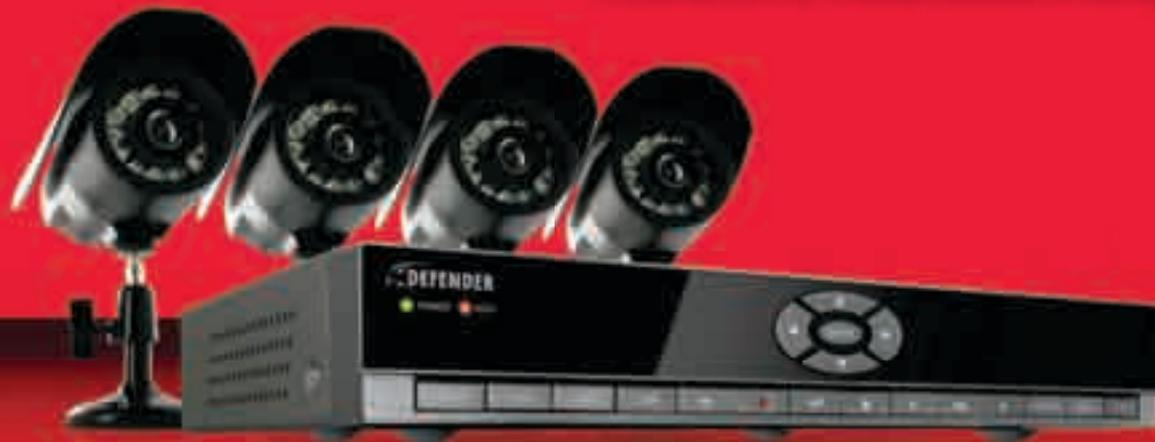




Smart Phone Compatible H.264 DVR Security System

4 Channel DVR w/ 4 Indoor/Outdoor Hi-Res Night Vision Cameras



QUICK START GUIDE

Congratulations on your purchase of the SN502-4CH! This user friendly system will allow you to monitor and protect your home or business. The coaching iMenu makes setting up and using your DVR very easy with helpful information bubbles that appear to assist you. The SN502-4CH comes equipped with H.264 compression which allows you to record and store more footage using less space, so you will never miss an important event. This manual was written to ensure that you get the most out of your SN502-4CH DVR.

BASIC SETUP

MOUNTING THE CAMERAS

1. Decide if the camera will be wall-mounted or sit on a desk/tabletop. The camera can be adjusted for either mounting scenario by rotating it to the required position.
2. Screw the mounting bracket into the camera's mounting hole, turning it clockwise.
3. Mount the camera in the desired location no more than 60 ft from the DVR unless you have purchased additional wiring. You may mount the cameras on a wall, ceiling or desk.
4. Ensure that the cameras are strongly secured into the wall.
5. Adjust cameras to the desired viewing angles.
6. For additional help on mounting the cameras, please see the drilling template, located at the back of the users manual.

Adjust camera to desired viewing angle



Ensure the camera is secured into place



For more information on camera mounting, please see Pg. 8 and 86 of the manual

BASIC SETUP



INSTRUCTIONS

1. Plug 12V adapter **(A)** into electrical wall outlet or surge protecting power bar.
2. Plug the single end of the four port power supply **(B)** into the male end of the 12V adapter **(A)**.
3. Connect the 4PIN DIN female connection on the camera **(E)** into the 4PIN DIN male connection on the 60ft video power wire **(F)**.
4. Plug the power jack **(G)** from the 60ft video/power wire into one of the ports of the four port power supply **(D)**.
5. Attach the BNC to RCA connector **(L)** to the video inputs **(J)** on the back of the DVR.
6. Connect the yellow male RCA plug **(H)** from the 60 ft cable to the BNC to RCA **(K)** connector on your DVR.
7. Repeat the above steps for all of the included cameras.

BASIC SETUP

CONNECTING A MONITOR

1. Connect a BNC to RCA connector to the top VIDEO OUT connection on the back of the DVR.
2. Plug the RCA cable into the BNC connector.
3. Attach the other end of the RCA cable to a yellow RCA video input on your TV/monitor.
4. Switch the TV/Monitor source to view the DVR. (Consult the TV/Monitor manual for instructions on how to switch the video source)
5. The bottom video out is for a second monitor. Plugging an RCA cable into this video out would be the same as plugging it into the top video output.

Plug in BNC to RCA connector



Plug RCA cable to BNC



For more information on basic setup please see Pg. 9-10 of manual

CONNECTING A USB MOUSE

It is recommended to connect the included USB mouse before powering on the DVR. This will speed up the initializing process as well as make the DVR easier to use.

1. Plug the USB connection on the mouse into the top USB connection on the back of the DVR.



POWERING ON DVR

1. Insert the included power cord into the included power supply.
2. Plug the power cord into a power outlet (surge protected power outlet recommended).
3. Insert the power supply wire into the rear DC 12V port on the DVR.
 - After a few seconds the splash screen will appear and the DVR will start up.

Connect to a power source



GETTING STARTED

Now that you have powered up the DVR and properly connected it to a TV or monitor you are ready to begin setting up and using the DVR. This DVR is designed to be user friendly. You will notice the coaching iMenu information bubbles describing settings that you will find in the menu. As an added convenience the DVR will automatically begin recording once it is powered on as long as at least one camera is properly connected.

USING THE MOUSE

- The included USB mouse makes using the SN502-4CH simple and efficient. Using the mouse will make controlling the DVR very similar to using a computer. It will allow you to easily click on items to select them and make desired changes. The mouse is not necessary for operation

Make sure that the mouse is connected to the top USB port on the back of the DVR before powering on.



VIEWING YOUR CAMERAS

By double clicking one of the four camera screens, the viewing mode will switch to full screen mode. Double clicking again will bring you to quad screen. From full screen mode you can zoom into an area of the screen. For more information on zooming in, please see “zoom” on page 15 of the Manual.

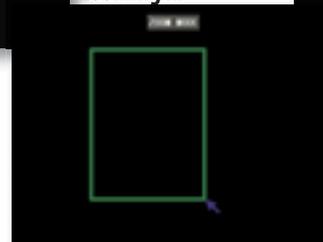
Full Screen



Quad Screen



Zooming in



GETTING STARTED

FUNCTION MENU

The Function Menu can be accessed 3 different ways:

- 1. By right clicking the mouse.**
To access items on this menu with the mouse move the mouse pointer over the option to highlight it and left click. To exit, move the pointer off the menu and left click.
- 2. Pressing select on the remote.**
To access items on this menu with the remote, use the arrow keys to move and when the option is highlighted, press select. To exit, press the menu button.
- 3. Pressing the function button**
To access items on this menu with the front of the DVR use the navigational key pad on the front of the DVR to move and when the option is highlighted, press enter. To exit, press the menu button.

Function Menu



For more information on the function menu please see Pg. 12 of the manual.

MAIN MENU

The main menu can be accessed by pressing the menu button on the front of the DVR or by selecting it from the function menu.

To access the main menu with the mouse, right click and select main menu from the function menu. On the DVR front panel and remote, press the "menu" button.

To select anything from the main menu, left click the mouse, press select on the remote or press "enter" on the front of the DVR.

When you access any sub-menu there are a few options that may be available on the bottom of the page.

The options include:

- 1. Default**
- 2. Apply**
- 3. Exit**

For more information on the main menu please see Pg. 15 of the manual



NETWORKING GUIDE

REQUIREMENTS

You will need to have:

- The DVR connected to a router
- Your computer hooked up to the same network/router as the DVR
- A PC or laptop that is connected to the same router that the DVR is connected to. The PC can be connected by a wired or wireless connection
- Internet Explorer 6.0 or higher (to check your version of Internet Explorer open I.E. In the top Menu bar select "Help" and then select About Internet Explorer. The version of I.E. will be displayed.)
- A genuine and fully updated version of Windows XP, Vista or newer
- The brand and model number of your router (this is usually located on the back or bottom of the router)
- The port, web port and IP address that the DVR is programmed to run off of. To view what ports are being used with your DVR see the network setup menu on your DVR.

CONNECTING DVR TO A ROUTER

1. Power off the DVR by removing the power cable from the back of the DVR.
2. Connect the included network cable to the back of the DVR in the Ethernet port (LAN).
3. Connect the other end of the network cable to an available port on the router.
4. Power on the DVR by reconnecting the power cable to the back of the DVR.



Note: *The computer and DVR need to be connected to the same router for initial setup. A computer will not always be necessary at the location to view the DVR.*

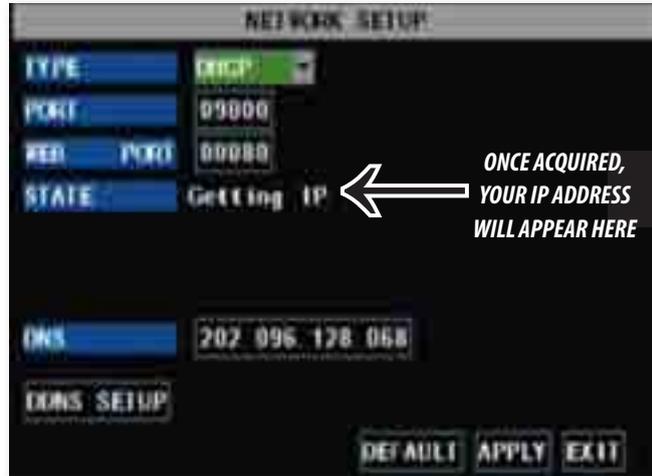
NETWORKING GUIDE

Finding your DVR's IP Address

By default, the DVR IP mode is set to DHCP. This means the DVR will automatically retrieve an IP address from the router that it is connected to. Unless your network requires a static IP address, leave the DVR IP mode set as DHCP.

1. Press Menu.
2. Enter password if prompted. The default password is 123456.
3. Select NETWORK SETUP.
4. Make sure the "IP Mode" is set to DHCP. This setting is acceptable for most users.
 - If the IP mode is not set to DHCP, use the drop down list next to type and change the type so that it is set to DHCP. You must hit "apply" and "exit" for the DVR to restart and retrieve an IP address
5. Write down your IP address, port and DNS. This information will be used in the next few steps to view the DVR on your computer as well viewing the DVR over the Internet.

Note: *If your router does not support DHCP, contact your network administrator to supply you with the proper IP information. If the DVR needs to store PPPoE (DSL/ADSL) settings contact your ISP (Internet Service Provider) for the proper IP address settings.*



Preparing Your Computer for Viewing the DVR:

Every computer that is accessing the DVR will need to be configured to download and run ActiveX controls. This change only needs to be made one time on the computer that is accessing the DVR. This can be done by following either of the two methods below. Method 2 only affects web sites that you specifically add to the trusted sites list. To change for all web sites, use Method 1. (Methods on following pages)

NETWORKING GUIDE

Method 1:



1. Open up Internet Explorer.
2. Click on TOOLS.
3. Click on INTERNET OPTIONS.
4. Click on the SECURITY tab, then click on the CUSTOM LEVEL button in this tab.

5. Change the ActiveX Settings listed below.

- Download signed ActiveX controls: PROMPT or ENABLED
 - Download unsigned ActiveX controls: PROMPT
 - Initialize and script ActiveX controls not marked as safe: PROMPT
 - Run ActiveX controls and plug-ins: ENABLE
 - Script ActiveX controls marked safe for scripting: ENABLE
- If this is an option:*
- Allow automatic prompting for file and code downloads: ENABLE



6. Click OK.
7. Click "Apply".
8. Close out of the Options window.

NETWORKING GUIDE

Method 2:



1. Open up Internet Explorer.
2. Click on TOOLS.
3. Click on INTERNET OPTIONS.
4. Click on the SECURITY Tab.
5. Click on TRUSTED SITES.
6. Click on the SITES button.

7. Type in the IP address of the DVR in the following format: `http://192.168.0.108` and click ADD.
8. If "Require server verification (https:) for all sites..." is selected you will need to uncheck the selection box.

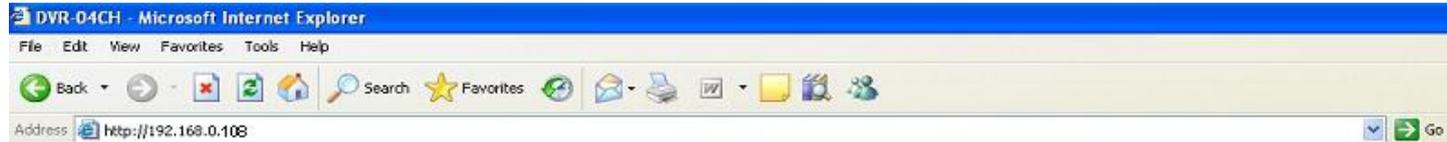
The IP address used in the example above is for internal network viewing. If you are trying to access the DVR from a remote location you will add the "External IP Address" to the trusted sites list. See "Testing Port Forwarding" Pg. 15

9. Change the default settings for the TRUSTED SITES zone to low. Click on DEFAULT LEVEL and change the security level of the zone to "low". This can be done by sliding the slider to the bottom. This will allow ActiveX controls from the DVR to be downloaded and the DVR to be viewed on the computer.
10. Click "Apply".
11. Click OK.

NETWORKING GUIDE

Viewing Your DVR on Your Computer

Now that the computer is prepared to install the necessary ActiveX controls you are ready to start viewing the DVR using your computer. Using Internet Explorer, type the IP address of the DVR into the address bar using the following format: `http://192.168.0.108` and press ENTER.



If the computer and the DVR are connected to the same router you can use the internal IP address to view the DVR. If the computer is not connected to the same router and is at a remote location you will need to use the external IP address for the DVR to view the DVR from that computer.

Log in to the DVR (Using Internet Explorer):

By default the DVR will require a user to input a password before being able to view the DVR online. The default password for the web interface of the DVR is: **123456**.



Installing the ActiveX controls:

There will be a yellow information bar that pops up below the address bar in Internet Explorer. Click on the yellow information bar and then select "Install This Add-on for All Users on This Computer. . .". Please be patient as the installation process can take 1-2 minutes.



NETWORKING GUIDE

VIEWING YOUR DVR OUTSIDE OF YOUR NETWORK

Now that you have successfully viewed your DVR and cameras from a computer connected to the same router it is time to set up your router to view the DVR while at a remote location. This process is called Port Forwarding and you can find detailed instructions on how to complete the required steps at: www.defender-usa.com/network or www.portforward.com

OPTION 1: (recommended)

1. Open up your web browser and go to:
www.defender-usa.com/network
2. Once the site has loaded you will see a list with photos of different Defender DVR systems. Select the SN502-4CH.
2. You will then see a list with photos of different types of routers. Select the router most similar to yours.
3. Another program will appear in a separate screen, select the get started icon in the bottom left corner.
4. Make sure the volume is at a reasonable listening level on your computer and follow the instructions given in the pop up window.
5. Once you have completed the port forwarding steps found in the online networking guide, see TESTING PORT FORWARDING.

Select your DVR (SN502-4CH)



Select your router model



Follow instructional video



**PLEASE MAKE SURE TO FORWARD PORTS
80 AND 9000 FOR ONLINE VIEWING.
IF YOU WOULD LIKE TO USE MOBILE
VIEWING, BE SURE TO FORWARD PORT
1024 AS WELL.**

NETWORKING GUIDE

OPTION 2:

1. Open up your web browser and go to:
www.portforward.com
2. Once the site has loaded scroll down to the list of routers.
3. Find the type of router you have and select it.
 - If you cannot find your exact router, select one that is similar to your router or made by the same company that made your router
4. Once you select a router there will be an advertisement – select the “click here to skip this advertisement” text in the top right corner.
5. On the next page there is a list of programs that require port forwarding, you can select any type of system as the instructions for port forwarding are the very similar for all products.
6. Follow the step by step instructions for your router on www.portforward.com. Be sure to use the set ports on the DVR (Default = Port 80 and 9000). The instructions will walk you through the port forwarding process from start to finish.
 - *Your router may require a user name and password, if you do not know this you may have to contact your router manufacturer*
7. Once you have completed port forwarding, see TESTING PORT FORWARDING.

Go to www.portforward.com



Port forward home page



Select a router most similar to yours



NOTE: *www.portforward.com is not affiliated with DEFENDER.*

NETWORKING GUIDE

TESTING PORT FORWARDING

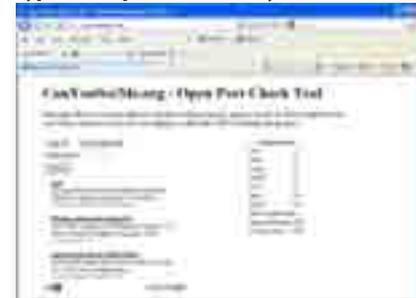
If you would like to see if your port forwarding worked and that you can view your DVR remotely follow these steps :

1. Open a web browser and type in www.whatsmyip.org.
2. Your External IP address will be listed on the top center of the screen, make sure to write it down. This is the address that you can use when not at home to connect up to your DVR.
3. Open another web browser.
4. Type in www.canyouseeme.org. This also allows you to see your external IP address.
5. Your external IP address will be listed and underneath it you will see a box saying "what port?"
6. In the box insert the port number you set the DVR to. The default ports are 80 and 9000 (you have to forward both, please make sure you check both ports.)
7. Click the "Check" button and scroll down.
8. You will see a message that tells you that it can successfully see your port. This means you have successfully completed port forwarding.
9. If you receive an error message please view "IF YOU CANNOT CONNECT" on Pg. 59 of the manual. If you're still having trouble you can always contact DEFENDER's 24/7 support team.

Write down your external IP address



Type in the port number(s) you forwarded



Note: www.whatsmyip.org and www.canyouseeme.org are not affiliated with DEFENDER.

NETWORKING GUIDE

TO VIEW ONLINE SOFTWARE USING EXTERNAL IP ADDRESS

1. Open Internet Explorer and type in www.whatsmyip.org and press enter. This will direct you to a website that lists your external IP address on the top of the page. Write down your external IP address.
2. Open another Internet Explorer window and type in your external IP address, followed by the port you forwarded for your DVR in the following format. `http://76.62.21.22:80`.
3. Follow the login screen for your DVR. The default password is **123456**.
4. Install any ActiveX controls or software settings that may pop up.
5. Once everything is properly installed, you will be viewing the online software. (Online software instructions can be found on Pg 64 of the manual).

USER LOGIN

IP ADDRESS: 76.62.21.22

MEDIA PORT: 9000

PASSWORD:

NETWORK: INTERNET

LOGIN **RESET**

Note: For more information on networking your DVR, viewing online, DYNDNS setup, troubleshooting and mobile viewing, please see the network guide in the manual Pg. 51-79

NETWORKING GUIDE

DDNS (Dynamic DNS)

Instead of having to type in the IP address to access the DVR online you can use DDNS to create an easy to remember website name. The DVR has two DDNS Provider web addresses built into it. The following instructions are for DYNDNS.org.

To Configure the DVR to Work with DDNS:

1. Press Menu on the DVR and select NETWORK SETUP. Insert password if required.
The default password is 123456
2. Highlight and select DDNS setup.
3. Change DDNS SETTING to ON.
4. Set your DDNS server to DYNDNS.
5. Once you have created your DYNDNS account, you will need to fill out the host name, user name and password you use for the account in this section of the DVR before you can view your footage.

Fill out DDNS setup with DYNDNS account information



Note: *The DynDNS sites are not owned nor operated by DEFENDER and therefore support for these services will be done through their web site.*

NETWORKING GUIDE

DynDNS SETUP

Instead of having to type in your external IP address to access the camera footage online you can use DDNS to create an easy to remember web site name.

The following instructions are for DYNDNS.org setup

1. On a computer that is connected to the same router as the DVR, open a web browser and type <http://www.dyndns.org> in the address bar.
2. Create a new account by clicking the “Create Account” link in the top right hand corner of the site.
3. Enter your preferred user name, email address, and password.
4. Optional information can be left blank, unless you would like to enter it.
5. Read and agree to the Acceptable Use Policy (AUP) by checking the box and click “Create Account”.
6. An account verification email will be sent to the email address you supplied. You will need to follow the instructions listed on DYNDNS.org in order to complete the account activation.

DynDNS home page



DynDNS Account Setup



DynDNS Account Confirmation



NETWORKING GUIDE

LOG INTO THE ACCOUNT AND SETUP A DDNS HOST

To set up a DynDNS name for your DVR:

1. Enter the DYNDNS.org user name and password you created and click login.
2. Click on the "Services" button located on the menu bar.
3. Click on the Dynamic DNS link.
4. Click on the "Get Started" link located on right side of the screen.
5. Type in a desired host name. We recommend you use your name, family name or your business' name, as long as it is easy for you to remember.
6. Choose a domain name from the drop down menu. We recommend using dyndns.org.
7. In the IP address field, type in the external IP address that you got earlier.
8. Leave all of the other options as they are, and click "Create New Host".
9. Follow the on screen instructions to activate and view your free DDNS host name.
10. Your dynamic DNS settings have been created.

Select the Services Button



Select Dynamic DNS



Select "Get Started"



Insert account info



NETWORKING GUIDE

TO VIEW DVR THROUGH HOST NAME

1. Ensure that all your DYNDNS account information is entered into your DVR's DDNS setup screen.
2. Open up Internet Explorer and type in your DVR's host name that you created on your DYNDNS account.
3. You will be prompted for a password.
Default Password: 123456
4. Click LOGIN and the DVR software and footage will pop up.

LOGGING INTO SOFTWARE

If you created a DYNDNS account, type in your account's host name in Internet Explorer. If you didn't create an account you can use your external IP address in Internet Explorer (if on a different computer) or your DVR's internal IP address in Internet Explorer (if on a computer connected to the same router).

Before you view the online software you are asked to login with a password, you can use the admin or user password and the footage will pop up.

The login screen also has the option to adjust which connection you are viewing the software with (internet or LAN). Leave this option set to Internet.

Default Password:123456

Once the password is inserted, select login and the DVR software and footage will pop up.



For more information on logging onto the DVR, the online software and viewing the recorded footage online, please see Online Software on Pg. 65 of the users manual

ONLINE SOFTWARE

This is what the online viewing software will look like in live mode:



Within some of the menu options, submenus have certain functions that have the same meaning for each menu:

- **Next:** This option does not apply to your DVR system
- **Default:** To restore all settings to the default settings select the "Default" button on the bottom of the screen
- **Apply:** To save changes select "apply" at the bottom of the screen
- **Exit:** To exit the menu, select "exit" at the bottom of the screen

MOBILE VIEWING

MOBILE VIEWING

This DVR is compatible with iPhone, BlackBerry, Windows Mobile and Symbian operating systems on 3G networks. Before you can access your DVR on a mobile phone you must make sure that the DVR has the proper network settings, has been port forwarded, and that you have the proper viewing software on your phone.

Set User name, password and port on DVR:

1. Go to Mobile setup on the DVR.
2. Insert the user name and password which a mobile user would use to access the DVR footage.
3. Insert a port for the mobile footage to run from. Port 1024 is a good default port to use. Make sure that you port forward this port on top of the other two ports.
4. Select “apply” to save your settings.

Port Forwarding:

Follow the port forwarding instructions found in the “port forwarding section” of the manual and use the port assigned in mobile viewing setup screen.

Be sure to forward the mobile port IN ADDITION to ports 80 and 9000.



iPhone



BlackBerry



Windows Mobile



Symbian

Note: For specific information on setting up your mobile device to view footage, please see Page 77 of the users manual



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- ▶ Networking Guides
- ▶ Specification Sheets
- ▶ Software Updates
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SN502-4CH