

SETTING UP WIRELESS CONECCTION IN OPENQ LINE DEVICES



**The next document pretends to serve as a guide in the use of the wifi
module installed in the products that belong to the OpenQ line**

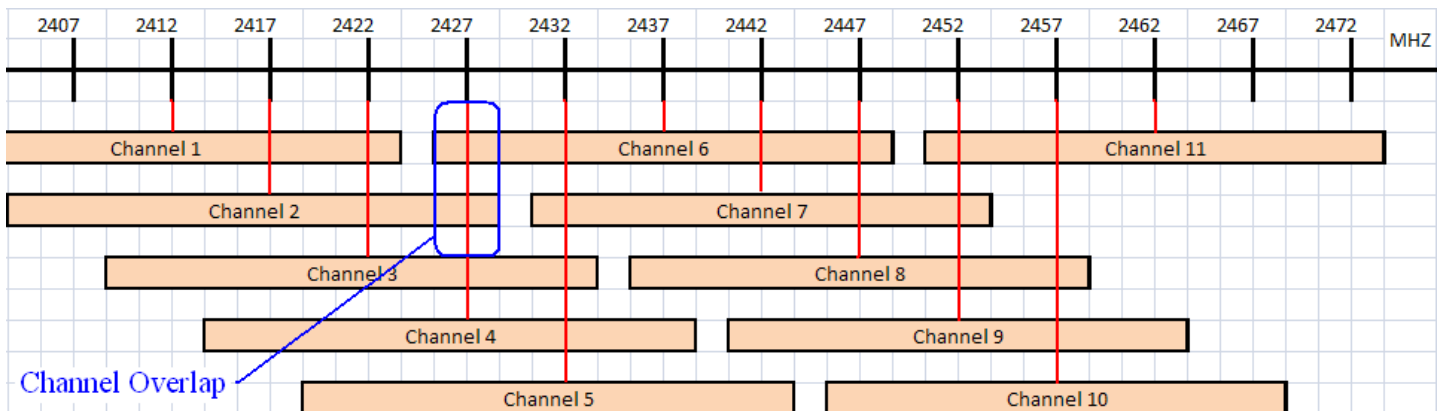
TECHNICAL ESPECIFICATIONS

- Video Compression: H.264 / M-JPEG.
- Video: D1 @ 30FPS NTSC / D1 @ 25FPS PAL.
- Dual video stream.
- Video resolution: D1, VGA, 2CIF, CIF.
- Bidirectional audio stream. Allow crosstalk between camera and central station.
- Embedded internal memory for local storage.

All our OpenQ devices use 802.11b/g standard to communicate wireless; transmit using 2,4ghz frequency, reaching a theorical speed of 11Mbps (b mode) to 54Mbps (g mode) according of the configuration of the wireless device used as a router.

DESIGN CONSIDERATIONS

The 2.4 GHZ band has 14 frequency channels, FCC only permit the use of 11 channels unlicensed. Take on count that each one of these channels extends 11 MHZ on each side of the center frequency overlapping another channel.



As shown in the graphic, Channel 2 and 6 overlap between them, reducing the bandwidth available, so it's recommendable to use three Access Point that uses Channel 1, 6 and 11 to prevent overlapping.

As many wireless telephones and networking equipment use the same 2,4 GHz band, take care to change the channel of them if there's a lot of risk to interfere in the wireless signal.

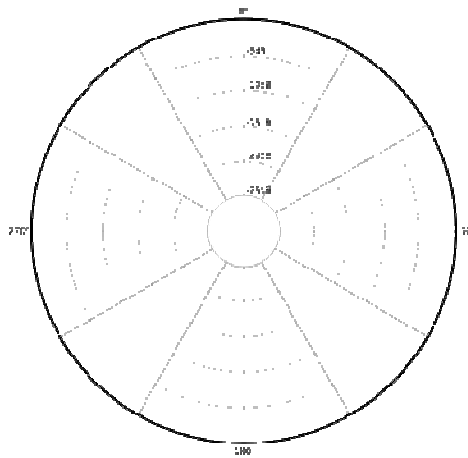
At the moment that you decide to design the network for wireless surveillance system, number of computers needed is a very useful data; another factor to take on count is the distance from the OpenQ devices to the wireless router and the bandwidth needed.

Trace a map of the area that should be covered and measure distance from the place that the farthest camera will be located and the place where wireless receptor is going to be placed. Be careful to add the obstacles and walls in the place to get a clearer idea of the zone.

WIFI COVERAGE

The coverage of the OpenQ devices is from 40 to 50 meters in open space without obstacles or external sources that decrease the power of the signal.

The antenna used is omnidirectional Rubber duck type that spread the signal 360° around the device, the frequency used is 2,4Ghz.



Polar Radiation Spectrum

OpenQ devices includes a 2 DBI gain antenna in the box, if you want to increase this value to get more coverage, an external antenna can be installed in the connector to match your requirements.

For closed spaces is necessary to keep in mind that the reach of the signal is reduced by the quantity of obstacles that there are between the receiving device and the device OpenQ camera as walls, roofs or other objects that go limiting the strength of the wireless signal; this is due to the attenuation suffered by the signal when crossing the material of which this obstacles are made of.

Recommendations to maximize the covering range:

1. Try to maintain a minimum quantity of walls according to the material of which are formed, it can decrease the signal approximately between 1 and 28 meters. Be careful when placing the wireless router or Acces point installed to enlarge the covering range.
2. Whenever is possible try to establish a line of view between the cameras and the wireless device A wall of 45 centimeters in an Angle of 45° behaves as a 1 meter of thickness wall.
3. The diverse construction materials used affect the wireless signal; a metal door or aluminum element can affect the coverage of the device negatively, avoid this type of materials along the way of the signal.
4. Place the antenna in the appropriate position to obtain a bigger reception of the signal in the device; in most of cases better results are obtained placing it perpendicular to the floor; however this can vary according to the conditions of the installation place.
5. it is recommended to maintain the OpenQ devices far (1 or 2 meters) of elements that generate noise of radio frequency as microwaves, CRT monitors, halogenous Lamps, electric motors and any other elements that generate strong electromagnetic fields around to them.
6. Avoid using devices that work in the frequency of 2,4GHZ as wireless telephones, wireless systems of security, roof fans or others that can affect and even reduce to zero the power of the wireless signal emitted by the OpenQ devices.
7. Using an external antenna of more gain is possible to increase the reach of the device for applications that require it.

INSTALLATION AND CONFIGURATION

Before proceeding to install the device, it is necessary to review the net configuration where device is going to be connected.

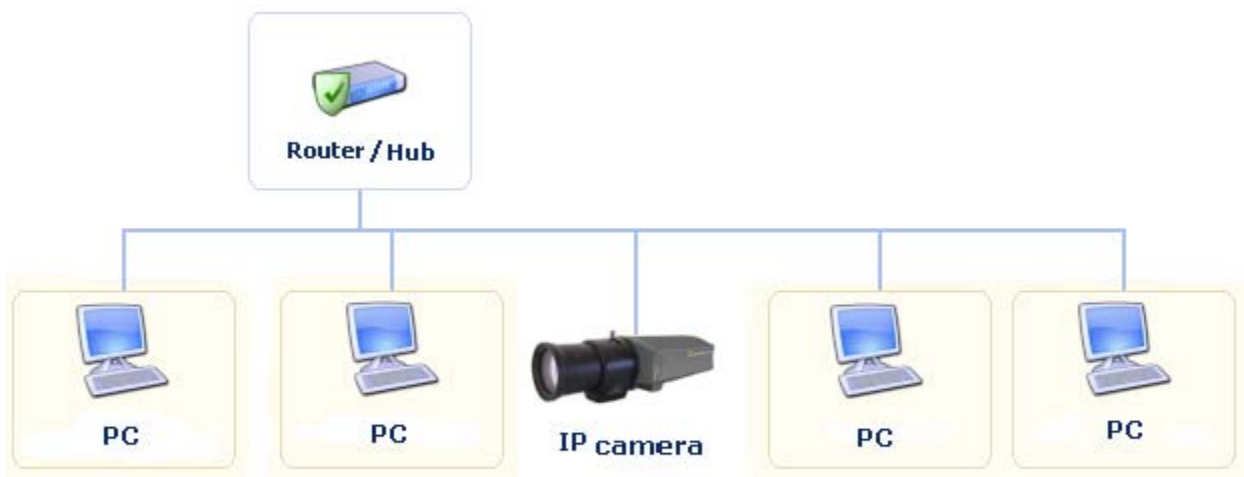
- **IP RANGE:** Verify the address of each connected device to prevent assigning a repeated address to the camera; assign to the OpenQ device a valid address inside the net.

- **SUBNET MASK:** Specify the net or subnet at which the device is going to be connected.

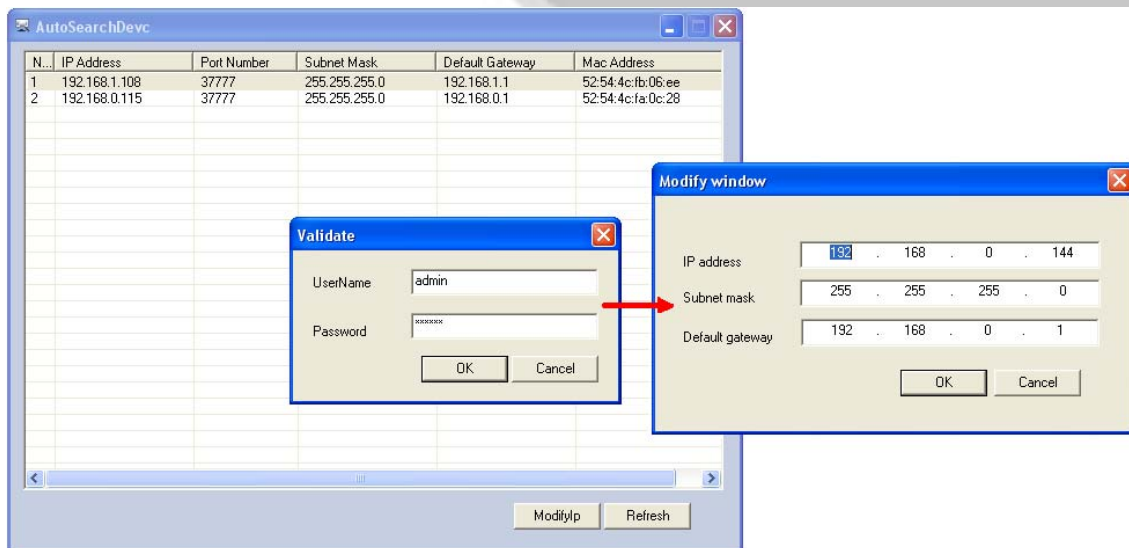
- **GATEWAY:** To access the OpenQ device from a different place to the local area network.

To setting up this device you should follow next steps:

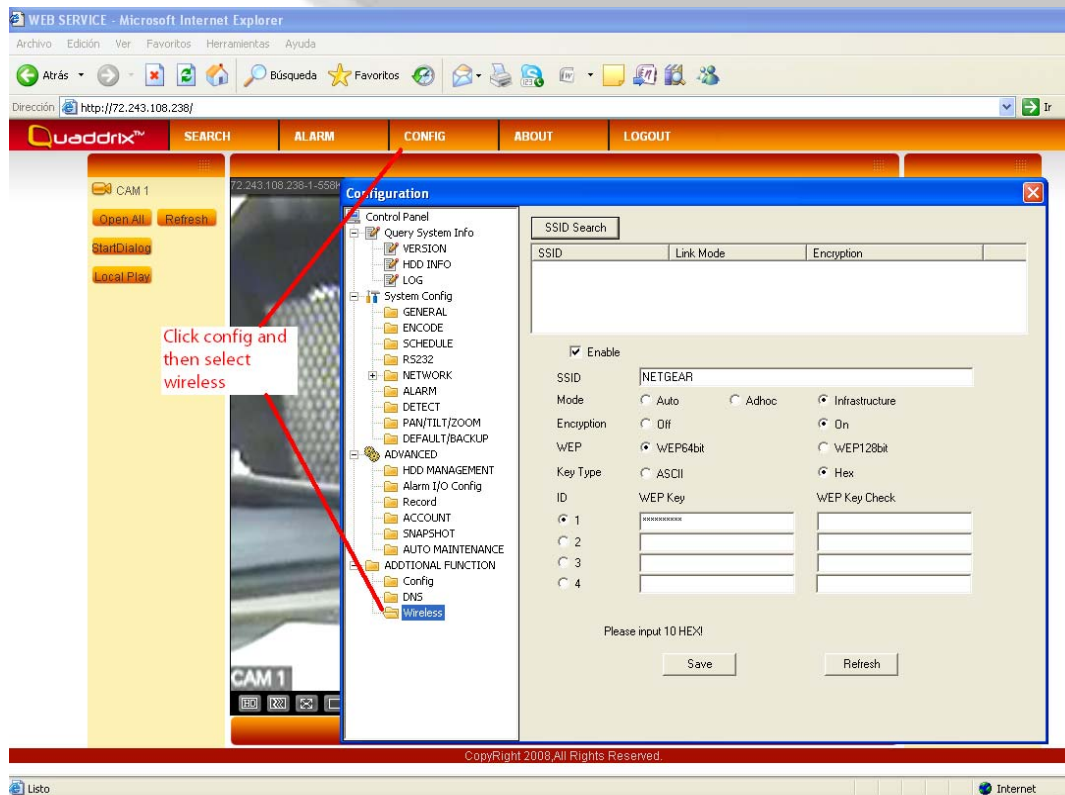
1. To connect physically (using a net cable) the camera to a LAN



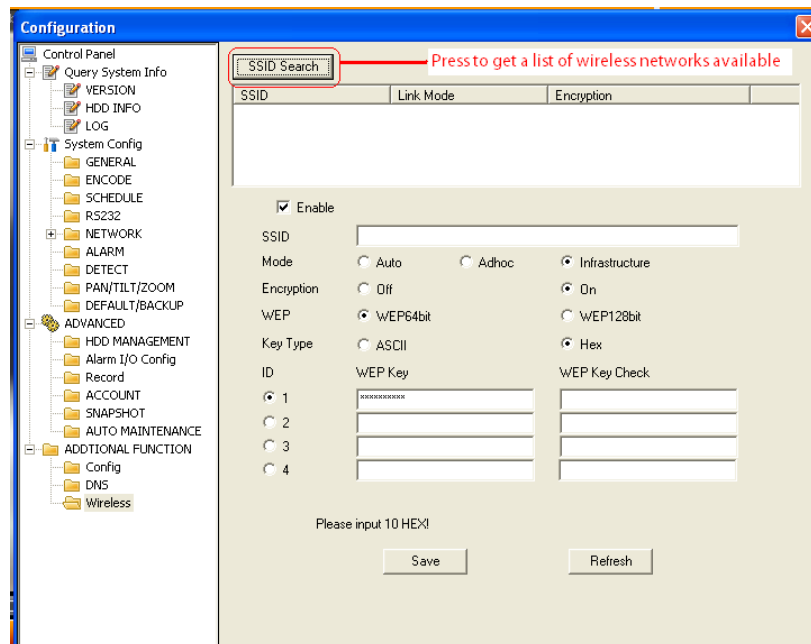
2. Once connected the camera to LAN and using the application included in the CD "discovery Tool" modify the IP address for defect of the OpenQ device in such a way that the new IP address match with the configuration of the net to which will connect. Default IP is 192.168.0.108.



- Done this, proceed to set up the WiFi module through the Web interface (Internet Explorer 6.0 or superior) of the camera; open up a navigator window and write the IP address assigned to the device, when pressing Enter, the service of remote access of the camera requests user's name and password to allow access to the device. By default, OpenQ line devices come with next values: user: admin and password: admin which can be modified when entering to the configuration of the device.
- Once you are logged in, the Web interface of the camera enter to the configuration of the device, click on the option called "Config" and select the option "Wireless" that appears in the drop down list of the new window.



In "Wireless" window, click over **"SSID search"** to make the wifi device find all wireless networks available. Choose the preferred network clicking over the name of this one.



- The next step is to configure the security parameters of the wireless network that device is going to be connected

WIRELESS NETWORK ID

ENCRYPTION TYPE

KIND OF KEY

PASSWORD

ON MEANS THAT SECURITY IS ACTIVE

Then save button must be pressed to save all changes applied to the device.

- The last step is set which kind of connection is going to have priority between wireless and Ethernet connection; to select which network is going to have priority choose the item called network on the configuration menu, then select the main connection and click in preferred box to confirm.

Configuration

Control Panel

- Query System Info
 - VERSION
 - HDD INFO
 - LOG
- System Config
 - GENERAL
 - ENCODE
 - SCHEDULE
 - RS232
 - NETWORK
 - EMAIL
 - DDNS
 - NAS
 - NTP
 - ALARM CENTER
 - ALARM
 - DETECT
 - PAN/TILT/ZOOM
 - DEFAULT/BACKUP
 - ADVANCED
 - HDD MANAGEMENT
 - Alarm I/O Config
 - Record
 - ACCOUNT
 - SNAPSHOT
 - AUTO MAINTENANCE
 - ADDITIONAL FUNCTION
 - Config
 - DNS

NETWORK

Ethernet Port: Ethernet Port1

IP Address: Ethernet Port1

Subnet Mask: Ethernet Port2(Wireless) 255 . 255 . 255 . 0

Gateway: 192 . 168 . 0 . 1

Device Name: CAM_AX

TCP Port: 37777 HTTP Port: 80

UDP Port: 37778 Max Connection: 10

Transfer Latency LAN Download

Service Type: MULTICAST Enable

User Name: IP Address: 152 . 20 . 112 . 0

Password: Port: 33460 0*65535

Save Refresh

Choose preferred network and check this box to confirm

When the camera is connected wireless and through the ethernet Port, the device always is going to give priority to the connection selected in the last step.

Done this, disconnect the cable and reboot the camera to load changes made.