

OPERATIONS MANUAL

Async2IP WEB

4-Port Asynchronous to LAN Adapter

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1 Product Introduction

The Async2IP_WEB remote secure console server allows network administrators to securely control and monitor remote routers, switches and servers over the corporate TCP/IP network using secure SSL encryption and password protection. The Async2IP_WEB allows remote management of async serial ports using an HTTPS encrypted web browser at the host site. The user interface is presented as a terminal screen with a command prompt on a web based GUI interface. No additional hardware or software is required at the host site and the Async2IP_WEB supports an unlimited amount of remote sites.

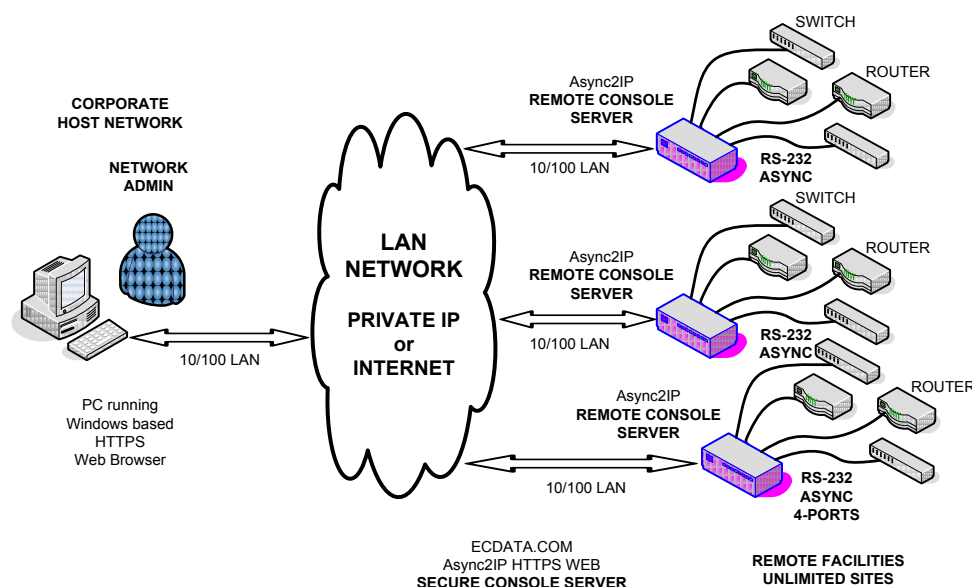
Local IT administrators can gain fast access to remote IT problems without sending expensive service personnel to trouble shoot a problem site. The Async2IP_WEB provides a significant return on investment with fast problem solving capabilities producing higher network uptime.

Installation is fast and simple with the built in Async2IP_WEB GUI interface. Each terminal port session is presented on its own GUI Window. The Async2IP_WEB has a 10/100 LAN port that supports twisted pair crossover detection and auto-correction (HP Auto-MDIX). The unit has four async RS-232 data ports presented on RJ-45 connectors. The RJ-45 pin-out allows low cost CAT-5 cable connections with straight through cables to Cisco routers/switches asynchronous command ports.

The Async2IP_WEB unit's system firmware upgrades are accomplished via the 10/100 LAN port. After completion of the firmware upgrade the Async2IP_WEB will reset itself and resume normal communications. No system software is required to be installed on the user's network or workstations for operation of the Async2IP_WEB.

The Async2IP_WEB is housed in a sturdy 19 inch 1U high chassis and has a 90-120 VAC power supply. Additional power supplies of 90-240VAC or 36 to 72 Volts DC are also available.

The Async2IP_WEB has a 3-year warranty and a 24 hour turnaround on warranty repairs.



2 Configuration

The Async2IP is shipped from the factory with preconfigured addresses.

NOTE: If at any time a unit needs to be returned to the factory default state, this is done via the recessed factory default button on the front panel. This button must be pressed (via a paperclip type device) **while applying power** to the unit. **Do not push too hard. Simply push until you hear or feel the click and hold 5 seconds.** Once the front panel system LED is green the button can be released.

2.1 Unit Configuration (EASY WAY)

****** It is recommended to configure the units locally before deploying to remote sites ******

A) Using a Web Browser type in the address bar: 169.254.0.100. The web page will appear and **Port 1 is enabled**. **DO NOT ENTER THE LOGIN AND PASSWORD ON THIS SCREEN**

HTTP2Async

Location, Console One

[Admin Page](#) Port 1 [Port 2](#) [Port 3](#) [Port 4](#)

Username:
Password:

After connecting to the unit, **CLICK** on **Admin Page**

B) Click on **Admin Page** to configure the unit's IP address and Port 1-4 settings.

C) A username and password is required to access the configuration "web page". The username is always: "**admin**" and the factory default password is: "**12345678**". Since SSL (https) is used for page security an authentication certificate is used. More than likely this will be an unknown certificate and will raise an exception by the web browser. To continue configuration of the Async2IP unit this **certificate must be accepted**.

D) Use the configuration "web page" to assign a new static IP address, IP mask, and gateway. Use the textbox containing 'Location X' in it to give the unit some meaningful name up to 32 characters in length. Also set the various asynchronous port speeds to the desired level, and check the DSR checkboxes if it is desired to force DSR on at all times.

E) Update the new parameters via the **UPDATE** button on the "web page".

F) Store to flash memory the new parameters via the red **STORE FLASH** button.

G) Assign a new password via the **CHANGE PASSWORD** button at the bottom of the "web page".

H) Power down the Async2IP unit and disconnect it from the PC.

I) Install the Async2IP unit into the network.

** If the install is corrupted by the user, you may reset the unit to the factory default state, this is done via the recessed factory default button on the front panel. This button must be pressed (via a paperclip type device) **while applying power** to the unit. Once the front panel system LED is green the button can be released (about 5 seconds).

****** It is recommended to configure the units locally before deploying to remote sites ******

UNIT CONFIGURATION, ADVANCED WAY

- a) Connect the factory fresh Async2IP unit directly to a **Lap Top PC** 10/100 LAN port with either a straight-thru or a cross-over CAT-5 cable.
- b) Turn on the Async2IP and the Lap Top PC. On the PC, go to the START button under Windows, then click on the RUN button and type: **cmd**, this gives you to the DOS prompt. Then type; **ipconfig** (you may need to type this several times while windows obtains an IP Address)
- c) Allow up to 4 minutes for the Lap Top PC operating system to settle in and give itself a default local IP address in the 169.254.xxx.xxx range.
- d) Bring up a browser on the PC and enter into the address field '**https://169.254.0.100**'. This is the factory default address of the Async2IP box. REMINDER: Be sure to use **https** and not **http**.
- e) The username is "**admin**" and the factory default password is "**12345678**".
- f) Use the configuration "web page" to assign a new static IP address, IP mask, and gateway. Use the textbox containing 'Location X' in it to give the unit some meaningful name up to 32 characters in length. Also set the various asynchronous port speeds to the desired level, and check the DSR checkboxes if it is desired to force DSR on at all times.
- g) Update the new parameters via the **UPDATE** button on the "web page".
- h) Store to flash memory the new parameters via the red **STORE FLASH** button.
- i) Assign a new password via the **CHANGE PASSWORD** button at the bottom of the "web page".
- j) Power down the Async2IP unit and disconnect it from the PC.
- k) Install the Async2IP unit into the network.

** If the install is corrupted by the user, you may reset the unit to the factory default state, this is done via the recessed factory default button on the front panel. This button must be pressed (via a paperclip type device) **while applying power** to the unit. Once the front panel system LED is green the button can be released.

3 Principles of Operation

3.1 Usage

Using the Async2IP is similar to using a legacy Terminal. When this TCP session is successfully made the Async2IP unit is now in **Data Mode** working just like a legacy Terminal.

All keystrokes entered in the terminal window are delivered to the attached remote user device at the other end of the LAN link. Conversely all display data generated by the remote user device is delivered to the terminal window as it happens.

HTTP2Async

Location, Console Four

[Admin Page](#) [Port 1](#) [Port 2](#) [Port 3](#) [Port 4](#)

Username:

Password:

After connecting to Port 4, enter the password: hello (factory default or user defined)

After logging in, the browser window becomes a legacy CRT Terminal interface. Keystrokes are sent to the remotely connected user device, and all returned data from that device is added to this browser window.

Only the Alphanumeric, Backspace, Enter, Pause|Break, and ESC* keys are supported. TAB, F1-F12, Arrow, and Control-n keys are not sent to the remotely connected user device. The PAUSE|Break key is used to send a CNTRL-C keystroke.

*The ESC key is supported in MSIE only.

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<---- Login Successful ---->



Paste Canned-Text here.

Now type a command to the Router or other attached DTE Terminal device

3.2 Port Data Rates

The Async2IP supports the following asynchronous data rates:

1200, 1800, 2400, 3600, 4800, 7200, 9600,
14400, 19200, 28800, 38400, 57600, 115200 bps.

3.3 Encryption

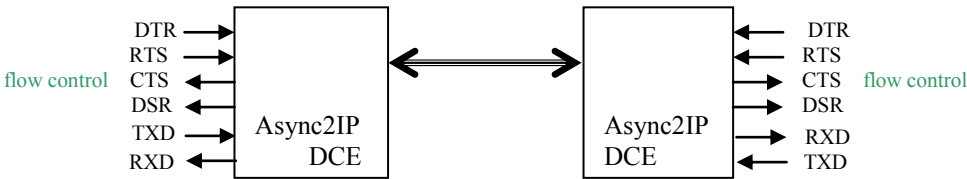
Two encryption schemes are used by the Async2IP. SSL is used for the “web page” accesses (https). Additionally, the TCP/IP session traffic is encrypted using a proprietary long key algorithm. No user data is ever sent over the LAN “in the clear”.

3.4 ASYNC Flow Control

The two TCP connected asynchronous ports are decoupled by the LAN link. Therefore the asynchronous speeds at each end do not have to match. This of course can lead to under and over-flow. This is dealt with by using hardware flow control. CTS (since the Async2IP is a DCE) is used for this purpose. The Async2IP will drop CTS when it can take no more data. For this to work, the user device must be monitoring CTS for permission to transmit.

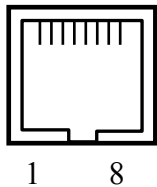
The same flow control mentioned above is used if packet traffic on the LAN becomes slow (no matter what the asynchronous speeds are).

Following are the RS-232 flow control lead mappings:



3.5 ASYNC RS-232 Leads

Each of the asynchronous ports are available on the back panel via 8-pin RJ-45 connectors. The pinouts and for these connectors are matched to popular Routers such as CISCO 2500 Async serial configuration ports:



Pin	RS-232 Use
1	RTS, Request to Send
2	DTR, Data Terminal Ready
3	TXD, Transmit Data
4	GND
5	GND
6	RXD, Receive Data
7	DSR, Data Set Ready
8	CTS, Clear to Send

RTS is not used by either the Master or the Remote Async2IP units.

DTR is used by the Master unit to monitor the coming and going of the terminal application.

CTS is used for flow control.

DSR can be either forced to always high, or it will follow the LAN LINK condition.

4 Physical Interfaces

4.1 Front and Back Panels



4.1.1 Front Panel LED Indicators

The following table describes the purpose of the LED indicators and their meaning by color:

<u>LABEL</u>	<u>WHEN OFF</u>	<u>WHEN YELLOW</u>	<u>WHEN GREEN</u>
SYS	POWER is Off	System Initializing	Normal Operation
LINK	LAN not connected	Establishing Connection	Normal Connection
PORT n Master	No TCP session active, DTR is not active.	No TCP session active, DTR is active.	TCP session is active.
PORT n Remote	No TCP session active, RTS and DTR inactive.	No TCP session active, RTS or DTR is active.	TCP session is active.

4.1.2 Rear Panel LED Indicator

There is one LAN LED indicator on the back panel. These are:

<u>LABEL</u>	<u>WHEN OFF</u>	<u>WHEN GREEN</u>
LINK	No LAN detected	LAN is active

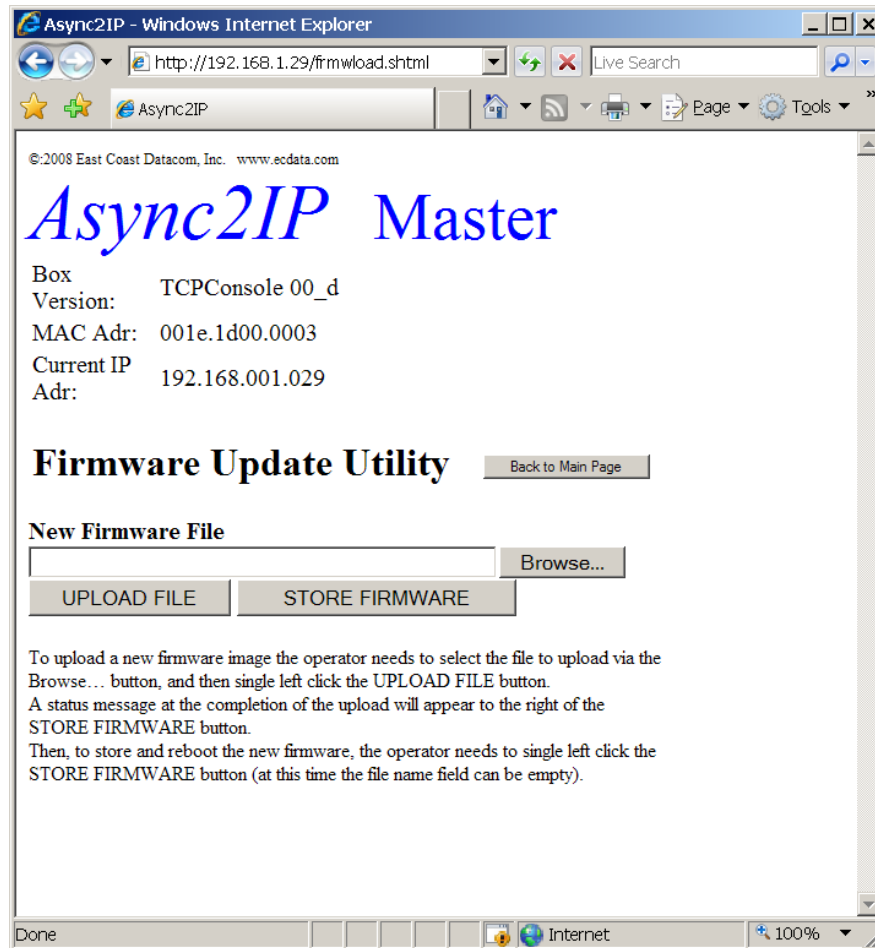
4.1.3 Recessed Front Panel Push Button

There is one push button recessed into the front panel. It can only be activated via a small screwdriver or paperclip. This is the “**set factory defaults**” button. If it is pushed on and held on during an initial power on sequence the Async2IP box will set all of its configuration parameters to the following factory defaults:

Box IP Address	169.254.0.100
Box IP Mask	255.255.0.0
Box Gateway Address	0.0.0.0
Ports 1-4 Speed	9600
Ports 1-4 DSR	DSR follows Link Status

4.2 Firmware Upgrade Page

An HTML Browser is used to upgrade the firmware in a Async2IP unit. This is a separate “web page” accessed via a button at the bottom of the Async2IP admin “web page”.



A username and password is needed to access the firmware update “web page”. This will be provided to the user when a new firmware load is needed.

It is a two-step process to upload a new firmware upgrade to a Async2IP unit. The first step is to upload the new firmware into RAM in the unit. The second step is to store this new firmware into Flash and reboot the unit.

To upload a new firmware image the operator needs to select the file to upload via the **Browse...** button, and then single left click on the **UPLOAD FILE** button. A status message at the completion of the upload will appear to the right of the STORE FIRMWARE button.

To store and reboot the new firmware the operator needs to single left click on the **STORE FIRMWARE** button (there is no need for the file name field to contain any entry). There will be no status message on this web page. Instead a new very concise page will be displayed to remind the operator that since the unit has rebooted the connection will need to be re-established. After approximately one minute the connection should be re-established. The Async2IP unit will have maintained the same *IP address and configuration* as was in Flash before the STORE FIRMWARE button was activated.

Appendix A - Specifications

Application

Remote Secure Console Server, 4-Port RS-232 Serial port management via Ethernet with secure encryption

Capacity

Up to Four Serial Async Ports converted to one 10/100 Base-T LAN Port

Interface

RS-232 on RJ-45's, Async, 8, N, 1(10 bit)
LAN: 10/100 Base-T, RJ-45 with DHCP Support

Data Rates

Serial Data: 1200 bps to 115.2 Kbps for simultaneous 4-Port operation
LAN: 10/100Mbps

Data Format

Data transparent and encrypted at all data rates

Serial Buffer

2048 bytes

Indicators

PWR: Power

System: Green or Yellow
Peer: Green or Yellow
Port 1: Green or Yellow
Port 2: Green or Yellow
Port 3: Green or Yellow
Port 4: Green or Yellow

Configuration

Via SSL Browser interface

User Configuration

Stored in Flash memory

Power Source

AC Power Option: 90-120VAC 50Hz or 90-240VAC, 50/60Hz

DC Power Option: DC Voltage, Input Range of -36 to -72vdc

IEC Power Inlet, (2) 5mm Fuses

Environmental

RoHS Compliant

Operating Temp: 32° to 122° F (0° to 50° C)

Relative Humidity: 5 to 95% Non-Condensing

Altitude: 0 to 10,000 feet

Dimensions

Length 3.22 inches (8.18 cm)

Width 19.00 inches (48.26 cm)

Height 1.75 inches (4.44 cm)

Weight

2 pounds (0.91 Kg)

MTBF Data

AC Powered: 371,246 hours

DC Powered: 330,734 hours

Warranty

Three Years, Return To Factory

Ordering Information:

PT# 183000

Model: Async2IP_WEB

Description: Async to LAN Adapter, 4-Port RS-232 to 10/100 LAN

PT# 180062

Model: AC 110VAC

PT# 180072

Model: AC 110 or 220VAC

PT# 180076

Model: DC 18-72VDC

Included with each unit:

1) Installation Guide

For further detailed technical information contact East Coast Datacom www.ecdata.com or (321) 637-9922.