ES-511, ES-522, ES-551, ES-571

Gold Microsoft Partner

Since 1984

brainboxes

Quick Start Guide

for Brainboxes Ethernet to Serial Range

Windows 10 Compatible

Windows 8 Compatible

nqa ISO 9001 ISO 14001 INTEGRATED MANAGEMENT

UKAS MANAGEMENT SYSTEMS 015

LIFETIME WARRANTY

LIFETIME SUPPORT

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For more information, please refer to the Product Manual on CD

Information on product accreditations, safety and correct disposal of this product can be found on the Product CD

1. Box Contents Checklist

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.

Ethernet to Serial Device (& Jumpers)

Quick Start Guide

Product CD

Optional Accessory Items

Power Supply

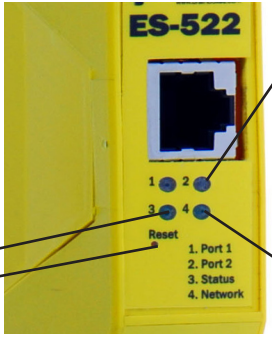
PW-600 (UK/EU/US/AUS)
- Suitable for use with all screw terminal ES products

Power Supply

PW-650 USB
- Suitable for use with all industrial ES products

NB: Image shown is an example, the same steps can be applied to all other products in the ES Industrial Ethernet to Serial range

2. Hardware



2. Hardware

1.	Port 1 - yellow removable screw terminal block
2.	Port 2 - grey removable screw terminal block (ES-522)
3.	Power input - black removable screw terminal block +5VDC to +30VDC
4.	Ethernet port connection - 10BaseT / 100BaseTX
5.	Serial port(s) LED
6.	Ethernet port LED
7.	Status LED
8.	Reset button (use unfolded paperclip to press)
9.	IP-30 rated non-conducting polyamide case
10.	DIN-rail mount
11.	Earth to DIN rail
12.	Ventilation

Grounding:

- Correctly wired grounds help cut down on electromagnetic radiation.
- 5 pin terminals allow a ground on the 5th pin of each block.
- Functional earth included in integral DIN-rail mount allows the DIN rail to be used as an earth.
- Total Galvanic Isolation prevents electromagnetic interference problems, useful for applications in electromagnetically noisy environments.

Device	5th pin ground	Isolated Mag Jack	Galvanic Isolation
ES-511	yes	yes	no
ES-522	yes	yes	no
ES-551	yes	yes	yes
ES-571	yes	yes	yes

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 to +30VDC) to the ES power terminal block or jack connection.
   If you're 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+
   The ES-5XX Series devices feature dual power supply inputs, only one power supply need be connected to ensure the device is powered up and working.

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

4. 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 the 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.

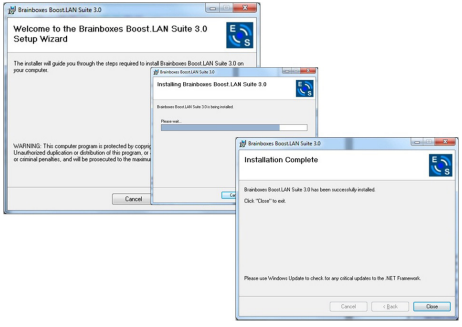
5. Using COM Ports on Windows

This is an optional step: Window's COM ports gives your device compatibility with serial port applications. Alternatively communication can be established with TCP only.

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

Note: If the navigation page does not autoload, go to Start → My Computer → Right Click the CD and select Explore. This will open the CD in Windows Explorer for browsing. Locate the "Setup.exe" program on the CD and double-click to launch. Proceed to Step 3.
If you're installing the software in Windows 2000, launch the "SetupW2k.exe" program on the CD.

2. Click "Install" to launch the Boost.LAN Setup.exe.
3. Follow the on-screen instructions to install the Boost.LAN software.

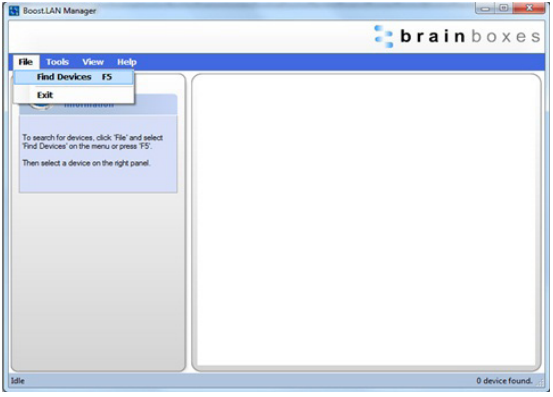


5. Using COM Ports on Windows

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.

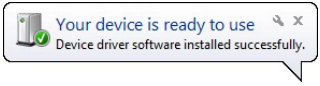
4. When installation is complete, you should see an icon labelled Boost.LAN Manager on the desktop. Double-click the link to open the application.

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



5. Using COM Ports on Windows

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.
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.”



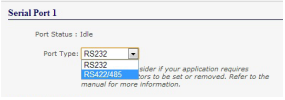
6. Configuring your ES Device

Changing Port Type

ES industrial devices can operate either as:

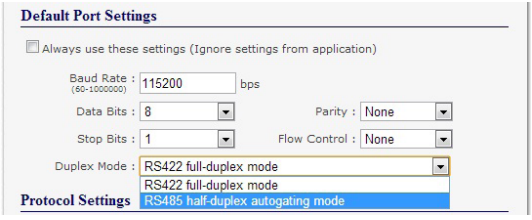
- RS232.
- RS422 Full Duplex mode with 2 twisted pairs or RS485 Full Duplex using 2 pairs of wire.
- RS485 Half Duplex autogating mode using 1 pair of wires.

By default the ES device port type is set to RS232. The port type can be changed 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 the RS422/485 port type is selected, an additional drop-down box appears allowing the user to set the duplex mode.

- Select “RS422 Full Duplex mode” for RS422 or “RS485 Full Duplex” communications.
- Select “RS485 Half Duplex autogating mode” for RS485 Half Duplex communications.



6. Configuring your ES Device continued...

When setting RS422 or RS485 mode, as well as configuring the software, the case of the ES device will need to be opened so the hardware can be configured by setting the jumpers inside. 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.

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.

Program Name	Default Port Number
Device Web Server	80
Serial Port 1	9001
Serial Port 2	9002
Firmware Upgrade	67 (BOOTP Server) 68 (BOOTP Client) 69 (TFTP Port)

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).

7. Default Settings

Network Settings		
Device Network Address	DHCP mode	
Web Server Port	80	
Port Settings	RS232	RS422/485
Baudrate	115200	115200
Databits	8	8
Stop Bits	n	n
Parity	1	1
Flow Control	None	None
Duplex Mode	N/A	Full Duplex
Protocol Settings	Telnet Mode (Server)	Telnet Mode (Server)
TCP/UDP Port Numbers		
Device Web Server	80 (TCP)	
Serial Ports 1-8	9001-9008 (TCP)	
Firmware Upgrade	67 (UDP) - BOOTP Server 68 (UDP) - BOOTP Client 69 (UDP) – TFTP Port	

8. Pin Outs

Port 1 - Yellow	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
RS232	Sig GND	CTS	RxD	RTS	TxD
RS485 FD	Sig GND	RxD-	RxD+	TxD+	TxD-
RS485 HD	Sig GND			Data+	Data-
Power Input - Black	-V	+V A	+V B	-V	Func GND

Ports 1 and 2 are software selectable as either RS232, RS422 or RS485

Port 1 terminal = yellow
Port 2 terminal = grey
Power terminal = black

9. LED Information

LED Information		
Status LED	Green light on	Device ready
	Flashing yellow	Changing settings
	Flashing between red & green	Querying IP
	Flashing between green & red/yellow	IP address diagnostic
	Flashing green/red	Performing hard reset
	Flashing between green & yellow	Initialisation diagnostic
Serial Port LED	Green light on	Port open
	Flashing light on	Data RX/TX
Ethernet LED	Green light on	Link established
	Flashing green	Data RX/TX

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

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