

## Introduction

There are dozens of variables you have to consider in order to design whole video surveillance system effectively for the project you proceed.

The processing capability of the device is one of the variables you may consider in order to have all the devices up and run in an expected manner. Not to exceed its own processing capability is the key factor needed to be considered in this matter. This document will help you to find better configuration values for the devices for each application.

#This document only provides a rough guideline to help users to configure the device.

## Processing Capability

- Frame loss
- Packet loss
- Event loss
- Freezing
- Reboot itself
- Unexpected symptoms

CPU Consumption	Status
~60%	Fine
60~80%	Acceptable
80~95%	Possible to occur unexpected symptom
95%~	Unexpected symptom will appear

*Tested FW Version: V1.4.0*

Those above are the symptoms which may occur if CPU consumption hits to too high. So it is recommended not to exceed its processing capability by referring to the table above:

1. when you configure image resolution, framerate
2. when you consider to use single stream or dual stream
3. when you decide to use snapshot, motion detection(MD) or video contents analytics(VCA)
4. when multiple connection to the device is required

# CPU Consumption

## Single Stream

Refer to the stream tables(right).

### Stream(720p)

Frame rate	720p @5fps	720p @15fps	720p @30fps
CPU Consumption	35~40%	45~50%	55~60%

## Dual Stream

Combine(add) each percentage values in the stream tables.

### Stream(1080p)

Frame rate	1080p @5fps	1080p @15fps	1080p @30fps
CPU Consumption	39~44%	55~60%	78~83%

## Other Functions

Refer to the other functions table(right).

### Other Functions

Function	Snapshot	MD	VCA
CPU Consumption	~3%	~10%	~30%

## Multiple Connection

Refer to the multiple connection tables(below). Please note that the test has been only performed with single stream configuration(not dual stream).

### Multiple Connection(720p)

720p@15fps, 2500kbps(CBR)

Bandwidth	2 users 5Mbps	4 users 10Mbps	6 users 15Mbps	8 users 20Mbps	10 users 25Mbps	12 users 30Mbps
CPU Consumption	33~40%	47~52%	55~60%	70~77%	83~87%	88~93%

### Multiple Connection(1080p)

1080p@15fps, 2500kbps(CBR)

Bandwidth	2 users 5Mbps	4 users 10Mbps	6 users 15Mbps	8 users 20Mbps	10 users 25Mbps	12 users 30Mbps
CPU Consumption	38~45%	50~60%	60~70%	80~85%	89~93%	90~96%

## For better result

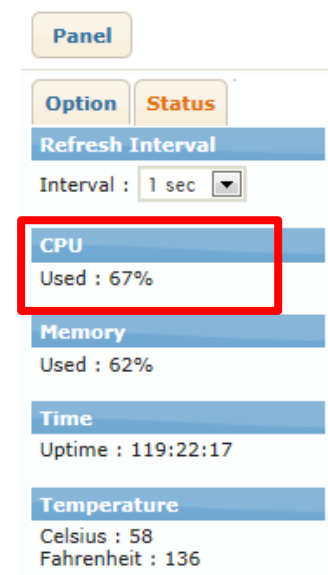
As it was mentioned in introduction, “This document only provides a rough guideline to help users to configure the device.”. It is recommended you to perform tests by yourself in order to have more accurate result, using this document only as a reference , before making any serious decisions.

Because there are many other combinations of configurations as well as environmental variables which has not been considered in this document. Such as:

1. Firmware(FW) Version
2. Complexity of the actual scene
3. Other resolution excluding 1080p and 720p
4. Other frame rate
5. Other bit rate in CBR mode
6. VBR mode
7. Network environment where poor bandwidth is expected
8. So on...

For your reference, the test has been performed with the device’s webpage by monitoring the change of CPU(Used) in the Status Panel while changing the configurations.

*All the test here has been performed with FW v1.4.0.*



The screenshot shows a web interface with a 'Panel' button at the top. Below it are 'Option' and 'Status' tabs, with 'Status' selected. A 'Refresh Interval' section shows 'Interval : 1 sec' with a dropdown arrow. The 'CPU' section is highlighted with a red box and shows 'Used : 67%'. Below it, the 'Memory' section shows 'Used : 62%'. The 'Time' section shows 'Uptime : 119:22:17'. The 'Temperature' section shows 'Celsius : 58' and 'Fahrenheit : 136'.