



SPECTRUM CNC TECHNOLOGIES

Multi-DNC Smart-Box overview

The Multi-DNC Smart-Box is designed to provide maximum functionality, convenience & ease-of-use for CNC Operators to access the many functions of the Multi-DNC software right at the CNC Control.

All the functions provided by the Smart-Box are arranged in easy to navigate menus. There are 5 keys provided for navigation, Up, Down, Left, Right, Cancel & Enter. From these 5 keys all functions can be accessed. When entering a filename the up & down arrow keys are used to scroll through all the available characters.


The following menus are provided on the Main Menu


- MAIN MENU -
DNC Operations
Request Help
Messages
Machine Alarms
Machine Idle
Settings

DNC Operations - Get a CNC Program by browsing

This function allows the operator to browse through a list of CNC Programs located in the Machine's primary folder defined within the Multi-DNC setup.

Pressing the     keys provides vertical & horizontal scrolling.


Pressing the  key on a filename will cause Multi-DNC to send the selected file to the CNC Machine.


Pressing the  key will go back to the previous menu.

Note: During the transfer of the CNC Program to the Machine the Smart-Box will display status information including % complete, number of blocks transferred, remaining bytes & a progress bar.

DNC Operations - Get a CNC Program by name

This function allows the operator to enter the name of the required file. The operator can enter a partial filename & Multi-DNC will search & display a list of files that match the partial filename entered so that the operator can choose from the list which file is required.


Pressing the  key will cause Multi-DNC to send the selected file to the CNC Machine.


Pressing the  key will go back to the previous menu.


Note: During the transfer of the CNC Program to the Machine the Smart-Box will display status information including % complete, number of blocks transferred, remaining bytes & a progress bar.

DNC Operations – View a CNC Program by browsing

This function allows the operator to browse through a list of CNC Programs located in the Machine's primary folder defined within the Multi-DNC setup.

Pressing the     keys provides vertical & horizontal scrolling.


Pressing the  key on a filename will select the CNC Program & allow the operator to view the actual CNC Program on the Smart-Box display.


Pressing the  key will go back to the previous menu.

DNC Operations - Get a Job-BASE Job by browsing

This function allows the operator to browse through a list of Jobs created using Job-BASE paperless manufacturing software. All Jobs are stored within an SQL Server database.

Pressing the     keys provides vertical & horizontal scrolling.

Pressing the  key on a Job will cause Multi-DNC to send the CNC Programs associated with the selected Job to the CNC Machine.


Pressing the  key will go back to the previous menu.


Note: During the transfer of the CNC Program to the Machine the Smart-Box will display status information including % complete, number of blocks transferred, remaining bytes & a progress bar.

DNC Operations - Get a Job-BASE Job by name

This function allows the operator to enter the name of the Job required.

Pressing the     keys provides vertical & horizontal scrolling.

Pressing the  key on a filename will cause Multi-DNC to send the selected file to the CNC Machine.


Pressing the  key will go back to the previous menu.


Note: During the transfer of the CNC Program to the Machine the Smart-Box will display status information including % complete, number of blocks transferred, remaining bytes & a progress bar.

DNC Operations – Receive File

This function allows the operator to enter a filename that will be used to receive data output from the CNC Machine.

Pressing the     keys provides vertical & horizontal scrolling.


Pressing the  key will cause Multi-DNC to go into the receive mode with the filename specified & wait for data to be sent from the CNC Machine.


Pressing the  key will go back to the previous menu.

DNC Operations – Drip-Feed Restart

This function allows the operator to restart the drip-feed process at any point in the CNC Program. The restart function is often required due to a tool break etc.





Pressing the     keys provides vertical & horizontal scrolling.


Pressing the  key will cause Multi-DNC to re-send the CNC Program from the specified starting point in the program.


Pressing the  key will go back to the previous menu.

DNC Operations – Drip-Feed Auto-Restart

This function allows the operator to restart the drip-feed process at any point in the CNC Program. This is achieved by selecting from a list of starting points that were identified inside the actual CNC Program such as a Tool change or M01 etc. The restart function is often required due to a tool break etc.

Pressing the     keys provides vertical & horizontal scrolling.


Pressing the  key will cause Multi-DNC to re-send the CNC Program from the specified starting point in the program.


Pressing the  key will go back to the previous menu.

DNC Operations – Operator Login

This function allows the operator to enter his username & login to the Multi-DNC system. This can be very useful when multiple operators use the same machine on different shifts, by logging in production/utilization information can be attributed to the correct operator.

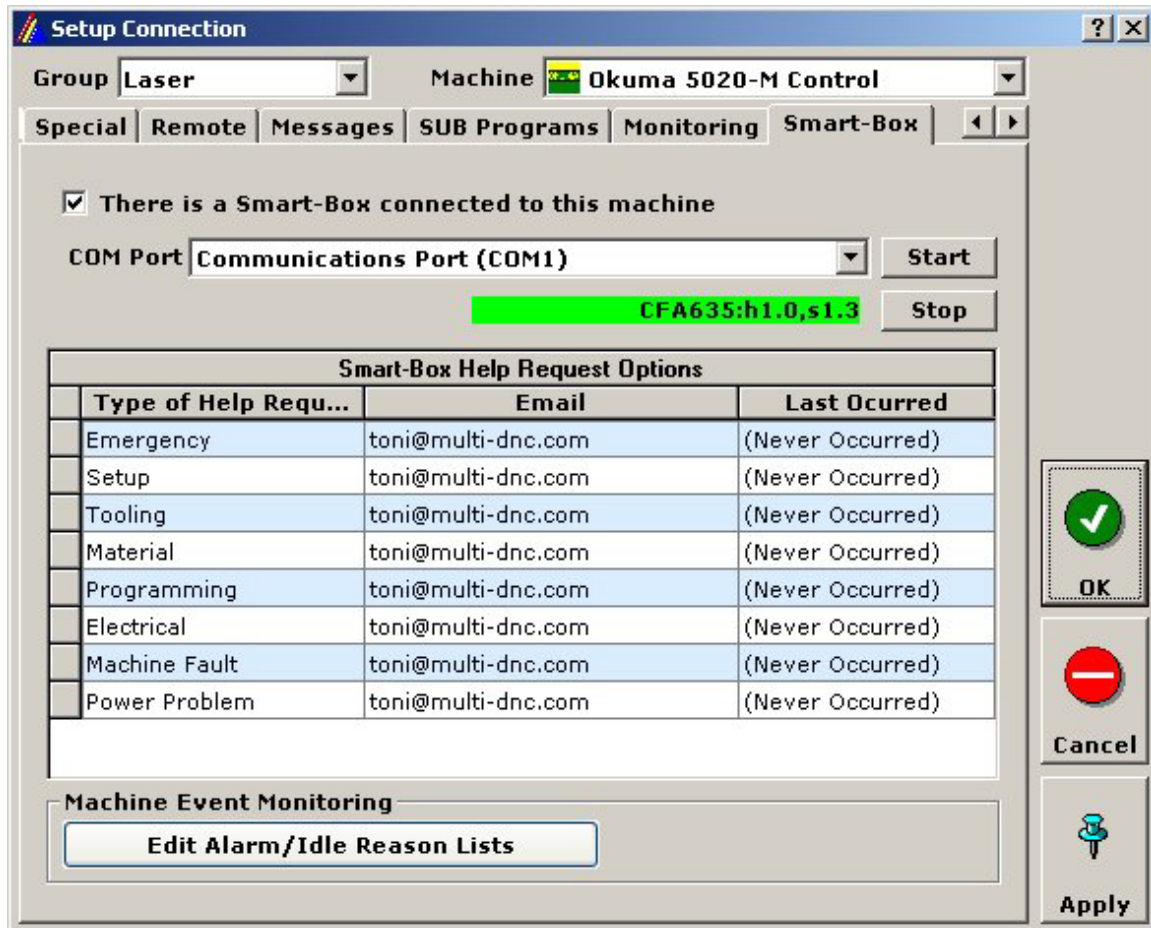
Pressing the     keys provides vertical & horizontal scrolling.

Pressing the  key will cause Multi-DNC to re-send the CNC Program from the specified starting point in the program.

Pressing the  key will go back to the previous menu.

Request Help

This function allows the operator to request help by choosing from a predefined list of help types. For example the following list could be setup in Multi-DNC.



Setup Connection

Group **Laser** Machine **Okuma 5020-M Control**

Special Remote Messages SUB Programs Monitoring Smart-Box

There is a Smart-Box connected to this machine

COM Port **Communications Port (COM1)** Start

CFA635:h1.0,s1.3 Stop

Smart-Box Help Request Options		
Type of Help Requ...	Email	Last Occurred
Emergency	toni@multi-dnc.com	(Never Occurred)
Setup	toni@multi-dnc.com	(Never Occurred)
Tooling	toni@multi-dnc.com	(Never Occurred)
Material	toni@multi-dnc.com	(Never Occurred)
Programming	toni@multi-dnc.com	(Never Occurred)
Electrical	toni@multi-dnc.com	(Never Occurred)
Machine Fault	toni@multi-dnc.com	(Never Occurred)
Power Problem	toni@multi-dnc.com	(Never Occurred)

Machine Event Monitoring

Edit Alarm/Idle Reason Lists

OK


Cancel


Apply

As many types of help request as required can be setup in Multi-DNC & the Smart-Box will display the list so that that operator can choose the type of help needed. The recipient of the email can respond back &

the response will be displayed on the Smart-Box for the Machine Operator.

Pressing the     keys provides vertical & horizontal scrolling.

Pressing the  key will cause Multi-DNC to send an email to the email address associated to the type of help requested.

Pressing the  key will go back to the previous menu.


Messages


This function allows the Machine Operator to look through any messages that might be waiting for him to read. He can also compose & send messages.

Machine Alarms

This function allows the operator to browse through a list of pre-defined Alarm conditions & choose the alarm condition that matches the CNC Machine's current alarm condition.

Pressing the     keys provides vertical & horizontal scrolling.


Pressing the  key will cause Multi-DNC will send an email to the associated email address for the type of alarm.


Pressing the  key will go back to the previous menu.

Machine Idle

This function allows the operator to browse through a list of pre-defined reasons for the Machine to be Idle.

Pressing the     keys provides vertical & horizontal scrolling.

Pressing the  key will cause Multi-DNC will send an email to the associated email address.





Pressing the  key will go back to the previous menu.

Settings


This function allows the operator to change the following pre-defined settings;

- 1). The folder used when browsing for CNC Programs. The operator can choose from existing folders on the Multi-DNC system.
- 2). The file extension. The operator can enter the desired file extension or make this setting blank to display all file extensions.

3). The file wildcard. The operator can use this setting to only display matching filenames on the Smart-Box. By making this setting blank all filenames will be displayed.

Pressing the     keys provides vertical & horizontal scrolling.

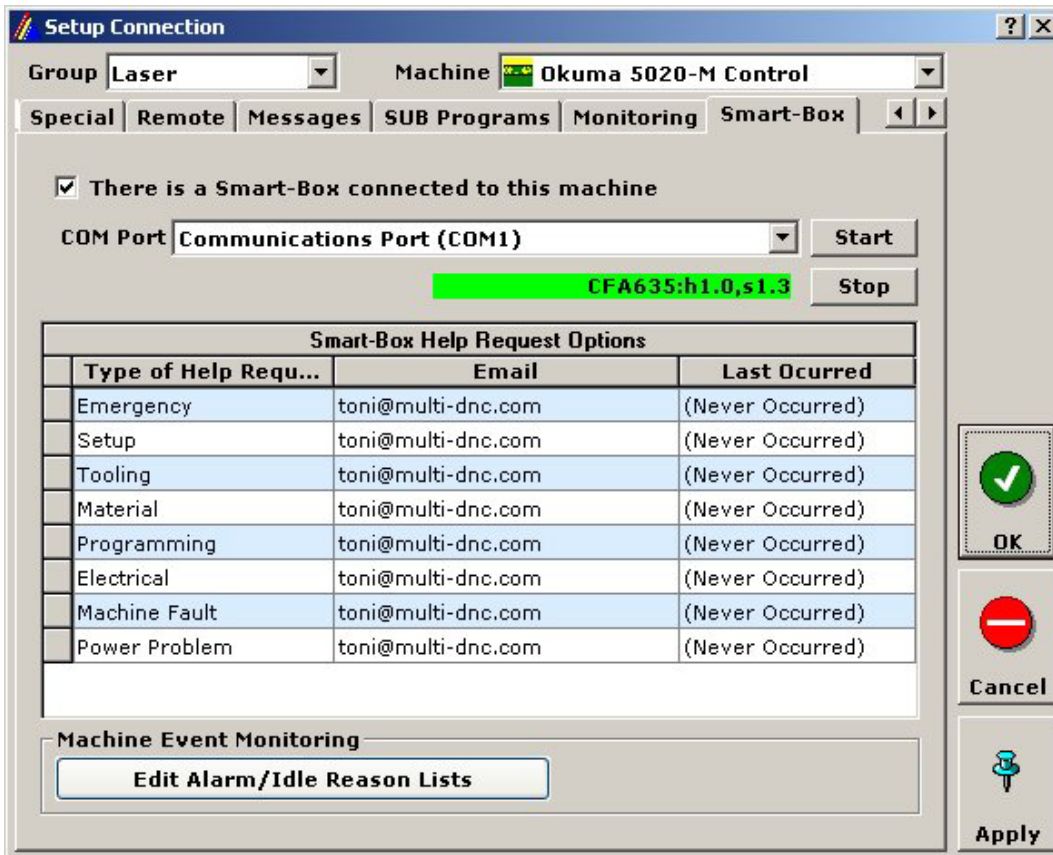
Pressing the  key save the new setting & go back to the main menu.

Pressing the  key not save the setting & will go back to the previous menu.

Setting up a Smart-Box in Multi-DNC

To setup a Smart-Box in Multi-DNC follow the procedure below.

- 1). Choose the Machine Connection in Multi-DNC
- 2). Go into 'Setup' & choose the 'Smart-Box' tab
- 3). Check the "There is a Smart-Box connected to this Machine" checkbox.
- 4). Choose the COM Port that the Smart-Box is connected to.
- 5). Test the connection by clicking the 'Start' button. Multi-DNC will attempt to start the Smart-Box service for this Machine connection. If successful you will see the status text background color turn Green, if not the background color will turn red.



NOTE:

Smart-Box Service:

Once a Smart-Box has been configured & the connection has been tested Multi-DNC will automatically start the Smart-Box service on Startup. When Multi-DNC is closed the Smart-Box service will also be automatically stopped. Multi-DNC can easily handle multiple Smart-Box services as needed.

Smart-Box On-Line/Off-Line:

When Multi-DNC is closed the Smart-Box service will also be automatically stopped. The Smart-Box will display the Off-Line message to the operator. Once Multi-DNC is started the Main Menu will be displayed at the Smart-Box.