FW5870 User's Manual

(Product Guide)

Version 4.14

April 13, 2012

FlexWATCH®
(주)세연테크 Seyeon Tech Co., Ltd.

Class A Digital Device (industrial & commercial environment)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to CE and FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FW5870 User's Manual

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About This Document

This document is prepared for users of FW5870 supplied by Seyeon Tech Co., Ltd. It is assumed that the users are familiar with Microsoft Windows operating systems and Web browsers such as Internet Explorer. It is also assumed that the users are well aware of how to install and use the network equipment such as LAN, Hub, router, and having basic knowledge of network terminologies. If you have any questions regarding network installations, please contact your network equipment vendor or network administrator or Internet service providers.

For updated contents, detailed features and other applications from Seyeon Tech, please refer to the user's manual in CD-ROM provided with the product you purchased, or visit Seyeon Tech's Internet homepage at http://www.flexwatch.com/.

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1. Product Overview

1.1. FW5870

FlexWATCH® 5870 is a stand-alone, hybrid network Digital Video Recorder & server that provides full feature of video server and recorder. FW5870 provides complete Triplex mode (Live video transmission, on-site video recording and remote playback). It provides simultaneous recording and remote access to live views and playback of recorded images from up to 8ch IP camera or video servers, and 8ch analog cameras, digitize and transmit them over TCP/IP network.

It can transmit up to 120fps@HD over the existing network. You can monitor video of FW5870 through web browser(ie. MS Internet Explorer), if FW5870 is connected to network. Saving & search is possible as well with HDD equipped.

FW5870 supports video compression MJPEG, and H.264 simultaneously so that user can choose appropriate video compression for the purpose. A hard drive is equipped inside FW5870 so the video streams can be recorded and searched per user's need. The recording can be kept enabled all the time, or it can also be initiated by motion-detection, sensor input, or time scheduling. The searching feature provides various search conditions that can be combined together for efficiency.

Picture 1 : FW5870

1.2. Key Features

- Standalone device with a built-in web server

- 10M/100M/1000M Auto-Sensing Ethernet

- Configuration and control device through Web browser

- Max 120 fps transmission speed on TCP/IP network

- Compressed audio transmission for each of 8 channels

- Audio decoding for one channel

- Support Dynamic IP network by IPCCTVDNS Server

- Support various PTZ (Pan/Tilt/Zoom) devices

- Support Sensor Input, Digital Output

- Support Transparent Mode

- Encryption function by user authentication

- Image transmission via FTP and Email

- Provide 8-Channel analog quad outputs

- Recording of 8 channel videos on internal Hard drive and external servers

- User-friendly GUI for playback & export Video as AVI file

- Record Video by motion event

1.3. Technical Specification

Hardware	32bit Embedded CPU Flash 8Mbytes /SDRAM: 128Mbytes Linux Version 2.6.24.4 Operating System Battery backed up real-time clock
Video compression	MJPEG H.264
Resolution	NTSC : 720x480, 704x480, 352x240, 160x112 PAL : 720x576, 704x576, 352x288, 160x144
Frame rate (each channel)	Up to 120 fps @D1
Video Streaming	Selectable Streaming MJPEG and H.264 Controllable frame rate and bandwidth
Image setting	Compression levels : 6 (MJPEG/H.264) Color: color, black & white
Recording	2-Step frame rate (Fast on event/Slow on continuous recording mode) Supports Linux File system. Supports max. 2 Tera Bytes SATA HDD Anti-shock system
Transmission or Recording (Single Mode)	Performance(1000Base-T / LAN) Transmission : 120fps(NTSC)/100fps (PAL) Recording : 120fps(NTSC)/100fps (PAL) when Single Mode with total channels at HD
Transmission and Recording (Duplex Mode)	Performance(1000Base-T / LAN) Transmission : 120fps(NTSC)/100fps (PAL) Recording : 110fps(NTSC)/100fps (PAL) when Duplex Mode with total channels at HD
Transmission and Recording and Playback(Triplex Mode)	Performance(1000Base-T / LAN) Transmission : 120fps(NTSC)/100fps (PAL) Recording : 110fps(NTSC)/100fps (PAL) when Triplex Mode with total channels at HD
Voice	4 bit G.723, Sampling rates 8KHz, Mono Audio 4chx2 in & 1ch out Bandwidth: 6KByte/sec (per channel) Min/Max Audio Freq : 300Hz ~ 3.4KHz
LAN interface	10/100/1000 Base-T Ethernet auto sensing
Alarm I/O Interface	4x2 Photo-coupled inputs and 4x2 Relay output
Video Input	4x2 Channel Composite Video Input
Video Output	Not Supported
Quad Output	1-Channel 9-divided Composite Video Output
Audio Input(MIC)	Input Impedance : 5 KΩ Phantom Power : 5 Volt Gain : 26 dB Jack : 3.5mm Mono

Audio Output(SPK)	Output Impedance : 230 Ohm Output Power : 50 mW Output Voltage : Peek To Peek 1 Volt Jack : 3.5mm Stereo
Power Over Ethernet	Not Supported
Serial Interface	Two serial ports for console, serial input/output device, PTZ COM Port is RS-232 AUX port can be configured as RS-232, RS-485 Max Baud rate: 115200 bit/s
PIR Motion Sensor	Not Supported
Security features	Multi user level protection for camera access, PTZ, Alarm I/O
Advanced Service	Up to 19.2M memory for Pre/Post alarm buffer e-mail, FTP, alarm Buffer by event or schedule IP notification, Alarm Notification to e-mail, CGI Call by event or schedule
Built-in Motion detections	Accuracy : 12x12=144 blocks Motion Sensitivity : -100 ~ 100 : 100 is hypersensitive
PTZ & UART Control Support	PTZ and UART device control through serial interface (Support various protocols; Pelco "P" & "D", Vicon V1311RB, Samsung PTZ, Honeywell PTZ and X10) Dial in/out via PSTN or GSM modem
Others	Time stamp on Video Transmit Serial input data transfer with video IP notification by e-mail
Management	Configurable by serial, web or telnet Remote system update via telnet, FTP OR web browser.
Developer support	Provides HTTP CGI API ActiveX control development kit
PWR Supply	Switch-mode power supply adaptor Input : 100~240VAC, 1.5A Output : DC 12 Volt, 5A, SMPS
PWR Consumption	DC 12Volt Max or Peak : 3.5 A Normal : 2.0 A (with Seagate Barracuda ES.2 1 TBytes HDD installed)
Operating Environment	Temperature : 32°~ 122℉ (0°~ 50℃) Humidity : 20 ~ 80% RH (non-condensing)
Miscellaneous	Work with Smart NVR(CMS software) Dynamic IP support through IPCCTVDNS Server
Simultaneous clients	Live-cast for up to 16x8 Channel Playback for up to 16 clients
Installation, management and maintenance	Installation CD and web-based configuration Firmware upgrades over HTTP, telnet or FTP, firmware available at homepage
Video access from Web browser	Video access from Web browser

Minimum Web browsing requirements	Pentium 4, 2 GHz, 2GB(RAM) or higher Video Card: 256MB RAM, 1024x768 resolution or higher 100Mbps Network Adaptor or faster Windows XP Pro or later Internet Explorer 6.x or later
System integration support	Powerful API for software integration available at http://www.flexwatch.com, including Simple Viewer API, FlexWATCH Control SDK, event trigger data in video stream, embedded scripting and access to serial port Peripherals over HTTP/TCP User can be installed user program daemon for event notification or sending image. Embedded operating system: Linux 2.6
Supported protocols	HTTP, TCP/IP, FTP, Telnet, RARP, PPPoE, PAP, CHAP, DHCP, NTP, SMTP client
Approvals	KCC FCC : Class A CE : Class A RoHS
Dimensions and weight	280(L) x 224(W) x 44(H) (in mm) About 1.70kg without power supply & HDD.

* All specifications are subject to change without prior notice.

Table 1 : Specification for FW5870
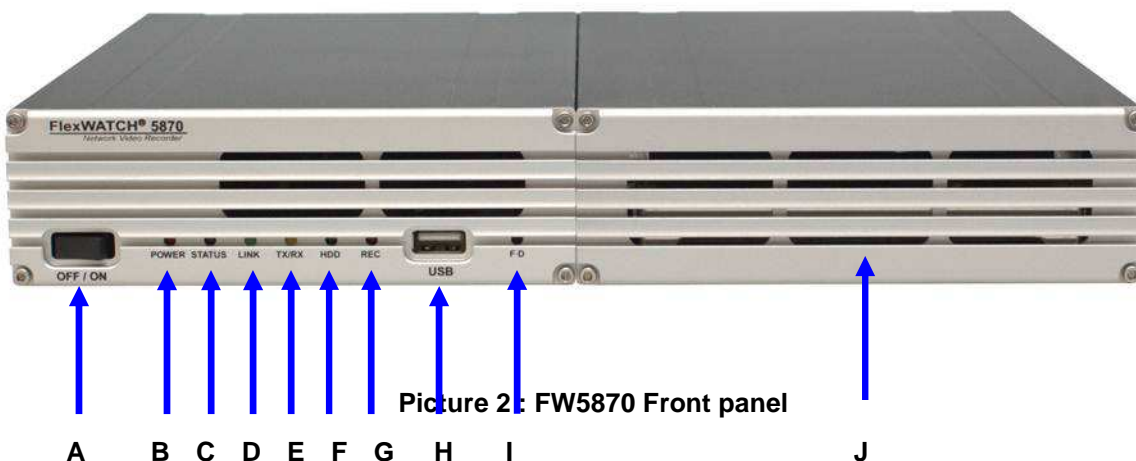
1.4. FW5870 Packing List

FW5870	1 EA	
Power Supply Unit (Power Cable & SMPS DC12V 5A Adapter)	1 EA	
CD (User's Manual, IP Installer and etc)	1 EA	

Table 2 : FW5870 Packing list

> Note: Please make sure all the listed items are included in the package. For any missing items, please contact your local distributor.

2. Product Description

2.1. FW5870 Front View

Picture 2 : FW5870 Front panel

|		
A	Power Switch	This switch is used to turn FW5870 On or Off. *(Note: Never turn off during formatting the HDD because it may cause a severe damage to it.)*
B	Power LED	This green LED is lit during FW5870 is powered on.
C	Status LED	Shows the operating status of FW5870. It goes green when it enters into normal operation after powered on and booting process.
D	LAN LINK LED	Indicates the connection status of LAN connector. It goes green when a physical connection is properly made to the LAN port.
E	LAN (TX/RX) LED	Blinks green when there is any data activity on the LAN port.
F	HDD LED	Blinks green when there is any data read from or written to HDD.
G	Recording LED	Blinks red if video stream is being recorded on the HDD.
H	USB	USB port (reserved for future use)
I	Factory Default Switch	Restore the factory default setting for FW5870. Keep pressing this button for 7 seconds after a system boot up.
J	HDD Rack	Detachable HDD Enclosure Rack. *(Note: Do not pull off this rack during operation. It might cause a severe damage to the HDD.)*

Table 3 : FW5870 Front panel

Beep Sound Description

	Condition	Beep Sound
1	Power ON	One short beep if boot-up is started normally.
2	System Ready	Two short beeps if boot-up is finished normally.
3	Power Off	Two beeps in case of power-off during operation (0.5 second).
4	HDD Error	One 5 second long beep in case of HDD failure during operation. The beep sound can be configured to ON or OFF on the web configuration.
5	FD Button	One 0.5 second-long beep followed by 3 short beeps for 3 seconds in case of FD button pressed for factory default restoration.

Table 4 : FW5870 Beep Sound

2.2. FW5870 Rear View

Picture 3 : FW5870 Real panel
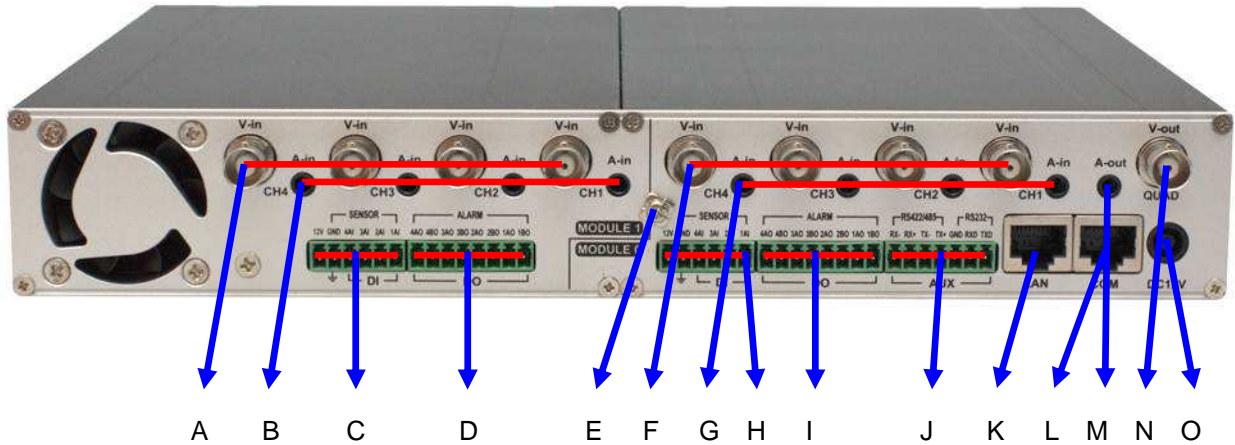
☞   *A FW5870 unit is consists of two function modules, module 1 and 2. Each module has 4 camera inputs, 4 audio inputs, 4 DI ports, and 4 DO ports.*
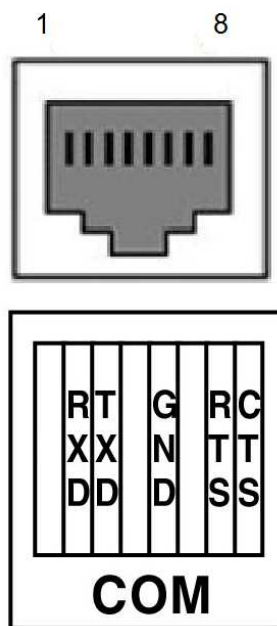
	Name	Description
A	Mod1, Video-In 1	BNC connector for Camera 1 of Module 1
	Mod1, Video-In 2	BNC connector for Camera 2 of Module 1
	Mod1, Video-In 3	BNC connector for Camera 3 of Module 1
	Mod1, Video-In 4	BNC connector for Camera 4 of Module 1
B	Mod1, Audio-In 1	3.5mm Audio Jack for Audio-In 1 of Module 1
	Mod1, Audio-In 2	3.5mm Audio Jack for Audio-In 2 of Module 1
	Mod1, Audio-In 3	3.5mm Audio Jack for Audio-In 3 of Module 1
	Mod1, Audio-In 4	3.5mm Audio Jack for Audio-In 4 of Module 1
C	Mod1/DI	Sensor/Contact Input Port for Module 1
D	Mod1/DO	Beacon/Alarm Output Port for Module 1
E	Ground	Grounding Terminal
F	Mod0, Video-In 1	BNC connector for Camera 1 of Module 0
	Mod0, Video-In 2	BNC connector for Camera 2 of Module 0
	Mod0, Video-In 3	BNC connector for Camera 3 of Module 0
	Mod0, Video-In 4	BNC connector for Camera 4 of Module 0

G	Mod0, Audio-In 1	3.5mm Audio Jack for Audio-In 1 of Module 0
	Mod0, Audio-In 2	3.5mm Audio Jack for Audio-In 2 of Module 1
	Mod0, Audio-In 3	3.5mm Audio Jack for Audio-In 3 of Module 1
	Mod0, Audio-In 4	3.5mm Audio Jack for Audio-In 4 of Module 1
H	Mod0/DI	Sensor/Contact Input Port for Module 0
I	Mod0/DO	Beacon/Alarm Output Port for Module 0
J	AUX	Auxiliary port for Modem or other devices (PTZ, UART-Out, Audio, UART-In)
K	LAN	RJ-45 Network Connector
L	COM	Control port for setup or other devices (PTZ, UART-Out, Audio, UART-In)
M	Audio Out	Speaker jack to receive audio in 2-way audio communication.
N	Video MUX Out	Video output port for viewing 8-channel video inputs on the screen.
O	Power Connector	DC 12V, 5A

Table 5 : FW5870 Rear panel

2.2.1. COM Port Description

The picture below shows how to wire the COM port connector pins when configuring the FW5870 with console. Each signal should be wired to the correct pin as shown in the picture. It is a common practice to use only RXD, TXD, and GND signals for RS-232 functionality. If FW5870 needs to be connected a computer through RS-232, then RXD and TXD pin may need to be cross-wired.

Picture 4 : COM Port Description

3. FW5870 Installation and Basic Setup

3.1. Before Installation

- Read carefully User's Manual.
- Check User's Network (IP Address, Network Mask and default gateway)
- Secure IP address for FW5870.

3.2. Factory Default Settings

The following table shows the factory default condition. Please refer to this when you need to change the values on admin menu.

	Factory Default
Admin ID	root
Admin password	root
IP address	10.20.30.40
Network mask	255.255.255.0
Gateway	10.20.30.1

Table 5 : Factory Default

Note: Factory default Admin ID and Password are all lower case letters. You can change the password with Capital letters.

3.3. Installing FW5870

For installation of FW5870, please follow the steps below.

1. Place the CCTV cameras in place and connect power supplies.
2. Connect the video output ports of analog CCTV cameras to the video-in ports of FW5870.
3. Connect the FW5870 to the Internet cable through the LAN port.
4. Connect the power supply of FW5870.

After that, you need to follow the steps below.

- Network Configuration: Refer to "IP Installer User's Manual"
- Camera Configuration: Refer to "FlexWATCH Admin Menu User's Manual"
- Service Configuration: Refer to "FlexWATCH Admin Menu User's Manual"