

| VELD | SEEK | POWER ON |
|--|--|---------------------------|
| Amplitude Weld Amplitude (%) 100 Amplitude Ramp (ms) 80 External | Seek Ramp (ms) 80 Seek Time (ms) 500 Frequency Offset (Hz) 0 | ⊖ Off ● Seek ⊖ Scan |
| Frequency Digital Tune (Hz) 30000 Internal Offset (Hz) 0 | Timed Seek | Clear Memory |
| External Offset | | |
| End of Weld Store | | |
| Clear memory with Reset Clear memory before Seek | | |
| Set with Horn Scan | | |
| IISC SETUP | | |
| ☑ Alarms - Reset Required | | |
| Save | Cancel Restore | Defaults |

DCX RM B Web Page

Operating Manual

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Manual Change Information

At Branson, we strive to maintain our position as the leader in ultrasonics plastics joining, metal welding, cleaning and related technologies by continually improving our circuits and components in our equipment. These improvements are incorporated as soon as they are developed and thoroughly tested.

Information concerning any improvements will be added to the appropriate technical documentation at its next revision and printing. Therefore, when requesting service assistance for specific units, note the Revision information found on the cover of this document, and refer to the printing date which appears on this page.

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Foreword

Congratulations on your choice of a Branson Ultrasonics Corporation system!

The Branson DCX RM B Power Supply system is process equipment for the joining of plastic parts using ultrasonic energy. It is the newest generation of product using this sophisticated technology for a variety of customer applications. This Operating Manual is part of the documentation set for this system, and should be kept with the equipment.

Thank you for choosing Branson!

Introduction

This manual is arranged into several structured chapters which will help you find the information you may need to know to safely handle, install, set up, program, operate, and/or maintain this product. Please refer to the <u>Table of Contents</u> and/or the <u>Index</u> of this manual to find the information you may be looking for. In the event you require additional assistance or information, please contact our Product Support department (see <u>1.3 How to Contact Branson</u> for information on how to contact them) or your local Branson representative.

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Chapter 1: Safety and Support

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1.1 Safety Requirements and Warnings

This chapter contains an explanation of the different safety notice symbols and icons found in this manual and provides additional safety information for ultrasonic welding. This chapter also describes how to contact Branson for assistance.

1.1.1 Symbols Found in this Manual

These symbols used throughout this manual warrant special attention:

| WARNING | Indicates a possible danger |
|---------|--|
| | If these risks are not avoided, death or severe injury might result. |

| CAUTION | Indicates a possible danger |
|---------|--|
| | If these risks are not avoided, slight or minor injury might result. |

| NOTICE | Indicates a possible damaging situation |
|--------|---|
| i | If this situation is not avoided, the system or something in its vicinity might get damaged. Application types and other important or useful information are emphasized. |

1.2 General Precautions

Take the following precautions before servicing the power supply:

- Be sure the power is disconnected before making any electrical connections
- To prevent the possibility of an electrical shock, always plug the power supply into a grounded power source
- Power supplies produce high voltage. Before working on the power supply assembly, do the following:

Turn off the power supply

Unplug main power

Allow at least 5 minutes for capacitors to discharge

- High voltage is present in the power supply. Do not operate with the cover removed
- High line voltages exist in the ultrasonic power supply assembly. Common points are tied to circuit reference, not chassis ground. Therefore, use only non-grounded, battery-powered multimeters when testing the power supply assembly. Using other types of test equipment can present a shock hazard
- Keep hands from under the horn. Down force (pressure) and ultrasonic vibrations can cause injury
- Do not cycle the welding system if either the RF cable or converter is disconnected
- When using larger horns, avoid situations where fingers could be pinched between the horn and the fixture

| CAUTION | Loud Noise Hazard |
|---------|--|
| | Sound level and frequency of the noise emitted during the ultrasonic assembly process may depend upon a. type of application, b. size, shape and composition of the material being assembled, c. shape and material of the holding fixture, d. welder setup parameters and e. tool design. |
| | Some parts vibrate at an audible frequency during the process. Some or all of these factors may result in an uncomfortable noise being emitted during the process. |
| | In such cases operators may need to be provided with personal protective equipment. See 29 CFR (Code of Federal Regulations) 1910.95 Occupational Noise Exposure |

1.2.1 Intended Use of the System

The DCX Power Supply and components are designed to be used as part of an ultrasonic welding system. These are designed for a wide variety of welding or processing applications.

The system can be used to perform ultrasonic welding, inserting, staking, spot welding, swaging, degating, and continuous ultrasonic operations. It is designed for automated, semi-automated and/or manual production operations.

1.2.2 Emissions

When being processed, certain plastic materials can emit toxic fumes, gases or other emissions that can be hazardous to the operator's health. Where such materials are processed, proper ventilation of the workstation is required. Check your materials suppliers for recommended protection when processing their materials.

| CAUTION | Corrosive Material Hazard |
|---------|---|
| | Processing of many materials, such as PVC, can be hazardous to an operator's health and could cause corrosion/damage to the equipment. Use proper ventilation and take protective measures. |

1.3 How to Contact Branson

For additional assistance, please refer to the DCX RM B Power Supply Instruction Manual.

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2.1 Introduction

The DCX RM B Web Page Interface provides access, via Ethernet connection, to web pages containing power supply information, diagnostics tools, and configuration options. Communication can be established point-to-point or through a local area network. On the web page interface you can access:

- <u>4.3 IP Setup</u>
- <u>4.4 Weld Preset</u>
- <u>4.5 I/O Diagnostics</u>
- 4.6 Seek & Weld Graphs
- <u>4.7 Horn Signature</u>
- <u>4.8 System Information</u>
- <u>4.9 Alarm Log</u>

2.2 Models Covered

This manual applies to the web page interface of the DCX RM B power supply.

2.2.1 DCX RM B Power Supply Manual Set

The following documentation is available in electronic format for the DCX RM B power supply:

DCX RM B Power Supply Instruction Manual

Chapter 3: Connecting to the Web Page Interface

| 3.1 | Locating the Ethernet Port |
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3.1 Locating the Ethernet Port

3.1.1 DCX RM B Ethernet Port Location

Figure 3.1 DCX RM B Power Supply



3.2 System Requirements

To connect to the DCX RM B Web Page Interface you will need a PC running a Windows® operating system with an Internet Explorer®* web browser software (versions 8 and up).

*Windows, and Internet Explorer are registered trademarks of Microsoft Corporation.

| NOTICE | |
|--------|--|
| i | The DCX RM B power supply is not compatible with network scanning software. If your local network uses these types of programs, the DCX RM B IP address must be placed in an exclusion list. |
| | |

| NOTICE | |
|-----------|---|
| () | A shielded Ethernet cable should be used to connect to the DCX RM B Web Page Interface to prevent possible EMI (Electromagnetic Interference) issues. |

3.3 Point to Point Connection (Windows Vista and Windows 7)

To connect directly to the DCX RM B Web Page Interface using a PC with Windows Vista \mathbb{B}^* or Windows $7\mathbb{R}^*$ operating system, complete the following steps:

*Windows Vista and Windows 7 are registered trademarks of Microsoft Corporation.

- 1. Connect the power supply to a computer via the Ethernet port
- 2. Turn on the power supply
- 3. On your PC, click on the Windows logo on the task bar and select Control Panel
- 4. Select View Large I cons on the top right corner
- 5. Select Network and Sharing Center
- 6. Select Change adapter settings



7. Right click on Local Area Connection and select Properties to bring up the Networking tab



8. Highlight Internet Protocol Version 4 (TCP/IPv4) from the list and click on Properties

| 🖞 Local Area Connection Properties |
|---|
| Networking Sharing |
| Connect using: |
| Intel(R) 82577LM Gigabit Network Connection |
| <u>C</u> onfigure |
| This connection uses the following items: |
| Client for Microsoft Networks |
| 🗹 🜉 QoS Packet Scheduler |
| File and Printer Sharing for Microsoft Networks |
| Internet Protocol Version 6 (TCP/IPv6) |
| Internet Protocol Version 4 (TCP/IPv4) |
| Link-Layer Topology Discovery Mapper I/O Driver |
| Link-Layer Topology Discovery Responder |
| |
| Install |
| Description |
| Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks. |
| |
| OK Cancel |

9. Use the following IP address:

IP address: 192.168.10.101

Subnet mask: 255.255.255.0

| General | |
|-------------------------------|--|
| | d automatically if your network supports need to ask your network administrator |
| 💿 Obtain an IP address auto | matically |
| () Use the following IP addre | ISS: |
| IP address: | 192.168.10.101 |
| Subnet mask: | 255.255.255.0 |
| Default gateway: | |
| Obtain DNS server addres | s automatically |
| O Use the following DNS ser | ver addresses: |
| Preferred DNS server: | X 6 30 |
| Alternate DNS server: | 10 10 10 |
| 🔲 Validate settings upon ex | it Advanced |

- 10.Click $\ensuremath{\text{OK}}$. Close the rest of the dialog boxes
- 11.Open the Internet Explorer web browser (version 8 and up)
- 12. In the address bar type the following address: <u>http://192.168.10.100</u>. Press Enter
- 13. This will bring up the DCX RM B Web Page Interface



14.Enter a user ID number (any number up to 9 digits long)

| LOGIN |
|-----------|
| User ID # |
| Log In |

3.4 Point to Point Connection (Windows XP)

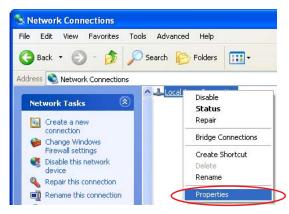
To connect directly to the DCX RM B Web Page Interface using a PC with Windows XP®* operating system, complete the following steps:

*Windows XP is a registered trademark of Microsoft Corporation.

- 1. Connect the power supply to a computer via the Ethernet port
- 2. Turn on the power supply
- 3. On your PC, select Start > Control Panel
- 4. Select Switch to Classic View on the top left corner

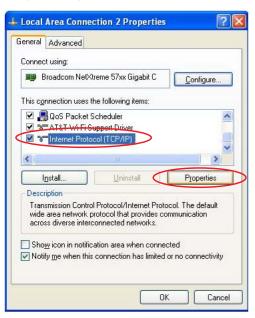


- 5. Select Network Connections
- 6. Right click on Local Area Connection and select Properties to bring up the General tab





7. Highlight Internet Protocol (TCP/IP) from the list and click on Properties



- 8. Use the following IP address:
- IP address: 192.168.10.101

Subnet mask: 255.255.255.0

| Internet Protocol (TCP/IP) Pro | operties 🛛 🛛 🛛 🛛 |
|---------------------------------|--|
| General | |
| | automatically if your network supports ed to ask your network administrator |
| O Obtain an IP address automa | atically |
| 💿 Use the following IP address: | |
| IP address: | 192 . 168 . 10 . 101 |
| Subnet mask: | 255 . 255 . 255 . 0 |
| Default gateway: | |
| Obtain DNS server address a | utomatically |
| OUSe the following DNS server | addresses: |
| Preferred DNS server: | |
| Alternate DNS server: | <u> </u> |
| | Ad <u>v</u> anced |
| | OK Cancel |

- 9. Click OK. Close the rest of the dialog boxes
- 10.Open the Internet Explorer web browser (version 8 and up)
- 11. In the address bar type the following address: <u>http://192.168.10.100</u>. Press Enter
- 12. This will bring up the DCX RM B Web Page Interface

13.Enter a user ID number (any number up to 9 digits long)

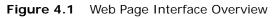
| LOGIN |
|-----------|
| User ID # |
| Log In |

Chapter 4: The Web Page Interface

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4.1 Web Page Interface Overview

The DCX RM B Web Page Interface allows you to set a weld preset, diagnose and configure the power supply I/O, perform horn scans and seeks, view system information, and to view and download the system alarms, history and events logs.



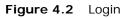
| IP Setup | Weld Preset 1/O Diagnostics Seek & Horn System Weld Graphs Signature Information | Alarm Log |
|----------|--|-------------------------|
| | IP SETUP | |
| B- | Static IP IP Address 192.168.10.100 Subnet Mask 255.255.255.0 Gateway 192.168.10.1 | |
| | MAC Address 00-1E-C0-DE-3F-8A | |
| | C-Save | Cancel Restore Defaults |

 Table 4.1
 Web Page Interface Overview

| Item | Name | Description |
|------------------------------|--|---|
| | | The menu navigation tabs are always displayed on the upper section of the web pages. They provide access to the following menu options: |
| Menu A Navigation Tabs | <u>4.3 IP Setup</u> <u>4.4 Weld Preset</u> <u>4.5 I/O Diagnostics</u> <u>4.6 Seek & Weld Graphs</u> | |
| | | 4.7 Horn Signature 4.8 System Information 4.9 Alarm Log |
| В | Menu Display | Displays the contents of the currently selected menu option. |
| С | Command Buttons | Different command buttons allow to save settings, cancel changes, restore default settings, and to perform other functions specific to each menu. |
| | 200 | Save, Cancel, and Restore Defaults is page specific. They only operate on the page displayed. |

4.2 Login

When connection is established with the DCX RM B Web Page Interface, the Login page will display. Enter a unique user ID number. The user ID is numeric only and up to 9 digits long. This number allows for keeping track of user access.



| LOGIN | |
|-------|-----------|
| | User ID # |
| | Log In |

4.3 IP Setup

Use this menu to setup the DCX RM B power supply's network settings. DCX RM B power supply's default IP setting is Static IP with the address shown in the figure below.

Figure 4.3 IP Setup Menu

| IP : | SETUP | | | | |
|------|-------------|---------------------|---|--|--|
| (| Static IP | | | | |
| | IP Address | 192.168.10.100 | | | |
| | Subnet Mask | 255.255.255.0 | | | |
| | Gateway | 192.168.10.1 | | | |
| | MAC Address | 00-1E-C0-DE-3F-8/ | Ą | | |
| | | DHCP Server Enabled | | | |
| C | DHCP Client | | | | |

| Name | Description |
|------------------------|---|
| IP SETUP | |
| Static IP | Select this option to manually assign an IP address to the DCX RM B power supply. The DCX RM B power supply will alert if an invalid IP address setting is entered. |
| IP Address | The IP address assigned to the DCX RM B power supply. |
| Subnet Mask | The mask used to determine to what subnet the DCX RM B power supply's address belongs to. |
| Gateway | The gateway address assigned to the network for communication with other computers or networks. |
| MAC Address | Displays the MAC address assigned to the DCX RM B power supply. |
| DHCP Server Enabled | Select this option to have DCX RM B power supply assign IP addresses to any devices connected to it. This facilitates connecting a computer or laptop point to point (P2P) with the DCX RM B power supply. NOTICE Connecting a DCX RM B power supply with DHCP server enabled to a network which already has a device working as a DHCP server will cause connectivity problems. |

| Table 4.2 | IP Setup Menu Option |
|-----------|----------------------|
|-----------|----------------------|

| Name | Description | |
|-------------|---|--|
| DHCP Client | Select this option to have the DCX RM B power supply automatically request an IP address from a DCHP Server. The IP address will be grayed out. | |

| NOTICE | |
|--------|--|
| 6 | All changes on this menu take effect on the next power-up. |

At any time you may determine the DCX RM B power supply's IP address by going through the associated registers using the front panel LCD. A Cold Start can also be performed to take your power supply back to it's factory default IP address. For details on navigating the DCX RM B registers or performing a Cold Start, consult your power supply manual.

| NOTICE | |
|--------|--|
| 6 | Beware that other settings will also be reset to their defaults when a Cold Start is executed. |

4.4 Weld Preset

Use this menu to set weld parameters, seek options, and power-up actions. Use the command buttons on the bottom to save settings, cancel changes, or to restore to factory default settings.

| ELD | SEEK | POWER ON |
|---|--|---|
| Amplitude Weld Amplitude (%) 100 Amplitude Ramp (ms) 80 External 80 Frequency 30000 Internal Offset (Hz) 0 External Offset (Hz) 0 External Offset Store 0 Clear memory with Reset Clear memory before Seek Set with Horn Scan 0 | Seek Ramp (ms) 80 Seek Time (ms) 500 Frequency Offset (Hz) 0 Timed Seek | Off Seek Scan ✓ Clear Memory |
| SC SETUP Alarms - Reset Required Frequency out on pin 1(JP3 2-3) Amplitude out on pin 14(JP3 1-2) | | |

 Table 4.3
 Weld Preset Menu Option

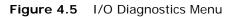
| Name | Description | |
|------------------------|--|--|
| Amplitude | | |
| Weld Amplitude (%) | The amplitude of ultrasonic energy that will be delivered by the DCX RM B power supply. Valid range is between 10 to 100 (10% to 100% amplitude). | |
| Amplitude Ramp (ms) | The time it takes for the amplitude to ramp up to 100% when the External Start signal is applied. If amplitude setting is lower than 100%, ramp time will be adjusted accordingly. | |
| External | Select the External check box to control the amplitude using an analog input from the user I/O connector. | |

| Table 4.3 Weld Prese | t Menu Option | | | | |
|------------------------------|--|--|--|--|--|
| Name | Description | | | | |
| Frequency | | | | | |
| Digital Tune (Hz) | Starting frequency set from horn signature or manually entered. | | | | |
| Internal Offset (Hz) | Sets the frequency offset from the Web Page as either a positive or negative value offset from digital tune. | | | | |
| External Offset | Select the External Offset check box to control the frequency offset using an analog input from the user I/O connector (J3). | | | | |
| End of Weld Store | Select to save the frequency at the end of the weld as the starting frequency for the following weld. | | | | |
| Clear memory with Reset | Select to clear memory with reset. Memory offset will be set to 0 when a Reset is applied. Reset can come from external I/O, front panel, or web page interface (seek or horn scan). | | | | |
| Clear Memory before Seek | Select to clear memory before seek. Memory offset will be set to 0 before Seek is applied. | | | | |
| Set with Horn Scan | Select to set Digital Tune frequency with a successfully completed horn scan. | | | | |
| Seek | | | | | |
| Seek Ramp (ms) | The time it will take the power supply to ramp-up when performing a seek. | | | | |
| Seek Time (ms) | The duration of a seek. | | | | |
| Frequency Offset (Hz) | The frequency offset applied to the power supply operating frequency. | | | | |
| Timed Seek | Select this check box to have the power supply perform a seek every 60 seconds. Seeks will be timed from the moment sonics was last activated. | | | | |
| Power On | | | | | |
| Off | Select this option to disable power-on actions. | | | | |
| Seek | Select this option to have the power supply perform a seek on power-up. | | | | |
| Scan | Select this option to have the power supply perform a horn scan on power-up. | | | | |
| Misc Setup | | | | | |
| Alarms - Reset Required | This option determines if the alarm is latched or not. Latched alarms require a reset before another cycle can start. | | | | |
| Frequency on Pin 1* | Select this check box to enable Frequency out on pin 1. Jumper JP3 must be in position 2-3. | | | | |
| Amplitude out on pin 14 | Select this check box to enable Amplitude out on pin 14. Jumper JP3 must be in position 1-2. This is the default setting. | | | | |

* Refer to DCX RM B Power Supply manual, Section Frequency Output Setting to enable Frequency out on pin 1.

4.5 I/O Diagnostics

Use this menu to monitor and control the DCX RM B power supply digital and analog I/O.



| IP Setup | Weld Preset I/O Diagnostics Seek & Horn System Weld Graphs Signature Information | Alarm Log |
|----------|---|---|
| | DIGITAL INPUTS | DIGITAL OUTPUTS |
| | J3-5 External Start J3-6 External Seek J3-13 External Reset | ✓ J3-2 O/L Inverted ☐ J3-9 Sonics Active ✓ J3-4 Overload |
| | ANALOG INPUTS | ANALOG OUTPUTS |
| | J3-15 Amplitude In (V) -10.00 J3-12 Frequency Offset (V) -9.99 | J3-10 Power Out (V) 00.00 J3-14 Amplitude Out (V) 00.00 |
| | Refresh Outputs | Stop |

| Table 4.4I/O Diagnostics Menu Option |
|--------------------------------------|
|--------------------------------------|

| Name | Description | | | |
|----------------------------|--|--|--|--|
| Digital Inputs | | | | |
| J3-5 External Start | | | | |
| J3-6 External Seek | Indicate if the digital inputs are active. | | | |
| J3-13 External Reset | | | | |
| Digital Outputs | | | | |
| J3-2 O/L Inverted | | | | |
| J3-9 Sonics Active | Select/clear check boxes to toggle available digital outputs on/off. | | | |
| J3-4 Overload | | | | |
| Analog Inputs | | | | |
| J3-15 Amplitude In (V) | Displays the current appled input values | | | |
| J3-12 Frequency Offset (V) | Displays the current analog input values. | | | |
| Analog Outputs | | | | |
| J3-10 Power Out (V) | Allows control of analog output values. | | | |
| J3-14 Amplitude Out (V) | | | | |

4.6 Seek & Weld Graphs

Use this menu to test your system. This feature allows you to capture 5 seconds of welding data which you can both view and export. The weld data graph is provided with 6 available parameters: Amplitude, Power, Phase, PWM Amplitude, Current, and Frequency. Each parameter has a checkbox to the left of its name.

Only checked parameters will be displayed. While in this menu, if the Weld is being run from external I/O or the custom LCD, the graph can be also displayed on the screen by using the "Update Graph" button.

| | Reset | | ıd | A | requency Memory mplitude Power | | | | 300 | 100 | | | |
|---|--------------------------------------|-------------|-----------------|-----------------------------|---|------|------|---------------------|---------|------|-----------|---------|------|
| 30750 | - 120 | 120 | ¹²⁰ | 180 | 1 | | | | | | | | |
| 30600 | - 108 | - 108 | - 108 | - 144 | ļ | | | | | | | | |
| 30450 | - 96 | - 96 | - 96 | 108 | | | | | | | | | |
| 30300 | - 84 | - 84 | - 84 | | | | | | | | | | |
| (1) 20150 2000000 | - 72 - 72 - 00 - 00 - 48 | % 72 | - 72 | 27 36 0 -36 -36 | - | | | | | | | | |
| 29700 | - 36 | - 36 | - 36 | 72 | ł | | | | | | | | |
| 29550 | - 24 | - 24 | - 24 | 108 | ł | | | | | | | | |
| 29400 | - 12 | - 12 | - 12 | 144 | ł | | | | | | | | |
| 29250 | - 0 | 0 | 6 | -180 | 0 500 | 1000 | 1500 | 2000 2 TIME (ms) | 2500 | 3000 | 3500 | 4000 | 4500 |
| ✓ AMPLITUDE ✓ POWER | | |] Phas] Pwm | | UDE | | | Upd | ate Gra | ph E | xport Gra | ph Data |] |

Figure 4.6 Seek & Weld Graphs Menu

| Table 4.5 Seek & Weld Graphs Menu Option |
|--|
|--|

| Name | Description |
|-----------------------|--|
| Seek | |
| Seek | Click to perform a seek cycle. |
| Reset Overload | Click to reset an overload condition. |
| OK - Memory Stored | Indicates that the horn operating frequency was stored in the DCX RM B power supply memory. |
| Overload - Cleared | Indicates that test resulted in an overload and the memory has been cleared. |
| Frequency | Monitors the horn operating frequency. |
| Memory | Displays the frequency stored in the DCX RM B power supply memory. |
| Amplitude | Displays the percentage of converter amplitude. |
| Power | Displays the percentage of power output. |
| Update Graph | Click to get the value of all the parameter and draw the graph for Phase, Current, Amplitude, Power, and Frequency parameters vs Time on the Y axis. |
| Export Graph Data | Click to export the Weld Graph data with Weld Preset settings to CSV file. |
| Draw from to | Select the <i>from</i> and <i>to</i> time values to zoom into the desired graph region. |
| Redraw Graph | Click to redraw the same graph with those parameters which are checked with the Time parameter on Y axis. |
| Set Default | Click to return the sample rate, start time, end time and graph selection to default settings. |
| Graph Selection | Select a parameter and enter a particular X time value to obtain the corresponding Y value at that particular time. |
| Update Value | Click to update the Y value for the given graph selection. |

4.7 Horn Signature

Use this menu to diagnose your ultrasonic horn. When performing a horn scan, ideally, there will be only one resonant frequency. The Horn Signature graph is provided with 3 available parameters: Phase, Current, and Amplitude. The horn Signature Graph can be both viewed and exported.

Each parameter has a checkbox to the left of its name. Only checked parameters will be displayed.



| | | | | Start Horn Scan Abort Horn Scan |
|---------------|------------------------------|-----------------------------|--------------------------------|---|
| | | Stat | us | Start nom Scan Abort nom Scan |
| | | | | |
| | | Res | ~ | Parallel Resonant Points Series Resonant Points |
| | | | _ | assed ailed |
| | | | - | borted |
| | | | | |
| | | | | |
| | 50 | - 50 | 180 | |
| | 45 | - 45 | - 144 | |
| | 40 | - 40 | - 108 | |
| (% | 35 | - 35 | - 72 - | |
| | 30 | . <mark>%</mark> 30 | (Deg) | |
| | | | | |
| MPLITUDE (| 25 | - BN 25 | HASE | |
| AMPLITUDE (| | 25 - 20 | H/ | |
| AMPLITUDE (%) | 25 | | 36 | |
| AMPLITUDE (| 25 20 | - 20 | 36 · 72 · | |
| AMPLITUDE (| 25 20 15 | - 20 - 15 - 10 | 36 - 72 - 108 - | |
| AMPLITUDE (| 25 - 20 - 15 - 10 - | - 20 - 15 - 10 - 5 | 36 - 72 - 108 - 144 - | 251 29401 29551 29701 29851 30001 30151 30301 30451 30601 |

| Table 4.6 | Horn Signature Menu Option |
|-----------|----------------------------|
|-----------|----------------------------|

| Name | Description |
|---------------------------|---|
| Horn Signature | |
| Start Horn Scan | Click to initiate the horn scan. |
| Abort Horn Scan | Click to abort the horn scan. |
| Status | Indicates the horn scan progress. |
| Result | Indicates if the horn scan passed, failed, or if the operation was aborted. |
| Parallel Resonant | Displays the parallel resonant frequencies of the ultrasonic horn. The parallel resonant frequency is the operating frequency of the ultrasonic stack. |
| Points | NOTICE If multiple parallel frequencies are found, they will all be listed. The frequency at which the ultrasonic stack is running will be displayed in blue. |
| Series Resonant Points | Displays the series resonant frequencies of the ultrasonic horn. |
| Update Graph | Click to draw the graph of the last horn scan. |
| Export Graph Data | Click to export the Weld Graph data with Weld Preset settings to CSV file. |
| Draw from to | Select the <i>from</i> and <i>to</i> time values to zoom into the desired graph region. |
| Redraw Graph | Click to redraw the same graph with those parameters which are checked with the Time parameter on Y axis. |
| Set Default | Click to return the sample rate, start time, end time and graph selection to default settings. |
| Graph Selection | Select a parameter and enter a particular X time value to obtain the corresponding Y value at that particular time. |
| Update Value | Click to update the Y value for the given graph selection. |

4.8 System Information

Use this menu to view information about your DCX RM B power supply. Have the information on this screen available when calling Branson for troubleshooting help.

Figure 4.8 System Information Menu

| | | | _ | | | |
|-----|---------------------|----------------|---|---------------|-------------|--|
| SYS | STEM | | P | OWER SUPP | PLY | |
| s | System | DCX RM B | | Power Level | 1500 Watts | |
| D | Display | Monochrome LCD | | Frequency | 30 kHz | |
| L | CD Software Version | 3.1 | | Serial Number | DEFAULT1234 | |
| L | .CD CRC | 0000DEBB | | P/S Version | V1.3.9 | |
| W | VebSite Version | V1.3.9 | | P/S CRC | 000036C1 | |
| С | Controller Version | 1.2 | | | | |

Table 4.7 System Information Menu Option

| Name | Description |
|-------------------------|---|
| System | |
| System | Displays the DCX RM B power supply model name. |
| Display | Displays the type of front panel user interface on the DCX RM B power supply. |
| LCD Software Version | Displays the LCD software version number. |
| LCD CRC | Displays the CRC code of the LCD software. |
| WebSite Version | Displays the Web Page version number. |
| Controller Version | Displays the controller version. |
| Power Supply | |
| Power Level | Displays the power supply wattage. |
| Frequency | Displays the power supply operating frequency. |
| Serial Number | Displays the power supply serial number. |
| P/S Version | Displays the power supply software version number. |
| CRC | Displays the CRC code of the power supply controller software. |

4.9 Alarm Log

Use this screen to view the DCX RM B power supply alarm history. The alarms can be sorted by alarm number or alarm type. Alarms can be exported to an Excel file.



Figure 4.9 Alarm Log Menu

| Alarm # 🔺 | Days | Hours | Alarm ∙ | UserID | Data1 | Data2 |
|-----------|------|-------|---------|--------|-------|-------|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Table 4.8Alarm Log Menu Option

| Name | Description | | |
|---------|---|--|--|
| Alarm # | A unique alarm identification number. | | |
| Days | The DCX RM B power supply units do not feature an | | |
| Hours | integrated real time clock. Alarm date and time account for the power-on hours from the moment the DCX RM B power supply was first turned on. | | |
| Alarm | Displays a brief alarm description. | | |
| UserID | The ID number of the user logged in at when the alarm occurred. Will display zero if the alarm occurs from an external weld. | | |

Table 4.8 Alarm Log Menu Option

| Name | Description | | | | |
|-----------------|---|--|--|--|--|
| Data1 | For future use. | | | | |
| Data2 | | | | | |
| Command Buttons | | | | | |
| Clear Log | r Log Click to clear the alarm log. | | | | |
| Export to Excel | Click to download an Excel spreadsheet file of the alarm log. | | | | |

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