



Setup and Admin Guide

Your Check Box and Ticket Manager System is designed to be simple to set up and use. To make set up as easy as possible, please take a moment to completely read through these instructions before you begin.



Wireless Hotspots

www.4EZWiFi.com

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Installing Checkbox

Locating the Equipment

Locate Checkbox in an area that is close to where your guests will be using the network. Wireless access points have a range similar to cordless telephones; in an open area they typically work up to 1000', but walls and other devices can cause interference and shorten the range. By using Mesh Node repeaters the range can be increased. The access point can be mounted on a wall, set on a counter or a shelf, or placed inside a drop ceiling with the antennas pointed through the ceiling into the area below. Keep in mind that Checkbox will need access to electricity. In addition, the Master unit unit will need a connection to your Internet Service Provider (ISP). If you ordered your Checkbox in a weatherproof enclosure your unit may look different from the diagram below.

Connecting the equipment (Refer to the picture)

Checkbox will connect to your cable, DSL, or local area network using a Cat5 network cable. (It looks like a telephone cord with fat plugs on each end). Depending upon your particular DSL or Cable modem the jack may be marked "LAN", "PC", "Host" or something else. In any event there will most likely be only one jack on the Cable or DSL modem that the plug fits into.



Optimal Mounting Locations

Checkbox uses two short "rubber ducky" style antennas and can achieve a range of up to 1000' outdoors, depending upon conditions. When mounting an external unit outdoors there are a few factors to keep in mind:

- Choose an area that is relatively high and free of obstacles.
- Choose an area where you will be able to mount the Checkbox safely.
- Choose an area where there will be power (and you can run a cable to your internet connection if this unit is a Master).
- Choose an area that is clear of power lines and other hazards.
- Do not locate the Checkbox antenna within 3-4 feet of a satellite dish, other wireless routers, cordless home phones, or other antennas they may cause interference to each other.
- You do not need to choose an area where you can regularly get to the Checkbox, as all administration work is done through a web browser.

Managing your System

Ticket Manager is the system you use to create and print tickets for your users. Ticket Manager also allows you to view users on the system (Active Clients), view tickets not yet used, and to delete tickets from the system. Ticket Manager is accessed through a web browser on your computer, and can be accessed from inside the Hotspot or from outside the Hotspot from anywhere on the internet. To learn how to access the system from outside the Hotspot see the *Accessing Your Hotspot* section in this guide.

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	ة Vine	Vigurd INN Welcome to the EyardII	NN	
		is ticket, please enter it in the :		
	If you do not have a ticket	, you can purchase access no	w at the front desk.	
		Submit Ticket		
				-
Done Done				🔮 Internet 👘
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CheckBox Wireless Hotspots www.4EZWIPLcom Active Clents Al Clents	Check	Access Controls	Customize Site	tained H
Active Clients Al Clients Client Usage Policy	Check	Access Controls Access Controls Access Control	Customize Site	tained H
CheckBox Wireless Hotspots Wireless Hotspots Attive Clents Al Clents Clent Usage Polcy Open Tickets	Check	Access Controls	Customize Site	tained H

To access Ticket Manager from inside the Hotspot make sure your computer is connected to the system, either by wireless connection or through a wired ethernet port. Open your web browser (such as Internet Explorer, Mozilla, Netscape, Safari, Opera, etc.) and you should see a welcome screen.

This is an example welcome screen your guests will see when they first log on to your Hotspot. From here they are prompted to enter a ticket before they can connect to the internet. The **Submit Ticket** box will only be displayed if tickets have been created.

To access the Ticket Manager screen, in the address bar enter the following: <u>http://192.168.17.1:3456/admin</u>

This will bring up a logon window asking you for a user name and password, just hit Enter or OK for now. The system has no user name or password as it is shipped. You may set a password inside the management screens that will be used for logon

Once you have successfully logged on to Ticket Manager you will see the Checkbox Administration Screen(s) as shown. Primary menu buttons are across the top, secondary menu buttons on the side.

You will want to set an operator password right away to prevent unauthorized access to your management screens. Your password can be any combination of letters or numbers from 4 to 16 characters long.

Setting up Guest Access

There are three ways your guests can access the system; using Access Tickets, using Credit Cards and PayPal, and using Free Access.

Access Tickets allow you to create and distribute tickets to your guests that allow them an amount of time online that you determine. These tickets can be good for an amount of time ranging from 15 minutes to one year. You can give these tickets away or sell them.

With the **Credit Card Module** you can accept credit cards automatically through the welcome page. The Credit Card Module uses the PayPal system to clear the transactions and deposit the funds into your account, and allows you to set the pricing and duration. With the Credit Card Module *you do not need to be present to hand out tickets* - great for unattended locations such as marinas and public spaces.

The Free Access System allows you to give your guests free access two different ways:

- 1) Allow a small free access time once per period. EG: 15 free minutes per day; or 1 day free per week. This is great for a coffee shop or restaurant that wants to advertise free internet access but prevent guests from taking up a table for hours.
- 2) Set the same free access time and period, allowing a guest unlimited free access. In this mode they will still be required to review your login page with terms and conditions, once per period.

The system will *automatically generate the appropriate buttons and boxes* on your welcome screen. If you have not created any tickets and have enabled free access and credit cards, then the system will not display a box to enter access tickets. If you have not enabled credit card payments or free access and have created tickets then only the ticket box will be displayed on your welcome screen. If you have not enabled free access or printed tickets, and have enabled credit cards then only the credit card buttons will be displayed.

The following is an example of a guest login screen with all the access options enabled:



If any particular access method is not activated, then that access method will not be shown to your users. *Note: If you disable all access methods, the only way for a guest to gain access through your Hotspot is if the administrator manually activates that specific client through the All Clients menu.*

Creating Tickets

Click on Access Controls from the menu at the top to begin creating tickets for your users. The system will automatically take you to the Ticket Generator page.

Select the usage duration of the tickets you wish to generate and their expiry date (shelf life) and then click on the **Generate Tickets** button.

	Administration	Access Controls	Customize Site	Network Setup	Mesh						
Generate Tickets											
Update Ticket Logo	Ticket Generator										
PayPal Setup			Access time								
PayPal Welcome											
	C	15 minutes	C 30 minutes	C 60 minutes							
Free Access Setup	0	2 hours	8 hours	C 24 hours							
Free Access Text	C	2 days	○ 3 days	⊂ 5 days							
	C	7 days	O 14 days	30 days							
Show Current Login	C	60 days	C 90 days	C 1 year							
			Shelf life (expiry) 30 💽 Days								
			Generate Tickets								

Shelf Life refers to how long the ticket is good sitting in the drawer until it expires. If you print a stack of tickets each good for 7 days of access with a Shelf Life of 90 days and they are not used, the system will delete them from the ticket database 90 days after their creation. If a guest activates that ticket 89 days after it is created they will still get a full 7 days of access. If however they try to activate it 93 days after it is created the ticket will not be recognized by the system. Shelf Life is particularly handy for promotional events, for example; "today only free 30 minutes access with each purchase". Users can not save up these promotional tickets as you can set their Shelf Life to 1 day for this event. You can create ticket sets with different Shelf Life and Access Time.

Free Access

Free Access controls have 2 setup options. How long you wish allow a client to access the internet when they push the Free Access button (Access Time), and when they will be allowed to see the button again (Trial Period). Once a guest selects free access, they will not see the button again until the period has expired.

Use this to allow a guest a "free trial" or "quick access" without interaction from you. You can still offer tickets and/or PayPal options for longer access requirements. Once a guest's free trial time is used, they will not even see the button until the trial period is expired.

If you wish to allow unrestricted access to your guests, but still have the guests view your site Login and Welcome page(s), you can set the Access Time and Trial Period time to be the same. For example, by setting the Access Time and Trial Period both to 1 day, your guests will see the site Login page once a day.

	Administration	Access C	ontrols	Customize Si	te N	etwork Setup	Mesh			
Generate Tickets			_							
Update Ticket Logo	Free Access Setup									
	Enabling this option will add another selection to your customer login page.									
PayPal Setup		Access Tin	ne	1	, Frial Peri	od				
PayPal Welcome		0	Disabled		0	30 Minutes				
		•	15 minute	s	0	1 Hour				
Free Access Setup		0	30 minute	s	0	1 Day				
Free Access Text		0	60 minute	s	0	3 Days				
		0	2 hours		œ	1 Week				
Show Current Login		0	8 hours		0	30 days				
Show current Edgin		0	1 Day							
		0	3 Days							
		0	1 Week							
				Update						

To enable Free Access, click on Access Controls in the top menu and then **Free Access Setup** on the left hand menu. Select the Access Time to specify how much free time you want to allow them on the system, and then select the Trial Period to specify the amount of time that must elapse before they get a new free trial.

You may also customize the message your users see by clicking on **Free Access Text** on the left hand menu and editing the message.

Customizing your Login Screen

As you add access methods the system will add the appropriate buttons and boxes to your Login screen. You can customize the look of your welcome screen by uploading a picture or logo in .JPG format.

To upload an image click on **Customize Site** in the top menu and then select **Upload Site Logo** on the menu on the left hand side of the administration screen. You may also select the options to change the welcome messages and change the ticket graphics as well.

For tips on how to size your graphics see the section *Tips For Uploading Graphics*.



You can review the results with the **Show** option on the left menu. They will be shown within the main frame in the admin panels, although your guests will see this frame as their "whole window".

You can also update the **text** of the **Login** page, the **Welcome** page received after they have logged in, and a message to display if they enter an incorrect ticket number and end up with a **Failed** login.

Credit Card Module

If you wish to use the credit card module, first you must configure your credit card account, and then you can set up your pricing and access times.

Welcome	Send Money	Request Money	Merchant T	ools	Auction Tools				
elcome		way to send a			-				
LOG IN	Bay an	yone with an email a		uy with C	PayPal				
New user?	Requ	est Money		V	Protection				
SION UP		Send a personal or group bill <u>learn mers</u> Over 50 million member accounts worldwide!							
at's New		Sign up for yo							
ommerce Saf			UF FREE Pays	aracce	20111				
tect yourself	Spotli	ight							
udulent email bsites	s and	Auction Tools It's easy to buy an	d sell on eBay	when y	vou use PayPal				
nd invoices w W PayPal Out	ith the look	to process your pa	yments.						
fer new merci	hants	Merchant Tools Accept online cred PayPal's Merchant	t card paymer	nts imm	ediately with				
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Welco		oney Request Mon	ey Merchan		Up Log In Help				
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Welco DUP For se Your Acco	ome Send Mo a PayPal Acco unt Type - Choose us from, anyone with	the account type that work an email address. Busin types C Person	ks best for you. P siss accounts can r al Account in:	ersonal a send and	Auction Tools				
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Welce	eme Send Md	C Person C Person C Person C Busine	ks best for you. P. So accounts can a counts can a count in:	ersonal a send and Cho United	Auction Tools				
Welce	eme Send Md	the account type that work an email address. Busin types C Person	ks best for you. P al Account in: ss Account in: Contact Us Use Shing Mass Pa	ersonal a send and Cho United	Auction Tools				

First you will need to set up a *Business Account* with PayPal if you do not already have one. Go to www.PayPal.com to set up a new account. (If you already have an existing business account with PayPal you can skip this section. If you have an existing personal account you will need to upgrade to a business account).

After you have finished setting up your Business Account with PayPal you will receive an **identity token**. This token will look like a long string of random numbers and characters. This string is the unique identifier that PayPal will use to identify you and your system to their servers to properly authorize the charge and credit your account. *It is very important that you copy this string carefully* (using copy and paste) in the next step. We strongly suggest that you copy this string into a blank document and store it for safekeeping.

Make sure you specify a Business Account when setting up your PayPal Account!

Once you have completed setting up your PayPal account and have copied your identity token, open the administration page on your Checkbox System and go to the PayPal Setup Option on the menu.

	Administration	Access Controls	Customize Site	Network Setup	Mesh	1				
Generate Tickets		Paypal Setup Page								
Update Ticket Logo	Paypal Id									
	thisisme@	here.com								
PayPal Setup	Usually yo	ur email address at P	aypal							
PayPal Wecome	Paypal Id	entity Token								
	th1s_is_a	fUnY*64_chaRaT3r_	:0de_th4t_paypal_suF	pl1Es						
Free Access Setup	Obtain fro	m your Paypal Merch	ant setup							
Free Access Text		1	ncrement Price							
			1 Hour 1.00							
Show Current Login			2 Hours 0.00							
			1 Day 10.00							
			1 Week 0.00							
			30 days 0.00							
			an adultan							
		Curre	us Dollar	*						
			Update							

In the box marked PayPal Identity enter your PayPal ID (typically your email address).

In the PayPal Identity Token box paste your PayPal Identity Token.

Set your prices, and leave as zero's any time increments that you do not wish to offer. Press the Update button when done.

It would be a good idea at this point to run some sample charges through the system. You can refund those charges when you are done testing by using the PayPal merchant tools in your PayPal Account Management Screen.

Please Note: This software is provided to process credit card transactions securely through PayPal utilizing PayPal's systems. Checkbox Hotspots is not affiliated with PayPal and does not offer support for managing PayPal merchant accounts.

Client Usage Policy

With the Client Usage Policy function, you can control how much bandwidth a guest can consume each hour. Bandwidth is the amount of data a guest passes through the system. The system can only pass a finite amount of data at a time, with the limiting factor usually being the internet connection itself. Most internet connections such as cable or DSL pass between 1 and 8 million bits-per-second of data. Satellite and fractional T1 circuits can be even slower. And some Internet Service Providers, especially satellite based providers, have limits on how much data can be used per day or per month.

Most guests will use the system for email and web browsing, and will never reach most bandwidth limits. Occasionally, a guest may attempt to use the system for downloading large files, such as movies or video. This can cause excessive usage and negatively impact all of your guests. If you use satellite or if your ISP has a daily or monthly download limit, one guest could easily consume your entire allotment.

To access the client usage settings, click on Administration and then Client Usage Policy on the left.



		Acti	vated Hots	pot clients			
 To Upo Clients 	date a Clie with a Po	nt Usage licy highlig	Policy, click on t	n the link in the Tic he link in the Policy are currently speed Bytes	column		
Ticket	Time Left	Traffic	Ip	Mac	AP	Sig	Policy
1089891378	3.8 days	1901984	192.168.17.161	00:16:B6:56:B3:8C	7AB083	28	90/901
2019216992	1.9 days	80117	192.168.17.112	00:14:A5:50:73:73	CB6E28	20	
1690310594	4.7 days	187096	192.168.17.111	00:13:02:A2:7D:55	7AB083	40	

Administration Access Controls Customize Site Network Setup Mesh

2019216992	1.9 days	80117	192.168.17.112	00:14:A5:50:73:73	CB6E28	20	
1690310594	4.7 days	187096	192.168.17.111	00:13:02:A2:7D:55	7AB083	40	
1056914406	1.9 days	196725	192.168.17.98	00:11:50:6F:D6:F3	69F93B	12	
1222908372	20.1 hrs	43099	192.168.17.72	00:14:A5:F4:30:F3	69F03E	38	
1893975478	15.6 days	1025026	192.168.17.28	00:06:25:1D:6E:C3	69F920	33	
1301442120	69.8 days	308219	192.168.17.24	00:11:09:6C:5A:5B		0	_
1757134329	21.7 hrs	20480	Disconnected	00:90:4B:9C:FB:90		0	
1220672509	4.8 days	36508	Disconnected	00:13:CE:9A:17:12		0	
1922514934	4.0 days	43530	Disconnected	00:16:CF:53:D7:AA		0	
1040574160	4 0 J	0072	D:	00.00.00.00.00.00	7 4 10 00 2	0	

The Client Usage Policy allows you to set an hourly limit on the amount of data each user can consume. Before reaching the limit each user will have normal access to the bandwidth on the internet connection—the system will divide the available bandwidth evenly among the active users. Once a user has reached their hourly limit that user will be reduced to a slower speed, roughly the equivalent of dial up speeds, for the remainder of the hour.

The system will <u>automatically</u> reduce the speed of a client when they have reached the hourly limit set in the Client Usage Policy. It will also enable them for normal access once they no longer exceed the hourly limit. You can review if any clients are currently speed restricted in the Active Clients panel. If they are speed restricted, their entry in the **Policy** column will be colored yellow.

Clicking on a client in this column will allow you to set individual client participation in bandwidth management, or temporarily reset the client counters.

Administering Clients

Under normal circumstances guests will get online, use their time and then automatically be logged off the system without any manual intervention from you or your staff. However there is an option to manually adjust a guest's remaining time, delete a guest from the system, and manually add a guest.

Active Clients

	Administration	Acce	ss Contr	ols Custon	nize Site Netw	ork Setup		Mesh	
Active Clients			Act	vated Ho	tspot clients				
All Clients			met	vaccu 110	ispor chents				
Client Usage Policy	 To Update 	e a Client i	Remainin	g Time, click o.	n the link in the Ti c	ket colum	n		
Open Tickets	* To Update a Chent Usage Policy, click on the link in the Policy column								
Open Systems	 Clients with a Policy highlighted in vellow are currently speed restricted Information in the Traffic column is in KiloBytes 								
Admin Password		ime Left		Ip	Mac	AP	Sig	Policy	
	1452906195	23.7 hrs	8665	192.168.17.231	00:19:D2:61:37:0B	CIABBO			
	1984653422	1.8 days	815373	192.168.17.229	00:19:D2:9E:BE:57	C1ABB0	37		
Restart System	1676496021	21.4 hrs	10412	192.168.17.204	00:18:DE:9B:EF:D6	C1ABB0	37		
	2094741004	1.6 hrs	71964	192.168.17.137	00:13:02:9D:4D:5A	CIABE6	39		
	Manual 1	Permanent	8486981	192.168.17.110	00:11:09:A3:85:B2		0	999/999 Mi	
	1747615752	24.0 hrs	28	192.168.17.102	00:18:DE:34:EF:A9	C1ABB3	21		
	1147254607	23.3 hrs			00:0E:35:BE:35:6B	C1ABC5			
	1426433039	21.5 hrs	1626	192.168.17.98	00:1A:73:3A:84:34	C1ABE0			
	1678999300	2.0 hrs			00:16:6F:5A:45:73	CIABC5			
		24.7 days		192.168.17.85	00:1A:73:11:11:4F	ED0580	37		
	1719512785	23.6 hrs		192.168.17.60	00:18:DE:A7:0E:F9	C1ABB3			
	1726430731	23.1 hrs		192.168.17.59	00:16:CF:A5:5B:BF				
	1953526273	22.6 hrs		192.168.17.36	00:D0:59:49:6A:3D	CIABBF			
	1078378545	22.8 hrs		192.168.17.22	00:0E:35:9F:11:C7	D7F699	27		
	1813451512	23.5 hrs	1878	Disconnected	00:13:CE:40:17:38		0		

All Clients

	Administration	Access C	ontrols	Customize	Site Network S	ietup	Mesh
Active Clients	Free	14 min	7465	192.168.17.99	00:16:CE:7F:D2:E2	C14571	35
All Clients	Manual	Permanent	3709238	192.168.17.90	00:06:5B:CB:D4:D6		0
Client Usage Policy	Free	<u>20.7 hrs</u>		192.168.17.86	00:19:D2:90:78:2C	DAC19E	
	Free	23.7 hrs		192.168.17.74	00:1A:92:23:BF:87	CE7F85	31
Open Tickets	Free	<u>14.9 hrs</u>		192.168.17.60	00:14:A4:3C:8D:57	CE7F8B	58
Open Systems	Free	<u>19.9 hrs</u>	17815	192.168.17.39	00:14:BF:77:F2:EC	494651	28
Admin Password	Free	11.4 hrs	73886	192.168.17.34	00:0E:35:C7:40:9C	494651	20
	Free	<u>23 min</u>	43495	192.168.17.21	00:11:F5:15:45:05	41E170	13
	Free	<u>3.3 hrs</u>	4319	Disconnected	00:16:E3:C4:FA:89		0
Restart System	Free	22.7 hrs	2706	Disconnected	00:18:DE:68:B1:A6		0
	Free	22.4 hrs		Disconnected	00:16:CF:4F:F6:C1		0
	Free	21.9 hrs		Disconnected	00:05:4E:49:B2:07		0
	Free	19.7 hrs		Disconnected	00:14:A5:EF:3D:A6		0
	Free	11.2 hrs	2029	Disconnected	00:13:02:71:E3:37		0
	Free	<u>1.7 hrs</u>	2978	Disconnected	00:14:A5:68:79:99		0
	Free	2.4 hrs	169479	Disconnected	00:1A:73:3F:38:F7		0
	Manual	Permanent	3196358	Disconnected	00:11:2F:22:53:E2		0
	Manual	197.6 days	3126	Disconnected	00:16:76:9A:C0:FE		0
	None	_	0	192.168.17.176	00:19:7D:B0:26:C6	ECDF8B	21
	None	_	0	192.168.17.142	00:90:4B:59:66:CF		0
	None	_	0	192.168.17.111	00:13:02:6D:DB:4E	C5B094	29
	None	_	2227	192.168.17.20	00:90:4B:5A:82:14	CE7F82	40

By selecting Administration in the top menu and then Active Clients on the left hand menu you will see a list of all client computers currently ticketed. Client computers are identifed by their MAC address, a unique serial number assigned to each network adapter. You can see their time remaining and if they are currently online. By clicking on the text in the **Ticket** column to the right of each client line you can change the remaining time or delete the client from the system. By clicking on the **Policy** column, you modify the bandwidth policy for that client.

By selecting All Clients on the left hand menu you will see not only clients with tickets but also those clients that have connected with the Hotspot system but who have not entered a ticket, credit card or free access. (Although these clients have been recognized by the system, they have not been allowed onto the internet yet, or their time has already expired.) Here you can manually give them time by clicking on the **None** in the **Ticket** column.



Specific Client Settings

After clicking on the **Ticket** column (see above) you can modify the remaining time or disable an active client.

By clicking on the colored box in the **Policy** column, you can set a client to unrestricted bandwidth usage so they will never be automatically slowed down, or you can just reset their usage counters for their one hour window of usage (which sets them back to full speed temporarily).

Combining Unrestricted Usage and Permanent Client settings are handy for company or employee laptops and computers.

See the section on *Client Usage Policy* for more information on the Client Usage feature.

Network Setup

Internet Access Setup

You probably will not need to make any changes in the network setup of your CheckBox system as most Internet Service Providers use DHCP, Dynamic Host Configuration Protocol, to tell the devices connected to their network what address and other parameters to use.

If your Internet Service Provider uses static IP addresses, or if you are connecting CheckBox to an internal company network you may need to set some network parameters manually.

	Administration	Access Controls	Customize Site	Network Setup	Mesh					
Internet Setup		Inte	rnet Access S	etun						
Local	Internet Access Setup									
Wireless			Ip Assignment							
Current status	C Automatic (DHCP) • Fixed									
Offline Override Restart System		IP A Ne	Fixed Ip Settings required for Fixed II ddress 207.148.169.29 ttmask 255.255.255.248 ttmask 207.148.169.25 DNS 205.233.109.39 Update 1	2)						

To access Network Setup click on Network Setup on the top menu. The Network Setup Page will appear. Enter the parameters as provided by your Internet Service Provider or network administrator. After you have entered the parameters press **Update** and then **Restart System** with the menu item on the left.

Local Address

Local Address refers to the IP addresses the Checkbox system assigns to users on the system. By default this address is in the 192.168.17.xxx range. This setting should not need to be changed under most circumstances. If there is a need to change this address range, select Local from the menu on the left hand side and enter the new address in here, press **Update** and then **Restart System**. This address must not be in the same range as the Internet address. If you are using Mesh Nodes *allow 10 minutes after restart* for the Mesh Nodes to rediscover the Master.

Wireless

Your Checkbox system, like most data wireless access points, announces its presence by broadcasting its SSID. This SSID is a name that your guests will see when their laptops connect to the Checkbox system. By default this name is **hotspot**, which lets the guests know they have found a public Hotspot. If you wish to change the SSID select wireless from the menu on the left hand side of the Network Setup Menu. Enter in the new name and press update. *Avoid using* tabs, spaces, the special characters \$ & = + ! #; [/, or the quote mark (") in the SSID. These characters can cause problems with some client laptops connecting to the Hotspot. If you are using Mesh Nodes*allow 10 minutes after update*for the Mesh Nodes to reconfigure their SSID.

Current Network Status



On the **Network Setup** menu selecting **Current Status** on the left hand menu brings up a window that shows the current network configuration. This screen will show you the parameters of the network the Checkbox is connected to, including its IP address, as well as the network address that the Checkbox is providing to clients.

Accessing Your Hotspot Management Interface

If your computer is directly connected to the Checkbox Hotspot, either wirelessly or through an ethernet connector to the back of the unit, you can use the procedure described in *Managing Your System*. An alternative URL that only works when connected in this way is http://hotspot/admin which is perhaps easier to remember.

You can also access the Management interface through other addresses and techniques, which are very dependent on your existing network setup.

Outside The Hotspot But Inside Your Network

If you have your Checkbox and Ticket Manager system connected to your company network you can access the Checkbox Administration Screens from any PC on your network, even if these PC's are not connected through the Checkbox system. In order to access your Checkbox and Ticket Manager system from your company network you will need to know the WAN IP address assigned to the Checkbox system by your network.



If you have access to Checkbox through a wireless client you can find this address in the Checkbox Administration Screen by clicking on Network Setup in the top menu and Current Status on the left hand menu. On the line below vlan1 you will see a listing for "inet addr:". This is the IP address assigned by your Internet Service Provider (ISP), or your internal router, to our system.

Once you have determined the IP address assigned to your Checkbox by your network you can access it by entering the IP address in the address bar of your web browser with **http:**// in front of the IP address and **:3456/admin** after the address. For example, if the IP address assigned by your network to the Checkbox system was 10.0.0.21 then you would enter **http:**//10.0.0.21:3456/admin.

This will bring up a password login box just as it would if you were connected from inside the Hotspot, and all administrative functions are accessible.



From The Internet

In order to access your Checkbox and Ticket Manager system from the internet, you need to know the IP address assigned to you by your Internet Service Provider. An IP address is a unique number much like a telephone number that identifies a unique machine on the internet. No two IP addresses can be the same on the internet. Most Internet Service Providers (ISP) use dynamic IP addresses which may change periodically, in order to conserve the pool of available IP addresses. Some ISP's will provide a static (non-changing) IP address upon request, and may charge for this service. If you intend to regularly administer your system from off site through the internet it will be easier if you have a static IP address.

Your ISP may need to know the MAC address of your Checkbox and Ticket Manager system. The MAC address is a unique hardware ID that your ISP will use to tie your Checkbox and Ticket Manager system to the static IP address. You will find the base MAC address listed on the bottom of the system itself. (Or inside the enclosure if your Master has been mounted in an external enclosure - contact Checkbox Hotspots support for help in determining your system's MAC address.) The ISP connected MAC address is one digit/character higher. If you have connected to the Management interface, you can directly read this value from the unit via Network Setup, Current Status.

Current status									
	Network Routes								
Offline Override	Kernel IP routing table								
offinitio offormation	Destination	Gateway	Genmask	Flags	Metric	Ref	Use Iface		
	192.168.17.0	0.0.0.0	255.255.255.0	U	0	0	0 br0		
Restart System	142.59.94.0	0.0.0.0	255.255.254.0	U	0	0	0 vlan1		
Restart System	0.0.0.0	142.59.94.1	0.0.0.0	UG	0	0	0 vlan1		
	Dns Configurati	on							
	search ab.hsia.	telus.net							
	nameserver 154.	11.129.59							
	nameserver 154.	11.129.187							
	Internet Connec	tion							
	vlan1	Link encap:Ether	net HWaddr 00:	16:B6:4	49:45:2	6			
	inet	addr:142.59.95.18	B2 Bcast:142.59	.95.25	5 Mask	:255.255	5.254.0		
	UP BR	OADCAST RUNNING I	MULTICAST MTU:1	500 Me	etric:1				
	DV na	abate.4666734 art	ore 0 dronned 0	overn	ine.O f	romo • O			

The internet side MAC address is listed on the vlan1 information line. It is the information just after **Hwaddr:**

This value is one hexadecimal character or digit larger than the value printed on the bottom of the unit.

If your Checkbox and Ticket Manager system is connected to your cable or DSL modem through a router (some ISP's supply a combination of both in one case), you will need to enable DMZ or virtual servers through your router to Checkbox. Please refer to your router manufacturer's instructions for details on how to enable DMZ or virtual servers. See the section on *Alternate Connection Scenarios*.

If you have obtained a static IP address from your ISP you will probably have to reboot your cable or DSL modem, and once that is done you will also need to reboot your Checkbox system. Upon reboot Checkbox should automatically see its new static IP address.

To access Checkbox and Ticket Manager system through the internet you will enter the IP address assigned by your ISP in the address bar of your web browser with **http:**// in front of the address and **:3456/admin** after the address. For example, if the static IP address for the Checkbox system was <u>66.23.124.9</u> then you would enter **http:**//<u>66.23.124.9</u>**:3456/admin**

File Edit	View Favorite	s Tools H	ielp				
🕞 Back 👻		2 🏠	Search	Services	👏 Media	1	Links

This will then bring up a password login box just as it would if you were connected from inside the Hotspot, and all administrative functions are accessible.

Mesh Node Repeaters

Mesh Node Status Display

You can extend the range of your system using Mesh Node Repeaters. These devices relay the data stream from your Master unit further throughout your facility. Mesh Nodes only need power, they do not need a wired connection back to the Master unit. Not only do Mesh Nodes extend the wireless signal, they also provide wired ports to allow computers, printers, VoIP telephones and other ethernet devices to access the network.

Mesh nodes are self-configuring. As long as they can receive a signal from one of their peers or the Master they will establish a connection amongst themselves and actively determine the best route back to their Master unit.

Once your Mesh Nodes are in place, you can monitor their status by selecting Mesh on the top menu.



The first column identifies the Mesh Node unit by it's MAC address. MAC stands for "Media Access Control" and is the equivalent to an electronic serial number for all network devices.

The second column shows the unit name or location; this is a label you can change by clicking in this box and entering a name or location. By default it is a row of ***** You can also click on the row of ***** the first time a Mesh Node is added to a system to allow it into the mesh.

IMPORTANT: The *first time a Mesh Node*

is added to the network it will show up highlighted in <u>blue</u> in the mesh status display. Until you click on this Mesh Node to accept it into the system it can not service clients or pass traffic. You must click on <u>blue</u> units and click on Update/Accept to allow them to join the system. This only needs to be done once. After a unit has joined, it will be remembered by the system, even after power failures or prolonged storage. Labeling the Mesh Nodes's location here makes it easier to remember where they are located.

The third column shows the name or location of the unit from which this unit gets its connection, this may be the Master or another Mesh Node. Mesh Nodes are constantly evaluating their connections and "talking" to other Mesh Nodes and the Master to determine the best route back to the Master and the internet. You may see this change occasionally as the system reconfigures itself to deal with changing conditions.

Mesh Node Status - continued

	Administration	istration Access Contro		Custom	ize Site 👘 Ne	etwork Setup		Mesh	
Mesh Nodes									
Mesh Signals	Mesh Node Status								
Reset Mesh		Unit	Location	Connection	IP	Signal	Noise	Clients	
	00183	9ED05DD	Master		192.168.17.1		8	0	
	0018	F85FEE40	Hall 107	Master	192.168.17.163	23	9	1	
	0018	F85FEE46	Hall 118	Hall 107	192.168.17.215	30	6	0	
	0018	F85FEE43	Hall 128	Master	192.168.17.189	27	7	0	
	00183	39ECE8EB	Hall 137	Hall 128	192.168.17.202	34	5	0	
	This is the current status of units in your mesh. It shows the instant signal level from each of the units to its upstream connection. Green indicates a stable connection. Vellow indicates a connection that is rerouting. Orange indicates a unit that is creating initial routing. Blue indicates a unit waiting to join your mesh. Click on the unit field, and update the name to allow it to join.								
	Note: Click on the Location column if you wish to describe a unit's location or accept a waiting uni into your mesh.								

The **sixth column** shows the noise level of the connection between this unit and its upstream connection. Like signal levels, noise levels will fluctuate. It is important that the noise level always be less than the signal; too much noise can drown out the signal. Generally noise levels below 10 are good, and any noise level higher than 45 will cause the unit to stop functioning.

The **last column** shows how many clients are using this Mesh Node or the Master.

The **fourth column** shows the IP (network) address of the unit.

The **fifth column** shows the current signal strength of this unit to its upstream connection. The signal strength is a 5 minute average, and it is normal for this to fluctuate.

Any unit with a low signal strength will be highlighted in Yellow or Red. Units highlighted in yellow will have slower connections that will be unreliable. Units in Red are not able to support traffic or users as they have a very low or no connection. For stable connections signals above 19 are best.

Mesh Signals

	Administration	Access Cont	rols	Custon	nize Site	Net	twork Setup	Mes
Mesh Nodes								
Mesh Signals			Mesh	i Sign	als N	Iatrix		
			(5 Minute	average	;)		
Reset Mesh			05DD	EE40	EE46	EE43	ESEB	
		OSDD		28	21	30	20	
		EE40	23		33	19	13	
		EE46	19	37		21	16	
		EE43	27	17	14		35	
		ESEB	91	14	15	37		
		Excellent	Good	Mar	ginal	Poor	Unusable	

This is a grid, showing all the cross connection paths available to the Mesh nodes. Labels on the top and sides are the last 4 digits of the unit MAC numbers. Columns are the receive side signal strength from units labeled in the rows.

It is a 5 minute average of the signal strengths.

The Mesh Signals Matrix displays a "map" of all the signal strengths and paths from and to various units in your mesh. The highlighted box in a column is the currently active upstream connection.

This information is useful during installation or while diagnosing mesh connection issues. It is rarely referenced while the mesh is running properly.

A Note About Time & Tickets



Your Checkbox system sets its internal clock from a time server on the internet. The first time the unit powers up, or after it has been unplugged, it will attempt to connect to one of many time servers on the internet to set its clock and date. Since tickets are time and date sensitive if the system does not know what time it is it can not determine if a ticket is still valid.

If the system can not set its clock for some reason (i.e. your internet connection is not set up or your Internet Service Provider is down) it will not generate tickets or allow users on the system. Users will receive a screen that lets them know that the system is temporarily unavailable. You will still be able to access the administrative pages.

Once you have created tickets with a valid time on the system, it will always start with the date and time that the last ticket was created or used. This may still not be 100% accurate, but this generally small variation will be corrected as soon as the unit connects with an internet time server.

Note: If you must access the internet through your Hotspot before it has obtained the proper time, you can temporarily override this behaviour with the **Offline Override** menu item under the **Network Setup** page. Example usage may be if you need to "register" your Hotspot with your ISP before they activate your Hotspot for internet access.



User Guides for Your Wireless Hotspot

This **Laminated guide** helps users, who may not be familiar with their own laptops, connect to the Checkbox system. These guides are printed on high quality stock, laminated and designed to be used over and over again.

Tips for Uploading Graphics

Ticket Manager provides the option to upload a graphic for the welcome page and a different graphic that prints out on the tickets. For best results these graphics should not be too large, either in pixels or file size.

Pixels refers to the number of dots in a picture, these dots make up the picture itself. If a picture is described as 200 x 400 pixels, the picture is 200 dots wide by 400 dots tall. If the pixel count is too big then the picture may not fit on the page or it may push other elements of the page off the screen. It is important to remember that not all screens are the same size! It may look fine on your screen but may not fit on somebody else's screen! The standard minimum screen size for computers 640 x 480.

File size refers to the amount of data used to record the picture information. Too little data and the picture looks course, blurry or grainy. Too much information and the picture takes too much space on the hard drive and takes too long to download.

So what is the "right" size? For the welcome screen logo generally an image that is no bigger than 640 pixels wide and 240 pixels tall works best. You can make them less wide or less tall. As for file size, somewhere between 20 KB and 100 KB is about right.

For the logo on your ticket, an image that is 110 pixels tall by 200 pixels wide is ideal, with a file size around 20 KB.

There are many tools you can use to resize your graphic, including Adobe Photoshop, Microsoft Picture It and a shareware tool called Irfanview (http://www.irfanview.com). Whichever tool you use, make sure to save your graphic in a .jpg format (most universally accepted by browsers).



An example Welcome screen logo.

An example Ticket logo.

Wireless Internet Access Ticket Access Code 1129381291 Valid for 15 min Expires Dec 28



Alternate Connection Scenarios

The best way to connect your Checkbox System is directly to your DSL or cable modem. You may also connect it through a switch or hub to the DSL or cable modem (*see figure 1*). You can also connect it through another router to the DSL or cable modem but this may prevent the Checkbox Hotspots Support System from being able to connect to your unit to provide support and updates.

If you wish to connect your Checkbox through another router to the DSL or Cable modem and you would like to access your system from the internet or receive support you will need to enable "Port Forwarding" to your Checkbox for port 3456, or place the Checkbox in the router's "DMZ" (De-militarized Zone). Please check with your router's documentation for instructions on how to do that.

Note: Some "modems" are a combination of a modem and a router inside a single enclosure. See your modem documentation or ISP instructions.

Figure 1



You may also connect wired PC's to the ports on the Checkbox (as shown in figure 2). These wired PC's may be used as public email stations, or you can use them in your office. These machines will need access tickets to connect to the internet, so if you choose to use them in the office, and your employees need to access the internet you will need to issue tickets for these machines, or enable them as permanent clients.



IMPORTANT - Please note! If you connect PCs as shown in figure 2 the wired and wireless PC's are on the same subnet—the PC's will be able to "see" each other . If you have your office PC's connected this way, make sure you have taken appropriate security measures.

Mesh Node Installation

The optional Mesh Node repeater can extend the range of your Checkbox by relaying the signal from one area to the next. No wiring is needed back to the Master, the Mesh Node connects wirelessly. It will need power, and will need to be within range of the Master unit or another Mesh Node (up to 1000' depending on intervening construction) and will then extend the signal up to another 1000', depending upon local conditions. Maximum range can vary between 50-1000'.

If your Mesh Node is mounted in a weatherproof enclosure it will look like the unit illustrated below.

Each Mesh Node unit should be located in a high clear location, preferably at least 8-15 feet off of the ground. The Mesh Nodes will need to be able to "see" the signal from the Master or another Node; the node can usually receive a good signal at the fringe of where most laptops begin to lose signal if it is up high enough. Depending upon local conditions this distance may vary from 50 feet to over a thousand feet.

Outdoor Mesh Nodes **MUST** be mounted with the antennas pointing down. Use the two mounting holes at the top of the box to bolt the unit to a wall or pole. Do not use the two lower holes; they are too close to the circuit board and you may damage the board trying to tighten screws down.

Once the outdoor unit has been mounted close the cover and secure with nylon ties. Make sure the antennas are extended straight down. In a high traffic area where the box is mounted within reach you may wish to use a small padlock.

Finally, apply power to the unit and allow up to 8 minutes for the unit to boot and find the Master. The power adapter should be in a protected area. If you are connecting it to an outlet located outdoors use a suitable plug enclosure. These can be found at most hardware and home improvement stores.



When installing Mesh Node repeaters install the Mesh Node closest to the Master first and work your way outward. Have the Master turned on and connected to the internet and turn on each Mesh Node as you install it.

When all of the Mesh Nodes are installed and powered up, click on the **Reset Mesh** menu item in the Mesh Status display. The Mesh Nodes will all reconfigure themselves to create the optimum mesh. Reconfiguring may take 10-30 minutes to complete, depending upon the number of Mesh Nodes you have.

Signal Strength, Power Levels and Antennas

Data communication between your guest's laptop and the Checkbox is a two-way affair. For a successful connection not only does a signal need to get from the Checkbox to the user's laptop, but they need to get a signal back to the Checkbox. Laptop wireless cards are not all created equal and few have an external antenna. Therefore it is not unusual for a guest to "see" a signal of a few bars, or "good" on their laptops but have a difficult time maintaining a connection. This is usually a case of the laptop seeing the signal from the Checkbox but the Checkbox not being able to see the Laptop.

Another issue wireless users often encounter is the "signal strength" meters displayed on their screens. These signal strength displays are an approximation of the signal strength averaged over a period of time and do not take into account signal noise, the interference inherent in every radio transmission. This can lead to users seeing a strong signal displayed, but still not being able to establish a connection.

Of course just the opposite can occur; sometimes users will see a weak signal but yet make a solid connection. Regardless of what the signal strength display reads, the bottom line for the user is always this: *Can they connect and is the connection fast enough*?

One way to improve the range of the signal is by adding a long range antenna to your Checkbox access point (the access point in this case is the Checkbox Master or Mesh Node). Long range antennas are rated in "dbi" and can sometimes help and sometimes can make the situation worse. While a standard antenna sends out radio waves equally in all directions like a balloon, long range antennas achieve greater range by changing the shape of the signal.

Instead of sending out the signal in a balloon shape some antennas flatten out the balloon into more of a donut, sending less of the signal straight up into the sky and more out towards the edges. These antennas can generally extend the usable range from 10% to 30%. However they can introduce two new problems; the case of the laptop seeing the Checkbox but the Checkbox not being able to see the laptop mentioned above, or a case where the "donut" is so flat that it shoots over the heads of the users, like a layer of fog traveling a few feet off of the ground. Generally if the property is flat, antennas with a gain of 6dbi or less are acceptable.

A second type of antenna re-shapes the signal even more, sending it in a pinpoint beam. These antennas can increase range ten-fold or more, however if the user is not in the direct path of the signal they will not be able to see it. Even if they are in the direct path if they are not able to send a signal back the full distance they will not be able to establish a connection. These high-gain point-to-point antennas are best used in pairs, one on each end of the path, and while not practical for laptops they are good for connecting buildings in remote locations or Mesh Nodes in areas not contiguous to other units.

In general terms, there are other ways manufacturer's improve the range of the signal for users. One way is to improve the sensitivity of the radio receiver at both ends. While we do not have control over the quality of the user's laptops we have made the receiver in the Checkbox very sensitive.

Another way to improve range is to increase transmit power. Again, since we do not have control over the quality of the user's laptops we can not affect their transmit power, but we could boost ours. Checkbox uses the maximum legal power for unlicensed operation in the frequencies (channels) it occupies. Unlicensed operation at higher power can result in the property owner being fined.

When you boost the transmit power on one end of the connection but not the other you also run into the problem of one side being able to see the signal from the other side but not being able to send a signal back.

Since laptops do not have good antennas and do not generally use the maximum output power they really benefit from having a high density signal. The best way to have a high density signal is by using multiple access points.

Mesh Node Placement Suggestions

Determining the proper number of access points requires taking into consideration several factors:

- How great a distance do you need to cover?
- What are the surroundings? Are there walls or open spaces? Is the building made of wood, rebar reinforced concrete, or steel? Stucco walls with chicken wire backing that create a radio cage?
- ➡ Is there any interference in the area?

On a flat open field with no interference a signal can travel up to 1000'. When we start adding walls, other devices and users, that distance will begin to shrink. Here are some general guidelines based on experiences with installations that obtained good wireless coverage.

- 2 floors, standard wood construction, single building motel about 300 ft (100 meters) long by 60 ft (20 meters) wide, office and Master unit at one end. Usually a Master unit and 2-3 Mesh Nodes is all that is required. As a general rule of thumb, you can expect approximately 100 ft (30-35 meters) through 3-4 walls for indoor coverage for this type of construction.
- Same as above, but with 2 parallel "wings" of the same size as the above building, separated by 150 ft of open parking lot, and a single office building centered between the wings. Usually a Master in the office, and 3-4 nodes per wing will give good coverage. Position one of the nodes in each of the wings so that it is closest to the "wireless hop" to the Master in the office and place the other units down each of the wings. Coverage for the "courtyard parking lot" between the wings will come from the Master plus all of the nodes in the wings. A Master and 6-8 Mesh nodes will cover this site.
- If loor hotel, concrete with rebar reinforced floors, single building 300 ft long and 80 ft wide. Interior walls standard wood construction. Office with the Master located at one end. This site can usually be done with a Master and 4-5 Mesh Nodes. Run your Mesh Nodes down the middle floor, but place them close enough together that the "angle of penetration" through the concrete ceiling and floors doesn't attenuate the signal too much to reach (and receive from) the client laptops. Interestingly, this same quantity works just about as well if the walls separating the rooms are the thicker "quiet" type of walls. You have already placed your units closer together to obtain a sharper "angle of penetration" through the concrete floor and ceiling, and this same closer placement works to your advantage in penetrating the thicker walls between the units on the same floor.
- Same as above, but with 2 parallel wings and close off the end into a "U" shape. Office in the bottom of the "U", and an 8 inch cinder block firewall covered with stucco separating each of the "wings" from the main office. With this setup, you will need a Master in the office, and 2 Mesh nodes situated fairly close to the firewalls in the "office section". Punching through the firewalls will attenuate the signal strength so that you will only be able to get 20-40 ft (6 to 12 meters) of good signal strength through into the wings. Keep in mind you can also position these units at (or in) the ceiling on the first floor and penetrate through the firewall and concrete ceiling into rooms on the second floor. Add additional Mesh nodes at this point and continue down the wings, same as above. Total is one Master and 10-12 Mesh Nodes.
- Another example would be a campground that is on an open flat field. To provide complete coverage however, you need to penetrate the aluminum skin of the travel coaches which might require Mesh Nodes spaced every 300 feet, so that no coach is more than 150-200 feet from a unit.

If that hotel happens to be at the end of an airport runway with a radar system nearby or that campground has a cell tower in the middle of the property then interference from those devices may necessitate additional units to overcome the interference.

Always keep in mind that you are placing the units to give the best connection path for laptops and wireless devices in your site. Simply having the Mesh units connect and work may not supply enough coverage for clients, especially in the outside or fringe areas of your site.

Glossary of Terms

The definitions below may not be the most technically complete, but are intended to give you an understanding of what each term means in relation to wireless networking.

- **3G** a method for the cell phone companies to transmit "high speed" internet and data access over their networks. Very limited coverage mostly urban areas, and expensive.
- **802.11** The standard that describes how wireless devices and networks should function. Devices complying with the 802.11 standards can work with each other even if they are from different manufacturers. Stay away from any device that is a "Pre-Standard device."
- Access Point A "transmitter" used to connect wireless laptops and other devices to a network.
- Broadband A generic term for fast internet connection generally any connection faster than dial up.
- **Bit** A single unit of digital information. It is either a "1" or a "0" and these bits are strung together into longer chains of numbers to represent everything on a network.
- Byte 8 Bits
- Cable Modem A modem using the Cable Company's system to transmit data. Cable modems can be used to access the internet, and also provide telephone service in some areas. Speeds can be as high as 8Mb/second in the U.S., and up to 100Mb/second in other countries.
- Cat 5/5e/6 CATegory 5/5e/6 cable the cable used to connect network devices. Might look like a phone cable, but it is not.
- **DHCP** -Dynamic Host Configuration Protocol The process by which a router or ISP automatically assigns IP addresses to computers and other devices on the network. DHCP addresses are dynamic they will change periodically.
- **Dial-up** An internet connection achieved over voice telephone line. Generally dial-up speeds are less than 32kbs (kilobits per second), and never more than 53kbs. Never. Despite what marketers claim.
- **DSL** Digital Subscriber Line A digital data connection that uses standard telephone wires and can be used independently of your phone line. DSL is available from some phone companies in certain areas. In order for DSL to work you must be within 20,000 feet of the phone company switch. Speeds can be as high as 8Mb/second.
- **Fiber Optic** A digital connection using strands of glass to bring laser powered pulses of light into a special modem (Really, we did not make this up). This technology is used in large businesses, Verizon is now experimenting with using it for home users and small businesses on the west coast, under the FIBos brand. Speeds begin at 100MB/s and go higher. Can support cable TV like services.
- **Firewall** A device or software program used to prevent unauthorized intruders from getting into a network or computer. Operating systems such as Windows XP (with SP2) & Mac OSX have software firewalls built in. Devices such as routers often also have simple firewalls built in. Software is also available to add to computers to act as firewalls. Every computer should have one software firewall installed on it, and only one. It is also a good idea to use a firewall style hardware router. More than one software style firewall on a computer offers no more protection & will degrade the performance of the computer.
- **Gateway** a device connecting one network for another, for example the Master unit in a Hotspot system is the gateway to the internet. Hotspots are a controlled gateway, most wireless access points are uncontrolled gateways.
- **Hotspot** -An area covered by a wireless signal. A Private Hotspot may be intended for a company or organization, and include security measures to protect the system and data. A public Hotspot is an area of coverage intended for use by the general public, and usually has no security, but may require an access code or payment.

- **ISP** Internet Service Provider a company or organization that connects end users to the internet, often by one or more means such as dial-up, Broadband or wireless. Often also provides other related services, such as email, web hosting, and even telephone services.
- Kilobit 1024 bits strung together.
- Latency The time it takes for data to get from one point to another across a network. Lower numbers are better, and expressed in milliseconds (thousandths of a second). Latency is very high on satellite connections because of the very long distances traveled, more than 44,800 miles to get up to the satellite and back.
- Megabit 1024 kilobits.
- Modem (Modulator Demodulator) A device for connecting computers and related equipment to data networks and phone lines. Different types of modems can connect to regular phone lines, DSL lines, Cable modems, Satellite dishes, T1- lines etc.
- **POE** Power over Ethernet A way of sending power to network devices over Cat 5 cable without running separate power lines.
- **QoS** Quality of Service A term used to denote what type of traffic gets priority on a network. Time sensitive traffic such as voice and video might be awarded high QoS, while non-time sensitive traffic such as email and web browsing might be given lower QoS.
- **Router** A device to direct the flow of traffic across a network. Most devices sold as "routers" are really combination devices, often incorporating a router, a switch, a DHCP server, and sometimes an access point. It is just easier to call it a router.
- Satellite Sending data from ground stations to satellites 22,400 miles up in space and bouncing them back to a dish on your roof. Speeds can be as high as 5Mb/second, but will be slower at certain times when many users are on. Sometimes the only choice for Broadband in rural areas.
- T-1 A dedicated data line with a speed of 1.4mbs expensive, but provides consistent bandwidth.
- WISP Wireless Internet Service Provider An ISP using wireless technology to connect it's users to the main network. Different from 802.11 technology, WISP's often use non-standards based systems that are transmitting to and from fixed points, often at lower speeds than 802.11, but at about the same speed as a typical DSL or cable modem (typically between 1 and 8 megabits). These transmissions are higher powered and are usually required by law to be licensed.
- **ToS** Terms of Service The policy and rules for using a network. Your ISP may have terms of service which do not allow certain uses on their network.
- **VoIP** Voice over Internet Protocol Using a data network, such as the internet or an office network, to transport voice. VoIP can be used in instant messaging applications, such as AIM, computer-to-computer such as with Skype, or using conventional telephones, such as with commercial applications like Vonage. VoIP calls are inexpensive, but may not be as reliable or as secure as traditional telephony.
- WiFi Wireless Fidelity A buzzword used to describe wireless network connections using the accepted 802.11 standards.
- WEP Wired Equivalency Protection a process to help secure the data transmitted across the wireless portion of a network. Relatively simple and not the most secure. WEP should not be used in a Hotspot intended for public use.
- WPA WiFi Protected Access (WPA and WPA2) a process to help secure the data transmitted across the wireless portion of a network. More secure than WEP, but not 100% secure, should not be used in a Hotspot intended for public use.

Warranty and Service

We have worked hard to design the best possible system for you and your guests. We want you be completely satisfied with your system. If you are not completely satisfied please let us know and we will try to make it right. If you are still not satisfied you may return the system in its original condition within 30 days from the date of purchase for a full refund, less shipping.

The system includes a 1 year warranty (*) from the date of purchase and 1 year of standard support. This warranty covers repair or replacement of the components of the system as we determine necessary. Standard support is for use by the site management and employees and is provided via telephone or email at our option delivered during standard business hours. Support does not include guest support, on-site visits, after hours calls, or assistance with network issues and items not related to this system. In no event shall Checkbox Hotspots be responsible for consequential damages due to the failure of this system or any of its components. We reserve the right to terminate support in the unlikely event of excessive, or abusive calls. Under no circumstances will Checkbox Hotspots liabilities exceed the original purchase price of the product. This is a network access device, and the purchaser alone is ultimately responsible for network and data security.

(*) This warranty covers Master and Mesh node units used in their intended roles. Performance is not guaranteed with use of external antennas or other add-on devices not sold by Checkbox Hotspots. Warranty is void if, in the opinion of Checkbox Hotspots, third party accessories or improper use causes damage to the units.

Site Monitoring	Guest Support					
 Continuous monitoring of Master and mesh 	✓ 24/7 live support for guests and end users					
 Individual, customized management portal 	✓ Dedicated toll free number					
 Ongoing site support 	✓ Tracking of support incidents and escalation					
 Extended hardware warranty 	✓ Can be used seasonally					

Optional Support Services

- Site Monitoring is a service providing continuous monitoring of your Hotspot system via our 24-hour support center. Site monitoring will automatically attempt to correct any problems that arise.
- Site Monitoring also provides a convenient portal for you to access your site management via a web browser without using an IP address; you simply go to our support website and enter your site ID number and password. Properties on Site Monitoring also receive ongoing Site Support for site management and employees during normal business hours.
- Guest support is provided 24/7 by professional support staff at a dedicated support number . Support staff are available to assist guests connecting to the wireless service, configuring their wireless settings and logging on. Support staff have instant, real-time access to system management pages, as well as escalating critical system issues to advanced technical support.
- Guest support is priced on a per-room/percampsite/per-boat-slip basis per month. Guest support requires that the site is also subscribed to Site Monitoring.

For more information or to order these services please contact your dealer.

Your Suggestions are Welcome

This is the second generation of this product, and many of the added features, improvements and refinements have been made at the suggestion of our users. We absolutely welcome your feedback and suggestions.

Installation Checklist

After you have installed your system use this checklist to make sure everything is ready for your guests.

Physical Installation – CheckBox

- CheckBox Master unit is connected to power.
- CheckBox Master unit is connected to internet connection.
- [Outdoor units only] CheckBox Master is mounted at least 8-15 feet off of the ground, and at least 4 feet away from any other antennas.
- [Outdoor units only] Network connection cable for CheckBox Master is not stapled or cable tied to AC wiring or power lines.

Physical Installation - Mesh Nodes



Mesh Nodes are connected to power.

[Outdoor units only] Mesh Nodes are mounted at least 8-15 feet off of the ground and at least 4 feet away from other antennas. Antennas must be pointed down.

System Setup - CheckBox Master



Set administrative password.

[For systems with Mesh Nodes] Accept Mesh Nodes into network on Mesh page.

Upload your graphic for Welcome Screen and Tickets.



Set up your Welcome Message.



Change SSID and Channel in Network Setup.

P

Print out user tickets [for systems using tickets].



Set up Free Access [for systems using free access].

Set up PayPal credit card system [for systems using PayPal].