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Liverpool, L24 8RL, UK

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Japan - t. +81-3-3833-2500
Brainboxes Japan. 1-2-8 Shinjyuku,
Shinjyuku-ku, Tokyo, 160-0022 Japan,
or visit www.brainboxes.com
## LED Information

<table>
<thead>
<tr>
<th>LED Information</th>
<th>Status LED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Status LED</strong></td>
<td><strong>Green Light on</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Flashing Yellow</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Flashing between Red &amp; Green</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Flashing between Green &amp; Red/Yellow</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Flashing Green/Red</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Flashing between Green &amp; Yellow</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Serial Port LED</strong></th>
<th><strong>Green light on</strong></th>
<th><strong>Port Open</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Flashing light on</strong></td>
<td><strong>Data RX/TX</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Ethernet LED</strong></th>
<th><strong>Green light on</strong></th>
<th><strong>Link established</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Flashing Green</strong></td>
<td><strong>Data RX / TX</strong></td>
</tr>
</tbody>
</table>

For further configuration details, or technical information on the ES product, please refer to Product Manual on CD.
8. Pin Outs

8.1. Serial DB9 Pin outs

<table>
<thead>
<tr>
<th>Pin</th>
<th>RS232</th>
<th>RS422/485</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TXD+</td>
<td>TXD+</td>
</tr>
<tr>
<td>2</td>
<td>TXD-</td>
<td>TXD-</td>
</tr>
<tr>
<td>3</td>
<td>RxD+</td>
<td>RxD+</td>
</tr>
<tr>
<td>4</td>
<td>RxD-</td>
<td>RxD-</td>
</tr>
<tr>
<td>5</td>
<td>GND</td>
<td>GND</td>
</tr>
</tbody>
</table>

8.2. Serial Terminal Block Pin outs / Power Terminal Block Pin outs

<table>
<thead>
<tr>
<th>RS232 P1</th>
<th>RS242/485 P2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pin 1 TxD</td>
<td>Pin 6 TxD+</td>
</tr>
<tr>
<td>Pin 2 RxD</td>
<td>Pin 7 TxD-</td>
</tr>
<tr>
<td>Pin 3 RTS</td>
<td>Pin 8 RxD+/D+</td>
</tr>
<tr>
<td>Pin 4 CTS</td>
<td>Pin 9 RxD-/D-</td>
</tr>
<tr>
<td>Pin 5 GND</td>
<td>Pin 10 GND</td>
</tr>
</tbody>
</table>

8.3. Jack Plug

All power jacks are centre = positive, outer = ground

Devices that use PW-500 PSUs: 5.5mm cylindrical jack plug

Devices that use PW-800 PSUs: 4mm cylindrical jack plug

1. Box Contents Check List - Screw Terminal Versions

Thank you for purchasing Brainboxes Ethernet to Serial product. This quick start guide will help you set up your ES device so that you can begin experiencing the benefits of Ethernet to Serial technology.

Optional Accessory Items

- PW-600 (UK/EU/US/AUS) - Suitable for use with all Screw terminal ES products
- DIN Rail Kits
- MK-048 - Suitable for use with these Screw terminal ES products:
  - ES-357
  - ES-020
  - ES-131

NB: Image shown is an ES-357 1x RS232, 1x422/485 and is an example. The same steps can be applied to all other products in the ES Ethernet to Serial range.
### 1. Box Content - DB9 versions

- **Power Supply**
  - **PW-800 (UK/EU/US/AUS)**
    - Output: 5V DC 1.0A (5W)
  - **PW-500 (UK/EU/US/AUS)**
    - Output: 5V DC 3.0A (15W)

- **Ethernet to Serial Device**
- **Quick Start Guide**
- **Product CD**

### Optional Accessory Items

**DIN Rail Kit Optional Accessory Items**

- **MK-048**
  - ES-246 - 1xRS232
  - ES-257 - 2xRS232
  - ES-320 - 1xRS422/485
  - ES-313 - 2xRS422/485

- **MK-059**
  - ES-701 - 4xRS232
  - ES-279 - 8xRS232
  - ES-346 - 4xRS422/485
  - ES-842 - 8xRS422/485

- **MK-070**
  - ES-701 - 4xRS232
  - ES-279 - 8xRS232
  - ES-346 - 4xRS422/485
  - ES-842 - 8xRS422/485

### Network Settings

<table>
<thead>
<tr>
<th>Device Network Address</th>
<th>DHCP mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web Server Port</td>
<td>80</td>
</tr>
<tr>
<td>Port Settings</td>
<td>RS232</td>
</tr>
<tr>
<td>Baudrate</td>
<td>115200</td>
</tr>
<tr>
<td>Databits</td>
<td>8</td>
</tr>
<tr>
<td>Stop Bits</td>
<td>n</td>
</tr>
<tr>
<td>Parity</td>
<td>1</td>
</tr>
<tr>
<td>Flow Control</td>
<td>None</td>
</tr>
<tr>
<td>Duplex Mode</td>
<td>N/A</td>
</tr>
<tr>
<td>Protocol Settings</td>
<td>Telnet + COM port control Mode (Server)</td>
</tr>
<tr>
<td>TCP/UDP Port Numbers</td>
<td>80 (TCP)</td>
</tr>
<tr>
<td>Serial Ports 1-8</td>
<td>9001-9008 (TCP)</td>
</tr>
<tr>
<td>Firmware Upgrade</td>
<td>67 (UDP) - BOOTP Server 68 (UDP) - BOOTP Client 69 (UDP) – TFTP Port</td>
</tr>
</tbody>
</table>

### Default Settings

- **Device Network Address**: DHCP mode
- **Web Server Port**: 80
- **Port Settings**: RS232
- **Baudrate**: 115200
- **Databits**: 8
- **Stop Bits**: n
- **Parity**: 1
- **Flow Control**: None
- **Duplex Mode**: N/A
- **Protocol Settings**: Telnet + COM port control Mode (Server)
- **TCP/UDP Port Numbers**: 80 (TCP)
- **Serial Ports 1-8**: 9001-9008 (TCP)
- **Firmware Upgrade**: 67 (UDP) - BOOTP Server 68 (UDP) - BOOTP Client 69 (UDP) – TFTP Port
6. Configuring your ES Device Continued...

2. Hardware - 1 & 2 Port Devices

6.2. Firewall Exceptions and Port Numbers

When using the ES devices with a firewall you may need to manually add the exception entries and port numbers to the firewall list. Listed below are the default port numbers and the firewall exceptions.

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Default Port Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device Web Server</td>
<td>80</td>
</tr>
<tr>
<td>Serial Port 1</td>
<td>9001</td>
</tr>
<tr>
<td>Serial Port 2</td>
<td>9002</td>
</tr>
<tr>
<td>Firmware Upgrade</td>
<td>67 (BOOTP Server)</td>
</tr>
<tr>
<td></td>
<td>68 (BOOTP Client)</td>
</tr>
<tr>
<td></td>
<td>69 (TFTP Port)</td>
</tr>
</tbody>
</table>

Default Windows Firewall Exception entries:

- Brainboxes Boost.LAN Suite
- Brainboxes Boost.LAN Suite (Device discovery) (except Windows XP 32 & 64 bits)
- UPnP Framework (Windows XP 32 & 64 bits)
- Network Discovery (Windows 7 or later)

1. 9 Pin D Serial Port or screw terminal block connection
2. Wall mount screw hole
3. Serial Port(s) LED
4. Ethernet LED
5. ES-357/ES-246/ES-257/ES-320 - Power Input 5-30V DC, 0.75-1.0W Typical
   ES-313                                  - Power Input 5-30V DC, 0.75-1.06W Typical
6. Reset button (use unfolded paperclip to press)
7. Ethernet port connection - 10BaseT / 100BaseTX
8. Status LED
9. DIN Rail kit holes
2. Hardware - 4 & 8 Port Devices

1. Serial Ports
2. Mount screw hole (on underneath of box)
3. Serial Port(s) LED
4. Ethernet LED
5. ES-346/ES-842 - Power Input 5-30V DC, 1.45-2.86W Typical
6. ES-701/ES-279 - Power Input 5-30V DC, 1.35-1.93W Typical
7. Reset button (use unfolded paperclip to press)
8. Ethernet port connection - 10BaseT / 100BaseTX
9. Status LED

6. Configuring your ES Device Continued...

By Default your RS422/485 ES device and Boost.LAN drivers are set to RS422 Full Duplex mode. To change the devices RS422/485 settings in the Windows driver:

1. Double click the port entry in Boost.LAN Manager.
2. Go to the Port Settings tab, then click the Advanced button.
3. Go to the RS422/485 Settings tab and select the duplex mode from the drop down box.
4. Select “RS422 full duplex mode” for RS422 or RS485 Full Duplex communications.
5. Select “RS485 half duplex autogating mode” for RS485 Half Duplex communications.
6. Configuring your ES Device

6.1 Changing Duplex Mode (RS422/RS485 Only)

ES RS422/485 devices can operate as either:

- RS422 Full Duplex mode with 2 twisted pairs or optionally 4 twisted pairs when using RTS/CTS handshaking or RS485 Full Duplex using 2 pairs or wire.
- RS485 Half Duplex autogating mode using only 1 pair of wires.

If you’re not using Boost.LAN Manager drivers you will need to set the duplex mode on the Serial Port pages of the web configuration page. To get to the web configuration page, type the IP address of your device into a web browser.

When setting RS485 Half Duplex mode, as well as configuring the software the case of the ES device needs opening and the hardware needs configuring by setting the jumpers inside. Note the Boost.Lan Windows driver set up and the webpage configuration are independent of each other.

For more detailed information on configuring your Ethernet to Serial device, including the hardware jumper configuration, please see the product manual on the CD which came with your ES device.

3. Network IP Addressing

The ES device is shipped in "DHCP Mode".

- On connecting to the network, the device automatically checks if it is connected to a DHCP Server. If this is the case, the DHCP server will allocate an IP address automatically to the ES device.
- If no DHCP Server is detected (e.g. you are using a direct cable connection to the PC), the ES device will default to an IP address of 192.168.127.254 within 60 seconds. Please ensure the PC you’re using for configuration can communicate with the 192.168.127.xxx IP range.
4. Connecting your ES Device

1. Connect the ES device to your local network or use a direct cable connection using a standard straight-through or crossover Ethernet cable and plugging into the Ethernet port connection.

2. Connecting to Power

   Connect the power adapter or a DC power line (5-30V) to the ES power terminal block or jack connection.
   If using the Brainboxes optional PW-600 power supply ensure:
   a. The wire marked “-” is connected to V-
   b. The wire marked “+” is connected to V+

   *If using your own power supply please check input requirements on page 5 - Hardware.

3. Confirm the device beeps as it is turned on.

4. When the Status LED turns steady green (after 5-60 seconds), the device is ready to use.

5. Connect the serial cable from your serial device to the serial port on the ES device. Refer to Section 8 of this Quick Start Guide for pin outs.

   Make a note of device MAC address (on side panel, 00-0a-4f-XX-XX-XX) as you will need it to identify the device on your network later.
6. You can find your Brainboxes ES device by selecting a device and matching it with the corresponding MAC address available on the left hand panel (see opposite page).
7. Once found, select the device and scroll to the "Tasks" section on the left hand panel.
8. Click Install Device.
9. When the device is installed a pop up box will appear saying “Your new hardware is installed and ready to use.”

1. Insert the CD into your PC. This should launch the Boost.LAN Navigation Page automatically.

2. Click "Install" to launch the Boost.LAN Setup.exe

**Note:** If the navigation page does not auto load, go to Start → My Computer → Right Click the CD and select Explore. This will open the CD in Windows Explorer for browsing the contents of the CD. Locate the “Setup.exe” program on the CD and double click to launch. Proceed to Step 3.

**Note:** If installing the software in Windows 2000 launch the "SetupW2k.exe" program on the CD.
3. Follow the on screen instructions to install the Boost.LAN software.

Note: Boost.LAN software requires the Microsoft .NET framework to be installed on your machine. If it is not already installed, the Setup.exe will install it automatically. Please follow on screen instructions and reboot if prompted to continue installation.

4. When installation is complete, you should see an icon labelled Boost.LAN Manager on the desktop. Double click the link to open the application.

5. Click on the “File -> Find Devices” button in the top left hand side of the window.