Why FlexWATCH®?

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Seyeon Tech Co., Ltd.

FlexWATCH offers lots of versatile solutions incomparable to any other competitors with know-how built from around 10 years experiences and provides clients with a great deal of opportunities to keep them ahead of the curve. FlexWATCH® products continuously focus on forward & backward compatibility which communication device has in pursing stability, reliability, permanency. Also, Seyeon Tech provides opportunities that allow clients to expand its application range with CMS (Central Monitoring System) necessary to operate from small to large scaled system (thousands of channels). This document covers major features of FlexWATCH® products to distinguish from those of competitors

Complete portfolio for any need

Most manufacturers of IP surveillance systems have either IP camera-oriented or software-oriented product lineup. Unlike those competitors, Seyeon Tech has been developing various IP products to meet any market needs in a timely manner. Seyeon Tech mainly focuses on NVR but we are also releasing diverse products by different number of analog video input channels, video compression format and adding new functions to existing NVR, trying to diversify product models. Also, Seyeon Tech has a selection of CMOS IP camera, Megapixel IP camera recently released, various video servers, video management software intended for integration with other brand's IP products.

FlexWATCH's continual effort to diversify product lineup helps clients choose proper products to meet their demands and broaden application range.

Category	Model	Description	Key Features
NVR	FW-5050	Embedded Pure-NVR, up to 16ch IP cameras	MJEG/MPEG4/H.264 support Multi-vendor support Max 60 fps recording at D1
	FW-5450	Embedded Hybrid-NVR, 4ch analog V-in, 12ch IP cameras	MJEG/MPEG4/H.264 support Multi-vendor support Max 120 fps recording at CIF
	FW-5850	Embedded Hybrid-NVR, 4ch analog V-in, 12ch IP cameras	MJEG/MPEG4/H.264 support Multi-vendor support Max 120 fps recording at CIF
NVS	FW-3150	1ch video server	MJEGP/MPEG4 dual stream, D1 Real-time
	FW-3170	1ch video server	MJPEG/H.264 dual stream, D1 Real-time
	FW-3450	4ch video server	MJEGP/MPEG4 dual stream, D1 Real-time
	FW-3850	8ch video server	MJPEG/MPEG4 dual stream Max 60 fps streaming at D1
IP camera	FW-1120	CMOS IP camera	Max VGA resolution, MJPEG Max 30 fps at VGA
	FW-1130	CCD IP camera (D&N)	MJPEG/MPEG4 dual stream, D1 Real-time
	FW-1131	CCD vandal dome (D&N)	MJPEG/MPEG4 dual stream, D1 Real-time
	FW-1161	High speed dome IP camera Optical 23, 27, 30, 36 times	MJPEG/MPEG4 dual stream, D1 Real-time
	FW-1173	CCD IP camera (D&N)	MJPEG/H.264 dual stream, D1 Real-time
	FW-1173M	1.3M CMOS IP camera	MJPEG/H.264 dual stream Max 15fps at 1.3M resolution, D1 Real-time

Software	FW manager	CMS software	16ch ~ 256 channel version Max 1800 fps recording speed
	ISENS	Video management software Alarm viewer Map viewer Virtual matrix Log viewer Health checker	More than 1000 channels
Others	Misc.	FlexWATCH provides various utilities, SDK and solution packages	

Dual Compression Engine

All the FlexWATCH® IP camera, video server support dual stream, and transmit up to maximum 30fps of video streams at D1 resolution. FlexWATCH basically supports MJPEG compression format and MPEG4 or H.264 is additionally supported by some models. FlexWATCH generally supports MJPEG, widely used for recording video streams in IP based video surveillance systems. To efficiently make the use of bandwidth for the transmission, we additionally support MPEG4, H.264 compression format. FlexWATCH® IP camera, video sever has built-in motion detector and DI/DO is used as pairs per video channel.

High Performance Streaming Engine

Latency is the most important factor in judging the efficiency of video surveillance system. Latency means a total delay time from capturing, compressing and transmitting video streams to receiving, restoring and displaying it on screen over network. In consideration of latency as a crucial factor in deciding performance of streaming engine, FlexWATCH® puts emphasis on low latency time at the rate from 100msec up to 200msec. That's why Seyeon Tech IP products are considered as high quality for video surveillance system.

Let us give an example of watching a subway train heading for the platform. In this case, it is required for subway security system to watch platform in real time before the train arrives at the platform. If the train moves faster than it is taken and latency is high, there is likely that train arrives at the platform even before security camera watches. To avoid this occasion, the least latency time becomes critical factor for the safety.

FlexWATCH® products can be widely adopted in video surveillance system where latency plays as an crucial variable.

Vivid and supreme quality on motion video

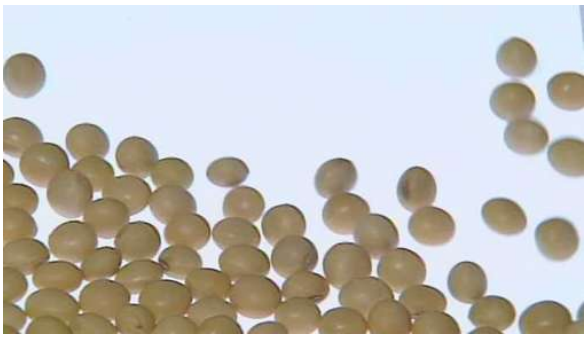
Two different types of video sources of cameras are available: interlaced video source and non-interlaced (progressive) video source. Interlaced video source is used in general CCD sensor and progressive video source is used in CCD and CMOS sensors. Progressive video source is much superior in motion image quality, so it is expected that IP cameras, cameras will also support progressive video source standard in the future.

Currently, more than 95% of video source either already installed or generally used is interlaced video source. If interlaced video source is digitized, transmitted over network, jaggedness on screen shows especially when frames are coded (even & odd field in a layer consist of a frame) and movements are complicated although what kind of codec is used. In video surveillance system, it is common to search images after incident happens by playing back video streams at slow rate or observing video data after stopping the system. In this case, interlaced video source leads to inevitable degraded video quality.

In order to avoid this weakness of the interlaced video source, some video manufacturers try decrease degraded image quality by adopting de-interlaced filter before compressing video images although it is actually interlaced video source. But if movement is more than expected or video source is complicated, then video quality becomes degraded. FlexWATCH® IP camera, video server recently released dramatically reduced this jaggedness. So users can enjoy more upgraded video quality like when using progressive video source.

Below pictures shows captured images of bins falling downward using video source transmitted from IP camera. Left one is taken by other brand IP camera and right one is by FlexWATCH® IP camera. You can clearly compare and see the differences on image quality from below test result.

Motion image quality of A brand's video server with de-interlaced filter adopted.



Motion image quality of FlexWATCH, a new line of video server and IP camera

Advanced Alarm Management at Embedded Hardware

FlexWATCH® IP cameras, video servers provides application services at embedded H/W in various forms. Whereas most IP products provide email, ftp upload services by schedule & event, Seyeon Tech further divides this service into buffering (pre-/post-), and non-buffering (periodic) by triggering at least 10msec time gap. Furthermore, more advanced services are available by recording at the internal memory with several Mbytes in a product itself.

Alarm buffering services is also available by using internal buffer in various conditions. IP address notification, interface and service for integrating with other application programs are provided. Thus, with FlexWATCH® product lineup, users can take advantage of its in-depth and delicate technology which plays an essential role in various application markets.

Complete Integration with other equipment as an Open Platform

FlexWATCH has been building abundant experiences of completely integrating with other equipment such as access control, alarm server, POS, ATM, traffic control system for more than 10 years. Moreover, we can support major 30 brands of PTZ devices.

FlexWATCH is now integrating other brands' IP cameras with FlexWATCH® NVR under our own development process. Currently, FlexWATCH® NVR supports Axis, Panasonic, Mobotix. More brands will be supported in a regular time manner.

FlexWATCH provides versatile SDK suitable for diverse needs of clients to be adequately utilized in any operating system environment. Also, FlexWATCH® products are already interoperable with many different CMS vendors, so clients can take full advantage of our IP products in SI projects with the help of specialized software companies. SDK from FlexWATCH is compatible in OS like Windows, Linux, and Mac.

High Reliability and Durability

In practice, there exist substantial difficulties in operating hundreds to thousands of IP video streams at site. First, users need to secure durable IP products to operate in various conditions. Also, it is very hard to operate the IP system unless reliability of it is not guaranteed.

FlexWATCH® products are being used in the environment where hundreds or more products simultaneously operate for years, so we have got a reputation for its high reliability, durability around the globe. Now, FlexWATCH® products are actively being applied in factory security, city surveillance and national disaster defense system, facility monitoring system, campus security. Your project manager can maximize all the benefits of the networked video solutions by relying on FlexWATCH® products. that lead to peace of mind.