FW1173 User's Manual

(Product Guide)

Version 4.12(Rev.E)

February 7, 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.

FW1173 User's Manual

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About This Document

This document is prepared for users of FW1174 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. FW1173

FlexWATCH® 1173 is a stand-alone device transmitting vdeo from built-in megapixel camera over IP(Internet Protocol) network. FW1173 model is divided into 3 different types: DS, MS and FS.

It can transmit up to 30fps@D1(DS)/1.3M(MS)/2M(FS) over the existing network. You can monitor video of FW1173 through web browser(ie. MS Internet Explorer), if FW1173 is connected to network. FW1173 supports video compression both Motion-JPEG and H.264 simultaneously so that user can choose appropriate video compression for the purpose. For both Motion-JPEG and H.264, FW1173 provides 6 levels of video quality. FW1173 also supports both ONVIF and PSIA.

Built-in SD card slot for full-blown DVR functionality is provided. Lens is not included.

Picture 1 : FW1173

1.2. Key Features

- Standalone device with a built-in web server
- 10M/100M Auto-Sensing Ethernet
- Configuring and controlling through Web browser
- Max 30 fps transmission speed on TCP/IP network
- Effective Bandwidth & Bit-rate Control (VBR/CBR) by H.264
- Supports Dual Streaming in Motion JPEG and H.264
- 1ch Voice Encoding/1ch Voice Decoding
- Support Dynamic IP network by IPCCTVDNS Server
- Support various PTZ (Pan/Tilt/Zoom) devices
- Support Sensor Input and Digital Output
- Support Transparent Mode
- Built-in 2 way Audio transmission (1ch A-in, 1 A-out)
- Encryption function by user authentication
- Image transmission function via FTP and Email
- Support both ONVIF/PSIA

1.3. Technical Specification

	FW1173-DS	FW1173-MS	FW1173-FS
Hardware	32bit Embedded CPU NAND Flash 128Mbytes/DDR2: 128Mbytes Linux version 2.6.xx operating system Battery backed up real-time clock		
Image sensor	1/3" CCD (ICX638,ICX639) Resolution: 560 TV Lines S/N ratio: 52dB or more (AGC OFF, Weight ON) Electronic shutter speed : 1/60(50) ~ 1/120,000 sec Sens-up : AUTO/FIXED/OFF (selectable limit x2 ~ x256) White Balance: ATW/AWC/Manual/Outdoor(1800K~10,500K)/Indoor(4500K ~8500K)	1/3" progressive scan MOS Active pixels 1280H x 1024V, 1.31M Effective pixels 1376H x 1070V, 1,47M Pixel size: 3.75 (H) μm × 3.75 (V) μm Color filter Bayer arrangement of primary colors: R, G, B Bit number of internal ADC: 12 bits Parallel output: 54 MHz, 12 bits Output frame rate: 30 fps	1/2.8" progressive scan CMOS Active pixels 2080H x 1553V, 3.23M Effective pixels 2096H x 1561V, 3.27M Pixel size : 2.5 (H) μm × 2.5 (V) μm Color filter Bayer arrangement of primary colors: R, G, B Bit number of internal ADC: 10/12 bits Parallel output: 37.125 MHz, 10/12 bits Maximum frame rate in all-pixel scan mode: 60 fps
Lens	Not included		
Minimum illumination	Color: 0.15 Lux (F1.2) B/W: 0.002 Lux (F1.2) (Sens-up: x128)	Color: 0.1 Lux(F1.0) B/W: 0.01 Lux(F1.0) (TDN) 0.02 Lux(F1.0) (without TDN)	Color: 0.3 Lux(F1.2) B/W: 0.002 Lux
Video related special functions	Backlight (OFF/LOW/MIDDLE/HIGH) AGC (OFF/LOW/MIDDLE/HIGH) Lens (MANUAL/DC) Shutter (ESC/MANUAL/FlickerLess) White Balance (ATW/AWC/MANUAL) DNR	Day & Night (ON/OFF) AGC, AWB Lens (MANUAL/DC) Shutter (MANUAL/AUTO) Vertical/Horizontal Flip Frequency Control (50/60) Brightness/Contrast/Sharpness Control	Day & Night (AUTO/COLOR/BW) AGC, AWB, Auto Exposure Lens (MANUAL/DC) Shutter (AUTO/MANUAL) Brightness/Contrast/Sharpness Control
Video compression	Motion JPEG H.264		
Video Standards	ONVIF PSIA		
Resolution	720x480, 704x480, 704x240, 352x240, 176x112	1.3M(1280x1024), HD(1280x720), VGA(640x352), CIF(320x176), QCIF(160x96)	FullHD(1920x1080), HD(1280x720), VGA(640x352), CIF(320x176), QCIF(160x96)

Frame rate (each channel)	Motion JPEG: Up to 30/25 fps @4CIF (Secondary Stream at QCIF) H.264: Up to 30/25 fps @4CIF (Primary Stream at QCIF)	Motion JPEG: Up to 30 fps @ 1280H x 720V (Other Stream at QCIF) H.264: Up to 30 fps @ 1280H x 720V (Other Stream at QCIF)	Motion JPEG: Up to 30 fps @ 1920H x 1080V (Other Stream at QCIF) H.264: Up to 30 fps @ 1920H x 1080V (Other Stream at QCIF)
Video Streaming	Motion JPEG and H.264 Dual Streaming (Simultaneously) Controllable frame rate and bandwidth		
Image setting	Compression levels: 6 (Motion-JPEG, H.264) Color: color, black & white		
Voice	8 bit PCM (G.711-u-low), Sampling rates 8KHz, Mono Audio 1ch in & 1ch out		
LAN interface	10/100BaseT Ethernet auto sensing IEEE 802.3af Built-in POE (optional) IEEE 802.11b/g Exterior Dongle wireless (optional)		
SD card slot	Built-in		
Alarm I/O Interface	1 Photo-coupled input and 1 Relay output		
Video Output	1 loop through analog video outputs	-	-
Audio Input(MIC)	Input Impedence : 4 KOhm Pantom Power : 3.3 Volt Gain : 20 dB Jack : 3.5mm Mono		
Audio Output(SPK)	Output Impedence : 130 Ohm Output Power : 50 mWatt Output Voltage : Peek To Peek 1 Volte Jack : 3.5mm Stereo		
Power Over Ethernet	Option		
Serial Interface	COM Port: RS-232, COM ports for console, serial input/output device Max Baudrate: 115,200 bps		
Security features	Multi user level protection for camera access, Alarm I/O		
Advanced Service	Up to 5.6M memory for Pre/Post alarm buffer E-Mail, FTP, 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 Up to 35 PTZ protocols from Pelco "P"& "D" protocol, Vicon V1311RB, Samsung, Honeywell and Etc,.X10 device control		
Others	Transmit External data(EX:POS) 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	SMPS Input: 100~240VAC, AC 50/60Hz, 300mA Output: DC 12 Volt, 1A
PWR Consumption	DC 12Volt Max 600 mA
Operating Environment	Temperature : 32°~ 122℉ (0°~ 50℃) Humidity : 20 ~ 80% RH(non-condensing)
Miscellaneous	Freely downloadable NDVR Software Work with FW-Manager(NDVR S/W) Dynamic IP support through IPCCTVDNS Server
Simultaneous users	Live-cast for up to 16 clients
Installation, management and maintenance	Installation CD and web-based configuration Firmware upgrades over HTTP or FTP , firmware available at www.flexwatch.com
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, RTP/RTSP, TCP/IP, FTP, Telnet, RARP, PPPoE, PAP, CHAP, DHCP, SMTP client(e- mail), NTP
Applications (not included)	FlexWATCH Manager 16/32/128/256
Included Accessories	Power supply 12 V DC Direct LAN Cable Bracket CD (User's Manual, installation wizard and etc)
Approvals	KCC FCC : Class A CE : Class A RoHS
Dimensions (HxWxD) and weight (1lbs = 454g)	70(W) x 108(D) x 66(H) (in mm) About 0.372kg without lens and power supply

** All specifications are subject to change without prior notice.*

Table 1 : FW1173 Data Sheet

1.4. FW1173 Packing List

FW1173 (without lens)	1ea	
Power Supply Unit (Power Cable & SMPS DC12V 1.0A Adapter)	1ea	
Bracket	1ea	
CD (User's Manual, installation wizard and etc)	1ea	

Table 2 : FW1173 Packing List

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

2. Hardware Description

2.1. Front View

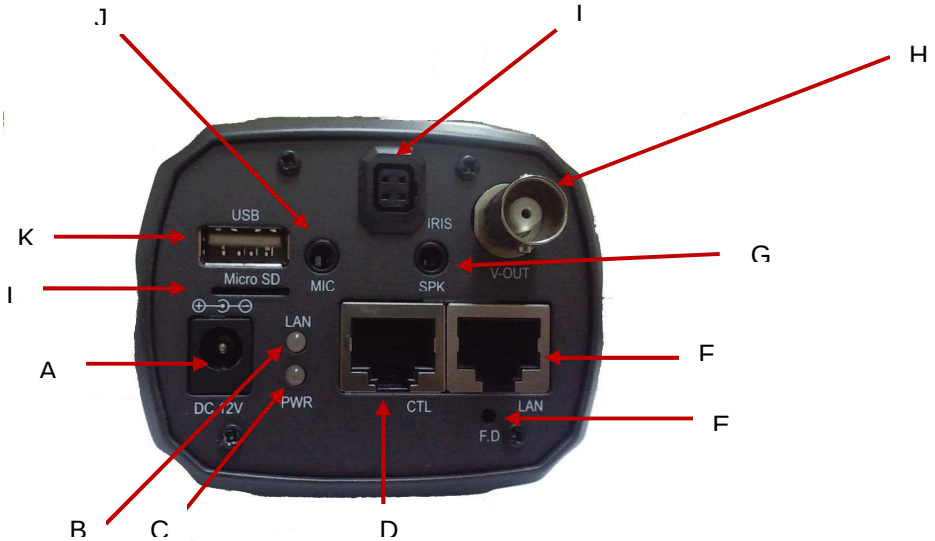
Picture 2 : Front View

	Name	Description
A	Lens Knob	Knob for zooming and focusing of the lens.
B	Lens	C-mount type lens. IRIS lens can also be mounted. (Not included)

Table 3 : FW1173 Front View

Note: Lens is sold separately.

2.1. Rear View



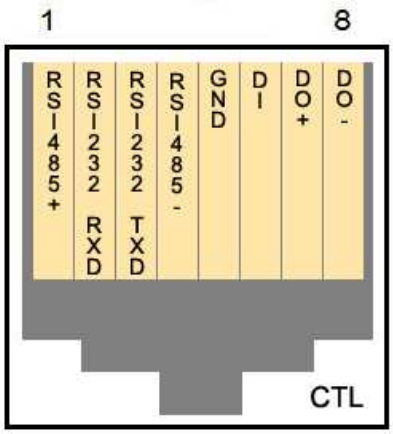
Picture 3 : FW1173Rear View

	Name	Description
A	Power Jack	12V DC Power Input port
B	LAN (Tx/Rx) LED (RED/GREEN)	RED – LAN TX/RX (Blinks when there is data activities) GREEN – LAN LINK (Turn on when physical LAN connection is made)
C	POWER LED (RED/GREEN)	RED – Power (Turns on when power is provided) GREEN – Status (blinks when IP setup is done or during UPNP setup process*) Green – Status (Display when IP setup is completed, and during uPnP Setup) - Blink 1 sec: Ready to Communicate with Gateway with assigned IP address - Blink 1/4 sec: The Internet is ready for use (DNS setup has been finished) - Blink 1/16 sec: Port-mapping completed (ready to communicate from outside) - Steady On: Test done for IPCCTVDNS server accessing FW-1173-MS. Communication test with IPCCTVDNS server is attemped only when IP address is assigned. If IPCCTVDNS setup is Disabled, LED is kept On in Red.
D	CTL Connector	CTL Port (RS-485, RS-232, DI, DO)
E	Factory Default	Button to restore the factory default. Need to keep pressing at least 5 seconds.
F	LAN Connector	RJ-45 LAN Connector
G	SPEAKER Conn.	Audio Output Port
H	Video Out	Video Out (Currently for FW1173-DS only)
I	IRIS Connector	IRIS LENS Cable connector
J	MIC Jack	Audio Input Port
K	USB Connector	Connector for Wireless USB Dongle
L	microSD Slot	microSD Card slot for video recording memory

Table 4 : FW1173 Rear View

2.1.1. CTL Port Description

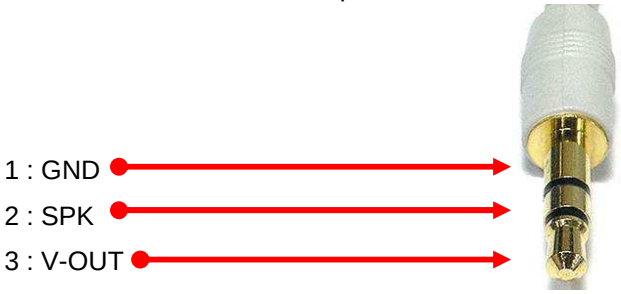
It's RS-232 port for Serial input device, Modem or Console (Hyperterminal.connection). For RS-232 connection, RXD,TXD and GND are used. For connection to PC, RXD and TXD are used. RXD and TXD should be cross to communicate properly



Picture 4 : CTL Port Description

2.1.2. Speaker V-out Jack Description

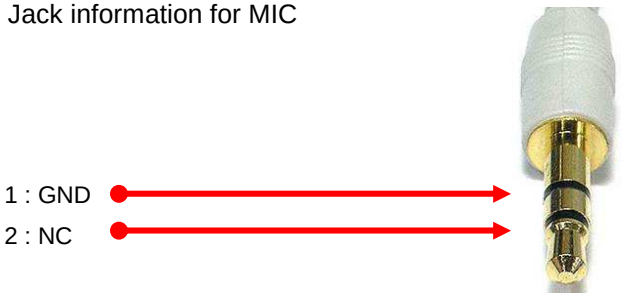
Jack information for Mono Speaker or Video Out Jack.



Picture 5 : V-out Jack

2.1.3. MIC Jack Description

Jack information for MIC



Picture 6 : MIC Jack

3. FW1173 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 FW1173.

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 FW1173

Following steps are the physical installation process for FW1173.

1. Fix the FW1173 in place
2. Connect the FW1173 to the Internet cable through the LAN port.
3. Connect the power supply of FW1173.

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"

3.3.1. Using Optional PoE

When using a PoE hub, A PoE module should be used between the PoE hub and FW1173. The HUB port of the PoE module connects to a LAN port of the PoE hub, while the DEV port of the PoE module goes to the LAN port of FW1173.

3.3.2. Using Optional PwE

When using a non-PoE hub, a PwE module can be used for ease of installing FW1173. The DEV port of PwE module is connected with LAN cable, and the HUB port of PwE module goes to a LAN port of Hub. But in this case, the Hub is an ordinary Non-PoE type, so the power source for FW1173 is used separately from the hub. To supply the power to FW1173 over the LAN cable, PwE has a power input jack that is to be connected to DC 12V 800mA adaptor.