



(Quickstart Section is on Page 2.)

OWNER'S MANUAL

iP1520
WEB CONTROLLED
AC POWER DISTRIBUTION



INTRODUCTION

iP1520 WEB BASED REMOTE POWER CONTROL

The Juice Goose iP1520 is a microcontroller based power distribution device that can be accessed via intranet or internet communications using Ethernet or RS232 connection. With this remote access, individual AC receptacles can be turned on and off and AC power receptacles can be monitored for electrical current flow.

The iP1520 has a 20 amp capacity and provides AC line conditioning and surge protection.

SAFETY PRECAUTIONS

The iP1520 is to operate at 120 volts, 60 hertz. Operation with any voltage or frequency other than that can damage the equipment and create an unsafe situation.

CAUTION #1: This device must be grounded. If a power extension cord is required, use a properly insulated and grounded cord. Failure to ground the device could expose the user to dangerous electric shock.

CAUTION #2: This device should be installed only by qualified electrical technicians using appropriate mounting hardware and correct installation techniques. When installing make sure main power is off before attaching the iP1520.

CAUTION #3: Do not expose the iP1520 to moisture or salty air. Doing so could cause significant damage and create an unsafe condition.

DISCLAIMER

Juice Goose shall under no circumstances be held responsible for any losses, damage, or injury resulting directly or indirectly from the use of the iP1520 device in a manner contrary to accepted safe operating methods or any instructions contained in this document. The user should determine prior to use whether this product is adequate, suitable and safe for the application intended. Since individual applications can be subject to extreme variation Juice Goose makes no representation or guarantee as to the suitability of the iP1520 for any generally described application.

QUICKSTART GUIDE

1. Unbox the unit. The box should contain: iP1520, manual, warranty card and Juice Goose promotional material.
2. With your PC on and booted up, connect the iP1520 to your PC using a suitable cable. If the iP1520 is connected to a network router use a standard CAT 5 cable, if connected directly to a PC use a CAT 5/6 crossover cable.
3. Plug the iP1520 power cord into a live AC receptacle, such as a wall outlet, with a twenty amp capacity (i.e. NEMA 5-20R).
4. The iP1520 will take about 30 seconds to boot up and configure itself at which point the Network light on the front of the unit will illuminate, indicating network connectivity. If the Network light blinks or does not light at all check the cable connections.
5. Open up your web browser and type in the following default IP address to access the iP1520 : <http://juicegoose>.
6. At this point you will be prompted to log into the iP1520.

Initial login will be:
Username: admin
Password: juicegoose

7. You will be presented with the control page where you can control the iP1520 PODS by clicking on the buttons or using the Sequence field by entering the value in seconds and clicking the Sequence UP button.
8. To setup a specific IP address and change passwords for the admin/user account click on the 'iP1520 Management' link at the top right of the page.
9. On the iP1520 management page you can configure the Admin and User passwords as well as configure the required IP address and any network/RS232 settings you require. This is detailed beginning on page 6. See your system administrator if you have one for help with configuration.

DETAIL SPECIFICATIONS

CHASSIS.....	16 Gauge Steel
DIMENSIONS (inches).....	1.72H x 19.0W x 7.0D
WEIGHT (lbs).....	10.0
CIRCUIT BREAKER.....	Back Panel, 20A Thermal
POWER INPUT CORD.....	7 Foot, 12/3 SJTW with NEMA 5/20P
VOLTAGE INPUT.....	120 VAC at 60 Hz
POWER OUTPUTS,,.....	Six NEMA 5/20R (Controlled) and One NEMA 5/20R Unswitched
NUMBER OF CONTROLLABLE PODS.....	Three
RELAY CURRENT RATING (amps).....	30
POWER LINE FILTRATION.....	Multi-stage Filter (48dB at 30 MHz)
MICROCONTROLLER.....	Microchip PIC18F97J60
COMMUNICATIONS LINES	
Ethernet (Network).....	RJ-45 (8 Wire)
RS232.....	RJ-12 (6 Wire)
MONITOR FEATURES	
Front Panel.....	Power On and Network Connection LEDs
Web Based.....	Outlet On, Sequence Delay and Current Flow (Additional web based control features are described in this Manual.)
OPERATING TEMPERATURE RANGE (degrees Fahrenheit)	
Operating.....	32 to 158
Storage.....	-40 to 185

FRONT PANEL FEATURES

ROCKER SWITCH - The primary intent is for the iP1520 to be controlled via a remote RS 232 or Ethernet link. This switch serves as a fail safe control device in the event a remote RS232 or Ethernet connection is not available or functioning. Moving this switch to the UP position will cause the iP1520 to turn on the three power PODs in a prescribed timed sequence. The default timing is two seconds between each POD activation. This timing can be changed by accessing the on board web server. Moving this switch to the DOWN position will cause the unit to turn off the POD outlets in the reverse order.

RECESSED SLIDE SWITCH - As a second fail safe control point, this switch can be used to manually turn on all POD outlets in the unlikely event of failure of the control circuitry contained in the iP1520. This switch will turn on all POD outlets simultaneously. When the switch is returned to its "off" position the iP1520 will revert to the prior state the unit was in.

NETWORK LED - This LED will light up solid when the iP1520 is connected to an Ethernet network connection. It will blink quickly when an Ethernet cable is attached but no network can be found. When no network cable is connected or

when using RS232 the light will blink slowly indicating the unit is powered up.
POD LEDs - As each of the POD duplex receptacles on the back of the iP1520 turns on a corresponding LED on the front of the unit will light. Each LED will turn off when the POD turns off.

BACK PANEL FEATURES

NETWORK (Ethernet) PORT - This RJ45 connector is for connecting to your PC, router or local area network using a TCP/IP link.

RS232 PORT- This RJ11 connector can be used for remote control of the iP1520 via RS232 protocol over distances not to exceed 50 feet.

PODs 1 -3 - There are three duplex receptacles on the back of the iP1520. Each is rated for a maximum twenty amp load and each is controllable to turn on or off independently of the others. When the on board sequencing process is used POD 1 will turn on first, followed in order by POD 2 and POD 3. They will turn of in reverse order using this same process.

UNSWITCHED OUTLET - This single outlet is rated for a maximum load of twenty amps. It will have power any time the iP1520 is plugged into a live AC receptacle.

DETAILED INSTALLATION AND SETUP

Unbox the unit. The box contains: the iP1520 unit, the iP1520 manual and a warranty card .

Mount the iP1520 in a 19" wide rack with metal mounting rails, designed with 1.75" spacing. Use appropriate rack mounting hardware. Plug the power cord into a grounded outlet. **Do not defeat the grounding feature of the iP1520 power cord.**

SET UP DETAIL

1. Connect the iP1520 to your network router using a Cat 5 cable plugged into the RJ45 Network port on the rear of the unit and the other end to your network router. If connecting directly to a PC use a Cat 5/6 Crossover cable.
2. Plug the iP1520 power cord into a live AC receptacle, such as a wall outlet, with a twenty amp capacity (i.e. NEMA 5-20R).
3. The iP1520 will take a few seconds to boot up and configure itself at which point the Network light on the front of the unit should illuminate and remain on without blinking, indicating network connectivity. If the Network light blinks check the cable connections.
4. Open a web browser on your PC and type in the following address on the navigation bar to access the iP1520 :
`http://juicegoose.`
5. You will be presented with the login box. Enter the following initial username and password (these can be changed later):

User: admin

Password: juicegoose

The control device page will be displayed where you can operate the PODs and create sequence events. At the top right you will see a iP1520 Management text link. Click on this to move to the iP1520 setup and configuration page.

Here you can reset the passwords for both the administrator and user. You can also configure the required IP address and any network/RS232 settings you require. See your system administrator or qualified personnel for that configuration.

The iP1520 management page consists of 4 tabs;

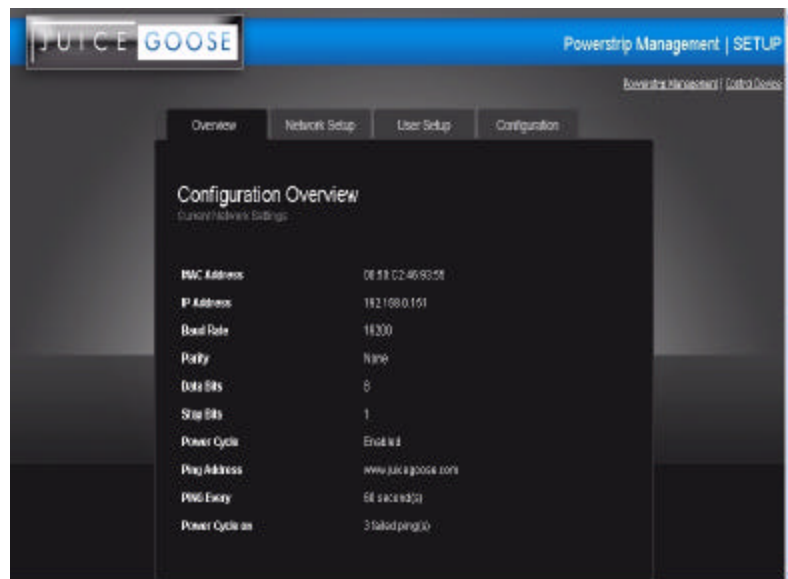
Overview—Which shows the current configuration of the iP1520

Network Setup— Where you can configure IP address and other required network settings dependant on your personal network

User Setup— Where you can set the username and password for both the admin account and user account

Configuration—This page allows you to configure RS232 baud-rate setting and the Power Cycle feature of POD1.

OVERVIEW



The Overview Tab displays the current settings of the unit and the MAC address. This page is useful for retrieving all the information you may need to set up the iP1520 on your network. If you have DHCP enabled, the IP address your router/DHCP server assigned can be viewed here.

NETWORK SETUP

The screenshot shows the 'Network Setup' configuration page in the Juice Goose management interface. The page has a dark theme with a blue header. The 'Network Setup' tab is selected, and the 'Enable DHCP' checkbox is checked. The configuration fields are as follows:

Field	Value
MAC Address	00:50:C2:46:00:55
Listen Port	80
IP Address	192.168.0.151
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
Preferred DNS Server	00.04.107.1
Alternate DNS Server	00.04.100.1

Buttons for 'Save' and 'Cancel' are located at the bottom left of the configuration area.

In the above screen capture you can see the network setup tab accessible when logged in as Admin.

The Enable DHCP is checked by default. This will result in the router or DHCP server assigning the IP address of the unit which will then be visible on the OVERVIEW tab.

If you wish to set the IP address manually to conform with your personal network the fields are provided to do this. You must first disable the DHCP check box and then enter the IP address, subnet mask, default gateway and preferred DNS values in compliance with your local network.

The Listen Port is used for remote access. The default is set to 80. But this can be changed to any port you select that otherwise is not being used by any other attached system. See page 12 for further details on the port address and how it relates to remote access.

USER SETUP

The screenshot displays the 'User Setup' configuration page within the 'Powerstrip Management | SETUP' application. The page has a dark theme with a blue header. At the top, the 'JUICE GOOSE' logo is on the left, and 'Powerstrip Management | SETUP' is on the right. Below the header, there are four tabs: 'Overview', 'Network Setup', 'User Setup', and 'Configuration'. The 'User Setup' tab is active. The main content area is titled 'User Setup' and contains two sections: 'Admin Account' and 'User Account'. Each section has a 'Username' field and a 'Password' field. The 'Admin Account' section also has a 'Repeat Password' field. At the bottom left of the form, there are 'SAVE' and 'CANCEL' buttons. The 'Username' fields contain 'admin' and 'user'. The 'Password' fields contain 'juicgoose', and the 'Repeat Password' field also contains 'juicgoose'.

The user setup tab is where you configure the Admin and User account passwords. You can change the username and password on both accounts by typing in the changes in the corresponding fields. There is a second password field for both accounts that verifies you typed the password in correctly. If you did not, an error message will be displayed when trying to save the changes.

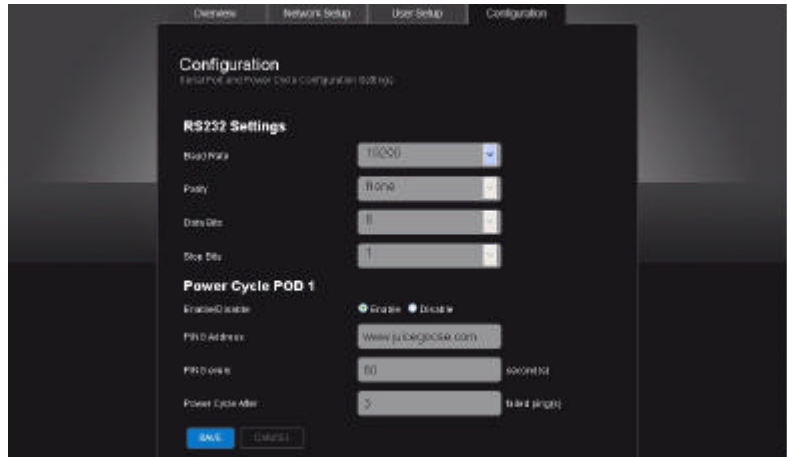
Once you have set the desired username/passwords hit the 'SAVE' button and the changes will be made and the unit will reboot. You may hit the Cancel button if you decide you don't want the changes and the username/passwords will remain unchanged.

Only the Admin login has access to the setup and configuration page. This login should only be used by authorized people as changes can render the unit in an unusable state if the wrong data is entered. A factory reset would then have to be applied.

The User account has access to only the POD and Sequence control page.

Multiple Admins and Users can be logged into the device at the same time which allows uninterrupted operation from multiple locations without the need for other users to log out first. The commands are processed based on the last command issued.

CONFIGURATION



You can also assign a new IP or control the device via RS232 commands (see page 13 and 14 for the list of commands), this will require a special cable (detailed drawing on page 13).

The only field that is variable for RS232 communication is the Baud rate which is set at a default of 19200bps. RS232 communication uses COM1. Your computer will need to be set to the same values as follows; Baud rate=19200, Parity=None, Data Bits=8, Stop Bits=1.

Once you have configured the PC's COM1 port to match the above values you can then use a Terminal program to access and issue the RS232 commands. There are several free terminal programs available such as Microsoft Hyperterminal. Or you can download one direct from the iP1520 product page on the Juice Goose website at <http://juicegoose.com/product-ip-1520.html>

POWER CYCLE FEATURE

Also on this page is the Power Cycle control feature. The Power Cycle feature is useful for rebooting routers should a connectivity issue arise. Simply plug the router into POD1. Should a router lock up occur the units will be rebooted via the power cycling of POD1 when your chosen domain cannot be PINGed by the iP1520. This feature ships disabled and can be enabled using the checkbox.

Before you enable this feature, be sure to configure the settings you require. After you enable the Power Cycle feature the settings cannot be changed unless you disable the feature again.

Please note: if you have a Dynamic IP address it is not advisable to plug your Cable/DSL modem into POD1 as a reboot of the modem could result in a new IP address being assigned to the modem and so could result in remote access issues if you do not know what the new IP address is. We suggest plugging the modem into the Unswitched (always on) outlet of the iP1520 and the router in POD1. If you have a static IP address this is not an issue and the modem can also be plugged into POD1.

There are 3 user definable fields to this feature.

The 'PING Address' field is the internet address that the unit will use to check network connectivity. The default is our web domain (www.juicegoose.com) and can be left as is. If you wish to choose another domain simply type the address in this field.

The 'PING Every' field is how often you want the iP1520 to check for connectivity. The default is 30 seconds and can be changed to any value (in seconds) you choose. It's recommended that you don't go below 30 seconds to allow any attached devices 'boot up' time.

The 'Power Cycle After' field is how many failed PING attempts the unit will carry out before rebooting POD1. The default is set to 2 tries but the user can define any value.

Once you have completed all setup fields as desired hit the save button at the bottom of the page to update the unit and reboot it.

REMOTE CONTROL AND MONITORING

Using the On Board Web Server

TURNING POWER ON AND OFF - On the Control page, each of three PODs has associated with it a virtual On/Off button (Activate) and an On/Off indicator (Status). Clicking an On/Off button turns the corresponding POD on or off. When a POD is on the Status indicator will be green as if on. When a POD is off, it's Status indicator will darken, as if off.

POWER MONITORING - The Current indicator will show the amount of electric current flowing through a particular POD. This meter is accurate to the nearest 0.1 amperes for levels between 0.2 and 20.0 amperes. Current measurement is RMS, averaged over a period of three seconds. Because the iP 1520 only measures current in one direction, from the outlet to the load, applications that feed current back to the supply (for example inductive loads such as motors) will not be measured accurately.

SEQUENCING SETTINGS - Rather than turning each POD on and off individually, in applications where it is desired to turn the outlets on and off in a coordinated sequence, a macro program can be set to turn the PODS on (1-2-3) and off (3-2-1) in order with the click of a virtual button. Under the Sequence heading on the Control page enter a desired number of seconds for the delay of turning the PODS on and off. The default value is two seconds. Clicking the Activate button will turn the outlets on or off in the prescribed order. The status of the PODs is indicated below the Status heading on the Control page.

REMOTE OPERATION OF iP1520 - To access the iP1520 from a different network other than the one the iP1520 is using, you need to first assign the iP1520 with a PORT address on the Network setup page and then assign this on your router. Log in to your router and enable the PORT FORWARDING feature (Sometimes called Virtual Server) using the assigned iP1520 IP number you chose and the port number you assigned. Each router's port forwarding is different. So see your routers manual for help with configuring this. Once you have port forwarding setup you can access the iP1520 from a remote network by typing the IP address and PORT address into your browser bar. The PORT address is added to the end of the IP address separated by a colon.

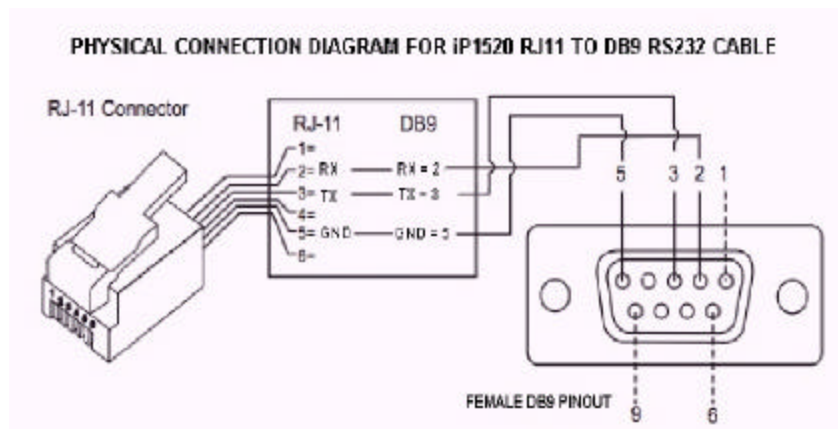
Example 200.100.075.050:80 - In this example "80" is the port address.

If you have enabled the port forwarding correctly on your router you will be able to access the iP1520 from any location in the world.

RS232 CONTROL AND MONITORING

To operate the iP1520 using RS232 you will need a suitable cable from the PC to the iP1520 RJ11 RS232 port on the rear of the unit. Below is the pin out for a RJ11 to female DB9 cable. This cable will need to be constructed or purchased.

RS232 CABLE PINOUT



RS232 COMMANDS

Using Terminal Software such as Windows Hyper Terminal or Micro Terminal which you can download from our website at <http://juicegoose.com/product-ip-1520.html>

, the following commands can be issued to the iP1520.

NOTE: A DEACTIVATE command must be issued first to ensure the physical sequence up/down switch position does not override the RS232 commands.

ACTIVATE - Enables the sequence up/down switch on the front of the iP1520

DEACTIVATE - Disables the sequence up/down switch on the front of the iP1520

POD1ON – Turns POD 1 on
POD1OFF – Turns POD 1 off
POD2ON – Turns POD 2 on
POD2OFF – Turns POD 2 off
POD3ON - Turns POD 3 on
POD3OFF – Turns POD 3 off

ALLON—Turns all PODs on without sequence
ALLOFF – Turns all PODs off without sequence

SEQUP(X) – Sequences up all PODs from 1 to 3, where (X) is the number of seconds between sequence events (e.g. A 2 second sequence would be SEQUP2)

SEQDOWN(X) Sequences down all PODs from 3 to 1, where (X) is the number of seconds between sequence events (e.g. A 2 second sequence would be SEQDOWN2)

POD1CURRENT (Reports current draw on Pod 1)
POD2CURRENT (Reports current draw on Pod 2)
POD3CURRENT (Reports current draw on Pod 3)

DHCPON - Enables DHCP on the iP1520
DHCP OFF - Disables the DHCP on the 1520. You will want to disable DHCP before entering any new network settings via RS232 or the changes will be lost when connecting the unit to a network.

SETIP XXX.XXX.XXX.XXX - Sets the IP address of the unit where 'X' represents your chosen numerals.

SETMASK XXX.XXX.XXX.XXX - Sets the subnet mask of the unit where 'X' represents your chosen numerals.

SETGATEIP XXX.XXX.XXX.XXX - Sets the gateway of the unit where 'X' represents your chosen numerals.

SETPDNS - Sets the primary DNS IP address.

SETSDNS - Sets the secondary DNS IP address.

INFO - Shows all current settings

ACTIVATE - Enables the sequence up/down switch on the front of the iP1520

DEACTIVATE - Disables the sequence up/down switch on the front of the iP1520

RESTART - Restarts/Reboots the iP1520. Use this command after making your changes.

WRITING CUSTOM CONTROL INTERFACE

If you wish you design your own driver/interface for the iP1520 this can be done by incorporating the predefined RS232 protocols as listed in the RS232 Control and Monitoring section of this Manual into your software.

TROUBLESHOOTING

I CANNOT CONNECT TO THE iP1520 VIA MY NETWORK.

Ensure your router has DHCP enabled (see your router's user manual to enable this feature). Then type <http://juicegoose> to access the login screen.

Check you are using the correct cable, standard CAT5 cable for router connection, crossover cable for direct to PC connection.

If you are connecting directly to a PC you will have to configure your computer to have an IP address of 192.168.1.1. See your operating systems help file on how to do this. We recommend you setup the devices initially on a router.

Are you using the correct username and password? If you are accessing the login page and your login is failing you might need to reset to factory default and try again if you have forgotten the correct username/password combination.

If you are trying to connect from a remote network ensure you are trying to access using the correct IP address and PORT number which were assigned to the unit. Port forwarding may need to be enabled on the remote unit's network router (see your administrator).

POD 1 KEEPS REBOOTING

The Power Cycle feature may be enabled and there is no connectivity to the selected domain. POD 1 will power cycle if the defined domain name to be PINGed is unreachable. This can happen if you're using the unit independently of a web enabled network. Disable the feature in this case.

Ensure you have chosen a valid web address to PING.

Ensure you have the PING set to at least 30 seconds and the retries to at least 2. If you have a router/modem on POD1, 60 seconds with 2 retries is recommended to allow time for the modem to boot up and reestablish connection.

I'VE FOGOTTEN MY USERNAME/PASSWORD.

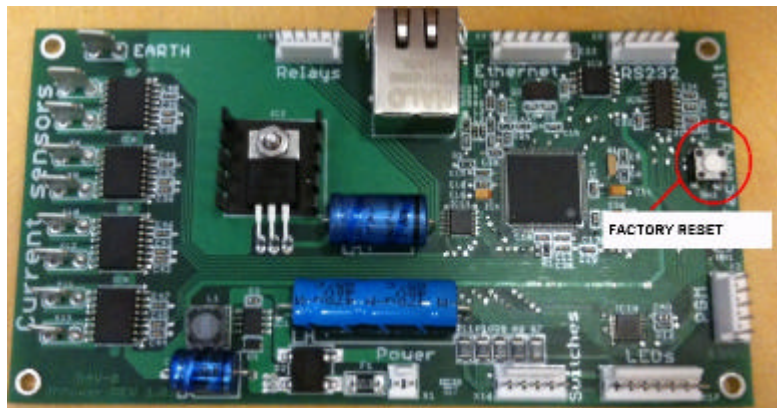
The only way to fix this issue is to do a factory reset of the unit as detailed below.

FACTORY RESET ALL VALUES

The iP1520 can be returned to its default firmware values by pressing a clearly marked button on the iP1520 control board. This will also reset the IP and RS232 to their default settings of IP: 192.168.1.77 and Baud rate 19200 and enable the DHCP feature.

WARNING: The iP1520 needs to be powered on to perform the factory reset, be careful to only touch the factory reset button and ideally use a pencil to press it. There is a risk of shock if you touch anything else inside the iP1520.

To perform the factory reset, remove the top chassis cover by removing all screws on the tops of each side of the chassis and lifting the top. Press the "Reset" button and hold it for 10 seconds. The network LED will be lit solid. When the LED goes out the reset is complete. Replace the top and reinsert the screws. At this point, when power is returned to the unit and network connection restored the setup procedure can be followed as if the unit was being used for the first time. See the "Quickstart" and/or "Setup Detail" sections of this manual.



IN CASE OF MALFUNCTION

The Juice Goose iP1520 is ruggedly constructed and contains quality components. There are no user serviceable parts inside this device. Unauthorized service will void all existing warranties and may result in equipment damage and personal injury.

Should improper performance be observed consult the following guidelines for diagnosis.

SYMPTOMS AND SOLUTIONS.

1. Unit will not power up.
 - a. Check to see that main utility power is available.
 - b. Check that the circuit breaker on the iP unit is not tripped.
 - c. Check the Network LED on the chassis. If it is not lit the iP device is probably not receiving power. Remove power from the iP device by unplugging it or turning off the circuit breaker that feeds the unit. Then restore power.
 - d. If the device is being remotely activated:
 - i. Check the cable leading to the iP network or RS232 input. Disconnect the cable and try to activate the iP product with the switch on the chassis. If this works either the cable is bad or the network/RS232 configuration is bad. If possible, exchange the cable in question with a known good cable.
2. Unit will not power down.
 - a. It is likely that when a unit fails to turn off the cause is similar to that which would cause a unit to fail to turn on.
 - b. Follow steps outline in 1., above.
3. Unit turns itself off unexpectedly.
 - a. The unit may have encountered excessive current draw that caused the circuit breaker to trip. Examine the breaker. If it has tripped the button section of the breaker will be extended and can be reset by pushing it in after the unit has been off for a brief period.
 - b. Review the current requirement of the equipment plugged into the iP device and compare it to the amperage rating of the iP device in question. See the Detail Specification section of this manual.

If the problem can not be remedied, if the encountered problem is not listed here and particularly if any evidence of severe or hazardous performance is observed, immediately disconnect power to the iP device and contact your local Juice Goose dealer or Juice Goose directly.

SERVICE

Should your unit require service, contact Juice Goose to receive a service authorization number. This number will allow us to track your returned unit. Please note that no returns will be accepted without such a number.

7320 Ashcroft, Suite 104
Houston, Texas 77081
(p) 713-772-1404
(f) 713-772-7360
(e) info@juicegoose.com
www.juicegoose.com