



the Companion



Plug & Play

Internet Remote Control

Users' Manual and Installation Guide



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Chapter 1Unpacking and setting up

1.1 Unpacking

Open the package to be sure the following items are included

- A) The Companion
- B) 15 or 25 DBA connector cable
- C) 15 or 25 DBA connector, no cable provided
- D) If any items are not included, please contact our office.

1.2 DBA Connectors

The back of The Companion



*J5 & J6 are paralleled J3 & J4 are paralleled J1 & J2 are paralleled
Therefore, either use all odd or all even together.*

If you have a Crown Transmitter with a cream or silver front panel, you need a 15 pin DBA cable and will plug into J1. If your transmitter has a green front panel, you should be able to use a 25 pin DBA cable and will plug into J3.

If you have a Crown Classic 1k, 2k, or 4k, that unit will need to be plugged into J5. If your driver has a cream or silver front panel (15 pin), plug the driver into J1 if you are also plugged into J5. If your driver has a green front panel (25 pin), plug into J3 if you are using J5.

If you are using equipment other than Crown Classic transmitters, then you will need to plug into J1, J3, or J5 or any mix of those three. You can also plug into J2, J4 or J6 or any mix of those three. However, you cannot plug into J1 & J2 or J3 & J4 or J5 & J6. Just remember – all odd or all even!



1.3 Ethernet Connection

You will need an Ethernet cable to plug from The Companion into your modem, internal router, switch, or computer.

Beware that directly connecting into your modem is less secure than connecting through your switch or router. To connect to The Companion from outside your network you will need to forward a port on your router to the local IP address of The Companion. This is outside the scope of this manual.

You may need a crossover cable to initially connect to your computer and setup The Companion directly to configure it for your network environment. See 3.1 for more details.

No Ethernet cables are provided.

The back of The Companion





Chapter 2 Power Up

Plug power supply into an outlet and then into the back of The Companion.

The back of The Companion



Observe the green LED on the front of the unit. The green LED will take 2-3 minutes before it comes on. This indicates the unit is powered and The Companion is running.





Chapter 3Imbedded Website

3.1 Logging In

3.1.1 IP Address

Easy plan - Crown Broadcast has set the factory defaults of the network settings for connection to the unit via the Ethernet cable to the following:

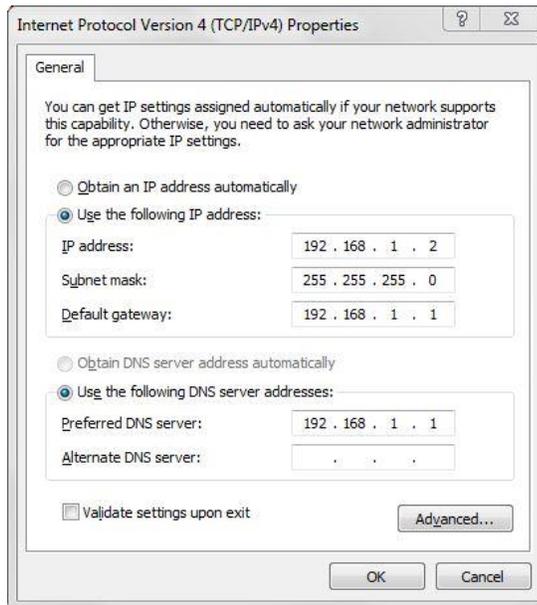
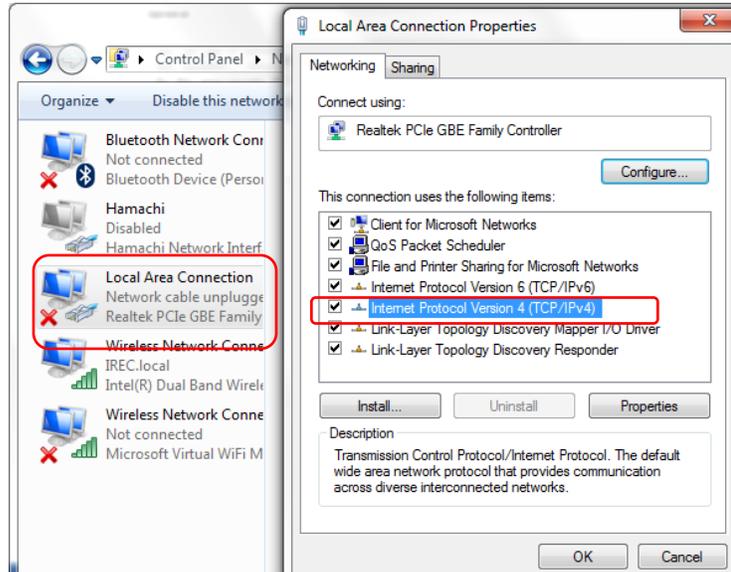
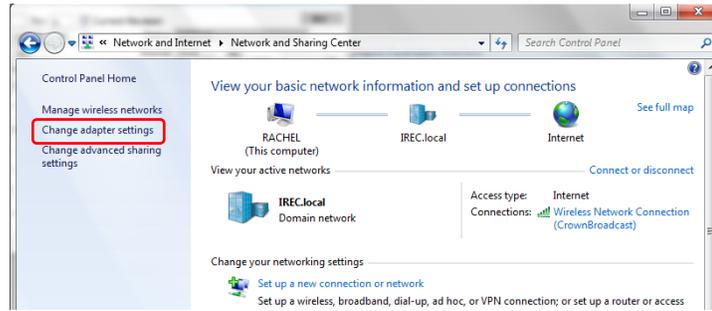
IP Address = 192.168.1.201
Subnet Mask = 255.255.255.0
Gateway = 192.168.1.1
DNS Server = 192.168.1.1

First try connecting using an Ethernet cable from The Companion to your server or modem. Type in the above IP Address. This is a common address and some systems have this blocked.

Backup plan – You can direct connect through a computer to the unit using a cross-over cable. Plug into The Companion and then to an Ethernet port on your computer. You will need to setup the Ethernet adapter settings on your computer to connect shown below. If you end up using this method, please go to Chapter 4 after setting up The Companion so you will be able to send email and access externally.

To setup the Ethernet adapter settings on a Windows machine go to “Control Panel -> Network and Sharing Center -> Change adapter settings”. Then right click the Local Area Connection of the Ethernet port you are connected to and click “Properties”. Double click the “Internet Protocol Version 4 (TCP/IPv4)”, select “Use the following IP address” and enter in the following information:

IP Address = 192.168.1.2
Subnet Mask = 255.255.255.0
Default Gateway = 192.168.1.1
Preferred DNS Server = 192.168.1.1





This should allow proper connection to the unit. Consult the computer and/or computer operating system manuals for procedures on how to change the IP address on the network port of the computer being used to connect to the unit.

If problems occur, please consult an IT professional to help resolve.

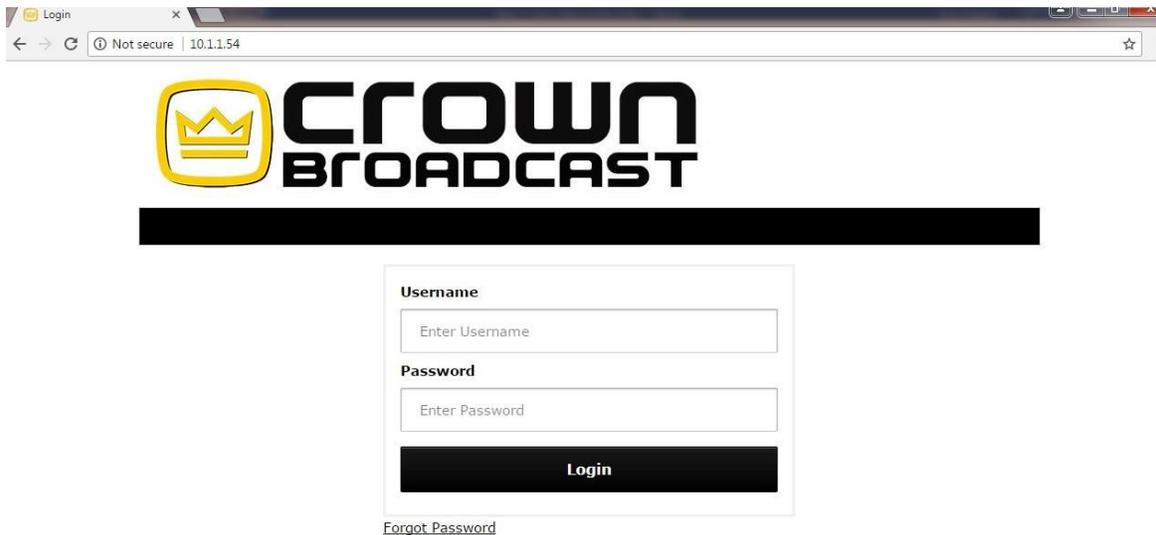
3.1.2 User name & password

Once proper connection has been made to the unit, a log-in screen should appear as below.

Enter the factory default log-in credentials:

User: admin

password: admin



This will allow connection to the unit with Administrator privileges. This is necessary to allow for changes needed to the log-in credentials explained later.



<<< NOTE: It is HIGHLY recommended to change the log-in credentials for the Administrator level access as soon as possible to avoid the possibility of unauthorized access to the unit. >>>

SAVE THIS PASSWORD – It is recommended to save your password in a “Digital Password Vault”-type system to aid in recovery in case it is forgotten.

3.1.3 Forgotten password

The log-in screen does have a “Forgot Password” link, but for this to work, an email address must be entered in the Administrator settings under the “Users” tab at the main panel after logging in.

When the “Forgot Password” link is chosen, the username needs to be entered and then click on the “Send Recovery Link” button, as shown below.

A screenshot of a web form for sending a recovery link. The form has a white background and a thin border. At the top, the word "Username" is written in a small, black font. Below it is a text input field with the placeholder text "Enter Username". At the bottom of the form is a black button with the text "Send Recovery Link" in white.

An email will be sent to the address listed under the Administrator user. Follow the instructions contained in this email to reset the password correctly. There is a 30-minute time limit that the information will remain valid. After the time has expired, the information in the email will no longer work and the “Forgot Password” request will need to be repeated.



3.2 Users

Users tab will have the listings and credential levels of all users. Factory default settings will show the three levels of access and each level of access.

“Admin” level access will allow all access to all tabs. This level should be restricted to the engineer responsible for setting up access for all users.

“Monitor and Control” level access will allow access to the first page and allow the user to monitor and control the transmitter. Access to the settings and I/O tabs are viewing only. Controls and setting areas in these pages are greyed out.

“Monitor Only” will only allow monitoring of the first page. This user cannot control the transmitter. The user can view the different tabs, but like the previously described level, the settings are greyed out.

To change the settings, click on the pencil icon which will bring up another menu that can be edited with Administrator access.

At the bottom of the list is a selection for adding users. There is no limit to the number of users allowed. This will allow for flexibility of the email alarms.

Username	Email Address	Access Level	Actions
Admin		Administrator	
Larry	wd9bmr@yahoo.com	Administrator	
Beryl	bloomis@irec1.com	Administrator	
Add New User			

Add User

Username

Password

Email Address

Access Level
 Admin
 Monitor and Control
 Monitor Only

Save



3.3 Setting

The settings tab will have all of the network communication settings including the IP information, SMTP, SNMP, logging information, email alarm timing, time zone information and unit identification.

3.3.1 Site ID, Frequency, Station Call

Go to Setting Tab and give this site and transmitter a name. You want this to be unique enough that, if you have more than one site or transmitter that is sending you information, you will be able to identify it easily. Once you type in the name you wish to use, make sure you click on the Save Site ID or it will not save.

Type in your Frequency and save.

Type in your Station Call and save.



Site ID

Name
IReC FM30E
Save Site ID

Frequency Selection

Frequency (Channel)
97.1
Save Frequency

Station Call

Call Sign
IREC
Save Station Call

3.3.2 Static IP Address

For now make no changes here. If you cannot get in with just an Ethernet cable and need to use the crossover cable, this is the section you will need. See Chapter 4 for details.



3.3.3 Email address for sending

The SMTP (Simple Mail Transfer Protocol) will need to have the proper information filled out to send email alerts. The SMTP server will need the name entered, the port required, the user name and password. What is there is standard, so unless you know it is different, just type in the username and password the system will need to send out an email for logging info and alarms. If you have been able to connect to the internet with an Ethernet cable using the 192.168.1.201, you can send a test email to be sure it works.

However, you will not be able to send an email when connected through a computer using a crossover cable. If you had to connect through a crossover cable, once you have gone through everything, go to Chapter 4, after successfully setting up the unit for your network and it is connected to the internet you can then send a test email.

SMTP

Host Address
smtp.office365.com

Port
587

Authentication

TLS

SSL

No Encryption

Username
bloomis@irec1.com

Password

3.3.4 SNMP

This section will stay the same. Your IT professional may need to set this up for monitoring the unit on the network via SNMP.

3.3.5 Logging

Logging

Username	Enable
Admin	<input type="checkbox"/>
Larry	<input checked="" type="checkbox"/>
Beryl	<input checked="" type="checkbox"/>

Daily Log Time (24hr Format)
06:00

Update Log Interval (Hours)
12

Enable Logging

Save Logging

- Check which of your users will get a daily log.
- What time do you want that log to be emailed?
- Do you want it every 24 hours, every hour, every 6 hours?
- Make sure you check to enable logging.
- Save.

3.3.6 Email Alarms

Email Alarms

Username	Enable
Admin	<input type="checkbox"/>
Larry	<input checked="" type="checkbox"/>
Beryl	<input checked="" type="checkbox"/>

Daily Email Time
15:30

Daily Alarm Log

Immediately

Enable Emailing

Save Email

- Again, check which of your users will get a daily alarm log.
- What time do you want that log to be emailed?
- Check if you want daily.
- Check if you want alarms sent immediately.
- Check enable emailing.
- Save.

3.3.7 Time Zone

Time Zone

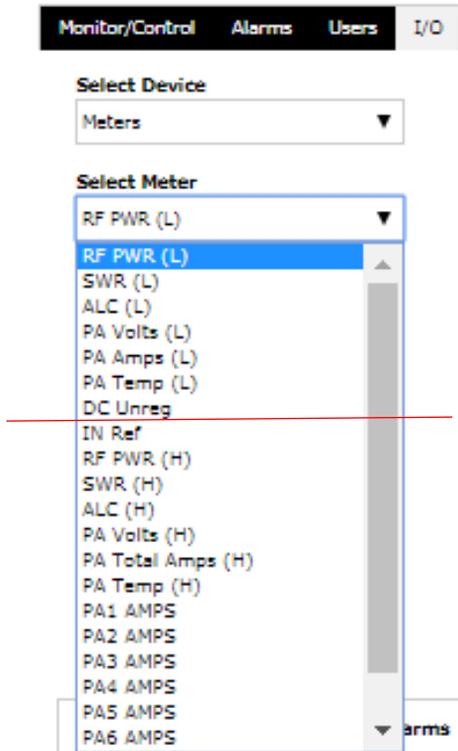
Time Zone
Indiana - Indianapolis

Save Time Zone

- Select your time zone from the drop down menu. Popular city names and areas or multiple GMT +/- settings at the bottom of the listing.
- "Save Time Zone".

3.4 I/O

The I/O (input / output) setup page allows configuration for each metering, and relay, as well as a status that includes the silence sensor and temperature alarm set points. It also has a listing of the users and check boxes available to set email addresses where alarms should be sent. The email for the different users were set up previously in the “Users” tab but will not show up in this area.



RF PWR through DC Unreg is for FM30 – FM600 transmitters with 25 pin din connector. The “L” = Low Power and is setup for units plugged into J3.

RF PWR through DC Unreg is for FM30 – FM500 transmitters with 15 pin din connector. Will not read SWR. The “L” = Low Power and is setup for units plugged into J1.

IN Ref through PA 8 AMPS is for 1k, 2k & 4k units. The “H”= High Power and is setup for units plugged into J5.

3.4.1 Set points

Each parameter can set a “High” and “Low” point of the reading as well as when the reading returns to a normal state, called “Exit”. It also has a setting for a time delay before the setting is validated as an alarm. This setting is in seconds and has no time limit. If you do not check the alarm box next to the set point, you could have a high RF set point but no alarm would be generated.



Monitor/Control Alarms Users I/O Settings About Log Out

Select Device
Meters

Select Device
RF PWR (L)

Change Name

Save Name

Calibration
Enter Panel Reading

Live Output: 0.00

Save Calibration

Setup Alarms

Email Alarms				Alarms	Set Points
Username	High	Low	Exit	High	High Point
Admin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="0"/>
Larry	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="20"/>
Beryl	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="0"/>

Enable Device
 Enabled Disabled

Log Device

Save Settings

3.4.2 Renaming parameters

Each parameter can be renamed. This allows The Companion to be used for transmitters other than Crown transmitters. It also allows non-transmitter equipment that can be controlled thru DB cables to be controlled remotely. See Pinouts, the last page of this manual.

3.4.3 Channel reading calibration

Each channel can also be calibrated to agree with the front panel readings. A live display is shown to aid in the process of calibration. This live reading assures the operator that the calibration took place. This live reading is the same reading as what is displayed on the main metering/control page.

To calibrate the channel, first select the channel from the drop-down menu. Enter the reading desired to be displayed into the blank window directly below the "Calibration" descriptor. Once the entry is done, click on "Save Calibration" to enter the new value into the unit.



3.4.4 Email Alarms

You will need to check the boxes that apply to each parameter. Which users should get the email alarms? What alarms should be emailed to what users? Please note that if you did not also setup the Email Alarms and Users on the Setting page, no email alarms will be sent.

3.4.5 Logging selections

There is also an option for logging the selection near the lower right area of this window called "Log Device". Check this box to enable logging of the parameter. Timing for the logging feature is set up in the "Settings" tab, which is described in 3.3.5.

3.4.6 Relays & Status...

Parameters under Relays and Status also are specific to Low power and High power. External Temperature works for any of them and The Companion comes with a temp sensor that can be installed for measurement just outside The Companion or a wire can be installed to run wherever in the building the temperature needs to be monitored.

Select Device
Relays

Select Relay
Carrier
Carrier
RF Raise (L)
RF Lower (L)
Auto Carrier
External Enable
RF Raise (H)
RF Lower (H)
RF PWIR Control
Interlock
Relay Alt Function
Toggle

Save Action

Setup Alarms

Email Alarms			Alarms	
Username	On	Off	On	Off
Admin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Larry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beryl	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Relay Inverted
 Yes No

Enable Device
 Enabled Disabled

Save Settings

Select Device
Status

Select Status Device
Internal Temperature
Internal Temperature
Transmitter Status (L)
Silence Sensor
Transmitter Status (H)
External Temperature

Setup Alarms

Email Alarms			Alarms		Set Points	
Username	Ok	Fault	High	Low	High Point	Low Point
Admin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Larry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Beryl	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

Log Device

Enable Device
 Enabled Disabled

Save Settings



3.5 Monitor/Control

The main control page will show current meter readings, status of the transmitter and silence detector, as well as relay controls that can be used to control the transmitter.

Meter	Value	Units
Internal Temperature	33.0	°C
RF PWR (L)	0	W
SWR (L)	1.04	
ALC (L)	6.03	V
PA Volts (L)	2.0	V
PA Amps (L)	0.00	A
PA Temp (L)	24.1	°C
DC Unreg	24	V
Silence Sensor	0.000	
External Temperature	0.0	°C

Label	State
Transmitter	OK
Silence Sensor	FAULT

3.5.1 Metering

Metering is in the upper left section of the website and shows the current metering channels and their levels. For the older mother board revision levels with a 15 pin din connector, the SWR ready will not function. The metering channels will need to be calibrated as described in section 3.4.3.

3.5.2 Status

The upper right section shows the status of the transmitter and silence detector. Status indicates the fault summary line status. Any flashing fault indicator on the front panel of the unit will cause the Green colored “OK” block to turn Red with the word “FAULT” in it.

The Silence Sensor indicator will be Green and will indicate “OK” during normal levels of program material. When program material ceases to be present, this block will change to Yellow with the word “WARNING” in it, then eventually change to Red with the word “FAULT” in it.

The action of this indicator reflects a typical slow VU meter with timing set by the design of the sensor. This design approach allows the user to be



able to set the timing of the alarm sensor with good accuracy. This setting will be described later.

3.5.3 Control

The lower section shows the optically isolated controls for the transmitter. For transmitters with older motherboard revision levels with a 15 pin din connector, the controls for raising and lowering power will not be functional. Each control can be used as a latching control (ON / OFF / Toggle) or as a momentary control (Pulse – time defined) which is set up in the I/O section.

The factory default settings are shown.

Relays

Relay	Input	State
Carrier	ON OFF Toggle	ON
RF Raise (L)	ON OFF Pulse	OFF
RF Lower (L)	ON OFF Pulse	OFF
Auto Carrier	ON OFF Toggle	OFF
External Enable	ON OFF Toggle	OFF



3.6 Alarms

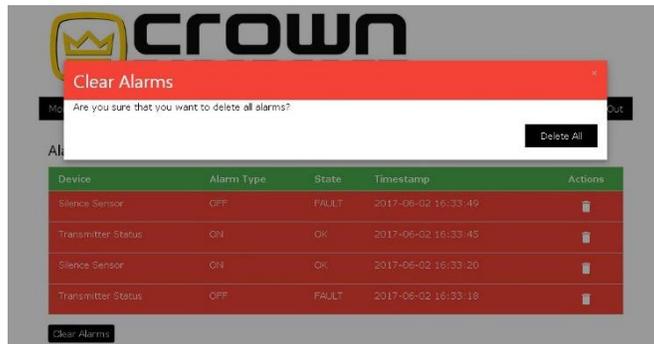
The Alarms tab shows currently saved alarms based on alarm set-up in the I/O section. Information about the alarm will be displayed. These alarms will not be cleared unless prompted by the user by clicking on the “Clear Alarms” button at the bottom of the list as shown below. A warning message will also need to be satisfied in case of an accidental selection.



Alarms Log

Device	Alarm Type	State	Timestamp	Actions
Transmitter Status (L)	OFF		2020-05-12 13:53:43	

Clear Alarms





3.7 About

The device name, firmware revision level, and Crown Broadcast's home webpage are listed.

You can click on the "Check for Update" if there is none; a green bar will tell you. If there is an update, it will inform you and give you an opportunity to download the update. This should not affect any of your settings.

The bottom of each page also has contact information listed as well as our address.

This information may be helpful should a situation arise where technical help is necessary.

The screenshot shows the 'About' page of the Crown Broadcast interface. At the top is the Crown Broadcast logo. Below it is a navigation bar with the following items: Monitor/Control, Alarms, Users, I/O, Settings, About (highlighted), and Log Out. The main content area displays the following information:

- Device Name:** The Companion
- Firmware Version:** 2.1.1
- Firmware Update:** A button labeled "Check For Update"
- Home Page:** www.CrownBroadcast.com

At the bottom, there is a contact information box with the following details:

- Crown Broadcast
2524 Toledo Road
Elkhart, IN 46516
- Phone: 574-262-8900
Fax: 574-970-8909
Service: 866-262-8917

3.8 Log Out

There is a place to log out. However, be aware that after a few minutes of no activity, you will be automatically logged out.



Chapter 4Static IP vs DHCP

If you have connected and setup via a crossover cable go to the Settings Tab and go to the Static IP Address setting. Here you can setup the unit to work in your network environment. You may choose for it to have a Static IP Address that fits your networks IP Pool range or choose for the unit to dynamically be assigned an IP Address via DHCP. Once you have setup the unit click “Save”. A green status bar will pop up and tell you that the unit is rebooting.

Static IP Address

IP Address
192.168.1.201

Subnet Mask
255.255.255.0

Default Gateway
192.168.1.1

DNS Server
192.168.1.1

HTTP Port
443

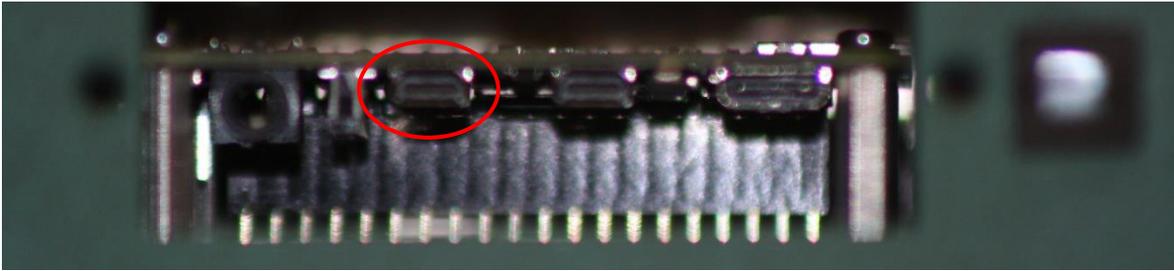
Static IP
 DHCP

Save Static IP

Unplug The Companion. Then unplug the crossover cable and connect using an Ethernet cable to your modem or router. If connected via DHCP your IT professional should be able to see what address The Companion was assigned. You may also try to connect to the unit via its hostname <https://irec/>.

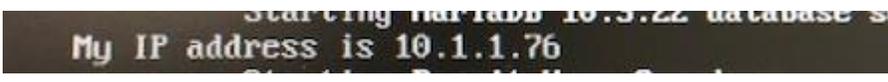
If not, you can plug a monitor into the Raspberry Pi4 by going through the front of The Companion. Unscrew the small plate by the diode. You will need a Micro HDMI connector to plug into the Raspberry Pi4.





Plug your monitor into the front of The Companion.

Then plug in The Companion and the monitor will scroll info for several pages. When done look for My IP Address about ½ way up from the bottom.

For example: A screenshot of a terminal window showing the text "My IP address is 10.1.1.76". The text is white on a black background.

This is the address you will type into your Browser to log in.
Go back to Settings and scroll down to SMTP.

You will need to tell it what username and password to use to send emails. Save this. It is also a good idea to send a test email just to make sure it will work.

SMTP

Host Address smtp.office365.com
Port 587
<input checked="" type="checkbox"/> Authentication <input type="radio"/> TLS <input type="radio"/> SSL <input type="radio"/> No Encryption
Username <input type="text"/>
Password <input type="text"/>
<input type="button" value="Save SMTP"/>
<input type="button" value="Send Test Email"/>



Chapter 5Remote Login

Once you are all setup, you need to work with your IT Professional to setup the unit to login remotely.

If you are having any problems, please feel free to contact us.



Crown Broadcast Five Year Limited Product Warranty

Summary of Warranty

Crown Broadcast IREC warrants its broadcast products to the ORIGINAL PURCHASER of a NEW Crown Broadcast product, for a period of five (5) years after shipment from Crown Broadcast. All products are warranted to be free of defects in materials and workmanship and meet or exceed all specifications published by Crown Broadcast. Product nameplate with serial number must be intact and not altered in any way. This warranty is non-transferable. This warranty in its entirety is the only warranty offered by Crown Broadcast. No other warranties, expressed or implied, will be enforceable.

Exclusions

Crown Broadcast will not warranty the product due to misuse, accident, neglect and improper installation or operation. Proper installation included A/C line surge suppression, lightning protection and proper grounding of the entire transmitter, and any other recommendations designated in the Instruction manual. This warranty does not extend to any other products other than those designed and manufactured by Crown Broadcast. This warranty does not cover any damage to any accessory such as loads, transmission line or antennas resulting from the use or failure of a Crown Broadcast transmitter.

Warranty does not cover any loss of revenue resulting from any failure of a Crown Broadcast product, act of God, or natural disaster.

Procedure for Obtaining Warranty Service

Crown Broadcast will repair or service, at our discretion, any product failure because of normal intended use. Warranty repair can only be performed at our plant facility in Elkhart, Indiana USA or at a factory authorized service depot. Expenses in remedying the defect will be borne by Crown Broadcast, including ground transportation cost within the continental United States. Prior to returning any product or component to Crown Broadcast for warranty work or repair, a Return Authorization (RA) number must be obtained from the Crown Broadcast Customer Service Department.

Product must be returned in the original factory pack or equivalent. Original factory pack materials may be obtained at a nominal charge by contacting Crown Broadcast Customer Service. Resolution of the defective product will be made within a reasonable time from the date of receipt of the defective product.

Warranty Alterations

No person has the authority to enlarge, amend, or modify this warranty, in whole or in part. This warranty is not extended by the length of time for which the owner was deprived the use of the product.

Repairs and replacement parts that are provided under the terms of this warranty shall carry only the unexpired portion of the warranty.

Product Design Changes

Crown Broadcast reserves the right to change the design and manufacture of any product at any time without notice and without obligation to make corresponding changes in products previously manufactured.

Legal Remedies of Purchaser

This written warranty is given in lieu of any oral or implied warranties not covered herein. Crown Broadcast disclaims all implied warranties including any warranties of merchantability or fitness for a purpose.



Companion Pinouts

