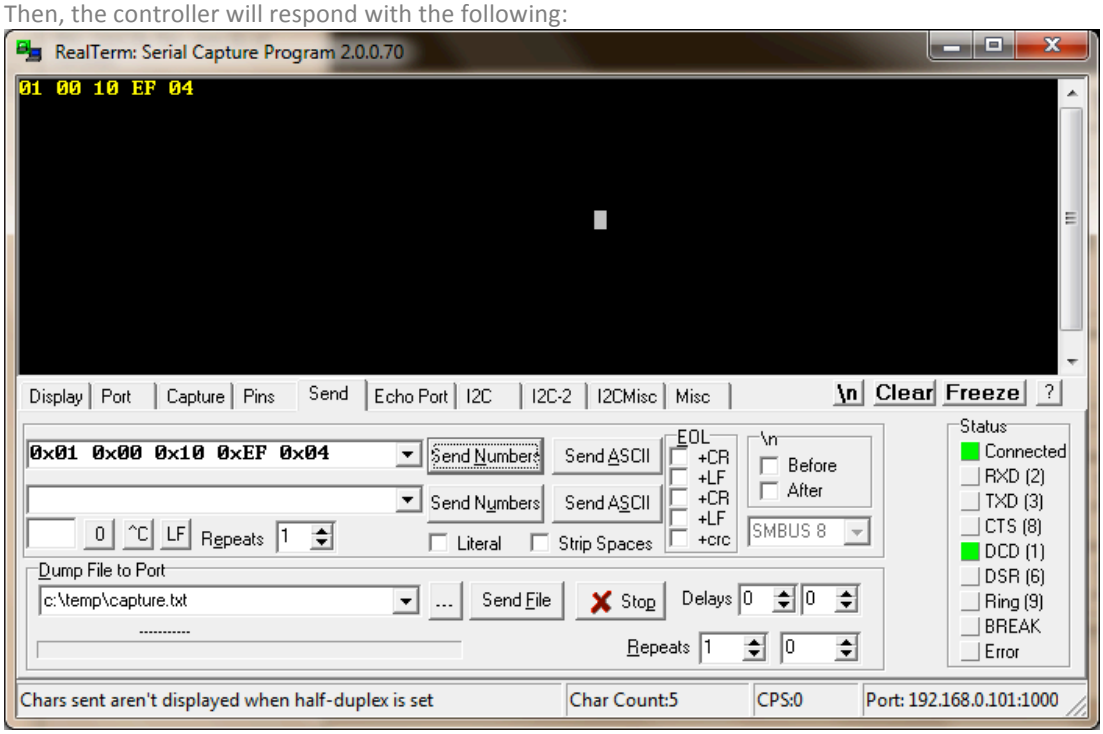
And open the connection by clicking on <open>.



Send

Now we are ready to send the command in order to turn the fireplace on. Type the shown numbers click on <Send Numbers>

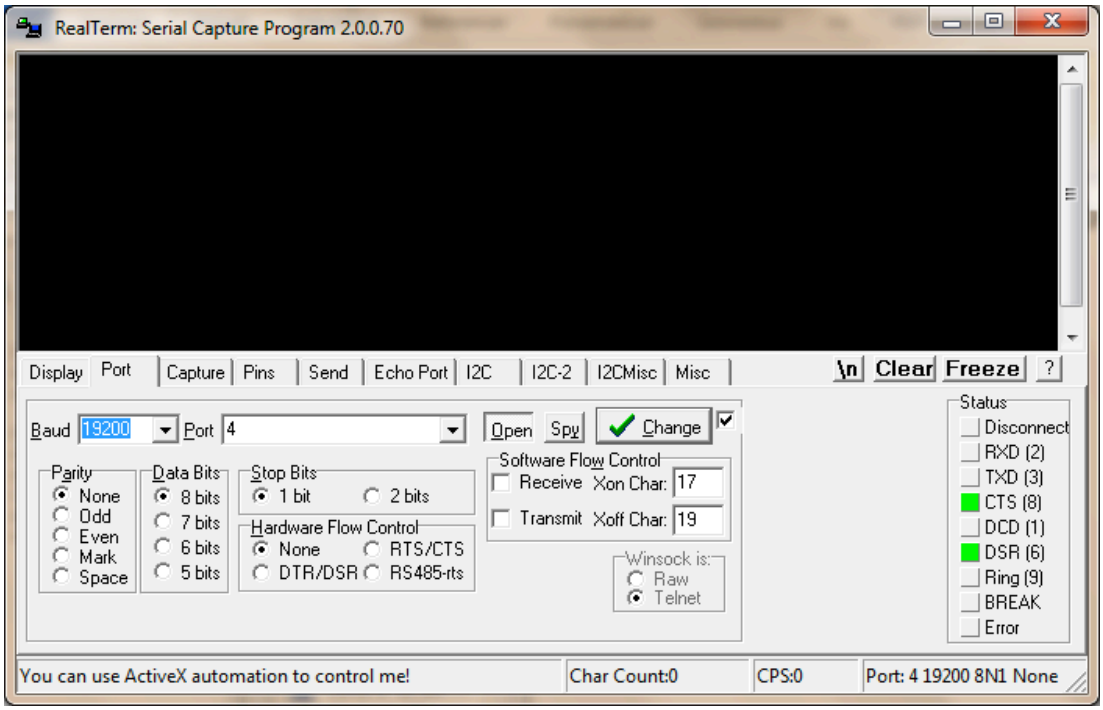
Then, the controller will respond with the following:



Now the connection between the controller and the e-Ribbon Fire has successfully established.

EXAMPLE OF HOW TO USE THE PROTOCOL FOR AN RS-232 CONNECTION

As described above, we have used RealTerm for this example. Repeat all steps as described above, however, choose the following ***PORT*** settings:



Here the connection is made to COM4 on the PC.

For more information please visit www.decoflame.com

or contact Decoflame at info@decoflame.dk