

ENGLISH

TOTAL SECURITY SOLUTIONS

Smart Solution For Your IP
Surveillance System

// IP Camera

// Video Server

// Software

// IP Module

// Media Decoder

// Video Recorder

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Connect the World as one IP surveillance Leader

IP Surveillance
World No.1 Company



Seyeon Tech co., Ltd. is a leading solution provider for IP based security products as well as hardware and software OEM/ODM for global partners. Since established in 1997, Seyeon has been only focusing on IP CCTV field to deliver the reliable IP products to the market. In addition, we are also supplying semi-finished module products, finished IP products and licensed products in accordance with customer requirements.

We have commercialized 3rd generation security surveillance products and solutions based on our network related technologies. Know-how and audio-visual technologies from over 20 years experiences. Furthermore, we now became the only Korean company who focuses just on TCP/IP based security products. With this focus strategy, we currently have a number of partners in more than 40 countries and have concentrated on our own brand, FlexWATCH.

Technologies

Embedded System Design

- Embedded Linux Real-time OS Platform
- ARM, MIPS, PPC
- H/W design

Video Signal Processing

- H.265, H.264, M-JPEG, MPEG-4, Wavelet
- H.265, H.264, MPEG-4 Compression

Application S/W development

- HTTP CGI, Active-x, Visual C++
- Windows app, Mobile, PDA SDK

Audio Signal Processing

- ADPCM, G.723.1, G.711
- MPEG-4/H.264 Audio Multiplexing

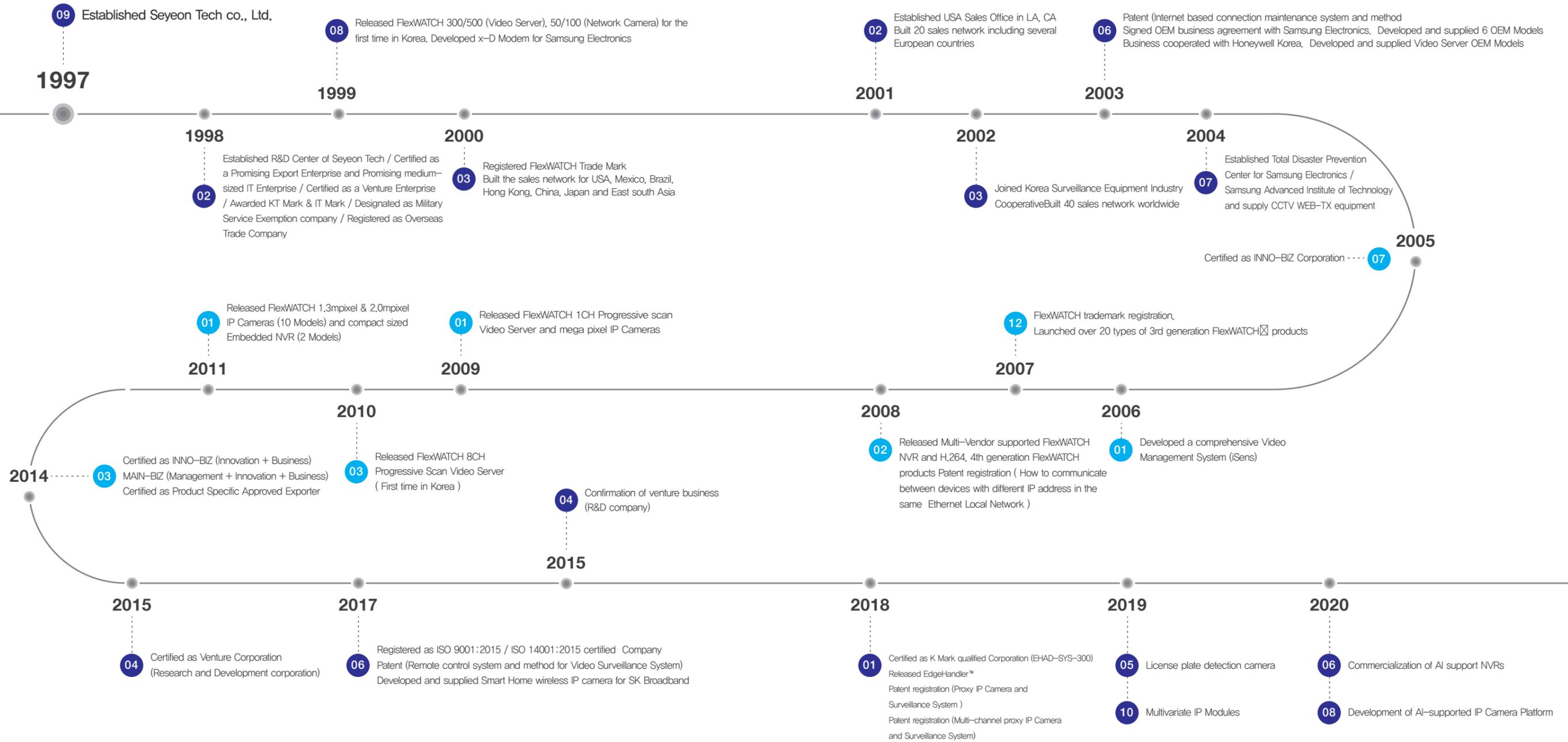
Network Protocol Design

- Http/Ftp/RTP/RTSP/DHCP/PPPoE/SMTP/TCP/IP/Video Streaming Engine

CCTV System Design

- IP Surveillance Total Solution System
- Integration/Video Remote Monitoring Solution

History



Product Lines We Have



IP Cameras

Supply finished IP Cameras with various options

We supply OEM/ODM cameras including Bullet, Dome and PTZ cameras.

Offering more than 200 customized camera models as an option, SI companies should have the higher opportunity to widen their choices. We also supply the specialized camera module for the specialized target market such as Home security Camera, Cloud Camera, IP door-phone Camera etc.

Key Features

- 2M/ 3M/ 4M/ 5Mpixel real-time IP Camera
- Supports x10/x30/x36 optical zoom Modules
- Supports customized camera development for customer's own camera housing
- Supports the latest ONVIF Profile S
- Global Shutter camera
- Ultra low light sensitivity camera
- Integration service for customer's specific protocol



IP Modules

Customized IP Camera module for manufacturers and SI companies

FlexWATCH® IP module by Seyeon Tech supports various in/out interface and required Specifications. The standardized hardware architectures enables to be compatible with new board with new SoC chipset. In addition, various interface boards are supplied as well as providing all technical information and services for IP Cameras and other products. The customized specific hardware development is available if needed.

Key Features

- Supports Camera's Bayer / LVDS / YUV input
- Supports 2M @ 30fps, 60fps
- Supports 3M, 4M @ 30fps & 5M 15fps
- Supports ONVIF Profile S
- Supports customer's streaming protocol (Option)
- Supports VA feature (Option)
- Single board module
- Global Shutter module
- Customized development for special application available other than IP Camera



NVR

Stable / Reliable Mass Storage Management

16/32/64 CH embedded NVRs are available. All NVRs are operated with the same UI and SDK.

Supports the latest ONVIF Profile S, and supports the unique/specialized features for camera manufacturers separately. FlexWATCH® NVR supports the unique technology of Mirroring function, which enables NVR to do live-view and playback other NVRs without any software.

Key Features

- 16 CH, 32CH, 64CH Embedded NVR
- Supports the latest ONVIF Profile S
- Supported CODEC : MJPEG/H.264/H.265
- Supports Voice broadcasting function
- Supports I-frame recording mode
- Compatible with EdgeHandler™ Adaptor
- Patented recording method maximizing storage device life time
- Patented Mirroring* function

* With Mirroring function, each FlexWATCH NVR can remotely monitor and playback other FlexWATCH NVRs by simply input IP address, port number, ID and Password. This is only one unique feature in the world for FlexWATCH NVRs



Software solution SMVP™ and others

Unlimited Channel management System

Seyeon Tech co., Ltd. supplies software solutions to manage all FlexWATCH® products. SMVP™ is Windows application software that allows you to register up to 256 CH for real-time monitoring, search and setup. In addition, Windows-based Smart NVR™ can register up to 128 CH for monitoring and recording / playback. All software uses the same SDK as IP Modules, Cameras and NVRs. IP installer is an utility program to detect Devices, set up of IP address, update of firmware for all FlexWATCH® Devices.

Key Features

- All FlexWATCH hardware and software use the same SDK to maximize compatibility and convenient technical support
- SMVP™: Windows application program for up to 256 CHs, and allows to monitor and playback using up to 4 Monitors.
- SmartNVR™: 16/32/64/128 CH Software NVR
- SmartAlarm/Map : Event based display program
- IP Installer: Utility program for management of Camera / NVR
- FlexWATCH® Mobile: Mobile App (Android /iOS)



EdgeHandler™

Integrated Management Solution for different Models and Systems

EdgeHandler™ is an integrated management solution for different Video output Devices. It consists of Adaptor and Decoder. FlexWATCH® NVR and SMVP™ can be used as an EdgeHandler™ Decoder. By connecting EdgeHandler™ Adaptor to HDMI port of the devices (e.g., DVR, NVR or PC) , you can access to the devices using EdgeHandler™ Decoder, NVR or SMVP™ remotely. The operation is exactly same to the operation just in front of the remote devices (DVR, NVR, PC)

Key Features

- Hardware based real-time remote control System
- Composed of EdgeHandler™ Adaptor(EHA) and Decoder(EHD)
- SMVP™, FlexWATCH® NVR supports the same features as EHD
- Real-time management of any Devices with HDMI output
- Integrated management for any different DVR/NVR/PC
- Used for Application server such as Factory Automation system, Smart Factory / Smart Farm / Smart City
- Used for management of PC server at IDC



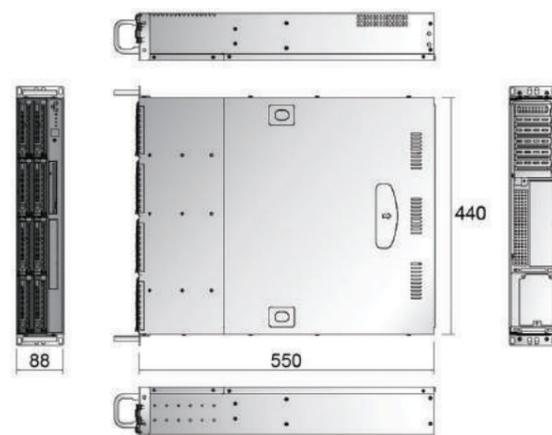
FWR228-01N

64CH, Rack-mountable NVR



▲
FWR228-01N
64CH, Rack-mountable NVR

FWR228-01N is a 19" rack type stand-alone Network Video Recorder. Supports H.265, H.264 and M-JPEG streaming from FlexWATCH cameras and others supporting ONVIF. Up to 64Ch IP cameras can be registered with 480fps@2M Full-HD live view from video output(HDMI, VGA, BNC) and 1920fps@2M Full-HD for real-time recording up to 64 IP cameras with 8 internal SATA connection up to 64TB(8x8TB) is supported. It also supports RAID 5 as an option for professional system Integration market which requires secure recording any time. FWR228-01N is the best IP solution for large scale system Integrator anytime, anywhere.



▲
FWR228-01N
64CH, Rack-mountable NVR

• Key Features

- 64Ch. Streaming
- Real time live viewing
Max. 480fps @ FULL-HD(1920x1080), 480fps @ D1
- Real time recording
Max. 1920fps @ FULL-HD(1920x1080)
- Supports H.265 / H.264 / MJPEG codec
- Video, Audio, PTZ, DI/DO control
- 1 HDMI / 1 VGA output for local display
- 3 USB port for mouse / keyboard etc
(USB 2.0 x 2 / USB 3.0 x 1)
- 64TB (Max. 8TB x 8HDD) support
- Support RAID 5 as an option
- 4K Recording and Playback

• Tech Notes

Relay server: Re-streaming

NVR works as a restreaming server that registers FlexWATCH® IP cameras and other 3rd party ONVIF IP Cameras and re-transmits the Video streams up to 4 concurrent streams to other various client software or NVRs.

I Frame Recording

It records only "I picture" at each GOP and discards "B picture" and "P picture". "I frame recording mode" at IP surveillance system is an alternative method to support the pre-post alarm recording function of DVR system.

FWR228-01N

► Technical Specifications

NVR

Max. Channel 64Ch, IP Cameras

Video

Max. Streaming Rate Max. 480fps @ Full-HD
Max. 480fps @ D1

Supported Codec H.265, H.264, MJPEG

Streaming Function Retransmission (Proxy)

PTZ Remote PTZ control

Recording

Max. Recording Rate Max. 1920fps @ Full-HD or 4K

Stream Video, Audio, Data

HDD Support Supports 8 SATA HDDs up to 8TB / each (Max.64TB)

RAID RAID 5 Supports (Optional)

Condition Always, Motion, Event, Schedule

Interface

Video Out 1 HDMI, 1 VGA

Audio In/Out 2 way (1 in, 1 out)

Audio Compression 8bit G.711, 8Khz, 8Kbyte/sec

Alarm In/Out 16 DI, 4 DO (Direct On/Off)

Serial Port RS-232C

Peripherals USB2.0 x 2 + USB3.0 x 1

Network

WAN (Ethernet) 10/100/1000-base-T Ethernet (auto sensing)

LAN (Ethernet) 10/100/1000-base-T Ethernet (auto sensing)

Protocol HTTP, TCP/IP, UDP, FTP, Telnet, RARP, DHCP, NTP, SMTP client, uPNP And etc.

Viewer Browsers (Microsoft Internet Explorer), CMS, VLC

Player Browsers (Microsoft Internet Explorer), CMS, VLC

Dynamic IP DDNS (www.ipcctvdns.com)

Smart Solution FlexWATCH Mobile (iOS, Andriod), IPCAMVISION (iOS, Android)

Security IP Filtering, Encrypted & Basic Authentication, HTTPS, Management White List

Hardware

System 32bit Embedded Linux, ARM Cortex A17 quad-core@maximum 1.4 GHz, SDRAM 256Mbyte, NAND Flash 128MBytes

Approvals KC, FCC, CE, RoHS, UL

Working Condition 0°C ~ +50°C (32°F ~ 122°F), 10% ~ 80% RH

Power Supply INPUT : 100-240VAC, 50-60Hz
OUTPUT : 12VDC @ 17A

Power Consumption Max. 300W

Dimension 440(W) x 550(D) x 88(H) mm

Weight About 8,500g without HDD

Built-in Software Features

Mirroring Function

By using the mirroring function, FlexWATCH NVR can monitor and playback other adjacent FlexWATCH NVRs and cameras (SD). Each NVR has an ability to control all video/audio and command for PTZ control with low latency.

Audio Broadcasting

By Audio broadcasting function, FlexWATCH® NVR can broadcast audio with the mic. on FlexWATCH® NVR to multiple speakers at FlexWATCH® IP cameras connected in the network. It can simultaneously broadcast the audio up to 32ch of IP cameras by any GROUPS at the same time.

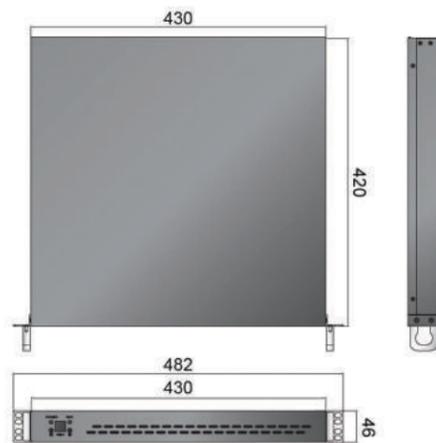
FWR224-01N

32CH, Rack-mountable NVR



▲
FWR224-01N
32CH, Rack-mountable NVR

FWR224-01N is a 19" rack type stand-alone Network Video Recorder. Supports H,265, H,264 and MJPEG streaming from FlexWATCH cameras and others supporting ONVIF. Up to 32ch IP cameras can be registered with 480fps@2M full HD(480fps@D1) live view from video output(HDMI, VGA) and Max. 960fps@2M full HD for real-time recording up to 32 IP cameras with 4 internal SATA connection up to 32TB (4x8TB) is supported.



▲
FWR224-01N
32CH, Rack-mountable NVR

• Key Features

- 32Ch. Streaming
- Real time live viewing
Max. 480fps @ FULL-HD(1920x1080), 480fps @ D1
- Real time recording
Max. 960fps @ FULL-HD(1920x1080), Support 4K
- Supports H.265 / H.264 / MJPEG codec
- Video, Audio, PTZ, DI/DO control
- 1 HDMI / 1 VGA output for local display
- 3 USB port for mouse / keyboard etc
(USB 2.0 x 2 / USB 3.0 x 1)
- 32TB (Max. 8TB x 4HDD) support
- Support 4K (8MP) Recording and Playback

• Tech Notes

Relay server: Re-streaming

NVR works as a restreaming server that registers FlexWATCH IP cameras and other 3rd party ONVIF IP Cameras and re-transmits the Video streams up to 4 concurrent streams to other various client software or NVRs.

I Frame Recording

It records only "I picture" at each GOP and discards "B picture" and "P picture". "I frame recording mode" at IP surveillance system is an alternative method to support the pre-post alarm recording function of DVR system.

FWR224-01N

► Technical Specifications

NVR

Max. Channel 32Ch, IP Cameras

Video

Max. Streaming Rate Max. 480fps @ Full-HD
Max. 480fps @ D1

Supported Codec H.265, H.264, MJPEG

Streaming Function Retransmission (Proxy)

PTZ Remote PTZ control

Recording

Max. Recording Rate Max. 960fps @ Full-HD or 4K

Stream Video, Audio, Data

HDD Support Supports 4 SATA HDDs up to 8TB / each (Max.32TB)

RAID -

Condition Always, Motion, Event, Schedule

Interface

Video Out 1 HDMI, 1 VGA

Audio In/Out 2 way (1 in, 1 out)

Audio Compression 8bit G.711, 8Khz, 8Kbyte/sec

Alarm In/Out 16 DI, 4 DO (Direct On/Off)

Serial Port RS-232C

Peripherals USB2.0 x 2 + USB3.0 x 1

Network

WAN (Ethernet) 10/100/1000-base-T Ethernet (auto sensing)

LAN (Ethernet) 10/100/1000-base-T Ethernet (auto sensing)

Protocol HTTP, TCP/IP, UDP, FTP, Telnet, RARP, DHCP, NTP, SMTP client, uPNP And etc.

Viewer Browsers (Microsoft Internet Explorer), CMS, VLC

Player Browsers (Microsoft Internet Explorer), CMS, VLC

Dynamic IP DDNS (www.ipcctvdns.com)

Smart Solution FlexWATCH Mobile (iOS, Andriod), IPCAMVISION (iOS, Android)

Security IP Filtering, Encrypted & Basic Authentication, HTTPS, Management White List

Hardware

System 32bit Embedded Linux, ARM Cortex A17 quad-core@maximum 1.4 GHz, SDRAM 256Mbyte, NAND Flash 128MBytes

Approvals KC, FCC, CE, RoHS, UL

Working Condition 0°C ~ +50°C (32°F ~ 122°F), 10% ~ 80% RH

Power Supply INPUT : 100-240VAC, 50-60Hz
OUTPUT : 12VDC @ 8.5A

Power Consumption Max. 72W

Dimension 430(W) x 420(D) x 45(H) mm

Weight About 8,500g without HDD

Built-in Software Features

Mirroring Function

By using the mirroring function, FlexWATCH NVR can monitor and playback other adjacent FlexWATCH NVRs and cameras (SD) Each NVR has an ability to control all video/audio and command for PTZ control with low latency.

Audio Broadcasting

By Audio broadcasting function, FlexWATCH NVR can broadcast audio with the mic. on FlexWATCH NVR to multiple speakers at FlexWATCH IP cameras connected in the network. It can simultaneously broadcast the audio up to 32ch of IP cameras by any GROUPS at the same time.

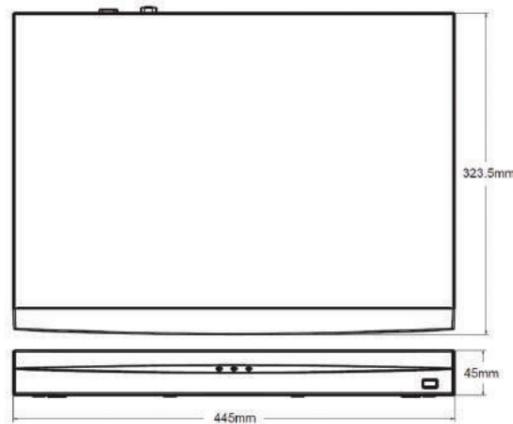
FWR300-00N

32CH, Stand-Alone NVR



▲
FWR300-00N
32CH, Stand-Alone NVR

FWR300-00N is a stand-alone type Network Video Recorder. Supports H,265, H,264 and MJPEG streaming from FlexWATCH cameras and others supporting ONVIF. Up to 32ch IP cameras can be registered with 480fps@2M full HD(480fps@D1) live view from video output(HDMI, VGA) and Max. 960fps@2M full HD for real-time recording up to 32 IP cameras with 4 internal SATA connection up to 32TB (4x8TB) is supported.



▲
FWR300-00N
32CH, Stand-Alone NVR

• Key Features

- 32Ch. Streaming
- Real time live viewing
Max. 480fps @ FULL-HD(1920x1080), 480fps @ D1
- Real time recording
Max. 960fps @ FULL-HD(1920x1080), Support 4K
- Supports H,265 / H,264 / MJPEG codec
- Video, Audio, PTZ, DI/DO control
- 1 HDMI / 1 VGA output for local display
- 3 USB port for mouse / keyboard etc
(USB 2.0 x 2 / USB 3.0 x 1)
- 32TB (Max. 8TB x 4HDD) support
- Support 4K (8MP) Recording and Playback

• Tech Notes

Relay server: Re-streaming

NVR works as a re-streaming server that registers FlexWATCH IP cameras and other 3rd party ONVIF IP Cameras and re-transmits the Video streams up to 4 concurrent streams to other various client software or NVRs.

I Frame Recording

It records only "I picture" at each GOP and discards "B picture" and "P picture". "I frame recording mode" at IP surveillance system is an alternative method to support the pre-post alarm recording function of DVR system.

FWR300-00N

► Technical Specifications

NVR

Max. Channel 32Ch, IP Cameras

Video

Max. Streaming Rate Max. 480fps @ Full-HD
Max. 480fps @ D1

Supported Codec H,265, H,264, MJPEG

Streaming Function Retransmission (Proxy)

PTZ Remote PTZ control

Recording

Max. Recording Rate Max. 960fps @ Full-HD or 4K

Stream Video, Audio, Data

HDD Supportw Supports 4 SATA HDDs up to 8TB /
each (Max.32TB)

RAID -

Condition Always, Motion, Event, Schedule

Interface

Video Out 1 HDMI, 1 VGA

Audio In/Out 2 way (1 in, 1 out)

Audio Compression 8bit G,711, 8Khz, 8Kbyte/sec

Alarm In/Out 4 DI, 1 DO (Direct On/Off)

Serial Port -

Peripherals USB2.0 x 2 + USB3.0 x 1

Network

WAN (Ethernet) 10/100/1000-base-T Ethernet
(auto sensing)

LAN (Ethernet) 10/100/1000-base-T Ethernet
(auto sensing)

Protocol HTTP, TCP/IP, UDP, FTP, Telnet,
RARP, DHCP, NTP, SMTP client, uPNP
And etc.

Viewer Browsers (Microsoft Internet
Explorer), CMS, VLC

Player Browsers (Microsoft Internet
Explorer), CMS, VLC

Dynamic IP DDNS (www.ipcctvdns.com)

Smart Solution FlexWATCH Mobile (iOS, Andriod),
IPCAMVISION (iOS, Android)

Security IP Filtering, Encrypted & Basic
Authentication, HTTPS,
Management White List

Hardware

System 32bit Embedded Linux, ARM Cortex
A17 quad-core@maximum 1.4
GHz, SDRAM 256Mbyte, NAND Flash
128MBytes

Approvals KC, FCC, CE, RoHS

Working Condition 0°C ~ +50°C (32°F ~ 122°F), 10% ~
80% RH

Power Supply INPUT : SMPS, 100-240VAC,
50-60Hz
OUTPUT : SMPS, 12VDC @ 4.17A

Power Consumption Max. 40W

Dimension 445(W) x 323.5(D) x 45(H) mm

Weight About 3,000g without HDD

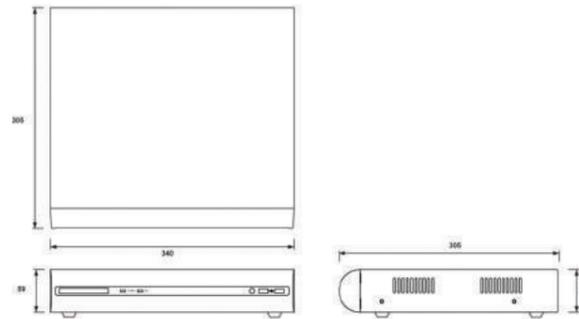
FWR303-00N

16CH, Stand-Alone NVR



▲
FWR303-00N
16CH, Stand-Alone NVR

FWR303-00N is a stand-alone type Network Video Recorder. Supports H,264 and MJPEG streaming from FlexWATCH cameras and others supporting ONVIF. Up to 16ch IP cameras can be registered with 480fps@2M live view from video output(HDMI, VGA) and Max. 480fps@2M full HD for real-time recording up to 16 IP cameras with 2 internal SATA connection up to 12TB (2x6TB) is supported.



▲
FWR303-00N
16CH, Stand-Alone NVR

• Key Features

- 16Ch. Streaming
- Real time live viewing
Max. 480fps @ FULL-HD(1920x1080),
240fps @ 4M, 120fps @ 8M
- Real time recording
Max. 480fps @ FULL-HD(1920x1080),
240fps @ 4M, 120fps @ 8M
- Supports H,264 / MJPEG codec
- Video, Audio, PTZ, DI/DO control
- 1 HDMI / 1 VGA / 1BNC output for local display
- 2 USB port for mouse / keyboard etc
- 12TB (Max. 6TB x 2HDD) support
- Optional E-SATA

FWR303-00N

► Technical Specifications

NVR

Max. Channel 16Ch, IP Cameras

Alarm

Interface 4DI/ 1 Out
Post Alarm 5 sec ~ 5 min
Alarm Action E-mail, Event Pop up, Buzzer, PTZ Preset, CMS

Video

Max. Streaming Rate Max. 480fps @ Full-HD
Max. 240fps @ 4M
Max. 120fps @ 8M

Supported Codec H,264, MJPEG

Streaming Function Max. UHD

PTZ Remote PTZ control

Interface

Video Out 1 HDMI, 1 VGA, 1 BNC

Audio In/Out In 16 IPC, Out HDMI

Audio Compression 8bit G.711, 8Khz, 8Kbyte/sec

Serial Port 1 RS-232C (ATM/POS)

RS-485 2 RS-485 (K/B, PTZ)

Peripherals 2 USB Port for Mouse / Keyboard or Backup

Recording

Max. Recording Rate Max. 480fps @ Full-HD
Max. 240fps @ 4M
Max. 120fps @ 8M

Stream Video, Audio, Data

HDD Support Supports 2 SATA HDDs up to 6TB /
each (Max. 12TB)
Supports 1 SATA HDDs up to 6TB +
1 E-SATA

RAID -

Condition Always, Motion, Event, Schedule

Hardware

System 32bit Embedded Linux, 256Mbyte
SDRAM, 128MBytes NAND Flash

Approvals KC, FCC, CE, RoHS

Working Condition 0°C ~ +50°C (32°F ~ 122°F), 10% ~
80% RH

Power Supply SMPS, DC 12V @ 5A

Power Consumption Max. 6W

Dimension 340(W) x 305(D) x 59(H) mm

Weight About 3,000g without HDD, Power
Supply

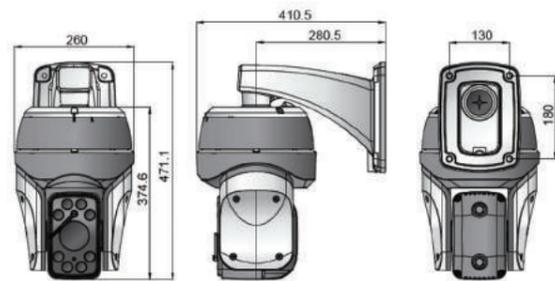
FW7709-FNR

2MP IR Speed Dome



▲
FW7709-FNR
2MP IR Speed Dome

FW7709-FNR is a high performance 1ch IR PTZ camera which equipped with a 1/1.9" 2.42M Progressive Scan CMOS image Sensor with optical 36x and digital 32x (optional 30X and digital 32x) strong in low light sensitivity supports simultaneous H,265, H,264 and MJPEG Video Compression, less network bandwidth and storage space required. FW7709-FNR also delivers high quality video up to 60 fps@1920x1080 in progressive mode. it will provide the best IP surveillance solution with a remote monitoring via the Pan / Tilt / Zoom, RS232, two-way Audio, Motion Detection.w



▲
FW7709-FNR
2MP IR Speed Dome

• Key Features

- 1/1.9" 2.42M PS CMOS sensor
- Optical 36x zoom (Option 30X 4.3mm ~ 129.0mm)
- Pan 360° / Tilt -20° to 200 degrees Manual : approx.
- 0.0065°/s ~ 120°/s up to 256 steps (depend on the controller)
- Preset up to approx. 300°/s
- Max. 60fps @ 2M (1920x1080)
- Quadruple Stream (H,265, H,264, M-JPEG, JPEG)
- Angular fixed of View (16:9 mode) {4:3 mode}
- 8 Motorized Zoom IR LED (Minimum 250m, 300m at manual focus)
- Digital Noise Reduction function
- OnVIF (Profile S) standard

• Tech Notes

Intelligent Varifocal IR LED control: IR PTZ

The IR beam automatically adapts becoming wider or narrower as the camera zooms in or out.

Text OSD

User can set 9 set of text strings to display direction of the camera or location of the camera. Each string can be extended up to 24 alphanumeric characters. When PTZ moves to the pre-set PAN angle up to 8, it automatically displays the text string set on the PAN angle like "to Las Vegas" or "-> Los Angeles"

FW7709-FNR

► Technical Specifications

Camera

Imaging Sensor	1/1.9" 2.42MP Progressive Scan CMOS
Lens	Optical 36x (Digital 32x) f=6.0~216.0mm (F1.5~F.4.8) FOV(H) : 56.5° ~2.12°
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.04 lux B&W : 0.0003 lux, 0 lux (IR On)
Pan Tilt Zoom	Pan : 360° Endless Tilt : -20° ~90° Optical Zoom 36x, Digital Zoom 32x (Total 1152x) 255 Presets, 8 Patterns, 10 Swing, 8 Group, 8 Schedules. Auto flip, Auto parking, Power-up action. Text display by 9 Pan angles.

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H,265, H,264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H,265/H,264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Focus control	Auto/Semi Auto/Interval/Manual
Exposure control	Shutter: Auto / Priority / Shut. Priority / Manual (1/30s(25s) ~ 1/30,000s); Brightness: Backlight (BLC, Realtime WDR); Flickless; Iris; DSS; AGC
Day & Night	Day/ Night/ Ext, Day <-> Night Threshold
White Balance	Auto/Indoor/Outdoor/Manual
Image Setting	Gamma, sharpness, noise reduction (3DNR), De-Fog, DIS, ACE, HLC, privacy, mirror
Text OSD	Max. 9 lines

Illuminator

Type	8 proportional zoom IR LEDs
Distance	Max. 300Meter

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer. Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Audio

Compression	8bit G,711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, AC24V / 3A
Power Consumption	Max. 60W
Operating Environment	-35°C ~ +60°C, 10% ~ 90% RH
Dimension	190ø x 260(L) x 374.6(H) mm
Weight	About 8500g without Power Supply
Approval	KC, CE, FCC, RoHS, IK10, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

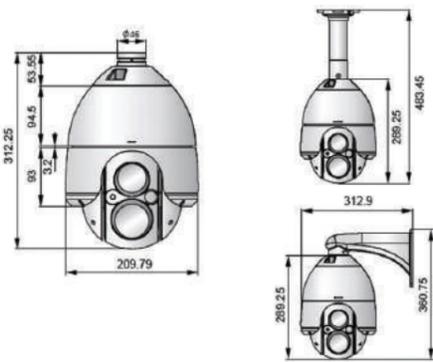
FW7707-FNR

2MP IR Speed Dome



FW7707-FNR
2MP IR Speed Dome

FW7707-FNR is a high performance 1ch IR PTZ camera which equipped with a 2.48M Progressive Scan CMOS image Sensor (Zoom: optical 30x, digital 32x) supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. FW7707-FNR also delivers high quality video at 30 fps@1920x1080 in progressive mode. it will provide the best IP surveillance solution with a remote monitoring via the Pan / Tilt / Zoom, RS232, two-way Audio, Motion Detection



FW7707-FNR
2MP IR Speed Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Panasonic 1/3" 2.48M PS CMOS sensor
- Optical 30x zoom, Digital 32x zoom
- Optional Optical 20X (f5.2~104mm), Digital 32X zoom
- Intelligent IR LED control by viewing angle
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- The shortest path with Vector Drive technology
- Waterproof with IP66 certified
- Max. 30fps @ 2M (1920 x 1080)
- Various Back light mode of WDR, BLC, HLC
- OnVIF (Profile S) standard

• Tech Notes

Intelligent Varifocal IR LED control: IR PTZ

The IR beam automatically adapts becoming wider or narrower as the camera zooms in or out.

Text OSD

User can set 9 set of text strings to display direction of the camera or location of the camera. Each string can be extended up to 24 alphanumeric characters. When PTZ moves to the pre-set PAN angle up to 8, it automatically displays the text string set on the PAN angle like "to Las Vegas" or "-> Los Angeles"

FW7707-FNR

► Technical Specifications

Camera

Imaging Sensor	1/3" Panasonic 2.48MP CMOS
Lens	Optical 30x (Digital 32x) f=4.3~129.0mm (F1.6~F.4.7) FOV(H) : 65.1 ° ~2.34 °
Day & Night	True Day & Night (ICR)
Min. Illumination	Color 1/30s : 0.05 lux, B&W 1/30s : 0.005 lux Color DSS on : 0.002 lux, B*W : 0.0001 lux
Pan Tilt Zoom	Pan : 360 ° Endless Tilt : -20 ° ~90 ° Optical Zoom 30x, Digital Zoom 32x (Total 960x) 209 Presets, 4 Patterns, 10 Swing, 8 Group, 8 Schedules. Auto flip, Auto parking, Power-up action. Text display by 9 Pan angles.

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Focus control	Auto/Semi Auto/Interval/Manual
Exposure control	Shutter: Auto / Priority / Shut. Priority / Manual (1/30s(25s) ~ 1/30,000s); Brightness: Backlight (BLC, Realtime WDR); Flickless; Iris; DSS; AGC
Day & Night	Day/ Night/ Ext, Day <-> Night Threshold
White Balance	Auto/Indoor/Outdoor/Manual
Image Setting	Gamma, sharpness, noise reduction (3DNR), De-Fog, DIS, ACE, HLC, privacy, mirror
Text OSD	Max. 9 lines

Illuminator

Type	1 Motorized zoom + 1 Mini IR LED, density proportional to zoom
Distance	Max. 150Meter

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer. Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Audio

Compression	8bit G.711, 8KHz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC12V / 5A
Power Consumption	Max. 48W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	130Ø x 210(L) x 312.3(H) mm
Weight	About 5500g without Power Supply
Approval	KC, CE, FCC, RoHS, IK10, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

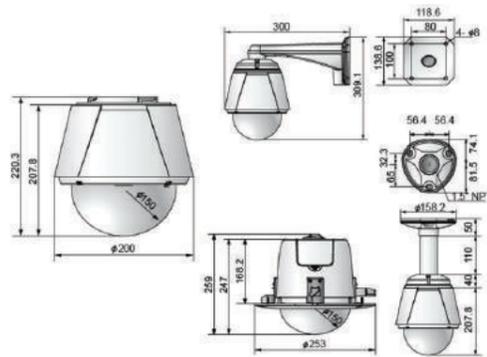
FW7706-FNP

2MP Speed Dome



▲
FW7706-FNP
2MP IR Speed Dome

FW7706-FNP is a high performance 1ch IR PTZ camera which equipped with a 2.48M Progressive Scan CMOS image Sensor (Zoom: optical 30x(Optional:20x), digital 32x) supports simultaneous H,265, H,264 and MJPEG Video Compression, less network bandwidth and storage space required. FW7706-FNP also delivers high quality video at 30 fps@1920x1080 in progressive mode, it will provide the best IP surveillance solution with a remote monitoring via the Pan / Tilt / Zoom, RS232, two-way Audio, Motion Detection



▲
FW7706-FNP
2MP IR Speed Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Panasonic 1/3" 2.48M PS CMOS sensor
- Optical 30x zoom, Digital 32x zoom
- Optional Optical 20X (f5.2~104mm), Digital 32X zoom
- High speed moving up to 500 ° /sec at preset mode
- The shortest path with Vector Drive technology
- Dual Power of 12VDC and 24VAC
- Quadruple Streaming
- Max. 30fps @ 2M (1920 x 1080)
- Various Back light mode of WDR, BLC, HLC
- OnVIF (Profile S) standard

• Tech Notes

Optimized Multiple Profile Streaming

Up to 4 streams are able to be set by different setting parameters such as res, video rate and frame rate to be serviced for different purposes

Powerful H.265 codec

H.265 codec gives more efficient file size than previous H.264 to save storage and bandwidth. Also to have interoperability with legacy systems

FW7706-FNP

► Technical Specifications

Camera

Imaging Sensor	1/3" Panasonic 2.48MP CMOS
Lens	Optical 30x (Digital 32x) f=4.3~129.0mm (F1.6~F.4.7) FOV(H) : 65.1 ° ~2.34 °
Day & Night	True Day & Night (ICR)
Min. Illumination	Color 1/30s : 0.05 lux, B&W 1/30s : 0.005 lux Color DSS on : 0.002 lux, B*W : 0.0001 lux
Pan Tilt Zoom	Pan : 360 ° Endless / Tilt : ~90 ° Preset 500 ° /sec, JOG 0.05 ° ~ 360 ° /sec (zoom proportional) Optical Zoom 30x, Digital Zoom 32x (Total 960x) 209 Presets, 4 Patterns, 10 Swing, 8 Group, 8 Schedules. Auto flip, Auto parking, Power-up action. Text display by 9 Pan angles.

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Focus control	Auto/Semi Auto/Interval/Manual
Exposure control	Shutter: Auto / Priority / Shut. Priority / Manual (1/30s(25s) ~ 1/30,000s); Brightness: Backlight (BLC, Realtime WDR); Flickless: Iris; DSS: AGC
Day & Night	Day/ Night/ Ext, Day <-> Night Threshold
White Balance	Auto/Indoor/Outdoor/Manual
Image Setting	Gamma, sharpness, noise reduction (3DNR), De-Fog, DIS, ACE, HLC, privacy, mirror
Text OSD	Max. 9 lines

Illuminator

Type	-
Distance	-

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Audio

Compression	8bit G.711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC12V / 1.8A or AC24V / 2.0A PoE : IEEE 802.3at (Optional Built-in)
Power Consumption	Max. 21.6W
Operating Environment	-30°C ~ +50°C, 10% ~ 90% RH
Dimension	148.5Ø x 200(L) x 215.5(H) mm
Weight	About 4200g without Power Supply
Approval	KC, CE, FCC, RoHS
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

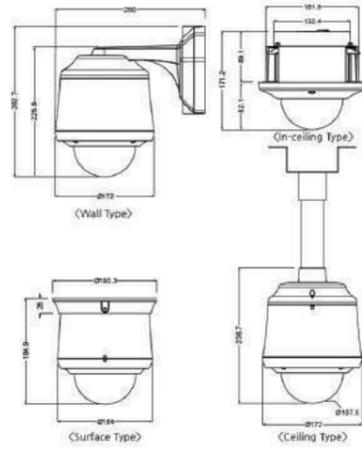
FW7804-FNC

2MP Speed Dome



FW7804-FNC
2MP IR Speed Dome

FW7804-FNC is a 2M Mini Speed PTZ camera which equipped with a 2MP Progressive Scan CMOS image Sensor (Zoom: optical 10x, digital 32x) supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. FW7804-FNC also delivers high quality video at 30 fps@1920x1080(Full HD) in progressive mode, it will provide the best IP surveillance solution with a remote monitoring via the Pan / Tilt / Zoom, RS232, two-way Audio, Motion Detection



FW7804-FNC
2MP IR Speed Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Panasonic 1/3" 2MP Panasonic CMOS sensor
- Optical 10x zoom, Digital 32x zoom
- Quadruple Streaming
- Max. 30fps @ 2M (1920 x 1080)
- Various Back light mode of WDR, BLC, HLC
- OnVIF (Profile S) standard

• Tech Notes

Powerful H.265 codec

H.265 codec gives more efficient file size than previous H.264 to save storage and bandwidth. Also to have interoperability with legacy systems

Optimized Multiple Profile Streaming

Up to 4 streams are able to be set by different setting parameters such as res, video rate and frame rate to be serviced for different purposes

FW7804-FNC

► Technical Specifications

Camera

Imaging Sensor	1/3" Panasonic 2.48MP CMOS
Lens	Optical 10x (Digital 32x) f=5.1~51.0mm (F1.6~F1.8) FOV(H) : 54.0° ~4.9°
Day & Night	True Day & Night (ICR)
Min. Illumination	Color 1/30s : 0.05 lux, B&W 1/30s : 0.005 lux Color DSS on : 0.002 lux, B*W : 0.0001 lux
Pan Tilt Zoom	Pan : 360° Endless / Tilt : ~90° Preset 500°/sec, JOG 0.05° ~ 360°/sec (zoom proportional) Optical Zoom 10x, Digital Zoom 32x (Total 320x) 209 Presets, 4 Patterns, 10 Swing, 8 Group, 8 Schedules. Auto flip, Auto parking, Power-up action, Text display by 9 Pan angles.

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Focus control	Auto/Semi Auto/Interval/Manual
Exposure control	Shutter: Auto / Priority / Shut. Priority / Manual (1/30s(25s) ~ 1/30,000s); Brightness: Backlight (BLC, Realtime WDR); Flickless; Iris; DSS; AGC
Day & Night	Day/ Night/ Ext, Day <-> Night Threshold
White Balance	Auto/Indoor/Outdoor/Manual
Image Setting	Gamma, sharpness, noise reduction (3DNR), De-Fog, DIS, ACE, HLC, privacy, mirror
Text OSD	Max. 9 lines

Illuminator

Type	-
Distance	-

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Audio

Compression	8bit G.711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC12V or PoE 802.3at
Power Consumption	Indoor : Operating (1.5A) Outdoor : Operating (2.5A), Max (Heater 5W / Fan On)
Operating Environment	-40°C ~ +60°C, 0% ~ 90% RH
Dimension	172.0 x 171.2(L) x 161.6(H) mm (In-Ceiling Type Standard)
Weight	About 2200g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

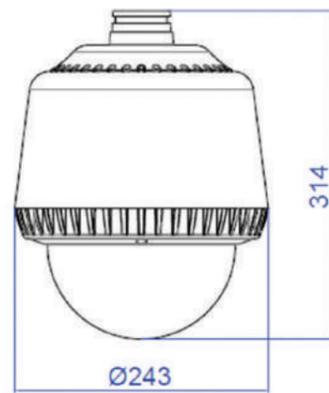
FW8706-FNP

2MP Speed Dome



▲
FW8706-FNP
2MP IR Speed Dome

FW8706-FNP is a high quality PTZ IP camera which is equipped with 2MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity sensor, it is especially superior in low light condition. As it supports simultaneous H,265, H,264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30 fps@Full HD(1920X1080) in progressive mode.



▲
FW8706-FNP
2MP IR Speed Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony 1/3" 2M PS CMOS sensor
- Optical 30x zoom, Digital 32x zoom
- True Day & Night with Mechanical IR Cut filter
- 255 Preset (Max. 512 preset with internal menu set)
- Programmable preset moving by schedule (Built-in RTC)
- Shock Detection Sensor
- Nominate North direction and display
- Pan angle display from zero position
- Pan / Tilt self-refresh correction

• Tech Notes

Schedule Pan Tilt Zoom

Built-in Real Time Clock enables the scheduling of Pan Tilt Zoom functions including independent exposure settings for each preset.

Nominal North direction

User can set the North direction of camera so it displays the cardinal directions while moving.

Text OSD

User can set 9 set of text strings to display direction of the camera or location of the camera. Each string can be extended up to 24 alphanumeric characters. When PTZ moves to the pre-set PAN angle up to 8, it automatically displays the text string set on the PAN angle like "to Las Vegas" or "-> Los Angeles"

FW8706-FNP

► Technical Specifications

Camera

Imaging Sensor	1/3" Sony 2MP CMOS
Lens	Optical 30x (Digital 32x) f=4.3~129.0mm (F1.5~F4.8)
Day & Night	True Day & Night (ICR)
Min. Illumination	0.002lux (DSS On)
S/N ratio	50dB
Pan Tilt Zoom	Pan : 360 ° Endless / Tilt : ~90 ° Optical Zoom 30x, Digital Zoom 32x (Total 960x) 255 Presets, 8 Patterns, 8 Group, 1 Tour Auto flip, Auto parking, Power-up action, 1 ° ~360 ° Pan Angle Display

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Focus control	Auto/Semi Auto/Interval/Manual
Exposure control	Shutter: Auto / Priority / Shut. Priority / Manual (1/30s(25s) ~ 1/30,000s); Brightness: Backlight (BLC, Realtime WDR); Flickless: Iris; DSS; AGC
Day & Night	Day/ Night/ Ext, Day <-> Night Threshold
White Balance	Auto/Indoor/Outdoor/Manual
Image Setting	Gamma, sharpness, noise reduction (3DNR), De-Fog, DIS, ACE, HLC, privacy, mirror
Text OSD	Max. 9 lines

Illuminator

Type	-
Distance	-

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer. Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Audio

Compression	8bit G,711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, AC24V / 2A, 60Hz
Power Consumption	Max. 30W
Operating Environment	-42°C ~ +70°C, ~90% RH
Fan, Heater	1 FAN, 1 Heater
Dimension	243Ø x 314(H) mm
Weight	About 3000g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

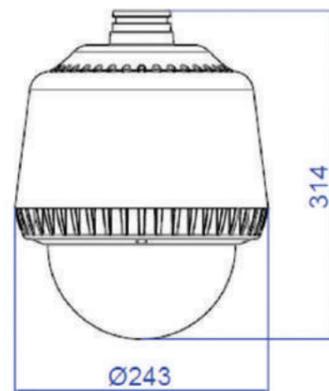
FW8706-HNP

2MP Speed Dome



▲
FW8706-HNP
2MP IR Speed Dome

FW8706-HNP is a high quality PTZ IP camera which is equipped with 2MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity sensor, it is especially superior in low light condition. As it supports simultaneous H,265, H,264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30 fps@Full HD(1920X1080) in progressive mode.



▲
FW8706-HNP
2MP IR Speed Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony 1/1.9" 2M PS CMOS sensor
- Optical 36x zoom, Digital 32x zoom
- True Day & Night with Mechanical IR Cut filter
- 255 Preset (Max. 512 preset with internal menu set)
- Programmable preset moving by schedule (Built-in RTC)
- Shock Detection Sensor
- Nominate North direction and display
- Pan angle display from zero position
- Pan / Tilt self-refresh correction

• Tech Notes

Schedule Pan Tilt Zoom

Built-in Real Time Clock enables the scheduling of Pan Tilt Zoom functions including independent exposure settings for each preset.

Nominal North direction

User can set the North direction of camera so it displays the cardinal directions while moving.

Text OSD

User can set 9 set of text strings to display direction of the camera or location of the camera. Each string can be extended up to 24 alphanumeric characters. When PTZ moves to the pre-set PAN angle up to 8, it automatically displays the text string set on the PAN angle like "to Las Vegas" or "-> Los Angeles"

FW8706-HNP

► Technical Specifications

Camera

Imaging Sensor	1/1.9" Sony 2MP CMOS
Lens	Optical 36x (Digital 32x) f=6.0~216.0mm (F1.5~F4.8)
Day & Night	True Day & Night (ICR)
Min. Illumination	0.002lux (DSS On)
S/N ratio	50dB
Pan Tilt Zoom	Pan : 360 ° Endless / Tilt : ~90 ° Optical Zoom 36x, Digital Zoom 32x (Total 1152x) 255 Presets, 8 Patterns, 8 Group, 1 Tour Auto flip, Auto parking, Power-up action, 1 ° ~360 ° Pan Angle Display

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Focus control	Auto/Semi Auto/Interval/Manual
Exposure control	Shutter: Auto / Priority / Shut. Priority / Manual (1/30s(25s) ~ 1/30,000s); Brightness: Backlight (BLC, Realtime WDR); Flickless: Iris; DSS; AGC
Day & Night	Day/ Night/ Ext, Day <-> Night Threshold
White Balance	Auto/Indoor/Outdoor/Manual
Image Setting	Gamma, sharpness, noise reduction (3DNR), De-Fog, DIS, ACE, HLC, privacy, mirror
Text OSD	Max. 9 lines

Illuminator

Type	-
Distance	-

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Audio

Compression	8bit G.711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, AC24V / 2A, 60Hz
Power Consumption	Max. 30W
Operating Environment	-42°C ~ +70°C, ~90% RH
Fan, Heater	1 FAN, 1 Heater
Dimension	243Ø x 314(H) mm
Weight	About 3000g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

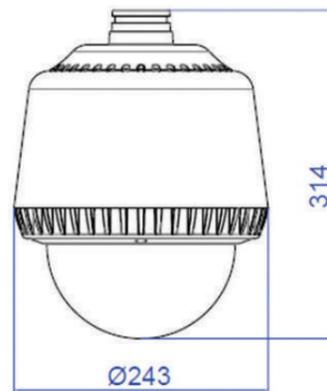
FW8706-QNP

4MP Speed Dome



▲
FW8706-QNP
4MP IR Speed Dome

FW8706-QNP is a high quality PTZ IP camera which is equipped with 4MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity sensor, it is especially superior in low light condition. As it supports simultaneous H,265, H,264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30 fps @ 4MP (2688X1520) in progressive mode.



▲
FW8706-QNP
4MP IR Speed Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony 1/1.8" 6.44MP PS CMOS sensor
- Optical 36x zoom, Digital 32x zoom
- True Day & Night with Mechanical IR Cut filter
- 255 Preset (Max. 512 preset with internal menu set)
- Programmable preset moving by schedule (Built-in RTC)
- Shock Detection Sensor
- Nominate North direction and display
- Pan angle display from zero position
- Pan / Tilt self-refresh correction

• Tech Notes

Schedule Pan Tilt Zoom

Built-in Real Time Clock enables the scheduling of Pan Tilt Zoom functions including independent exposure settings for each preset.

Nominal North direction

User can set the North direction of camera so it displays the cardinal directions while moving.

Text OSD

User can set 9 set of text strings to display direction of the camera or location of the camera. Each string can be extended up to 24 alphanumeric characters. When PTZ moves to the pre-set PAN angle up to 8, it automatically displays the text string set on the PAN angle like "to Las Vegas" or "-> Los Angeles"

FW8706-QNP

► Technical Specifications

Camera

Imaging Sensor	1/1.8" 6.44MP Sony CMOS
Lens	Optical 36x (Digital 32x) f=6.0~216.0mm (F1.5~F4.8)
Day & Night	True Day & Night (ICR)
Min. Illumination	0.002lux (DSS On)
S/N ratio	50dB
Pan Tilt Zoom	Pan : 360 ° Endless / Tilt : ~90 ° Optical Zoom 36x, Digital Zoom 32x (Total 1152x) 255 Presets, 8 Patterns, 8 Group, 1 Tour Auto flip, Auto parking, Power-up action, 1 ° ~360 ° Pan Angle Display

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	2688x1520, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ 4MP (2688x1520)
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Focus control	Auto/Semi Auto/Interval/Manual
Exposure control	Shutter: Auto / Priority / Shut. Priority / Manual (1/30s(25s) ~ 1/30,000s); Brightness; Backlight (BLC, Realtime WDR); Flickless; Iris; DSS; AGC
Day & Night	Day/ Night/ Ext, Day <-> Night Threshold
White Balance	Auto/Indoor/Outdoor/Manual
Image Setting	Gamma, sharpness, noise reduction (3DNR), De-Fog, DIS, ACE, HLC, privacy, mirror
Text OSD	Max. 9 lines

Illuminator

Type	-
Distance	-

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ehternet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Audio

Compression	8bit G.711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, AC24V / 2A, 60Hz
Power Consumption	Max. 30W
Operating Environment	-42°C ~ +70°C, ~90% RH
Fan, Heater	1 FAN, 1 Heater
Dimension	243Ø x 314(H) mm
Weight	About 3000g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

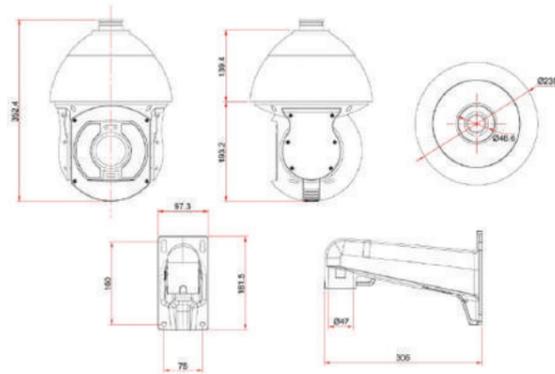
FW8709-QNR

4MP Laser and IR Speed Dome



FW8709-QNR
4MP Laser and IR Speed Dome

FW8709-QNR is a high quality Laser and IR PTZ IP camera which is equipped with 6.44MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity sensor, it is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30fps@4M (2688X1520) in progressive mode.



FW8709-QNR
4MP Laser and IR Speed Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony 1/1.8" 6MP PS CMOS sensor
- Optical 36x zoom, Digital 32x zoom
- 4 steps zoom proportional IR LED working up to 400m
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps @ 4MP (2688x1520)
- Built-in FAN/HEATER
- OnVIF (Profile S) standard

• Tech Notes

Intelligent Varifocal IR LED control: IR PTZ

The IR beam automatically adapts becoming wider or narrower as the camera zooms in or out.

Schedule Pan Tilt Zoom

Built-in Real Time Clock enables the scheduling of Pan Tilt Zoom functions including independent exposure settings for each preset.

Text OSD

User can set 9 set of text strings to display direction of the camera or location of the camera. Each string can be extended up to 24 alphanumeric characters. When PTZ moves to the pre-set PAN angle up to 8, it automatically displays the text string set on the PAN angle like "to Las Vegas" or "-> Los Angeles"

FW8709-QNR

► Technical Specifications

Camera

Imaging Sensor	1/1.8" Sony 6.44MP CMOS
Lens	Optical 36x (Digital 32x) f=6.0~216.0mm (F1.5~F.4.8) FOV(H) : 49.27° ~ 1.85°
Day & Night	True Day & Night (ICR)
Min. Illumination	Color 1/30s : 0.2 lux, B&W 1/30s : 0.05 lux Color DSS on : 0.02 lux, B&W : 0.005 lux
Pan Tilt Zoom	Pan : 360° Endless Tilt : -10° ~ 92° Optical Zoom 36x, Digital Zoom 32x (Total 1152x) 250 Presets, 1 Patterns, 12 Group, 1 Tour. Auto flip, Auto parking, Power-up action, Text display by 9 Pan angles.

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	2688x1520, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ 4MP (2688x1520)
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Focus control	Auto/Semi Auto/Interval/Manual
Exposure control	Shutter: Auto / Priority / Shut. Priority / Manual (1/30s(25s) ~ 1/30,000s); Brightness: Backlight (BLC, Realtime WDR); Flickless: Iris; DSS; AGC
Day & Night	Day/ Night/ Ext, Day <-> Night Threshold
White Balance	Auto/Indoor/Outdoor/Manual
Image Setting	Gamma, sharpness, noise reduction (3DNR), De-Fog, DIS, ACE, HLC, privacy, mirror
Text OSD	Max. 9 lines

Illuminator

Type	4 Laser LEDs and 10 Power LEDs
Distance	Max. 400Meter

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Audio

Compression	8bit G.711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, AC24V / 3A
Power Consumption	Max. 42W
Operating Environment	-35°C ~ +60°C, 10% ~ 90% RH
Dimension	238(W) x 341(H) mm
Weight	About 5000g without Power Supply
Approval	KC, CE, FCC, RoHS, IK10, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

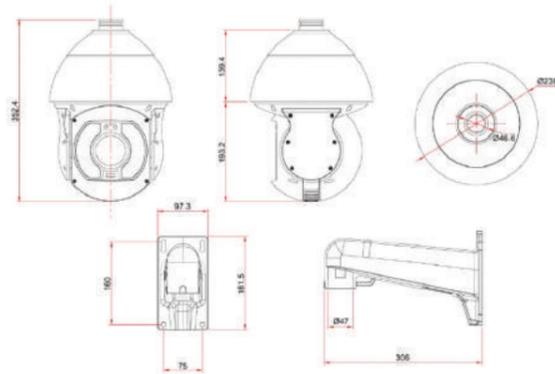
FW8709-FNR

2MP Laser and IR Speed Dome



FW8709-FNR
2MP Laser and IR Speed Dome

FW8709-FNR is a high quality Laser and IR PTZ IP camera which is equipped with 2.42MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity sensor, it is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30fps@2M (1920X1080) in progressive mode.



FW8709-FNR
2MP Laser and IR Speed Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony 1/1.9" 2.42MP PS CMOS sensor
- Super high sensitivity
- Optical 36x zoom, Digital 32x zoom
- Optional Optical 30x (f6.0~180mm), Digital 32x zoom
- 4 steps zoom proportional IR LED working up to 400m
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps @ 2MP (1920x1080)
- Built-in FAN/HEATER
- OnVIF (Profile S) standard
- TTA Approval

• Tech Notes

Intelligent Varifocal IR LED control: IR PTZ

The IR beam automatically adapts becoming wider or narrower as the camera zooms in or out.

Schedule Pan Tilt Zoom

Built-in Real Time Clock enables the scheduling of Pan Tilt Zoom functions including independent exposure settings for each preset.

Text OSD

User can set 9 set of text strings to display direction of the camera or location of the camera. Each string can be extended up to 24 alphanumeric characters. When PTZ moves to the pre-set PAN angle up to 8, it automatically displays the text string set on the PAN angle like "to Las Vegas" or "-> Los Angeles"

FW8709-FNR

► Technical Specifications

Camera

Imaging Sensor	1/1.9" Sony 2.42MP CMOS
Lens	Optical 36x (Digital 32x) f=6.0~216.0mm (F1.5~F.4.8) FOV(H) : 56.5 ° ~ 2.12 °
Day & Night	True Day & Night (ICR)
Min. Illumination	Color 1/30s : 0.01 lux, B&W 1/30s : 0.05 lux Color DSS on : 0.001 lux, B&W : 0.0002 lux
Pan Tilt Zoom	Pan : 360 ° Endless Tilt : -10 ° ~92 ° Optical Zoom 36x, Digital Zoom 32x (Total 1152x) 250 Presets, 1 Patterns, 12 Group, 1 Tour. Auto flip, Auto parking, Power-up action, Text display by 9 Pan angles.

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Focus control	Auto/Semi Auto/Interval/Manual
Exposure control	Shutter: Auto / Priority / Shut. Priority / Manual (1/30s(25s) ~ 1/30,000s); Brightness: Backlight (BLC, Realtime WDR); Flickless: Iris; DSS; AGC
Day & Night	Day/ Night/ Ext, Day <-> Night Threshold
White Balance	Auto/Indoor/Outdoor/Manual
Image Setting	Gamma, sharpness, noise reduction (3DNR), De-Fog, DIS, ACE, HLC, privacy, mirror
Text OSD	Max. 9 lines

Illuminator

Type	4 Laser LEDs and 10 Power LEDs
Distance	Max. 400Meter

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer. Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Audio

Compression	8bit G.711, 8KHz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, AC24V / 3A
Power Consumption	Max. 42W
Operating Environment	-35°C ~ +60°C, 10% ~ 90% RH
Dimension	238(W) x 341(H) mm
Weight	About 5000g without Power Supply
Approval	KC, CE, FCC, RoHS, IK10, IP66, TTA
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

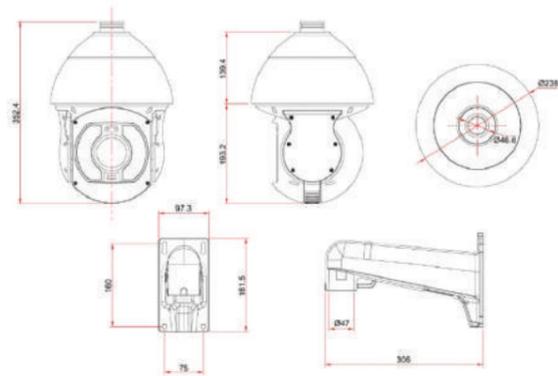
FW8707-FNR

2MP IR Speed Dome



FW8707-FNR
2MP IR Speed Dome

FW8707-FNR is a high quality IR PTZ IP camera which is equipped with 2.48MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity sensor, it is especially superior in low light condition. As it supports simultaneous H,265, H,264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30fps@2M (1920X1080) in progressive mode.



FW8707-FNR
2MP IR Speed Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Panasonic 1/3" 2.48MP PS CMOS sensor
- Optical 30x zoom, Digital 32x zoom
- 4 steps zoom proportional IR LED working up to 350m
- Quadruple Stream (H,265, H,264, M-JPEG, JPEG)
- Max. 30fps @ 2MP (1920x1080)
- Built-in FAN/HEATER
- OnVIF (Profile S) standard

• Tech Notes

Intelligent Varifocal IR LED control: IR PTZ

The IR beam automatically adapts becoming wider or narrower as the camera zooms in or out.

Schedule Pan Tilt Zoom

Built-in Real Time Clock enables the scheduling of Pan Tilt Zoom functions including independent exposure settings for each preset.

Text OSD

User can set 9 set of text strings to display direction of the camera or location of the camera. Each string can be extended up to 24 alphanumeric characters. When PTZ moves to the pre-set PAN angle up to 8, it automatically displays the text string set on the PAN angle like "to Las Vegas" or "-> Los Angeles"

FW8707-FNR

► Technical Specifications

Camera

Imaging Sensor	1/1.3" Panasonic 2.48MP CMOS
Lens	Optical 30x (Digital 32x) f=4.3~129.0mm (F1.6~F4.7) FOV(H) : 65.1 ° ~ 2.34 °
Day & Night	True Day & Night (ICR)
Min. Illumination	Color 1/30s : 0.05 lux, B&W 1/30s : 0.005 lux Color DSS on : 0.002 lux, B&W : 0.0001 lux
Pan Tilt Zoom	Pan : 360 ° Endless Tilt : -10 ° ~ 92 ° Optical Zoom 30x, Digital Zoom 32x (Total 960x) 250 Presets, 1 Patterns, 12 Group, 1 Tour. Auto flip, Auto parking, Power-up action, Text display by 9 Pan angles.

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H,265, H,264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H,265/H,264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Focus control	Auto/Semi Auto/Interval/Manual
Exposure control	Shutter: Auto / Priority / Shut. Priority / Manual (1/30s(25s) ~ 1/30,000s); Brightness: Backlight (BLC, Realtime WDR); Flickless: Iris; DSS; AGC
Day & Night	Day/ Night/ Ext, Day <-> Night Threshold
White Balance	Auto/Indoor/Outdoor/Manual
Image Setting	Gamma, sharpness, noise reduction (3DNR), De-Fog, DIS, ACE, HLC, privacy, mirror
Text OSD	Max. 9 lines

Illuminator

Type	1 zoom portion IR and 1 mini IR
Distance	Max. 150Meter

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer. Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Audio

Compression	8bit G,711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, AC24V / 3A
Power Consumption	Max. 42W
Operating Environment	-35°C ~ +60°C, 10% ~ 90% RH
Dimension	238(W) x 341(H) mm
Weight	About 5000g without Power Supply
Approval	KC, CE, FCC, RoHS, IK10, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

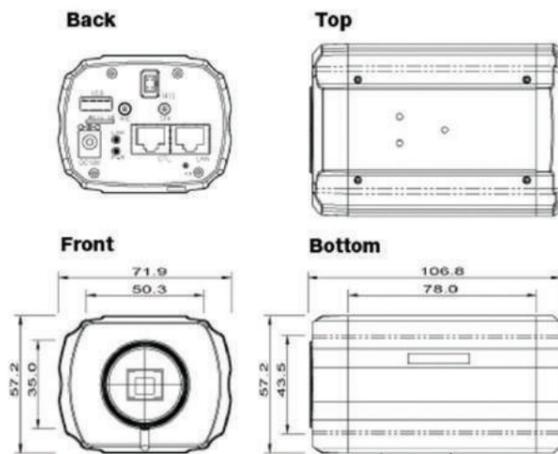
FW7300-GXN

3MP Global Shutter Box



▲
FW7300-GXN
3MP Global Shutter Box

FW7300-GXN is high quality Global Shutter Box type IP camera which is equipped with 1/1.8" 3.19MP Sony IMX265 Global Shutter CMOS image Sensor. As it simultaneously supports H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality clear video image at 30 fps @ 3M (2048x1536) in progressive mode.



▲
FW7300-GXN
3MP Global Shutter Box

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony IMX265 (1/1.8") 3.19MP Global Shutter Image Sensor
- Good for ANPR or LPR
- CS Mount Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps @ 3MP (2048x1536)
- Onboard storage by MicroSD (Up to SDXC 128GB)
- OnVIF (Profile S) standard

• Tech Notes

Global shutter cameras for LPR

High-speed, smear-free still image capture is the hallmark of global shutter image sensors. Applications such as traffic management, metrology and robotics inspection all need to image fast-moving objects without smear or distortion. These imagers have the ability to electronically shutter itself and "stop the action."

Latency

Latency is request and response time between IP cameras and remotely connected client devices or servers. FlexWATCH IP camera shows the lowest Latency time (25%~40% better) against popular other IP cameras from various brands.

FW7300-GXN

► Technical Specifications

Camera

Imaging Sensor	1/1.8" 3.19MP Sony IMX265 Global Shutter CMOS
Lens	CS Mount Type
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.05 lux (0.02 lux DSS On) B/W : 0 lux

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	2048x1536, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Illuminator

Type	-
Distance	-

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Audio

Compression	8bit G.711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3af
Power Consumption	Max. 3.5W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	71.7(W) x 103.5(D) x 57.4(H) mm
Weight	About 375g without Power Supply
Approval	KC, CE, FCC, RoHS, IK10, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

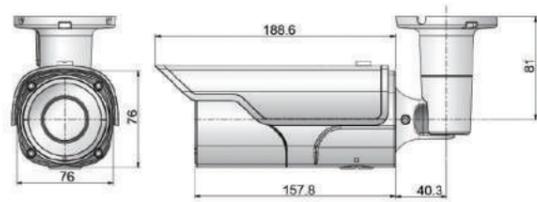
FW7930-GXM

3MP Global Shutter Bullet



FW7930-GXM
3MP Global Shutter Bullet

FW7930-GXM is a high quality IR bullet IP camera which is equipped with 3,19MP(effective pixel) Global Shutter CMOS image Sensor. With the highest sensitivity sensor, it is especially superior in low light condition. As it supports simultaneous H,265, H,264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30 fps @ 3MP (2048X1536) in progressive mode.



FW7930-GXM
3MP Global Shutter Bullet

• Key Features

- Ambarella platform - Backdoor Issue free
- 1/1.8" 3,19MP Sony IMX265 Global Shutter CMOS sensor
- 3.6~11.0mm Motorized Auto-Focus Lens
- 4 Power IR LEDs up to 50M
- Quadruple Stream (H,265, H,264, M-JPEG, JPEG)
- Max. 30fps @ 3MP (2048x1536)
- Option : MicroSD Slot, CVBS, 2Way Audio, DIO etc.
- OnVIF (Profile S) standard

• Tech Notes

Global shutter cameras for LPR

High-speed, smear-free still image capture is the hallmark of global shutter image sensors. Applications such as traffic management, metrology and robotics inspection all need to image fast-moving objects without smear or distortion. These imagers have the ability to electronically shutter itself and "stop the action."

IP filtering

The IP filtering enables you to control what IP traffic you want to allow into and out of your IP camera. Use IP filtering to help protect your IP camera by filtering access from other IP address set for filtering.

FW7930-GXM

► Technical Specifications

Camera

Imaging Sensor	1/1.8" 3,19MP Sony IMX265 Global Shutter CMOS
Lens	3.6~11.0mm Motorized Auto-Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.05lux (0.02 lux DSS ON), B&W : 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H,265, H,264, M-JPEG, JPEG
Resolution	2048x1536, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H,265/H,264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Illuminator

Type	4 Power IR LED
Distance	Max. 50Meter

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Audio

Compression	8bit G.711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC12V / 3A PoE : IEEE 802.3at
Power Consumption	Max. 7.8W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	85 x 280(L) x 80(H) mm
Weight	About 1250g without Power Supply
Approval	KC, CE, FCC, RoHS, IP67
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

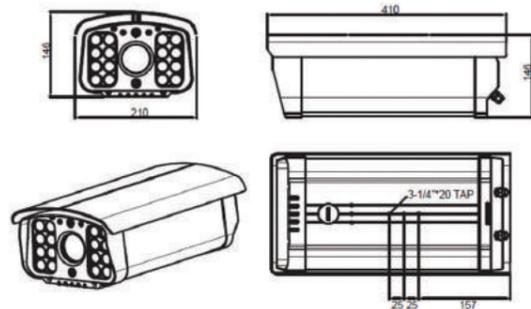
FW9305-GSM

2MP Global Shutter ANPR/LPR



▲
FW9305-GSM
2MP Global Shutter ANPR/LPR

FW9305-GSM is Outdoor IR All-in-one Motorized Camera which is equipped with 3.19MP Global Shutter CMOS image Sensor. with the highest sensitivity sensor, it is especially superior in low light condition. As it supports simultaneous H,265, H,264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30 fps @ 2MP (1920X1080) in progressive mode.



▲
FW9305-GSM
2MP Global Shutter ANPR/LPR

• Key Features

- Ambarella platform - Backdoor Issue free
- 1/1.8" 3.19MP Sony IMX265 Global Shutter CMOS sensor
- Strobe driven power LED (16EA plus external 30EA)
- Good for ANPR or LPR
- 12.0~40.0mm Motorized Auto-Focus IR correction Lens
- Quadruple Stream (H,265, H,264, M-JPEG, JPEG)
- Max. 30fps @ 2MP (1920x1080)
- Various Back light mode of WDR, BLC, HLC
- Night Color Level adjustment (Off, 10 steps)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard
- Remote Web configuration of IR ON/OFF and CDS sensitivity

• Tech Notes

Global shutter cameras for LPR

High-speed, smear-free still image capture is the hallmark of global shutter image sensors. Applications such as traffic management, metrology and robotics inspection all need to image fast-moving objects without smear or distortion. These imagers have the ability to electronically shutter itself and "stop the action."

Strobe Light

Strobes produce a bright light in a similar way to on-camera flash. They differ in that they're brighter, they produce extremely short bursts of light, and they recharge quickly. While strobe lights produce a short, yet powerful, burst of illumination, continuous lighting stays on during the entire photo session. In IP cameras, shutter speed must be synchronized with strobe timing.

FW9305-GSM

► Technical Specifications

Camera

Imaging Sensor	1/1.8" 3.19MP Sony IMX265 Global Shutter CMOS
Lens	12.0~40.0mm Motorized Auto-Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.05lux (0.02 lux DSS ON), B&W : 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H,265, H,264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H,265/H,264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Lens Type	ELC/ALC
AF Mode	Auto / Manual
Day-Night Auto Focus	OFF / ON
Brightness (Target Exposure Weight)	0~20
Shutter	Auto / Manual / Flicker
Auto Shutter Speed Min./Max. Setting	1/30~30,000 Shutter Auto, Lens ELC Deblur Mode
Max. AGC gain	0~10
Sense Up Level	OFF / x2 / x4 / x8 / x16 / x32
Strobe Timig Adjustment	-250~250
Back Light Mode	OFF / HLC / BLC / WDR
WDR Weight	Low / Middle / High
Image Adjustment	Sharpness, Gamma
White Balance	Auto / Preset / Manual
DNR	Off / Low / Middle / High
Day & Night Control	Auto / Color / B&W / External
Night Color Mode	Off / 1~10 10steps
Image Direction	Mirror(On/Off), Flip(On/Off)
Advanced Image Adjustment	Defog, D-Zoom, D-WDR, Shading, EIS(DIS)

Illuminator

Type	Strobe Driven Power LED 16EA (External 15 x 2 = 30EA)
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Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer. Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Audio

Compression	8bit G,711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	Optional, 1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC15V / 5A
Power Consumption	Max. 25.5W (Main unit only) Max. 78W (with External LED)
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	210(W) x 410(D) x 146(H) mm
Weight	About 4500g without Power Supply
Approval	KC, CE, FCC, RoHS, IP67
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

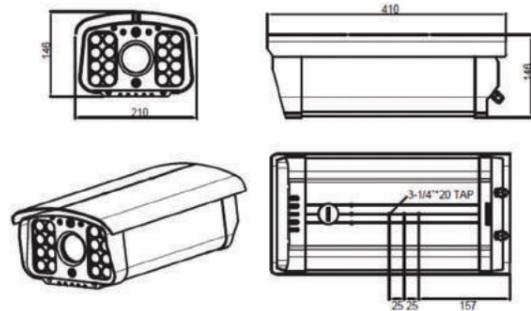
FW9305-GXM

3MP Global Shutter ANPR/LPR



▲
FW9305-GXM
3MP Global Shutter ANPR/LPR

FW9305-GXM is Outdoor IR All-in-one Motorized Camera which is equipped with 3.19MP Global Shutter CMOS image Sensor, with the highest sensitivity sensor, it is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30 fps @ 3MP (2048x1536) in progressive mode.



▲
FW9305-GXM
3MP Global Shutter ANPR/LPR

• Key Features

- Ambarella platform - Backdoor Issue free
- 1/1.8" 3.19MP Sony IMX265 Global Shutter CMOS sensor
- Strobe driven power LED (16EA plus external 30EA)
- Good for ANPR or LPR
- 12.0~40.0mm Motorized Auto-Focus IR correction Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps @ 3MP (2048x1536)
- Various Back light mode of WDR, BLC, HLC
- Night Color Level adjustment (Off, 10 steps)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard
- Remote Web configuration of IR ON/OFF and CDS sensitivity

• Tech Notes

Global shutter cameras for LPR

High-speed, smear-free still image capture is the hallmark of global shutter image sensors. Applications such as traffic management, metrology and robotics inspection all need to image fast-moving objects without smear or distortion. These imagers have the ability to electronically shutter itself and "stop the action."

Strobe Light

Strobes produce a bright light in a similar way to on-camera flash. They differ in that they're brighter, they produce extremely short bursts of light, and they recharge quickly. While strobe lights produce a short, yet powerful, burst of illumination, continuous lighting stays on during the entire photo session. In IP cameras, shutter speed must be synchronized with strobe timing.

FW9305-GXM

► Technical Specifications

Camera

Imaging Sensor	1/1.8" 3.19MP Sony IMX265 Global Shutter CMOS
Lens	12.0~40.0mm Motorized Auto-Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.05lux (0.02 lux DSS ON), B&W : 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	2048x1536, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ 3MP
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Lens Type	ELC/ALC
AF Mode	Auto / Manual
Day-Night Auto Focus	OFF / ON
Brightness (Target Exposure Weight)	0~20
Shutter	Auto / Manual / Flicker
Auto Shutter Speed Min./Max. Setting	1/30~30,000 Shutter Auto, Lens ELC Deblur Mode
Max. AGC gain	0~10
Sense Up Level	OFF / x2 / x4 / x8 / x16 / x32
Strobe Timig Adjustment	-250~250
Back Light Mode	OFF / HLC / BLC / WDR
WDR Weight	Low / Middle / High
Image Adjustment	Sharpness, Gamma
White Balance	Auto / Preset / Manual
DNR	Off / Low / Middle / High
Day & Night Control	Auto / Color / B&W / External
Night Color Mode	Off / 1~10 10steps
Image Direction	Mirror(On/Off), Flip(On/Off)
Advanced Image Adjustment	Defog, D-Zoom, D-WDR, Shading, EIS(DIS)

Illuminator

Type	Strobe Driven Power LED 16EA (External 15 x 2 = 30EA)
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Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Audio

Compression	8bit G.711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	Optional, 1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC15V / 5A
Power Consumption	Max. 25.5W (Main unit only) Max. 78W (with External LED)
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	210(W) x 410(D) x 146(H) mm
Weight	About 4500g without Power Supply
Approval	KC, CE, FCC, RoHS, IP67
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

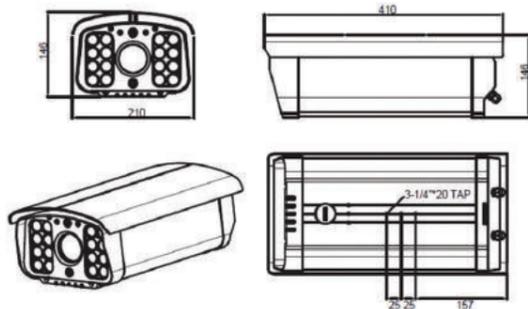
FW9305-GPM

5MP Global Shutter ANPR/LPR



▲
FW9305-GPM
5MP Global Shutter ANPR/LPR

FW9305-GPM is Outdoor IR All-in-one Motorized Camera which is equipped with 5.07MP Global Shutter CMOS image Sensor. with the highest sensitivity sensor, it is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 15fps @ 5MP (2432x2048) or 30fps @ 4MP (2304x1728) in progressive mode.



▲
FW9305-GPM
5MP Global Shutter ANPR/LPR

• Key Features

- Ambarella platform - Backdoor Issue free
- 2/3" 5.07MP Sony IMX264 Global Shutter CMOS sensor
- Strobe driven power LED (16EA plus external 30EA)
- Good for ANPR or LPR
- 12.0~40.0mm Motorized Auto-Focus IR correction Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 15fps @ 5MP (2432x2048) or 30fps @ 4MP (2304x1728)
- Various Back light mode of WDR, BLC, HLC
- Night Color Level adjustment (Off, 10 steps)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard
- Remote Web configuration of IR ON/OFF and CDS sensitivity

• Tech Notes

Global shutter cameras for LPR

High-speed, smear-free still image capture is the hallmark of global shutter image sensors. Applications such as traffic management, metrology and robotics inspection all need to image fast-moving objects without smear or distortion. These imagers have the ability to electronically shutter itself and "stop the action."

Strobe Light

Strobes produce a bright light in a similar way to on-camera flash. They differ in that they're brighter, they produce extremely short bursts of light, and they recharge quickly. While strobe lights produce a short, yet powerful, burst of illumination, continuous lighting stays on during the entire photo session. In IP cameras, shutter speed must be synchronized with strobe timing.

FW9305-GPM

► Technical Specifications

Camera

Imaging Sensor	2/3" 5.07MP Sony IMX264 Global Shutter CMOS
Lens	12.0~40.0mm Motorized Auto-Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.05lux (0.02 lux DSS ON), B&W : 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	2432x2048, 2304x1728, 2048x1536, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	Max. 15fps @ 5MP Max. 30fps/25fps @ 4MP
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Lens Type	ELC/ALC
AF Mode	Auto / Manual
Day-Night Auto Focus	OFF / ON
Brightness (Target Exposure Weight)	0~20
Shutter	Auto / Manual / Flicker
Auto Shutter Speed Min./Max. Setting	1/30~30,000 Shutter Auto, Lens ELC Deblur Mode
Max. AGC gain	0~10
Sense Up Level	OFF / x2 / x4 / x8 / x16 / x32
Strobe Timig Adjustment	-250~250
Back Light Mode	OFF / HLC / BLC / WDR
WDR Weight	Low / Middle / High
Image Adjustment	Sharpness, Gamma
White Balance	Auto / Preset / Manual
DNR	Off / Low / Middle / High
Day & Night Control	Auto / Color / B&W / External
Night Color Mode	Off / 1~10 10steps
Image Direction	Mirror(On/Off), Flip(On/Off)
Advanced Image Adjustment	Defog, D-Zoom, D-WDR, Shading, EIS(DIS)

Illuminator

Type	Strobe Driven Power LED 16EA (External 15 x 2 = 30EA)
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Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctv dns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Audio

Compression	8bit G.711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	Optional, 1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC15V / 5A
Power Consumption	Max. 25.5W (Main unit only) Max. 78W (with External LED)
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	210(W) x 410(D) x 146(H) mm
Weight	About 4500g without Power Supply
Approval	KC, CE, FCC, RoHS, IP67
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

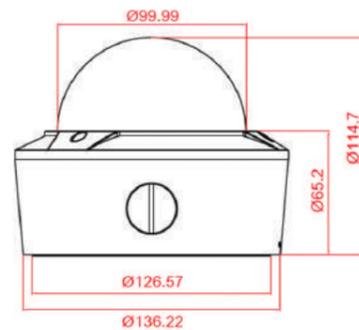
FW7501-FTM

2MP Vandal proof Dome



FW7501-FTM
2MP Vandal proof Dome

FW7501-FTM is a high quality Vandal proof Dome type IP camera which is equipped with 2.13MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity Starvis sensor, It is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30 fps@Full HD(1920X1080) in progressive mode.



FW7501-FTM
2MP Vandal proof Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.8") 2.13MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 2.8~12.0mm Motorized Auto Focus Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps @ 2MP (1920x1080)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

Region of Interest (ROI)

Some cameras offer the ability to transmit only a partial region of a sensor, which offers the option of concentrating on image areas containing the information relevant to image processing.

Reducing the size of the image transmitted by the camera reduces the image size and thus the bandwidth required for each image. In configuring an ROI the read out window is reduced to the area relevant for analysis, increasing the image frequency significantly.

IP filtering

The IP filtering enables you to control what IP traffic you want to allow into and out of your IP camera. Use IP filtering to help protect your IP camera by filtering access from other IP address set for filtering.

FW7501-FTM

► Technical Specifications

Camera

Imaging Sensor	1/2.8" 2.13MP Sony Starvis PS CMOS Sensor
Lens	2.8~12.0mm Motorized Auto Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.05 lux B/W : 0.0005 lux / 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Illuminator

Type	30 IR LEDs
Distance	Max. 30Meter

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Video/Audio

Video Out	1 CVBS
Audio Compression	8bit G.711, 8KHz, 8KByte/sec
Audio stream	2 way (Optional)
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3af
Power Consumption	Max. 6.6W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	100 Dome, 137(L) x 115(H) mm
Weight	About 1170g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

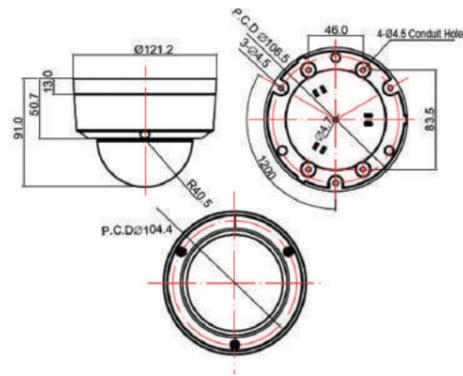
FW7502-FTF

2MP Vandal proof Dome



FW7502-FTF
2MP Vandal proof Dome

FW7502-FTF is a high quality Vandal proof Dome type IP camera which is equipped with 2.13MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity Starvis sensor, It is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30 fps@Full HD(1920X1080) in progressive mode.



FW7502-FTF
2MP Vandal proof Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.8") 2.13MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 3.6mm Fixed Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps @ 2MP (1920x1080)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

Backdoor Issue free

FlexWATCH uses backdoor issue free USA Ambarella platform.

Latency

Latency is request and response time between IP cameras and remotely connected client devices or servers. FlexWATCH IP camera shows the lowest Latency time (25%~40% better) against popular other IP cameras from various brands.

FW7502-FTF

► Technical Specifications

Camera

Imaging Sensor	1/2.8" 2.13MP Sony Starvis PS CMOS Sensor
Lens	3.6mm Fixed
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.05 lux B/W : 0.0005 lux / 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Illuminator

Type	24 IR LEDs
Distance	Max. 25Meter

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Video/Audio

Video Out	1 CVBS
Audio Compression	-
Audio stream	-
Connection	-

General

Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3af
Power Consumption	Max. 5.3W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	81 Dome, 121.2(L) x 91(H) mm
Weight	About 515g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

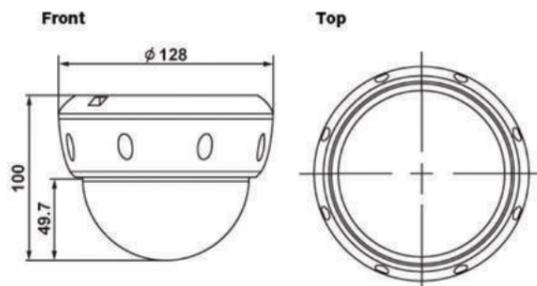
FW7601-FTM

2MP Indoor Plastic Dome



▲
FW7601-FTM
2MP Indoor Plastic Dome

FW7601-FTM is a high quality Plastic Indoor Dome type IP camera which is equipped with 2.13MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity Starvis sensor, It is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30 fps@Full HD(1920X1080) in progressive mode.



▲
FW7601-FTM
2MP Indoor Plastic Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.8") 2.13MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 2.8~12.0mm Motorized Auto Focus Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps @ 2MP (1920x1080)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

IP filtering

The IP filtering enables you to control what IP traffic you want to allow into and out of your IP camera. Use IP filtering to help protect your IP camera by filtering access from other IP address set for filtering.

Management white list

A whitelist is a list of items that are granted access to a certain system or protocol. When a whitelist is used, all entities are denied access, except those included in the whitelist. ... A network administrator may configure a firewall with a whitelist that only allows specific IP addresses to access the IP camera or NVRs.

FW7601-FTM

► Technical Specifications

Camera

Imaging Sensor	1/2.8" 2.13MP Sony Starvis PS CMOS Sensor
Lens	2.8~12.0mm Motorized Auto Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.05 lux B/W : 0.0005 lux / 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Illuminator

Type	30 IR LEDs
Distance	Max. 30Meter

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Video/Audio

Video Out	-
Audio Compression	-
Audio stream	-
Connection	-

General

Case	Plastic
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3af
Power Consumption	Max. 5.3W
Operating Environment	-10°C ~ +50°C, 10% ~ 90% RH
Dimension	120 Dome, 100(H) mm
Weight	About 500g without Power Supply
Approval	KC, CE, FCC, RoHS
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

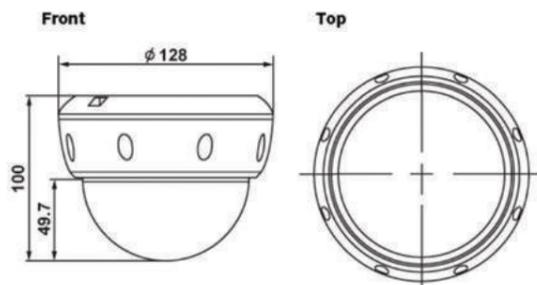
FW7601-FTF

2MP Indoor Plastic Dome



▲
FW7601-FTF
2MP Indoor Plastic Dome

FW7601-FTF is a high quality Plastic Indoor Dome type IP camera which is equipped with 2.13MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity Starvis sensor, It is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30 fps@Full HD(1920X1080) in progressive mode.



▲
FW7601-FTF
2MP Indoor Plastic Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.8") 2.13MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 3.6mm Fixed Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps @ 2MP (1920x1080)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

Backdoor Issue free

FlexWATCH uses backdoor issue free USA Ambarella platform.

Region of Interest (ROI)

Some cameras offer the ability to transmit only a partial region of a sensor, which offers the option of concentrating on image areas containing the information relevant to image processing.

Reducing the size of the image transmitted by the camera reduces the image size and thus the bandwidth required for each image.

In configuring an ROI the read out window is reduced to the area relevant for analysis, increasing the image frequency significantly.

FW7601-FTF

► Technical Specifications

Camera

Imaging Sensor	1/2.8" 2.13MP Sony Starvis PS CMOS Sensor
Lens	3.6mm Fixed
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.05 lux B/W : 0.0005 lux / 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Illuminator

Type	30 IR LEDs
Distance	Max. 30Meter

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Video/Audio

Video Out	-
Audio Compression	-
Audio stream	-
Connection	-

General

Case	Plastic
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3af
Power Consumption	Max. 5.0W
Operating Environment	-10°C ~ +50°C, 10% ~ 90% RH
Dimension	120 Dome, 100(H) mm
Weight	About 500g without Power Supply
Approval	KC, CE, FCC, RoHS
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

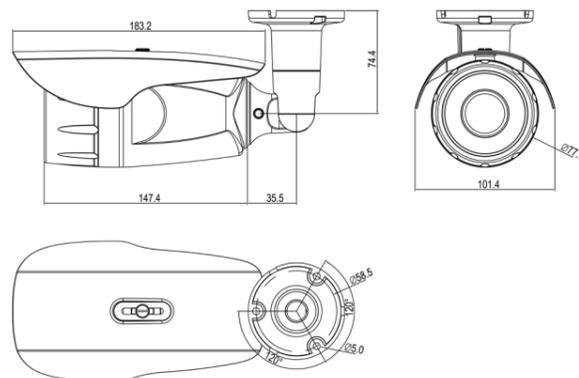
FW7901-FTM

2MP Motorized Bullet



FW7901-FTM
2MP Motorized Bullet

FW7901-FTM is a high quality IR bullet IP camera which is equipped with 2.13MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity Starvis sensor, it is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30 fps@Full HD(1920X1080) in progressive mode.



FW7901-FTM
2MP Motorized Bullet

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.8") 2.13MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 2.8~12.0mm Motorized Auto Focus Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps @ 2MP (1920x1080)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

NVR using SD card

NVR functions are perfectly implemented at IP camera with various recording modes. Smart search is available through NVRs, PCs and mobile devices.

DOL WDR

DOL WDR stands for digital overlap wide dynamic range, it's the next generation Sensor-based WDR technology exclusively developed by Sony.

FW7901-FTM

► Technical Specifications

Camera

Imaging Sensor	1/2.8" 2.13MP Sony Starvis PS CMOS Sensor
Lens	2.8~12.0mm Motorized Auto Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.05 lux B/W : 0.0005 lux / 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Illuminator

Type	30 IR LEDs
Distance	Max. 30Meter

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Video/Audio

Video Out	1 CVBS
Audio Compression	8bit G.711, 8KHz, 8KByte/sec
Audio stream	2 way (Optional)
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3af
Power Consumption	Max. 7.2W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	58 x 258(L) x 85(H) mm
Weight	About 669g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

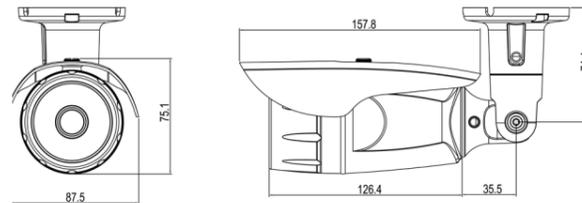
FW7902-FTF

2MP Fixed Bullet



FW7902-FTF
2MP Fixed Bullet

FW7902-FTF is a high quality IR bullet IP camera which is equipped with 2.13MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity Starvis sensor, it is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30 fps@Full HD(1920X1080) in progressive mode.



FW7902-FTF
2MP Fixed Bullet

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.8") 2.13MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 3.6mm Fixed Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps @ 2MP (1920x1080)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

Tips for color setting

When you feel the color of the image is not so brilliant or strong, set Saturation in the camera setting menu higher.

To get a crystal clear bright image, set **Auto Exposure weight** higher. Set **Auto Exposure weight** lower when specific area like number plate is too much bright due to reflection from sunlight or spot like.

The SONY STARVIS is back-illuminated pixel technology used in CMOS image sensors for surveillance camera applications. The excellent high sensitivity and low noise generates a wonderful full-color imaging world in any scene, any time.

FW7902-FTF

► Technical Specifications

Camera

Imaging Sensor	1/2.8" 2.13MP Sony Starvis PS CMOS Sensor
Lens	2.8~12.0mm Motorized Auto Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.05 lux B/W : 0.0005 lux / 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Illuminator

Type	30 IR LEDs
Distance	Max. 30Meter

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Video/Audio

Video Out	1 CVBS
Audio Compression	-
Audio stream	-
Connection	-

General

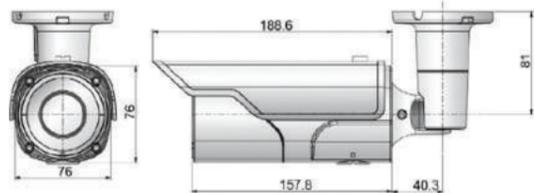
Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3af
Power Consumption	Max. 4.0W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	50 x 235(L) x 76(H) mm
Weight	About 596g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

FW7930-HSM

2MP Night Watch Bullet



FW7930-HSM is a supreme sensitivity Outdoor IR Motorized Auto Focus Bullet Camera which has web server and real time operation system. FW7930-HSM supports simultaneous H.265, H.264 and MJPEG Video Compression for less network bandwidth and storage space. FW7930-HSM also delivers high quality video up to 30 fps@1920x1080 in progressive mode while having triple streaming. FW7930-HSM has progressive scan CMOS which produce clearer image under the low light condition than ordinary CMOS, and makes it possible to monitor vivid and crystal clear image at dark environment. It enables color video monitoring in city surveillance where has some light source at night time.



FW7930-HSM
2MP Night Watch Bullet

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony 2.13MP (1/1.9") PS CMOS Sensor
- Night Color with super high sensitive 1/1.8" Sony sensor
- 3.6~11.0mm Motorized Auto Focus Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps @ 2MP (1920x1080)
- Various Back light mode of WDR, BLC, HLC
- OnVIF (Profile S) standard
- Defog and EIS (DIS)
- 2 MicroSD Slot
- TTA approval

• Tech Notes

Saturation defines the brilliance and intensity of a **color**. When you feel the color of the image is not so brilliant or strong, set **Saturation higher**. The term hue refers to the color of the image itself, while saturation describes the intensity (purity) of that hue. When color is fully saturated, the color is considered in purest (truest) version. Primary colors red, blue and yellow are considered truest version color as they are fully saturated.

Audio Broadcasting

By Audio broadcasting function, FlexWATCH NVR can broadcast audio with the mic. on FlexWATCH NVR to multiple speakers at FlexWATCH IP cameras connected in the network. It can broadcast the audio up to 32ch of IP cameras by the any GROUPs at the same time.

FW7930-HSM

► Technical Specifications

Camera

Imaging Sensor	1/1.9" 2.13MP Sony IMX385 CMOS
Lens	3.6~11.0mm(F1.5) Motorized Auto Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.04 lux, 0.0006 lux (DSS ON), B/W : 0 lux

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (MIC volume setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI (Region of Interest)
Lens control	Lens type / AF mode / Scanning / Day&Night Auto Focus
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual / Auto / Flicker
Max AGC Gain	0~10
Sense Up Level	Off / x2 / x4 / x8 / x16 / x32
Back Light Mode	Off / HLC(0~20) / BLC / WDR (Low/ Middle/High)

Brightness (Target Exposure Weight)	0 ~ 20
Image Adjustment	Sharpness, Gamma
White Balance	Auto / Preset / Manual
DNR	Off / Low / Middle / High
Day & Night Control	Auto / Color / B&W / External
Anti-Saturation	0 ~ 20
Image Direction	Mirror(On/Off), Flip(On/Off)
Advanced Image Adjustment	Defog, D-Zoom, D-WDR, Shading, EIS(DIS)

Illuminator

Type	30 IR LEDs or Optional 4 Power LEDs
Distance	Max. 30Meter (30 IR LEDs) Max. 50Meter (Optional 4 Power LEDs)

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer. Upload FTP, Email notification, FCM Google notification
Connection	Optional 1 DI/ 1DO

Onboard storage

Type	Optional 2 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Video/Audio

Video Out	Optional 1 CVBS
Audio Compression	8bit G.711, 8Khz, 8KByte/sec
Audio stream	Optional 2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC12V / 3A PoE : IEEE 802.3af, IEEE 802.3at in Power LED Option
Power Consumption	Max. 13.8W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	85 x 280(L) x 80(H) mm
Weight	About 1250g without Power Supply
Approval	KC, CE, FCC, RoHS, TTA, IP67, IK10
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

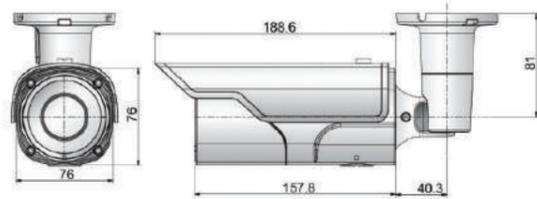
FW7930-HXM

2MP Night Watch Bullet



▲
FW7930-HXM
2MP Night Watch Bullet

FW7930-HXM is a supreme sensitivity Outdoor IR Motorized Auto Focus Bullet Camera which has web server and real time operation system. FW7930-HXM supports simultaneous H.265, H.264 and MJPEG Video Compression for less network bandwidth and storage space. FW7930-HXM also delivers high quality video up to 30 fps@1920x1080 in progressive mode while having triple streaming. FW7930-HXM has progressive scan CMOS which produce clearer image under the low light condition than ordinary CMOS, and makes it possible to monitor vivid and crystal clear image at dark environment. It enables color video monitoring in city surveillance where has some light source at night time.



▲
FW7930-HXM
2MP Night Watch Bullet

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony 2.42MP (1/1.9") PS CMOS Sensor
- Night Color with super high sensitive 1/1.9" Sony sensor
- 3.6~11.0mm Motorized Auto Focus Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps @ 2MP (1920x1080)
- DOL WDR (>120dB)
- Active image mode switching by Day, Night or DI/Motion
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) Setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

NIR is a **region** of the electromagnetic spectrum that has unique properties which make it very useful for characterizing materials. The **NIR region** is from 700 to 2500 nm. FlexWATCH IP cameras has the best image quality in NIR region by using Sony up to date sensor.

Management white list

A whitelist is a list of items that are granted access to a certain system or protocol. When a whitelist is used, all entities are denied access, except those included in the whitelist. ... A network administrator may configure a firewall with a whitelist that only allows specific IP addresses to access the IP camera or NVRs.

FW7930-HXM

► Technical Specifications

Camera

Imaging Sensor	1/1.9" 2.42MP Sony PS CMOS sensor
Lens	3.6~11.0mm Motorized Auto Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.04 lux, 0.0006 lux (DSS ON), B/W : 0 lux (IR LED On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitive setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI (Region of Interest)
Exposure mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Center Flip
Shutter Control	Manual (Min./Max. setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable/Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 special condition / custom
3DNR	0 ~ 11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Shutter Time Min./Max.	1/30 ~ 32,000
Four Active Image mode switching	Default(Day) / Night / DI / Motion
Three Color Mode	Default / Standard / Vivid
Image Flip	Vertical Flip / Horizontal Flip (Enable / Disable)
Corridor Mode	Enable / Disable

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	Optional 1 DI/ 1DO

Illuminator

Type	4 Power LEDs
Distance	Max. 50Meter

Onboard storage

Type	MicroSD
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Video/Audio

Video Out	1 CVBS
Audio Compression	8bit G.711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC12V / 3A PoE : IEEE 802.3at
Power Consumption	Max. 13.8W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	85 x 280(L) x 80(H) mm
Weight	About 1250g without Power Supply
Approval	KC, CE, FCC, RoHS, IP67, IK10
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

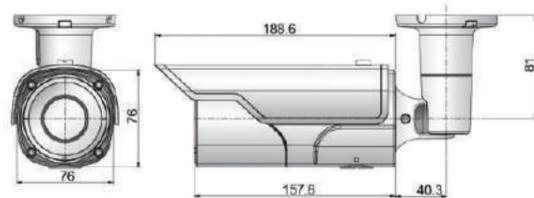
FW7930-HXF

2MP Night Watch Bullet



▲
FW7930-HXF
2MP Night Watch Bullet

FW7930-HXF is a supreme sensitivity Outdoor IR Motorized Auto Focus Bullet Camera which has web server and real time operation system. FW7930-HXF supports simultaneous H,265, H,264 and MJPEG Video Compression for less network bandwidth and storage space. FW7930-HXF also delivers high quality video up to 30 fps@1920x1080 in progressive mode while having triple streaming. FW7930-HXF has progressive scan CMOS which produce clearer image under the low light condition than ordinary CMOS, and makes it possible to monitor vivid and crystal clear image at dark environment. It enables color video monitoring in city surveillance where has some light source at night time.



▲
FW7930-HXF
2MP Night Watch Bullet

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony 2.42MP (1/1.9") PS CMOS Sensor
- Night Color with super high sensitive 1/1.9" Sony sensor
- 3.6mm Fixed Lens
- Quadruple Stream (H,265, H,264, M-JPEG, JPEG)
- Max. 30fps @ 2MP (1920x1080)
- DOL WDR (>120dB)
- Active image mode switching by Day, Night or DI/Motion
- Three Color mode (Default/Standard/Vivid)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) Setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

Zero-configuration networking (zeroconf) is a set of technologies that automatically creates a usable IP camera network based on the Internet Protocol Suite (TCP/IP) when IP cameras are interconnected with other device or server. It does not require manual operator intervention or special configuration servers. Without zeroconf, a network administrator must set up network services, such as Dynamic Host Configuration Protocol (DHCP) and Domain Name System (DNS), or configure each computer's network settings manually.

NVR using SD card

NVR functions are perfectly implemented at IP camera with various recording modes. Smart search is available through NVRs, PCs and mobile devices.

FW7930-HXF

► Technical Specifications

Camera

Imaging Sensor	1/1.9" 2.42MP Sony PS CMOS sensor
Lens	3.6mm Fixed
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.04 lux, 0.0006 lux (DSS ON), B/W : 0 lux (IR LED On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H,265, H,264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H,265/H,264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitive setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI (Region of Interest)
Exposure mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Center Flip
Shutter Control	Manual (Min./Max. setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable/Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 special condition / custom
3DNR	0 ~ 11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Shutter Time Min./Max.	1/30 ~ 32,000
Four Active Image mode switching	Default(Day) / Night / DI / Motion
Three Color Mode	Default / Standard / Vivid
Image Flip	Vertical Flip / Horizontal Flip (Enable / Disable)
Corridor Mode	Enable / Disable

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	Optional 1 DI/ 1DO

Illuminator

Type	4 Power LEDs
Distance	Max. 50Meter

Onboard storage

Type	MicroSD
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Video/Audio

Video Out	1 CVBS
Audio Compression	8bit G,711, 8KHz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC12V / 3A PoE : IEEE 802.3at
Power Consumption	Max. 13.5W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	85 x 280(L) x 80(H) mm
Weight	About 1250g without Power Supply
Approval	KC, CE, FCC, RoHS, IP67, IK10
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

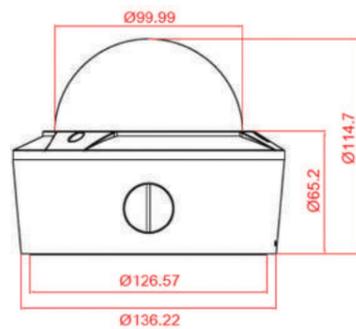
FW7501-HXM

2MP Night Watch Vandal Dome



▲
FW7501-HXM
2MP Night Watch Vandal Dome

FW7501-HXM is a supreme sensitivity Outdoor IR Motorized Auto Focus Vandal proof Dome Camera which has web server and real time operation system. FW7501-HXM supports simultaneous H,265, H,264 and MJPEG Video Compression for less network bandwidth and storage space. FW7501-HXM also delivers high quality video up to 30 fps@1920x1080 in progressive mode while having triple streaming. FW7501-HXM has progressive scan CMOS which produce clearer image under the low light condition than ordinary CMOS, and makes it possible to monitor vivid and crystal clear image at dark environment. It enables color video monitoring in city surveillance where has some light source at night time.



▲
FW7501-HXM
2MP Night Watch Vandal Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony 2.42MP (1/1.9") PS CMOS Sensor
- Night Color with super high sensitive 1/1.9" Sony sensor
- 3.6~11.0mm Motorized Auto Focus Lens
- Quadruple Stream (H,265, H,264, M-JPEG, JPEG)
- Max. 30fps @ 2MP (1920x1080)
- DOL WDR (>120dB)
- Active image mode switching by Day, Night or DI/Motion
- Three Color mode (Default/Standard/Vivid)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) Setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

Latency

Latency is request and response time between IP cameras and remotely connected client devices or servers. FlexWATCH IP camera shows the lowest Latency time (25%~40% better) against popular other IP cameras from various brands.

Tips for color setting

When you feel the color of the image is not so brilliant or strong, set Saturation in the camera setting menu higher. To get a crystal clear bright image, set Auto Exposure weight higher. Set Auto Exposure weight lower when specific area like number plate is too much bright due to reflection from sunlight or spot like.

FW7501-HXM

► Technical Specifications

Camera	
Imaging Sensor	1/1.9" 2.42MP Sony PS CMOS sensor
Lens	3.6~11.0mm Motorized Auto Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.04 lux, 0.0006 lux (DSS ON), B/W : 0 lux (IR LED On)
Video Stream	
System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H,265, H,264, M-JPEG, JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ Full-HD
Video Stream	Quadruple Streaming, selectable : H,265/H,264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP
Video Setting	
Motion Detection	4 Areas
Audio Detection	Enable (sensitive setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI (Region of Interest)
Exposure mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Center Flip
Shutter Control	Manual (Min./Max. setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable/Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 special condition / custom
3DNR	0 ~ 11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Shutter Time Min./Max.	1/30 ~ 32,000
Four Active Image mode switching	Default(Day) / Night / DI / Motion
Three Color Mode	Default / Standard / Vivid
Image Flip	Vertical Flip / Horizontal Flip (Enable / Disable)
Corridor Mode	Enable / Disable

Network	
Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps
System Intergration	
Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	Optional 1 DI/ 1DO
Illuminator	
Type	30 IR LEDs
Distance	Max. 30Meter
Onboard storage	
Type	MicroSD
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App
Video/Audio	
Video Out	1 CVBS
Audio Compression	8bit G,711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out
General	
Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3af
Power Consumption	Max. 7.8W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	100 x 137(L) x 115(H) mm
Weight	About 1170g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

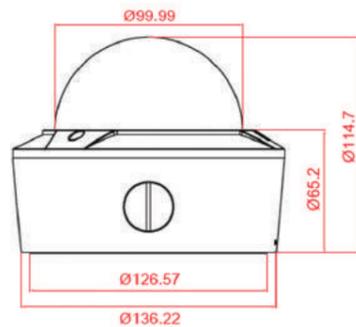
FW7511-TVM

3MP Vandal proof Dome



▲
FW7511-TVM
3MP Vandal proof Dome

FW7511-TVM is a high quality Vandal proof Dome type IP camera which is equipped with 3.21MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity Starvis sensor, It is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30fps@3M(2048x1536) in progressive mode.



▲
FW7511-TVM
3MP Vandal proof Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.8") 3.21MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 2.8~12.0mm Motorized Auto Focus Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps @ 3MP (2048x1536)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Three Color mode (Default/Standard/Vivid)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

Audio Broadcasting

By Audio broadcasting function, FlexWATCH NVR can broadcast audio with the mic. on FlexWATCH NVR to multiple speakers at FlexWATCH IP cameras connected in the network. It can broadcast the audio up to 32ch of IP cameras by the any GROUPS at the same time.

The SONY STARVIS is back-illuminated pixel technology used in CMOS image sensors for surveillance camera applications. The excellent high sensitivity and low noise generates a wonderful full-color imaging world in any scene, any time.

FW7511-TVM

► Technical Specifications

Camera

Imaging Sensor	1/2.8" 3.21MP Sony Starvis PS CMOS Sensor
Lens	2.8~12.0mm Motorized Auto Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.04 lux B/W : 0.0005 lux / 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	2048x1536, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ 3M
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Illuminator

Type	30 IR LEDs
Distance	Max. 30Meter

Video/Audio

Video Out	1 CVBS
Audio Compression	8bit G.711, 8Khz, 8KByte/sec
Audio stream	2 way (Optional)
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3af
Power Consumption	Max. 7.8W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	100 Dome, 137(L) x 115(H) mm
Weight	About 1170g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

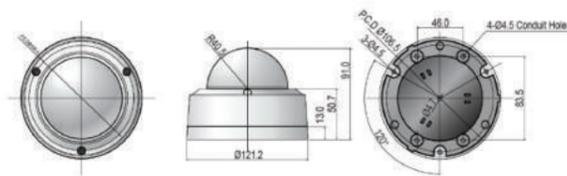
FW7502-TVF

3MP Vandal proof Dome



▲
FW7502-TVF
3MP Vandal proof Dome

FW7502-TVF is a high quality Vandal proof Dome type IP camera which is equipped with 3,21MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity Starvis sensor, It is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30fps@3M(2048x1536) in progressive mode.



▲
FW7502-TVF
3MP Vandal proof Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.8") 3.21MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 3.6mm Motorized Auto Focus Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps @ 3MP (2048x1536)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

NIR

NIR is a **region** of the electromagnetic spectrum that has unique properties which make it very useful for characterizing materials. The **NIR region** is from 700 to 2500 nm. FlexWATCH IP cameras has the best image quality in NIR region by using Sony up to date sensor.

Management white list

A whitelist is a list of items that are granted access to a certain system or protocol. When a whitelist is used, all entities are denied access, except those included in the whitelist. ... A network administrator may configure a firewall with a whitelist that only allows specific IP addresses to access the IP camera or NVRs.

FW7502-TVF

► Technical Specifications

Camera

Imaging Sensor	1/2.8" 3.21MP Sony Starvis PS CMOS Sensor
Lens	3.6mm (F1.8) Fixed
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.05 lux B/W : 0.0005 lux / 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	2048x1536, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ 3M
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Illuminator

Type	24 IR LEDs
Distance	Max. 25Meter

Video/Audio

Video Out	1 CVBS
Audio Compression	-
Audio stream	-
Connection	-

General

Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3af
Power Consumption	Max. 5.2W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	81 Dome, 121.2(L) x 91(H) mm
Weight	About 515g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

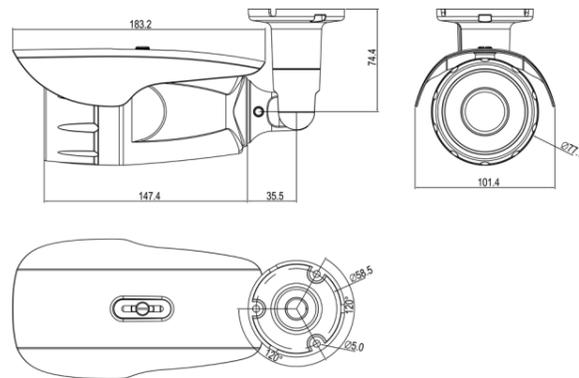
FW7901-TVM

3MP Motorized Bullet



FW7901-TVM
3MP Motorized Bullet

FW7901-TVM is a high quality Bullet type IP camera which is equipped with 3.21MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity Starvis sensor, It is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30fps@3M(2048x1536) in progressive mode.



FW7901-TVM
3MP Motorized Bullet

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.8") 3.21MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 2.8~12.0mm Motorized Auto Focus Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps @ 3MP (2048x1536)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

Latency

Latency is request and response time between IP cameras and remotely connected client devices or servers. FlexWATCH IP camera shows the lowest Latency time (25%~40% better) against popular other IP cameras from various brands.

NVR using SD card

NVR functions are perfectly implemented at IP camera with various recording modes. Smart search is available through NVRs, PCs and mobile devices.

FW7901-TVM

► Technical Specifications

Camera

Imaging Sensor	1/2.8" 3.21MP Sony Starvis PS CMOS Sensor
Lens	2.8~12.0mm Motorized Auto Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.05 lux B/W : 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	2048x1536, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ 3M
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Illuminator

Type	30 IR LEDs
Distance	Max. 30Meter

Video/Audio

Video Out	1 CVBS
Audio Compression	-
Audio stream	-
Connection	-

General

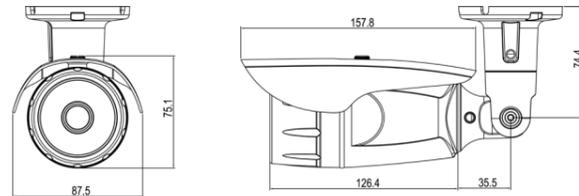
Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3af
Power Consumption	Max. 7.8W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	58 x 258(L) x 85(H) mm
Weight	About 669g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

FW7902-TVF

3MP Fixed Bullet



FW7902-TVF is a high quality Bullet type IP camera which is equipped with 3.21MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity Starvis sensor, It is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30fps@3M(2048x1536) in progressive mode.



FW7902-TVF
3MP Fixed Bullet

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.8") 3.21MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 3.6mm Fixed Motorized Auto Focus Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps @ 3MP (2048x1536)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

Region of Interest (ROI)

Some cameras offer the ability to transmit only a partial region of a sensor, which offers the option of concentrating on image areas containing the information relevant to image processing.

Reducing the size of the image transmitted by the camera reduces the image size and thus the bandwidth required for each image. In configuring an ROI the read out window is reduced to the area relevant for analysis, increasing the image frequency significantly.

IP filtering

The IP filtering enables you to control what IP traffic you want to allow into and out of your IP camera. Use IP filtering to help protect your IP camera by filtering access from other IP address set for filtering.

FW7902-TVF

► Technical Specifications

Camera

Imaging Sensor	1/2.8" 3.21MP Sony Starvis PS CMOS Sensor
Lens	3.6mm Fixed
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.05 lux B/W : 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	2048x1536, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ 3M
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer. Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Illuminator

Type	24 IR LEDs
Distance	Max. 25Meter

Video/Audio

Video Out	1 CVBS
Audio Compression	-
Audio stream	-
Connection	-

General

Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3af
Power Consumption	Max. 4.8W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	50 x 235(L) x 76(H) mm
Weight	About 596g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

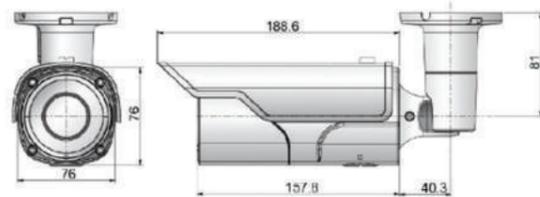
FW7930-TXM

3MP Motorized Bullet



▲
FW7930-TXM
3MP Motorized Bullet

FW7930-TXM is a high quality Bullet type IP camera which is equipped with 3.21MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity Starvis sensor, It is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30fps@3M(2048x1536) in progressive mode.



▲
FW7930-TXM
3MP Motorized Bullet

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.8") 3.21MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 5.0~50.0mm Motorized Auto Focus Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps @ 3MP (2048x1536)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

NVR using SD card

NVR functions are perfectly implemented at IP camera with various recording modes. Smart search is available through NVRs, PCs and mobile devices.

NIR

NIR is a **region** of the electromagnetic spectrum that has unique properties which make it very useful for characterizing materials. The **NIR region** is from 700 to 2500 nm. FlexWATCH IP cameras has the best image quality in NIR region by using Sony up to date sensor.

FW7930-TXM

► Technical Specifications

Camera

Imaging Sensor	1/2.8" 3.21MP Sony Starvis PS CMOS Sensor
Lens	5.0~50.0mm Motorized Auto Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.05 lux B/W : 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	2048x1536, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ 3M
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ehternet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer. Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	2 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Illuminator

Type	4 Power IR LEDs
Distance	Max. 50Meter

Video/Audio

Video Out	1 CVBS
Audio Compression	8bit G.711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3at
Power Consumption	Max. 7.8W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	85 x 280(L) x 80(H) mm
Weight	About 1250g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

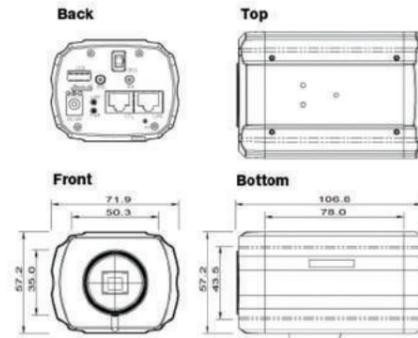
FW7300-TXN

3MP CS Mount BOX



FW7300-TXN
3MP CS Mount BOX

FW7300-TXN is a high quality BOX type IP camera which is equipped with 3.21MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity Starvis sensor, It is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30fps@3M(2048x1536) in progressive mode.



FW7300-TXN
3MP CS Mount BOX

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.8") 3.21MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- CS Mount
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps @ 3MP (2048x1536)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

NVR using SD card

NVR functions are perfectly implemented at IP camera with various recording modes. Smart search is available through NVRs, PCs and mobile devices.

Latency

Latency is request and response time between IP cameras and remotely connected client devices or servers. FlexWATCH IP camera shows the lowest Latency time (25%~40% better) against popular other IP cameras from various brands.

FW7300-TXN

► Technical Specifications

Camera

Imaging Sensor	1/2.8" 3.21MP Sony Starvis PS CMOS Sensor
Lens	CS Mount
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.05 lux B/W : 0.0005 lux

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	2048x1536, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ 3M
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer. Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Illuminator

Type	-
Distance	-

Video/Audio

Video Out	1 CVBS
Audio Compression	8bit G.711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3af
Power Consumption	Max. 7.8W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	71.7(W) x 103.5(D) x 57.4(H) mm
Weight	About 375g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

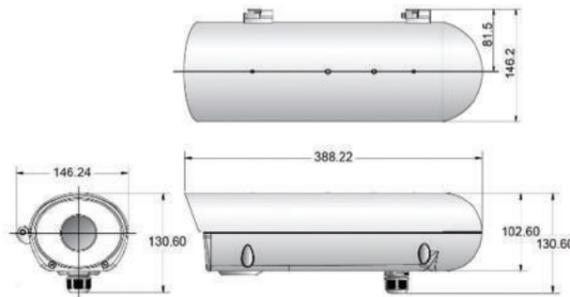
FW9302-TXM

3MP All-in-One Housing



▲
FW9302-TXM
3MP All-in-One Housing

FW9302-TXM is Outdoor IR All-in-one Motorized IP Camera which is equipped with 3.21MP Progressive Scan CMOS image Sensor. As it supports simultaneous H,265, H,264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30fps@3M(2048x1536) in progressive mode.



▲
FW9302-TXM
3MP All-in-One Housing

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.8") 3.21MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 5.0~50.0mm Motorized Auto Focus Lens
- Quadruple Stream (H,265, H,264, M-JPEG, JPEG)
- Max. 30fps @ 3MP (2048x1536)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

DOL WDR

DOL WDR stands for digital overlap wide dynamic range, it's the next generation Sensor-based WDR technology exclusively developed by Sony. DOL WDR can provide many advantages such as improved characteristics in low-light environments compared to conventional WDR that uses multiple frame set output. In challenging lighting conditions, DOL-WDR is capable of capturing both dark and bright part then combining the differences into a scene to generate a highly realistic image.

NVR using SD card

NVR functions are perfectly implemented at IP camera with various recording modes. Smart search is available through NVRs, PCs and mobile devices.

FW9302-TXM

► Technical Specifications

Camera

Imaging Sensor	1/2.8" 3.21MP Sony Starvis PS CMOS Sensor
Lens	5.0~50.0mm Motorized Auto Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.05 lux B/W : 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H,265, H,264, M-JPEG, JPEG
Resolution	2048x1536, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps/25fps @ 3M
Video Stream	Quadruple Streaming, selectable : H,265/H,264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer. Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	2 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Illuminator

Type	4 Power IR LEDs
Distance	Max. 50Meter

Video/Audio

Video Out	1 CVBS
Audio Compression	8bit G.711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC12V / 3A PoE : IEEE 802.3at
Power Consumption	Max. 14,4W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	164(W) x 430(D) x 137(H) mm
Weight	About 3000g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

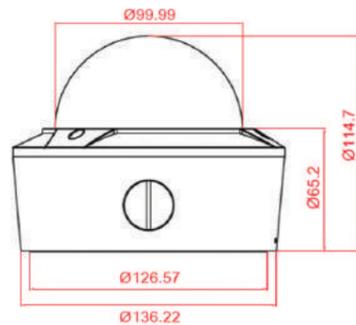
FW7511-PVM

5MP Vandal proof Dome



FW7511-PVM
5MP Vandal proof Dome

FW7511-PVM is a high quality Vandal proof Dome type IP camera which is equipped with 6.82MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity sensor, It is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 15fps@5M(2592x1944) or 30fps@4M(2688x1520) in progressive mode.



FW7511-PVM
5MP Vandal proof Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.9") 6.82MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 2.8~12.0mm Motorized Auto Focus Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 15fps@5M(2592x1944) or 30fps@4M(2688x1520)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

Management white list

A whitelist is a list of items that are granted access to a certain system or protocol. When a whitelist is used, all entities are denied access, except those included in the whitelist. ... A network administrator may configure a firewall with a whitelist that only allows specific IP addresses to access the IP camera or NVRs.

The SONY STARVIS is back-illuminated pixel technology used in CMOS image sensors for surveillance camera applications. The excellent high sensitivity and low noise generates a wonderful full-color imaging world in any scene, any time.

FW7511-PVM

► Technical Specifications

Camera

Imaging Sensor	1/2.9" 6.82MP Sony Starvis PS CMOS Sensor
Lens	2.8~12.0mm Motorized Auto Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.06 lux B/W : 0.0006 lux / 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	2048x1536, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps, 25fps, 15fps@5M(2592x1944)
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Illuminator

Type	30 IR LEDs
Distance	Max. 30Meter

Video/Audio

Video Out	1 CVBS
Audio Compression	8bit G.711, 8Khz, 8KByte/sec
Audio stream	2 way (Optional)
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3af
Power Consumption	Max. 7.8W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	100 Dome, 137(L) x 115(H) mm
Weight	About 1170g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

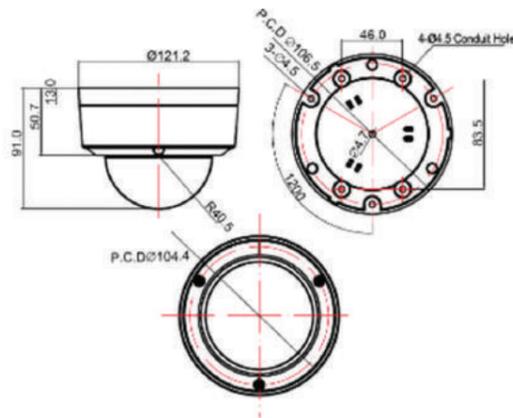
FW7502-PVF

5MP Vandal proof Dome



▲
FW7502-PVF
5MP Vandal proof Dome

FW7502-PVF is a high quality Vandal proof Dome type IP camera which is equipped with 6.82MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity Starvis sensor, It is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 15fps@5M(2592x1944) or 30fps@4M(2688x1520) in progressive mode.



▲
FW7502-PVF
5MP Vandal proof Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.9") 6.82MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 3.6mm Motorized Auto Focus Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 15fps@5M(2592x1944) or 30fps@4M(2688x1520)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

Tips for color setting

When you feel the color of the image is not so brilliant or strong, set Saturation in the camera setting menu higher. To get a crystal clear bright image, set Auto Exposure weight higher. Set Auto Exposure weight lower when specific area like number plate is too much bright due to reflection from sunlight or spot like.

IP filtering

The IP filtering enables you to control what IP traffic you want to allow into and out of your IP camera. Use IP filtering to help protect your IP camera by filtering access from other IP address set for filtering.

FW7502-PVF

► Technical Specifications

Camera

Imaging Sensor	1/2.9" 6.82MP Sony Starvis PS CMOS Sensor
Lens	3.6mm Fixed
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.06 lux B/W : 0.0006 lux / 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	2048x1536, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps, 25fps, 15fps@5M(2592x1944)
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer. Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Illuminator

Type	24 IR LEDs
Distance	Max. 25Meter

Video/Audio

Video Out	1 CVBS
Audio Compression	-
Audio stream	-
Connection	-

General

Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3af
Power Consumption	Max. 5.2W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	81 Dome, 121.2(L) x 91(H) mm
Weight	About 515g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

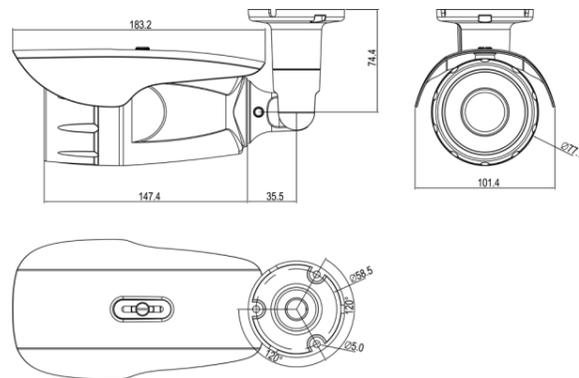
FW7901-PVM

5MP Motorized Bullet



▲
FW7901-PVM
5MP Motorized Bullet

FW7901-PVM is a high quality Bullet type IP camera which is equipped with 6.82MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity Starvis sensor, It is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 15fps@5M(2592x1944) or 30fps@4M(2688x1520) in progressive mode.



▲
FW7901-PVM
5MP Motorized Bullet

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.9") 6.82MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 2.8~12.0mm Motorized Auto Focus Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 15fps@5M(2592x1944) or 30fps@4M(2688x1520)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

Zero-configuration networking (zeroconf) is a set of technologies that automatically creates a usable IP camera network based on the Internet Protocol Suite (TCP/IP) when IP cameras are interconnected with other device or server. It does not require manual operator intervention or special configuration servers. Without zeroconf, a network administrator must set up network services, such as Dynamic Host Configuration Protocol (DHCP) and Domain Name System (DNS), or configure each computer's network settings manually.

IP filtering

The IP filtering enables you to control what IP traffic you want to allow into and out of your IP camera. Use IP filtering to help protect your IP camera by filtering access from other IP address set for filtering.

FW7901-PVM

► Technical Specifications

Camera

Imaging Sensor	1/2.9" 6.82MP Sony Starvis PS CMOS Sensor
Lens	2.8~12.0mm Motorized Auto Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.06 lux B/W : 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	2048x1536, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps, 25fps, 15fps@5M(2592x1944)
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification

Connection -

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Illuminator

Type	30 IR LEDs
Distance	Max. 30Meter

Video/Audio

Video Out	1 CVBS
Audio Compression	-
Audio stream	-
Connection	-

General

Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3af
Power Consumption	Max. 7.5W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	58 x 258(L) x 85(H) mm
Weight	About 669g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

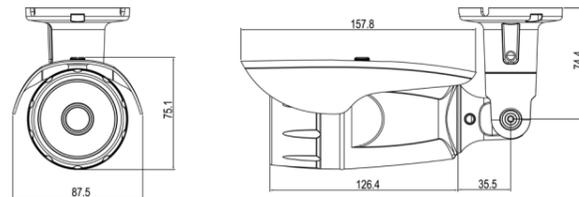
FW7902-PVF

5MP Fixed Bullet



▲
FW7902-PVF
5MP Fixed Bullet

FW7902-PVF is a high quality Bullet type IP camera which is equipped with 6.82MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity Starvis sensor, It is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 15fps@5M(2592x1944) or 30fps@4M(2688x1520) in progressive mode.



▲
FW7902-PVF
5MP Fixed Bullet

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.9") 6.82MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 3.6mm Fixed Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 15fps@5M(2592x1944) or 30fps@4M(2688x1520)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

Saturation defines the brilliance and intensity of a color. When you feel the color of the image is not so brilliant or strong, set Saturation higher. The term hue refers to the color of the image itself, while saturation describes the intensity (purity) of that hue. When color is fully saturated, the color is considered in purest (truest) version. Primary colors red, blue and yellow are considered truest version color as they are fully saturated.

The SONY STARVIS is back-illuminated pixel technology used in CMOS image sensors for surveillance camera applications. The excellent high sensitivity and low noise generates a wonderful full-color imaging world in any scene, any time.

FW7902-PVF

► Technical Specifications

Camera

Imaging Sensor	1/2.9" 6.82MP Sony Starvis PS CMOS Sensor
Lens	3.6mm Fixed
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.06 lux B/W : 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	2048x1536, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps, 25fps, 15fps@5M(2592x1944)
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctv dns.com
Interface	RJ45 Ehternet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification

Connection -

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Illuminator

Type	24 IR LEDs
Distance	Max. 25Meter

Video/Audio

Video Out	1 CVBS
Audio Compression	-
Audio stream	-
Connection	-

General

Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3af
Power Consumption	Max. 4.5W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	50 x 235(L) x 76(H) mm
Weight	About 596g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

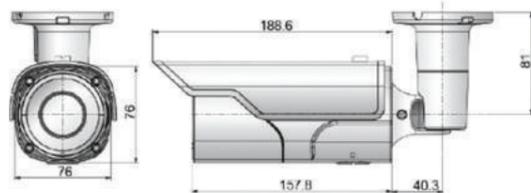
FW7930-PXM

5MP Motorized Bullet



▲
FW7930-PXM
5MP Motorized Bullet

FW7930-PXM is a high quality Bullet type IP camera which is equipped with 6.82MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity Starvis sensor, It is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 15fps@5M(2592x1944) or 30fps@4M(2688x1520) in progressive mode.



▲
FW7930-PXM
5MP Motorized Bullet

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.9") 6.82MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 5.0~50.0mm Motorized Auto Focus Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 15fps@5MP(2592x1944) or 30fps@4MP(2688x1520)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

Latency

Latency is request and response time between IP cameras and remotely connected client devices or servers. FlexWATCH IP camera shows the lowest Latency time (25%~40% better) against popular other IP cameras from various brands.

NVR using SD card

NVR functions are perfectly implemented at IP camera with various recording modes. Smart search is available through NVRs, PCs and mobile devices.

FW7930-PXM

► Technical Specifications

Camera

Imaging Sensor	1/2.9" 6.82MP Sony Starvis PS CMOS Sensor
Lens	5.0~50.0mm Motorized Auto Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.06 lux B/W : 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	2048x1536, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps, 25fps, 15fps@5M(2592x1944)
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctv dns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer. Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	2 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Illuminator

Type	4 Power IR LEDs
Distance	Max. 50Meter

Video/Audio

Video Out	1 CVBS
Audio Compression	8bit G.711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3at
Power Consumption	Max. 7.8W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	85 x 280(L) x 80(H) mm
Weight	About 1250g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

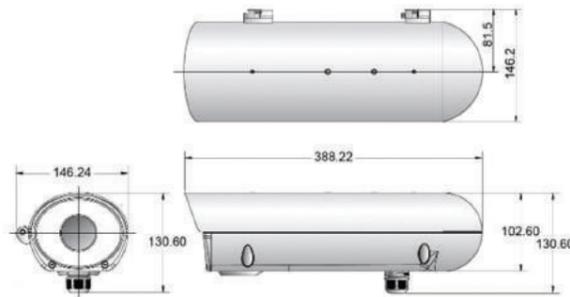
FW9302-PXM

5MP All-in-One Housing



▲
FW9302-PXM
5MP All-in-One Housing

FW9302-PXM is Outdoor IR All-in-one Motorized IP Camera which is equipped with 6.82MP Progressive Scan CMOS image Sensor. As it supports simultaneous H,265, H,264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 15fps@5M(2592x1944) or 30fps@4M(2688x1520) in progressive mode.



▲
FW9302-PXM
5MP All-in-One Housing

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.9") 6.82MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 5.0~50.0mm Motorized Auto Focus Lens
- Quadruple Stream (H,265, H,264, M-JPEG, JPEG)
- Max. 15fps@5M(2592x1944) or 30fps@4M(2688x1520)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

Region of Interest (ROI)

Some cameras offer the ability to transmit only a partial region of a sensor, which offers the option of concentrating on image areas containing the information relevant to image processing.

Reducing the size of the image transmitted by the camera reduces the image size and thus the bandwidth required for each image. In configuring an ROI the read out window is reduced to the area relevant for analysis, increasing the image frequency significantly.

NVR using SD card

NVR functions are perfectly implemented at IP camera with various recording modes. Smart search is available through NVRs, PCs and mobile devices.

FW9302-PXM

► Technical Specifications

Camera

Imaging Sensor	1/2.9" 6.82MP Sony Starvis PS CMOS Sensor
Lens	5.0~50.0mm Motorized Auto Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.06 lux B/W : 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H,265, H,264, M-JPEG, JPEG
Resolution	2048x1536, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps, 25fps, 15fps@5M(2592x1944)
Video Stream	Quadruple Streaming, selectable : H,265/H,264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctv dns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer. Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	2 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Illuminator

Type	4 Power IR LEDs
Distance	Max. 50Meter

Video/Audio

Video Out	1 CVBS
Audio Compression	8bit G,711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3at (Optional)
Power Consumption	Max. 14.4W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	164(W) x 430(D) x 137(H) mm
Weight	About 3000g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

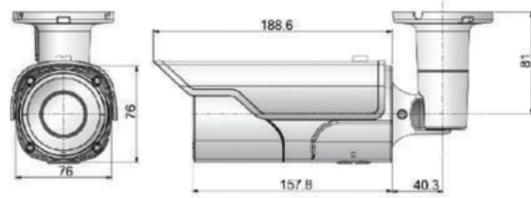
FW7930-PSM

5MP Motorized Bullet



▲
FW7930-PSM
5MP Motorized Bullet

FW7930-PSM is a high quality Bullet type IP camera which is equipped with 6.44MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity Starvis sensor, It is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 15fps@5M(2592x1944) or 30fps@4M(2688x1520) in progressive mode.



▲
FW7930-PSM
5MP Motorized Bullet

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/1.8") 6.44MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 3.6~11.0mm Motorized Auto Focus Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 15fps@5MP(2592x1944) or 30fps@4MP(2688x1520)
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

Backdoor Issue free

FlexWATCH uses backdoor issue free USA Ambarella platform.

DOL WDR

DOL WDR stands for digital overlap wide dynamic range, it's the next generation Sensor-based WDR technology exclusively developed by Sony.

DOL WDR can provide many advantages such as improved characteristics in low-light environments compared to conventional WDR that uses multiple frame set output. In challenging lighting conditions, DOL-WDR is capable of capturing both dark and bright part then combining the differences into a scene to generate a highly realistic image.

FW7930-PSM

► Technical Specifications

Camera

Imaging Sensor	1/1.8" 6.44MP Sony Starvis PS CMOS Sensor
Lens	3.6~11.0mm Motorized Auto Focus
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.04 lux B/W : 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	2048x1536, 1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Frame rate	30fps, 25fps, 15fps@5M(2592x1944)
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctv dns.com
Interface	RJ45 Ethernet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer. Upload FTP, Email notification, FCM Google notification
Connection	1 DI/ 1DO, RS485

Onboard storage

Type	2 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Illuminator

Type	4 Power IR LEDs
Distance	Max. 50Meter

Video/Audio

Video Out	1 CVBS
Audio Compression	8bit G.711, 8Khz, 8KByte/sec
Audio stream	2 way
Connection	1 Audio In / 1 Audio Out

General

Case	Metal
Power Supply	SMPS, DC12V / 3A PoE : IEEE 802.3at
Power Consumption	Max. 7.5W
Operating Environment	-20°C ~ +60°C, 10% ~ 90% RH
Dimension	85 x 280(L) x 80(H) mm
Weight	About 1250g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

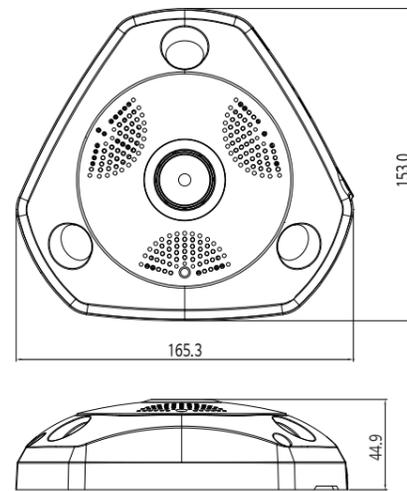
FW7503-PVP

4MP Panoramic Vandal Dome



▲
FW7503-PVP
4MP Panoramic Vandal Dome

FW7503-PVP is a high quality Panoramic (Fisheye) Vandal proof Dome type IP camera which is equipped with 6.82MP(effective pixel) Progressive Scan CMOS image Sensor. With the highest sensitivity Starvis sensor, It is especially superior in low light condition. As it supports simultaneous H.265, H.264 and MJPEG Video Compression, less network bandwidth and storage space required. It also delivers high quality video image at 30fps@4M(2048x2048) in progressive mode.



▲
FW7503-PVP
4MP Panoramic Vandal Dome

• Key Features

- Ambarella platform - Backdoor Issue free
- Sony Starvis (1/2.9") 6.82MP PS CMOS Sensor
- Night Color with super high sensitive sensor
- 1.1mm (F2.0) Fisheye Lens
- Quadruple Stream (H.265, H.264, M-JPEG, JPEG)
- Max. 30fps@4M(2048x2048) / Fixed Primary Stream
- DOL WDR (>120dB)
- Night Color level adjustment (B/W, 10, 20, 30, 40, 50)
- Shutter limit (Min./Max.) setting
 - Good for the better night time moving object image
 - To avoid saturation under strong back light or IR reflection
- OnVIF (Profile S) standard

• Tech Notes

Region of Interest (ROI)

Some cameras offer the ability to transmit only a partial region of a sensor, which offers the option of concentrating on image areas containing the information relevant to image processing.

Reducing the size of the image transmitted by the camera reduces the image size and thus the bandwidth required for each image. In configuring an ROI the read out window is reduced to the area relevant for analysis, increasing the image frequency significantly.

The SONY STARVIS is back-illuminated pixel technology used in CMOS image sensors for surveillance camera applications. The excellent high sensitivity and low noise generates a wonderful full-color imaging world in any scene, any time.

FW7503-PVP

► Technical Specifications

Camera

Imaging Sensor	1/2.9" 6.82MP Sony Starvis PS CMOS Sensor
Lens	1.1mm Fisheye Fixed
Day & Night	True Day & Night (ICR)
Min. Illumination	Color : 0.06 lux B/W : 0.0006 lux / 0 lux (IR On)

Video Stream

System	Ambarella 32bit Embedded Linux 256Mbyte SDRAM, 128Mbyte NAND Flash
Compression	H.265, H.264, M-JPEG, JPEG
Resolution	2048x2048 (Fixed Primary Stream) 1280x1280, 1024x1024, 720x720, 640x640, 320x320
Frame rate	30fps@4MP (2048x2048)
Video Stream	Quadruple Streaming, selectable : H.265/H.264/MJPEG, Frame rate, Bitrate, VBR/AVBR/CBR/ACBR, GOP

Video Setting

Motion Detection	4 Areas
Audio Detection	Enable (sensitivity setting) / Disable
Privacy Masking	8 Areas
Video Analytics	Optional (Face Detection, Tampering, Tripwire etc.)
Smart Video	ROI
Exposure Mode	Indoor / Outdoor
AE Metering Mode	Spot / Center / Average / Venter Flip
Shutter Control	Manual (Min./Max. Setting) / Auto
Max AGC Gain	0~72
Sense Up Level	Off / 1 / 2
Back Light Compensation	Enable / Disable
Auto Exposure Weight	25% ~ 400%
WDR	DOL WDR (Enable / Disable), D-WDR 0~128
Image Adjustment	Brightness / Contrast / Hue / Saturation / Sharpness
White Balance	Auto / Manual / 9 Special Condition / Custom
3DNR	0~11
Day & Night Control	Color / Black&White / AutoNight Color (B/W, 10, 20, 30, 40, 50)
Image Direction	Vertical Flip / Horizontal Flip / Corridor Mode

Network

Security	IP Filtering, HTTPS, Encrypted & Basic Authentication, Management White List
Supported protocols	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
DDNS	www.ipcctvdns.com
Interface	RJ45 Ehternet 10/100Mbps

System Intergration

Programing Interface	SDK, OnVIF Profile S
Video Analytic	Motion detection, Optional: ROI, Tripwire, Tampering, Face Detection
Triggering Event	Motion detection, triggering DI, triggering serial input, connected/ disconnected, boot finished
Action on Event	Pre-alarm & Post-alarm buffer, Upload FTP, Email notification, FCM Google notification

Connection -

Onboard storage

Type	1 MicroSD Slot
Recording	Always, Schedule, Event, Schedule & Event
Playback	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App

Illuminator

Type	-
Distance	-

Video/Audio

Video Out	-
Audio Compression	-
Audio stream	-
Connection	-

General

Case	Metal
Power Supply	SMPS, DC12V / 1A PoE : IEEE 802.3af
Power Consumption	Max. 5.2W
Operating Environment	-10°C ~ +50°C, 10% ~ 90% RH
Dimension	81 Dome, 121.2(L) x 91(H) mm
Weight	About 515g without Power Supply
Approval	KC, CE, FCC, RoHS, IP66
Accessories	-
Bundle Software	IP Installer, SMVP, Smart NVR Lite

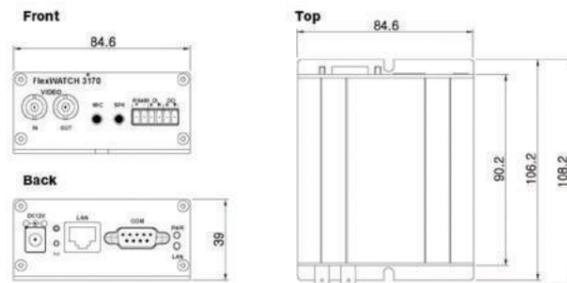
FW3170

1CH. Video Server (Encoder)



▲
FW3170
1CH. Video Server (Encoder)

FW3170 is a stand-alone 1 channel network video server to transmit the supreme video and audio data over the TCP/IP network. FW3170 supports simultaneous H.264 and MJPEG Video Compression, less network bandwidth and storage space required. FW3170 delivers High Video quality at maximum 30 fps in different resolution. Traditionally, the analog video signal from the analog camera causes a “tearing” effect due to the fact even and odd fields are slightly displaced with time interval. FW3170 converts the interlaced image from conventional analog camera into a progressive quality image. FW3170 makes it possible to monitor fast moving images in vivid and crystal clear quality



▲
FW3170
1CH. Video Server (Encoder)

• Key Features

- 1Ch. BNC IN/OUT
- G.711 2-WAY Audio
- RS-232/485 PTZ support
- Max. 30/25fps @ D1
- Dual Streaming (H.264, M-JPEG)
- Hardware Intelligent Motion Detection
- ONVIF (Profile S) Standard

• Tech Notes

Audio Broadcasting

By Audio broadcasting function, FlexWATCH NVR can broadcast audio with the mic. on FlexWATCH NVR to multiple speakers at FlexWATCH IP cameras connected in the network. It can broadcast the audio up to 32ch of IP cameras by the any GROUPs at the same time.

Latency

Latency is request and response time between IP cameras and remotely connected client devices or servers. FlexWATCH IP camera shows the lowest Latency time (25%~40% better) against popular other IP cameras from various brands.

FW3170

► Technical Specifications

Video Server

Analog Input 1Ch.

Video

Streaming	Dual Streaming
Compression	H.264, M-JPEG
Resolution	720x480(720x576), 704x480(704x576), 352x240(352x288), 176x112(176x144)
Max. Frame Rate	30fps, 25fps
Bit Rate Control	VBR, CBR (H.264 only, 32K~12Mbps)
Frequency Control	NTSC, PAL
Buffer	Max. 5.6Mbyte pre/post alarm buffer
Privacy Masking	8 Privacy zone
Motion Detection	On (144 block selection), Off
Video Analytics	-
Flip	Vertical (On, Off), Horizontal (On, Off)
PTZ	PTZ device control through serial port

Interface

Video Out	1 Analog out
Audio In/Out	2-WAY (1 in, 1 out)
Audio Compression	G.711
Alarm In/Out	1 DI, 1 DO
Serial Port	RS-232C, RS-485
Peripherals	-
Memory Slot	-

Network

LAN	10/100-base-T (auto sensing)
Protocol	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
Standard	OnVIF (Profile S)
Viewer	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App
Dynamic IP	DDNS (www.ipcctv dns.com)
Smart Solution	FlexWATCH Mobile (Android, iOS)
Security	HTTPS, Encrypted & Basic Authentication

Hardware

System	32bit Embedded Linux, 256Mbyte SDRAM, 128MBytes NAND Flash
Approvals	KC, FCC, CE, RoHS
Working Condition	-10°C ~ +50°C, 20% ~ 80% RH
Power Supply	SMPS, DC 12V @1A
Power Consumption	Max. 4.8W
Dimension	84.6(W) x 108.2(D) x 39(H) mm
Weight	About 236g without Power Supply

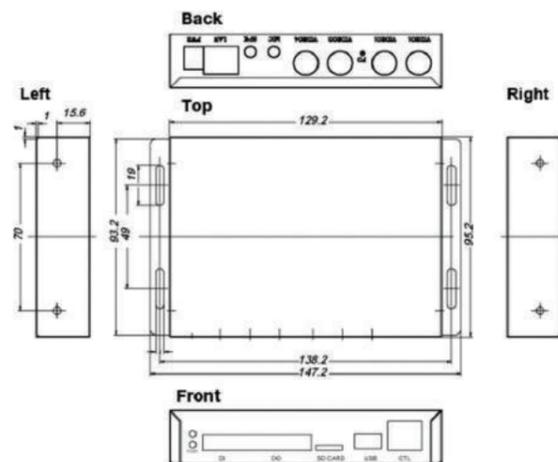
FW3471

1CH. Video Server (Encoder)



▲
FW3471
1CH. Video Server (Encoder)

FW3471 is a stand-alone 4 channel network video server to transmit the supreme video and audio data over the TCP/IP network. FW3471 supports simultaneous H,264 and MJPEG Video Compression, less network bandwidth and storage space required. FW3471 delivers High Video quality at maximum 30 fps in different resolution. Traditionally, the analog video signal from the analog camera causes a “tearing” effect due to the fact even and odd fields are slightly displaced with time interval. FW3471 converts the interlaced image from conventional analog camera into a progressive quality image. FW3471 makes it possible to monitor fast moving images in vivid and crystal clear quality.



▲
FW3471
1CH. Video Server (Encoder)

• Key Features

- 1Ch. BNC IN/OUT
- G.711 2-WAY Audio
- RS-232/485 PTZ support
- Max. 30/25fps @ D1
- Dual Streaming (H,264, M-JPEG)
- Hardware Intelligent Motion Detection
- Onboard storage by MicroSD
- ONVIF (Profile S) Standard

• Tech Notes

Management white list

A whitelist is a list of items that are granted access to a certain system or protocol. When a whitelist is used, all entities are denied access, except those included in the whitelist. ... A network administrator may configure a firewall with a whitelist that only allows specific IP addresses to access the IP camera or NVRs.

Audio Broadcasting

By Audio broadcasting function, FlexWATCH NVR can broadcast audio with the mic. on FlexWATCH NVR to multiple speakers at FlexWATCH IP cameras connected in the network. It can broadcast the audio up to 32ch of IP cameras by the any GROUPs at the same time.

FW3471

► Technical Specifications

Video Server

Analog Input 4Ch.

Video

Streaming	Dual Streaming
Compression	H,264, M-JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Max. Frame Rate	30fps, 25fps
Bit Rate Control	VBR, CBR (H,264 only, 32K~12Mbps)
Frequency Control	NTSC, PAL
Buffer	Max. 5.6Mbyte pre/post alarm buffer
Privacy Masking	8 Privacy zone
Motion Detection	On (144 block selection), Off
Video Analytics	-
Flip	Vertical (On, Off), Horizontal (On, Off)
PTZ	PTZ device control through serial port

Interface

Video Out	-
Audio In/Out	2-WAY (1 in, 1 out)
Audio Compression	G.711
Alarm In/Out	1 DI, 1 DO
Serial Port	RS-232C, RS-485
Peripherals	-
Memory Slot	-

Network

LAN	10/100-base-T (auto sensing)
Protocol	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
Standard	OnVIF (Profile S)
Viewer	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App
Dynamic IP	DDNS (www.ipcctv dns.com)
Smart Solution	FlexWATCH Mobile (Android, iOS)
Security	HTTPS, Encrypted & Basic Authentication

Hardware

System	32bit Embedded Linux, 256Mbyte SDRAM, 128MBytes NAND Flash
Approvals	KC, FCC, CE, RoHS
Working Condition	-10°C ~ +50°C, 20% ~ 80% RH
Power Supply	SMPS, DC 12V @1A
Power Consumption	Max. 5.0W
Dimension	147.2(W) x 95.2(D) x 26(H) mm
Weight	About 250g without Power Supply

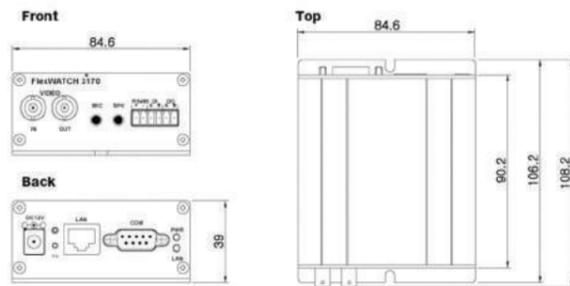
FWS200

1CH, HD-SDI Video Server



▲
FWS200
1CH, HD-SDI Video Server

FWS200 is a stand-alone HD-SDI 1 channel network video server to transmit the supreme video and audio data over the TCP/IP network. FWS200 supports simultaneous H,264 and MJPEG Video Compression, less network bandwidth and storage space required. FWS200 delivers High Video quality at maximum 30 fps in different resolution. Traditionally, the analog video signal from the analog camera causes a “tearing” effect due to the fact even and odd fields are slightly displaced with time interval. FWS200 converts the interlaced image from conventional analog camera into a progressive quality image. FWS200 makes it possible to monitor fast moving images in vivid and crystal clear quality



▲
FWS200
1CH, HD-SDI Video Server

• Key Features

- 1Ch. BNC IN/OUT
- G.711 2-WAY Audio
- RS-232/485 PTZ support
- Max. 30/25fps @ 2M (1920x1080)
- Dual Streaming (H,264, M-JPEG)
- Hardware Intelligent Motion Detection
- Built-in PoE, USB
- ONVIF (Profile S) Standard

• Tech Notes

Audio Broadcasting

By Audio broadcasting function, FlexWATCH NVR can broadcast audio with the mic, on FlexWATCH NVR to multiple speakers at FlexWATCH IP cameras connected in the network. It can broadcast the audio up to 32ch of IP cameras by the any GROUPS at the same time.

NVR using SD card

NVR functions are perfectly implemented at IP camera with various recording modes. Smart search is available through NVRs, PCs and mobile devices.

Latency

Latency is request and response time between IP cameras and remotely connected client devices or servers. FlexWATCH IP camera shows the lowest Latency time (25%~40% better) against popular other IP cameras from various brands.

FWS200

► Technical Specifications

Video Server

Analog Input 1Ch.

Video

Streaming	Dual Streaming
Compression	H,264, M-JPEG
Resolution	1920x1080, 1280x720, 704x480, 640x352, 320x176, 160x96
Max. Frame Rate	30fps, 25fps
Bit Rate Control	VBR, CBR (H,264 only, 32K~12Mbps)
Frequency Control	NTSC, PAL
Buffer	Max. 5,6Mbyte pre/post alarm buffer
Privacy Masking	8 Privacy zone
Motion Detection	On (144 block selection), Off
Video Analytics	-
Flip	Vertical (On, Off), Horizontal (On, Off)
PTZ	PTZ device control through serial port

Interface

Video Out	1 HD-SDI Out
Audio In/Out	2-WAY (1 in, 1 out)
Audio Compression	G,711
Alarm In/Out	1 DI, 1 DO
Serial Port	RS-232C, RS-485
Peripherals	-
Memory Slot	1 MicroSD Slot

Network

LAN	10/100-base-T (auto sensing)
Protocol	HTTP, RTP/RTSP(Uni/Multicast), TCP/IP(v4/v6), UDP, FTP, Telnet, HTTPS, RARP, SNMP, DHCP, NTP, SMTP client, uPnP&etc
Standard	OnVIF (Profile S)
Viewer	Internet Explorer, FlexWATCH NVR/ CMS/ Mobile App
Dynamic IP	DDNS (www.ipcctv dns.com)
Smart Solution	FlexWATCH Mobile (Android, iOS)
Security	HTTPS, Encrypted & Basic Authentication

Hardware

System	32bit Embedded Linux, 256Mbyte SDRAM, 128MBytes NAND Flash
Approvals	KC, FCC, CE, RoHS
Working Condition	-10°C ~ +50°C, 20% ~ 80% RH
Power Supply	SMPS, DC 12V @1A
Power Consumption	Max. 4.8W
Dimension	84.6(W) x 106.2(D) x 39(H) mm
Weight	About 236g without Power Supply

EHA200

► Network Adapter



EdgeHandler Adapter (EHA) is a network adapter which is connected to the target device such as HDMI output device, PC, DVR, NVR and I/O devices. It can convey mouse, keyboard and control information and transmit video through IP network remotely. With EdgeHandler Decoder (EHD200), remote video devices can be controlled.

• Tech Notes

Backdoor Issue free

FlexWATCH uses backdoor issue free USA Ambarella platform.

Universal Video Management System

Most of DVR, NVR and VMS can be managed at the single screen. There is no complex protocol integration. EdgeHandler™ enables the system much simpler and robust.

Super Low Network Bandwidth

In order to control several Full HD video channels remotely, it requires lots of bandwidth. Only it requires the single Full HD video bandwidth to manage all video channels.

Universal Video Management System

Most of DVR, NVR and VMS can be managed at the single screen. There is no complex protocol integration. EdgeHandler™ enables the system much simpler and robust.

Strong Security & Encryption

Strong Security & Encryption by using proprietary hardware key.
Supports AES, DES, RSA algorithms through Hardware Accelerator.

Real-time monitoring and control on PC

Real-time monitoring and control by connecting directly to Adaptor from PC when connected to Decoder from a User PC, supports monitoring and control features up to 64 Adaptors simultaneously.

Applications –CCTV Surveillance System

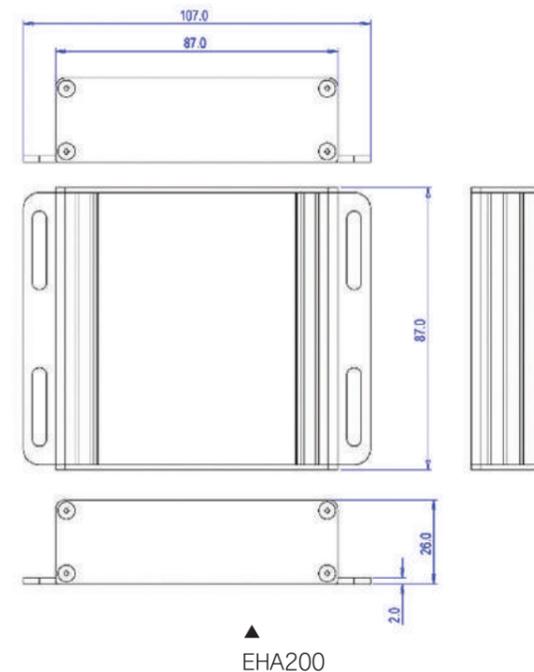
Our solution helps to simplify the hassle of using multiple interface with separate solutions. The EdgeHandler allows users to seamlessly control all devices, from security systems to alarms, into one single screen for ease of use. Our solution offers a smart tool to manage security systems and video surveillance solutions that allows users to view and control multiple interface in one single screen without complicated integrations.

IP Camera interface available with Decoder

Real-time monitoring by registering IP Cameras Any DVR/NVR can be monitored and controlled by using Adaptor.

EHA200

► Technical Specifications



• Key Features of EdgeHandler

- Real-time streaming of HDMI video
- The fastest proprietary streaming engine embedded
- Perfect Mouse Synchronization
- Multiple streaming & resolution
- Keyboard and Mouse Controllability
- Power Cycling and Audio, etc. (to be supported)
- Possible to turn ON/OFF Power using relay port remotely
- Two way audio communication (Optional)
- Applications
- Security system maintenance
- Unmanned facility maintenance
- Remote system maintenance etc.

Video

Max. Streaming Rate	Up to 60fps @ Full-HD / Triple Streaming
Supported Codec	H.264 / H.265 (Option) Video compression, M-JPEG
Connections	Up to Four connections from EHD200

Interface

Video Out	1 HDMI - 1080p60p, 720p60p, 1280x1024, 1024x768
Audio In/Out	1 Port (MIC/SPK)
Alarm	1 Alarm Output
Serial Port	1 Serial Port (reserved for future)
Peripherals	1 USB Port (B type)

Network

Ethernet	10/100/1000-base-T (auto sensing)
Dynamic IP	DDNS support
Security	ID/Password protection DRM based proprietary secure key distribution protocol (to be released)
Miscellaneous	Web interface 4 connections from EHD

Hardware

Approvals	KC, FCC, CE, RoHS
Working Condition	0°C ~ +50°C, ~80% RH
Power Supply	SMPS, DC 12V @1A
Power Consumption	Max. 3.5W
Dimension	107(W) x 83(D) x 26(H) mm
Weight	About 165g without Power Supply

EHA300

► Network Adapter



EdgeHandler Adapter (EHA300) is a network adapter which is connected to the target device such as HDMI output device, PC, DVR, NVR and I/O devices. It can convey mouse, keyboard and control information and transmit video through IP network remotely. With EdgeHandler Decoder (EHD200), remote video devices can be controlled.

• Tech Notes

Backdoor Issue free

FlexWATCH uses backdoor issue free USA Ambarella platform.

Easy Integration of other vendors DVR, NVR and VMS

If the video output format of DVR system is admitted to EdgeHandler™ Adapter, most of systems are managed remotely. Any concern supporting the customer system vanishes.

Real-time streaming of HDMI Video

Supports various Video compression standard (H.265/H.264/MJPEG).

The fastest proprietary streaming Engine embedded, Selectable Video Bandwidth and Selectable Video Quality and Resolution.

No additional Software installation needed

No dependency of operating system (Windows/Linux/MAC), target hardware and any outside service. Supports any PC/Embedded H/W Irrelevant to Virus infection of HDMI output device. No impact on the system performance of HDMI output device.

Strong Security & Encryption

Strong Security & Encryption by using proprietary hardware key.

Supports AES, DES, RSA algorithms through Hardware Accelerator.

Applications –POS Surveillance System

Our solution provides small-mid sized retail managers and shop owners with a complete picture of transaction activities by enabling monitoring of suspected events with IP surveillance cameras or DVRs.

IP Camera interface available with Decoder

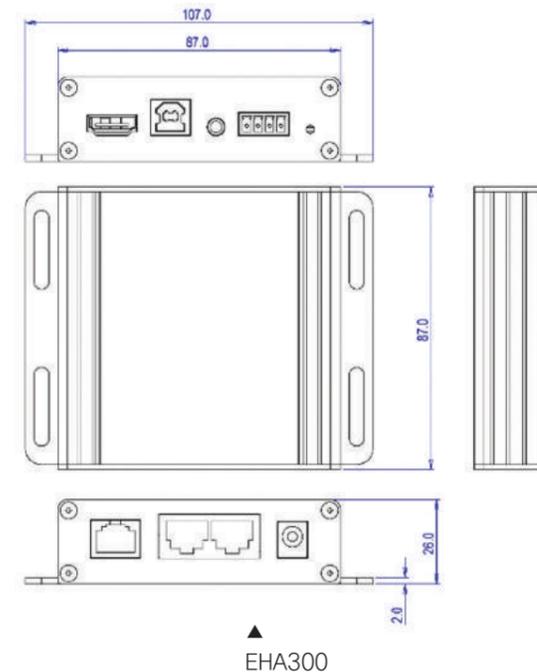
Real-time monitoring by registering IP Cameras Any DVR/NVR can be monitored and controlled by using Adaptor.

Easy Integration of any PC system

PC is widely used such as ATM, kiosk, digital signage, access control, FA, etc. Those PC can be controlled remotely seeing the video screen in real-time.

EHA300

► Technical Specifications



• Key Features of EdgeHandler

- Real-time streaming of HDMI video
- The fastest proprietary streaming engine embedded
- Perfect Mouse Synchronization
- Multiple streaming & resolution
- Keyboard and Mouse Controllability
- Power Cycling and Audio, etc. (to be supported)
- Possible to turn ON/OFF Power using relay port remotely
- Two way audio communication (Optional)
- Applications
- Security system maintenance
- Unmanned facility maintenance
- Remote system maintenance etc.

Video

Max. Streaming Rate	Up to 60fps @ Full-HD / Triple Streaming
Supported Codec	H.264 / H.265 (Option) Video compression, M-JPEG
Connections	Up to Four connections from EHD200

Network

Ethernet	2 x 10/100/1000-base-T (auto sensing)
Dynamic IP	DDNS support
Security	ID/Password protection DRM based proprietary secure key distribution protocol (to be released)
Miscellaneous	Web interface 4 connections from EHD

Interface

Video Out	1 HDMI - 1080p60p, 720p60p, 1280x1024, 1024x768
Audio In/Out	1 Port (MIC/SPK)
Alarm	1 DI / 1DO
Serial Port	1 Serial Port (reserved for future)
Peripherals	1 USB Port (B type)

Hardware

Approvals	KC, FCC, CE, RoHS
Working Condition	0°C ~ +50°C, ~80% RH
Power Supply	SMPS, DC 12V @1A
Power Consumption	Max. 3.5W
Dimension	107(W) x 83(D) x 26(H) mm
Weight	About 165g without Power Supply

EHD200

► Network Adapter



EHD200

EdgeHandler Decoder (EHD200) is a one of management units to control EdgeHandler Adapter (EHA200/EHA300). It can be used to control remote video devices like HDMI output device, PC, DVR and NVR. It can register up to 64 EHA200 or EHA300 adapters.

• Tech Notes

Backdoor Issue free

FlexWATCH uses backdoor issue free USA Ambarella platform.

Save Video LOG

In case of using the Decoder with built-in storage (HDDs), Possible to record all contents of software operation and system operation of HDMI video output device under various conditions with high compression and good quality. Real-time recording with Full HD quality for up to 64 Adaptors.

Super Low Network Bandwidth

In order to control several Full HD video channels remotely, it requires lots of bandwidth. Only it requires the single Full HD video bandwidth to manage all video channels.

Applications – Equipment Monitoring

Many industrial manufacturing companies need to manage and maintain their equipment. Our solution enables them to integrate an on-site monitoring system and control center into one screen for viewing and controlling keyboard and mouse via internet.

Applications –POS Surveillance System

Our solution provides small-mid sized retail managers and shop owners with a complete picture of transaction activities by enabling monitoring of suspected events with IP surveillance cameras or DVRs.

Strong Security & Encryption

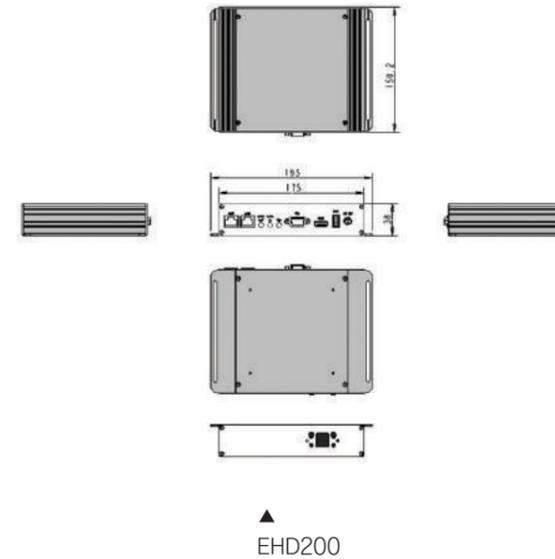
Strong Security & Encryption by using proprietary hardware key.
Supports AES, DES, RSA algorithms through Hardware Accelerator.

No additional Software installation needed

No dependency of operating system(Windows/Linux/MAC), target hardware and any outside service. Supports any PC/Embedded H/W Irrelevant to Virus infection of HDMI output device. No impact on the system performance of HDMI output device.

EHD200

► Technical Specifications



EHD200

• Key Features of EdgeHandler

- Real-time decoding of streaming video
- Up to 64 adapter(EHA200, EHA300) can be registered
- Perfect Mouse Synchronization
- Keyboard and Mouse Controllability
- Applications
- Security system maintenance
- Unmanned facility maintenance
- Remote system maintenance etc.

Video

Decoding Performance	Max. 30fps x 8 Channels @ 1080P 30fps x 64ch @ D1
Supported Codec	H.264 / H.265 (Option) Video compression, M-JPEG
Display Mode	Max 8 x 8 display mode Group display mode
Re-streaming	Support Video Re-streaming

Network

Ethernet	2 x 10/100/1000-base-T (auto sensing)
Dynamic IP	DDNS support (www.ipcctvdns.com)
Security	ID/Password protection DRM based proprietary secure key distribution protocol (to be released)
Miscellaneous	Web interface Max. 16 connections

Interface

Video Out	1 HDMI, 1 VGA
Audio In/Out	1 Speaker, 1 Microphone (LINE IN port : Reserved)
Peripherals	2 USB Port (B type) for Mouse, Keyboard etc.

Hardware

Approvals	KC, FCC, CE, RoHS
Working Condition	0°C ~ +50°C, ~80% RH
Power Supply	SMPS, DC 12V @1A
Power Consumption	Max. 4.5W
Dimension	195(W) x 150.2(D) x 38(H) mm
Weight	About 725g without Power Supply

Smart NVR



• Key Features

- Web-based IP Video Management Software
- Real time Liveview Streaming, Recording and Playback
- Megapixel camera support
- Max. 3,840fps/128ch Redistribution Streaming (64-512 users)
- Max 16ch Simultaneous Search & Playback
- Supports Triple Codec (H.264, MPEG-4, M-JPEG)
- Video, Audio, PTZ, DI/DO control
- Automatic IP Camera con guration
- Multivendor camera support
- Multi monitor for local display
- POS / Serial Data / VA integration
- Smart Map, Smart Alarm support

Technical Specifications

Video Input Channels	1-128 IP Stream
Live Casting	Display mode : 4,9,16,25,36,49,64, 81,100 Special display mode : 2, 4, 6, 7, 8, 10, 12, 13 Max 100ch simultaneous live video displaywith live audio
Audio Encoding	G.711 , G.723 audio codec support
Audio Channels	2 way MIC & SPK for NVR system
Recording	Video, audio & data recording Up to maximum 3,840fps / 128ch Recording : Schedule, Motion-driven, event-driven Various recording mode according to multiple combination of date, time & alarm. (using 'AND' & 'OR' conditions)
Backup	AVI format support, FJP, IDX
Search & Playback	Various search mode according to multiple combination of date, time & alarm (using 'AND' & 'OR' conditions) 6 play mode : Forward, Reverse, Fast Forward, Fast Reverse, Single step Forward, Single Step Reverse Max. 16 channel playback simultaneously
PTZ Support	8 direction Pan & Tilt, Zoom + - , Autopan, 256 preset, Touring Continuous & Step mode
Proxy Support	All interface to network device through only one standard web interface Video proxy, Audio proxy, PTZ proxy, DI/DO proxy
Dynamic IP	Dynamic IP service using www. ipcctvdns.com
Smart Solution	Smart Phone Application (IOS, Android)
Security	Channel based user password protection for live-cast, PTZ, alarm output and audio

Web Interface	Live-cast, PTZ control, search through Web browser Minimum PC requirement - Windows XP Pro (IE 6.x or later), Pentium4 (2Ghz, 2G RAM), Video Card (256MB RAM, 1024x768)
Software License	16, 32, 64, 128ch Software License (Freeware 9ch) Full-featured PC NVR with matrix functionality
Resolution Support	QXGA: 2048x1536, UXGA: 1600x1200, SXGA: 1920x1080, HD: 1280x720, XGA: 1024x768, SVGA: 800x600, VGA: 640x480, D1: 720x480(576), 4CIF: 704x480(576)/704x240(288), CIF: 352x240(288), OCIF: 176x112(144)
Install & Maintenance	Configuration by installation wizard
Advanced Function	HTTP port filtering, Admin, Multilevel password(256 users), Disk Circulation
Multivendor Support	Axis, Mobotix, Panasonic, Arecont Vision, IOInVision, Vivotec and etc. Please make sure the supported compression format according to the brand Supported in Multivendor version only.
Server/Group Mode	New, Dual Streaming mode, Max. frame rate, ODS control Edit, Delete, Copy, Alignment
Video Mode	Server registration, Group registration, Dual monitor support Full screen mode, Circulation mode, Ratio mode (3 types)
IP Device Registration	Simple registration, Manual registration, Access homepage
Search Mode	Server registration, Group registration Calender search, Condition search Snapshot, Print
Preference Settings	User/Password, Access control, HTTP port Disk circulation, Disk full, Disk select E-mail report, E-mail account
Remote Control	Smart Multi Viewer Player Total 16 Smart NVR control
Applications	Smart Alarm Viewer Smart Map Viewer

Technical note and tips

What makes FlexWATCH different.

Backdoor Issue free

FlexWATCH uses backdoor issue free USA Ambarella platform.

Broad range of products and solutions

During more than 20 years, Seyeon Tech has been focusing on only IP CCTV products and solution. There are a lot of manufacturing and system integration partners globally. Particularly, Seyeon Tech is welcoming customers who are specialized in each Vertical Market

Device Independent SDK

All FlexWATCH products use the same user interface. Seyeon Tech has smart NVR (windows basis) and R2/R5 NVR(Linux PC, embedded). All system uses the same SDK. If one device is integrated to partner products, it means that all FlexWATCH products are already integrated. It alleviates the development and customization burden. Even though hardware platform is changed, the SDK is forward and backward compatible

Modular Architecture

FlexWATCH system including IP cameras, NVR even mobile application uses the same software platform which is called

IP Cameras

Backdoor Issue free

Majority of FlexWATCH Camera uses backdoor issue free USA Ambarella platform.

Tips for color setting

When you feel the color of the image is not so brilliant or strong, it is recommended to set Saturation in the camera setting menu higher. To get a crystal clear bright image, it is strongly recommended to set Auto Exposure weight higher. Auto Exposure weight needs to be set lower when specific area such as number plate is too much bright due to the reflection from sunlight or spotlight

2 SD card slots

Some of FlexWATCH cameras like FW7930-TXM or FW9302-TXM has two SD card slots which double the recording capacity or can be recorded with RAID 0

“Modular Architecture”. FlexWATCH products are composed of several software modules comprised of RX, TX, REC(recording), VMFD(Proprietary middle engine), Display modules. By the combination of each module, it becomes different products like IP camera and NVR. The modular architecture enhances the operating performance such as the lowest streaming performance. It is used to all models whatever operation system and hardware CPU are used

Unified User Interface

Based on the Modular Architecture, all FlexWATCH products provide the same user interface regardless of product models. It provides common user interface to all devices such as IP camera and NVR. By glance, it is hard to distinguish what OS and SOC are used for the products. The same and unified user interface helps customer reduce the technical support burden

Perfect Compatibility

All FlexWATCH products supports forward and backward compatibility such as newly released models and the oldest model from more than 10 years ago.

3 Independent color modes

FlexWATCH camera has 3 independent color modes Such as DEFAULT, STANDARD, VIVID. According to the customer needs, this mode can be chosen

4 Independent parameter setting

FlexWATCH camera has 4 independent one-shot camera parameter setting modes. Default (Day mode), Night mode, DI mode by external sensor and Motion Detection mode by built in motion detection. Most of IP cameras provide the fixed setting. However, FlexWATCH camera supports dynamic change of parameter setting

Add-on Services : Integration Enablement via Serial

FlexWATCH cameras have a capability to send the serial device information of data generation devices like POS or various IoT sensors. For the full integration, FlexWATCH system provides “Add-on-Service”. For the details, please contact technical support team

IP Cameras

Audio Detection

FlexWATCH camera supports Audio detection as alarms event similar to video motion detection. It gives alarm event when pre-configured audio level is detected

DOL WDR

DOL WDR stands for digital overlap wide dynamic range, it's the next generation Sensor technology, which is based on WDR technology exclusively developed by Sony.

DOL WDR can provide many advantages such as improved characteristics in low-light environments compared to conventional WDR that uses multiple frame set output. In challenging lighting conditions, DOL-WDR is capable of capturing both dark and bright part then combining the differences into a scene to generate a highly realistic image.

H.265 codec

H.265 codec gives more efficient file size than previous H.264 to save storage and bandwidth and to have interoperability with legacy systems

Integration Services via Email, FTP

Buffered and non-buffered email, ftp services are supported. According to event and schedule, pre-post alarm buffering is supported. There are various types of CGI command to active these services. For the details, please contact technical support team

IP filtering

The IP filtering enables you to control what IP traffic you want to allow into and out of your IP camera. Use IP filtering to help protect your IP camera by filtering the access from the pre-configured IP address set

IR level control (FW9305-FXZ)

IR level will be controlled by zoom ratio automatically. User can set optimal IR brightness manually good for the image at any zoom position

Latency

Latency is a request and response time between IP cameras and client devices or servers remotely connected. FlexWATCH IP camera shows the lowest Latency time (25%~40% better) against popular other IP cameras from various brands

Local SD Card Backup like NVR

Some important sequence of still images or moving frames can be stored in the SDHC memory card. This action can be configured to work with pre-post- alarm event or a given recording condition by motion and schedule. With FlexWATCH SD recording, NVR functions are perfectly implemented at IP

camera with various recording modes. Conditional search by motion, schedule and event is available through NVRs, PCs and mobile devices

Management white list

A whitelist is a list of items that are granted the access to a certain system or protocol. When a white list is used, all entities are denied the access, except those included in the whitelist. Network administrator may configure a firewall with a whitelist that only allows specific IP addresses to access the IP camera or NVRs.

Min & Max Shutter Speed

Users can set Min & Max shutter speed according to the environment. This function is important when camera is installed for License Plate Number reading when car is moving fast. By setting Minimum shutter speed fast, it gives clear image without motion blur.

Night color mode

With most advanced Sony sensor, the excellent high sensitivity and low noise performance generate a wonderful full-color image even during night time without IR. IR will be automatically turned off at night time when the camera is set to Night color mode to avoid wrong color reproduction due to IR lighting

NIR - Near IR Region

NIR is a region of the electromagnetic spectrum that has unique properties which make it very useful for characterizing materials. The NIR region is from 700 to 2500 nm. FlexWATCH IP cameras has the best image quality in NIR region by using the most advanced Sony sensor

Optimized Multiple Profile Streaming

Up to 4 streams, many parameters can be set differently such as resolution, video encoding method and frame rate for different purposes

Region of Interest (ROI)

Some cameras offer the ability to transmit only a partial region of a sensor, which offers the option of concentrating on image areas containing the information relevant to image processing. Reducing the size of the image transmitted by the camera reduces the image size and the bandwidth required for each image. In configuring an ROI, the read out window is reduced to the area relevant for analysis, increasing the image frequency significantly

Saturation

Saturation defines the brilliance and intensity of a color. When the color of the image is not so brilliant or strong, it is recommended to set Saturation higher. The term of "hue" refers to the color of the image itself, while saturation describes the intensity (purity) of that hue. When color is fully saturated, the color is considered in purest (truest) version

IP Cameras

Tips for color setting

When you feel the color of the image is not so brilliant or strong, it is recommended to set Saturation in the camera setting menu higher. To get a crystal clear bright image, it is strongly recommended to set Auto Exposure weight higher. Auto Exposure weight needs to be set lower when specific area such as number plate is too much bright due to the reflection from sunlight or spotlight

STARVIS

STARVIS is a Sony technology which is a back-illuminated pixel technology used in CMOS image sensors for surveillance camera applications. The excellent high sensitivity and low noise generates a wonderful full-color imaging world in any scene, any time

Text OSD

User can set 9 set of text strings to display direction of the camera or location of the camera. Each string can be extended up to 24 alphanumeric characters. In case of PTZ, user can set 8 different directions like to Las Vegas or -> Los Angeles by PAN angle. When PTZ moves to the pre-set PAN angle, it automatically displays the text string set on the PAN angle.

Global shutter cameras for LPR

Global shutter

High-speed, smear-free still image capture is the hallmark of global shutter image sensors. Applications such as traffic management, metrology and robotics inspection all need to capture the fast-moving objects without smear or distortion. To stop the action, the camera starts and stops exposure of all pixels in an array simultaneously, under electronic control. This functionality requires specific design features, and not all sensors have them. Full-frame CCDs require mechanical shutters or strobing to achieve this result, introducing more cost and complexity into the vision system. Frame-transfer CCDs may not provide the speed required, or may be difficult to cost-justify due to the extra silicon required for the storage area.

Standard rolling-shutter CMOS sensors distort images of moving objects because they only read out one line of their arrays at a time—by the time they read the next line, the object has moved. This distortion is a major obstacle for machine vision applications such as automated sorting or defect inspection—objects that that should be a "pass" are judged as "fail" because the image fed into the pattern-matching algorithms is distorted. For example, instead of valid round holes, the system would see unacceptable ellipses.

Unified Communication (Single HTTP port for live/ playback/ control)

FlexWATCH camera uses only TCP port 80 of HTTP. All communication ports are integrated to single port. This is based on proprietary streaming protocol which helps reducing installation burden. Most of other vendors IP camera uses different TCP/UDP ports for video/audio/data communication. FlexWATCH camera supports other industrial standard protocols as well

Zero-configuration networking (zeroconf)

is a set of technologies that automatically creates a usable IP camera network based on the Internet Protocol Suite (TCP/IP) when IP cameras are interconnected with other device or server. It does not require manual operator intervention or special configuration servers. Without zeroconf, a network administrator must set up network services, such as Dynamic Host Configuration Protocol (DHCP) and Domain Name System (DNS), or configure each computer's network settings manually.

Rolling Shutter



Motion Blur



Global Shutter



Strobe Light

Strobes produce a bright light in a similar way to on-camera flash. They differ in that they're brighter, they produce extremely short bursts of light, and they recharge quickly. While strobe lights produce a short, yet powerful, burst of illumination, continuous light stays on during the entire photo session. In IP cameras, shutter speed must be synchronized with strobe timing.

PTZ cameras

Intelligent Varifocal IR LED control: IR PTZ only

The IR beam automatically adapts becoming wider or narrower as the camera zooms in or out

Schedule Pan Tilt Zoom FW8706 series only

Built-in Real Time Clock enables the scheduling of Pan Tilt Zoom functions including independent exposure settings for each preset

Nominal North direction FW8706 series only

User can set the North direction of camera so it displays the cardinal directions while moving.

Text OSD

User can set 9 set of text strings to display direction of the camera or location of the camera. Each string can be extended up to 24 alphanumeric characters. When PTZ moves to the pre-set PAN angle up to 8, it automatically displays the text string set on the PAN angle like "to Las Vegas" or "-> Los Angeles"

NVR

Audio Broadcasting

By Audio broadcasting function, FlexWATCH NVR can broadcast audio with the mic. on FlexWATCH NVR to multiple speakers at FlexWATCH IP cameras connected in the network. It can simultaneously broadcast the audio up to 32ch of IP cameras by any GROUPs at the same time.

Mirroring Function

By using the mirroring function, FlexWATCH NVR can monitor and playback other adjacent FlexWATCH NVRs and cameras (SD). With mirroring function, each FlexWATCH NVR can remotely operate other FlexWATCH NVRs without any additional software and agent programs. Each NVR has an ability to control all video/audio and command (e.g., PTZ control) with low latency. The mirror function simplifies the configuration of

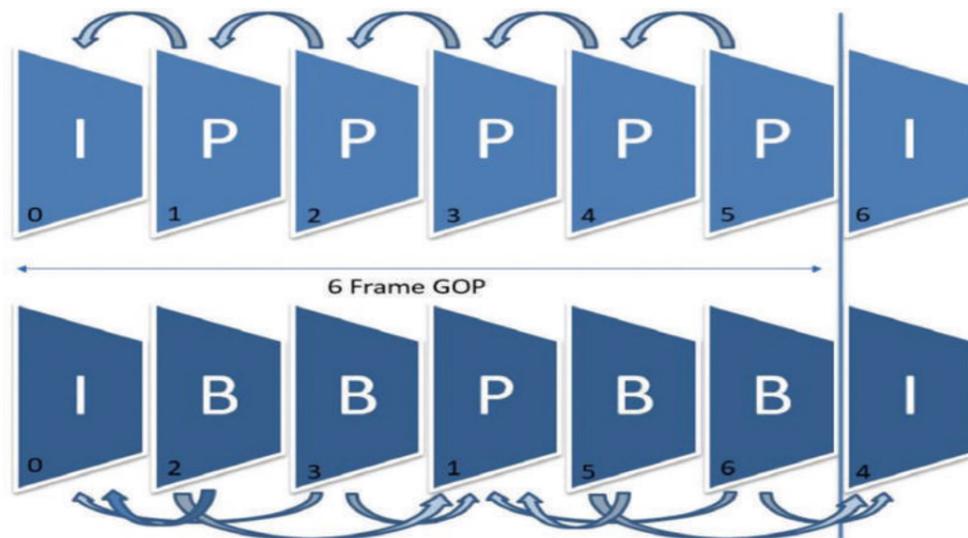
NVR and administration of multiple FlexWATCH NVRs

Relay server: Restreaming

NVR works as a restreaming server that registers FlexWATCH IP cameras and other 3rd party ONVIF IP Cameras and re-transmits the Video streams up to 4 concurrent streams to other various client software or NVRs.

I Frame Recording mode

FlexWATCH NVRs support I frame recording mode. It records only "I frame" at each GOP and discards "B frame" and "P frame". "I frame recording mode" at IP surveillance system is an alternative method to support the pre-post alarm recording function of DVR system. Additionally, it dramatically reduces the network usage for pre-post alarm recording mode



"I frame" can be recorded without any adjacent pictures information
B and P frames are dependent on "I frame" to decode them. If "I frame" is missing, all adjacent B and P frames can not be decoded
GOP : Group of Pictures

EdgeHandler(TM)

EdgeHandler(TM) is a hardware based remote monitoring and control system. The system is composed of EdgeHandler Adapter and Decoder. The Adapter is connected to the devices to be controlled and monitored. The Decoder is a device to control multiple Adapters.

Universal Video Management System : Most of DVR, NVR and VMS can be managed at the single screen. There is no complex protocol integration. EdgeHandler™ enables the system much simpler and robust.

Easy Integration of other vendors DVR, NVR and VMS

: if the video output format of DVR system is admitted to EdgeHandler™ Adapter, most of systems are managed remotely. Any concern supporting the customer system vanishes

Easy Integration of any PC system : PC is widely used such as ATM, kiosk, digital signage, access control, FA, etc. Those PC can be controlled remotely seeing the video screen in real-time

Super Low Network Bandwidth : In order to control several Full HD video channels remotely, it requires lots of bandwidth. However, EdgeHandler™ requires only single Full HD video bandwidth to manage all video channels of DVR and NVR

Real-time streaming of HDMI Video : It supports various Video compression standard (H.265/H.264/MJPEG).

Simultaneous real-time monitoring of Multiple HDMI Videos

Power ON/OFF function of HDMI output Device: It is possible to turn ON/OFF Power of HDMI output Device using relay output of Adaptor from Decoder remotely

IP Camera supported from Decoder

Save Video LOG : In case of using the Decoder with built-in storage (HDDs), it is possible to record all contents of software operation and system operation of HDMI video output device under various conditions with high compression and good quality. It allows real-time recording with Full HD quality up to 64 Adaptors.

No additional Software installation : Any software is not installed at the target device (HDMI). It helps protecting

any harmful influence like hacking and virus. Moreover, EdgeHandler™ does not depend on No dependency of operating system (Windows/Linux/MAC), target hardware platform

Application example: Equipment Monitoring

Many industrial manufacturing companies need to manage and maintain their equipment. The solution enables them to integrate an on-site monitoring system and control center into one screen for viewing and controlling keyboard and mouse via internet.

Application example: CCTV Surveillance System

Our solution helps to simplify the hassle of using multiple interfaces with separate solutions. The EdgeHandler™ allows users to seamlessly control all devices, from security systems to alarms, into one single screen for ease of use. This solution offers a smart tool to manage security systems and video surveillance solutions that allows users to view and control multiple interfaces in one single screen without complicated integrations.

Application example: POS Surveillance System

It provides small-mid-sized retail managers and shop owners with a complete picture of transaction activities by enabling monitoring of suspected events with IP surveillance cameras or DVRs.



Smart Solution For Your IP
Surveillance System

SEYEONTECH

Above specifications can be changed without prior notice

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