

Hanwha Techwin is a leading supplier of advanced video surveillance solutions for IP-video, analog and hybrid systems. Building on the company's history of innovation, Hanwha Techwin is dedicated to providing systems solutions with the highest levels of performance, reliability and cost-efficiency. Hanwha Techwin is committed to the continued development of innovative systems products for professional security applications.

For additional information, visit <http://security.hanwhatechwin.com/>

1. **PRODUCTS**
   1. **EQUIPMENT**
      1. Manufacturer : Hanwha Techwin (http://security.hanwhatechwin.com/)
      2. Model : PNM-9084QZ1
      3. Alternates : None
   2. **GENERAL DESCRIPTION**
      1. Video Compression and Transmission – The camera shall have the following properties relating to the video signals it produces.
         1. H.265, H.264 and MJPEG compression, each derived from a dedicated encoder and capable of being streamed independently and simultaneously
            1. H.265 and H.264 – frame rates to 60fps/50fps (60Hz/50Hz)
            2. MJPEG – frame rates to 30fps/25fps (60Hz/50Hz)
         2. The camera shall be able to configure up to 10 independent video stream profiles with differing encoding, quality, frame rate, resolution, and bit rate settings.
         3. Resolution selections

1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240

* + - 1. Simultaneous unicast access by up to 20 users
      2. Multicast or unicast capable
      3. Dynamic DNS (DDNS) support.
      4. WiseStream and Dynamic GOV to efficiently manage bitrate of the video stream.
    1. Camera – The camera device shall have the following physical and performance properties:
       1. IP66, IK10, NEMA4X rated for protection against impacts
       2. Auto day/night operation with removable IR cut filter
       3. 2D and 3D digital noise reduction
       4. 32 privacy masking regions utilizing polygonal
    2. Intelligence and Analytics – The camera shall have a suite of integral intelligent operations and analytic functions to include:
       1. Motion detection with definable detection areas and minimum / maximum object size definition that ignores false alarms such as trees and waves on water.
       2. Detection of logical events of specified conditions from the camera’s video input
          1. Defocus detection, Directional detection, Fog detection, Face detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection
    3. Interoperability – The camera shall be ONVIF Profile S / T compliant.
    4. The camera shall possess the following further characteristics:
       1. Built-in web server, accessed via standard browsers including MS Edge, Firefox, Chrome and Safari
       2. Micro SD/SDHC/SDXC memory card and NAS recording options, with configurable pre-alarm and post-alarm recording intervals
       3. Bi-directional audio
       4. Alarms and notifications
          1. alarm notification triggers:

alarm input

video analytics

network disconnect

* + - * 1. available notification means upon trigger:

file upload via FTP and e-mail

notification via e-mail

record to local storage (SD/SDHC/SDXC card)

alarm output

handover

* + - 1. Pixel Counter available in the plug-in web viewer.
      2. POE capable
  1. **DETAILED SPECIFICATIONS**
     1. Video
        1. Image
           1. Sensor : 1/2.8" 2M CMOS x 4CH

pixels per sensor : 1920 (H) x 1080 (V)

scanning : progressive

* + - * 1. Minimum illumination

Color mode : 0.04Lux(F2.2, 1/30sec)

Black & white mode : 0.004Lux(F2.2, 1/30sec)

* + - * 1. The following features with control settings shall be available:

Camera Title

Off / On (Displayed up to 85 characters per line)

English / Numeric / Special characters

Multi-line (Max. 5lines), Color (Grey / Green / Red / Blue / Black / White), Transparency, Auto scale by resolution

Direction Indicator : Support

Day/night : Auto (ICR)

Backlight compensation : BLC, HLC, WiseDR

WDR : 120dB

Digital Noise Reduction (DNR) : Off / On (SSNR V)

Digital Image Stabilization: Support

Defog : Support

Motion Detection : Off / On (8ea, 8 point polygonal zones)

Privacy Masking : Off / On (32ea, polygonal zones)

Color : Gray / Green / Red / Blue / Black / White

Mosaic

Gain Control : Off / Low / Middle / High

White Balance : ATW / AWC / Manual / Indoor / Outdoor

Electronic shutter speed : Minimum / Maximum / Anti flicker (2 ~ 1/12,000sec)

Image flip : Off / On

Image mirror : Off / On

Alarm I/O : Input 1ea / Output 1ea

Alarm Triggers : Analytics, Network disconnect, Alarm input

Alarm Events

File upload via FTP and e-mail

Notification via e-mail

SD/SDHC/SDXC or NAS recording at Event Triggers

Alarm output

Handover(PTZ Preset)

* + - * 1. Lens : 3 ~ 6mm (Optical 2x) motorized varifocal

Max. Aperture Ratio : F2.2(Wide) ~ F3.1(Tele)

FoV

H : 107˚(Wide) ~ 56.3˚(Tele) / V : 57˚(Wide) ~ 31.5˚(Tele)

D : 126˚(Wide) ~ 64.3˚(Tele)

Min. Object Distance : 0.5m (1.64ft)

Lens Type : Fixed Iris

Focus Control : Simple focus

* + - * 1. Pan /Tilt / Rotate

Remote adjustment (Max. 200cycles)

0 ~ 360 ˚ / 0 ~ 73 ˚ / 0 ~ 90 ˚

* + - * 1. DORI (EN62676-4 standard)

Detect : Wide: 28.4m(11.18ft) / Tele: 71.8m(28.27ft)

Observe : Wide: 11.4m(4.49ft) / Tele: 28.7m(11.30ft)

Recognize : Wide: 5.7m(2.24ft) / Tele: 14.4m(5.67ft)

Identify : Wide: 2.8m(1.10ft) / Tele: 7.8m(3.07ft)

* + - 1. Video Streams
         1. The camera shall be able to produce 10 video profiles, each of which may have the following properties:

Encoding type : H.265, H.264, MJPEG

Resolution:

1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240

Frame rate

H.265 and H.264 : Max.60fps/50fps (60Hz/50Hz)

MJPEG : Max. 30fps/25fps (60Hz/50Hz)

Smart Codec : Manual(5ea area), WiseStream Ⅱ

Bit rate control

H.265 and H.264 : constant bit rate (CBR) or variable bit rate (VBR)

MJPEG : variable bit rate (VBR)

* + - 1. Number of multi-streaming profiles : 10 maximum
      2. Simultaneous users (total) : 20 maximum (unicast)
      3. Storage and Recording
         1. The camera shall have onboard SD card storage.

Card type : Micro SD/SDHC/SDXC

Capacity : Up to 256GB (each CH) 4CH

Image content on the card shall have the ability to be downloaded to a selected destination.

* + - * 1. NAS
      1. Interoperability - Video streams shall be capable of supporting ONVIF protocol, profiles S / T.
      2. Single Images - The camera shall support jpg file image screenshot and export.
      3. Memory : 5GB RAM, 1280MB Flash
    1. Network
       1. Connectivity : Metal shielded RJ-45(10/100/1000BASE-T)
       2. Protocols supported :
          1. Transmission Control Protocol (TCP), Internet Protocol (IP) v4 and v6, User Datagram Protocol (UDP)
          2. Configuration: Dynamic Host Configuration Protocol (DHCP)
          3. Web services: Hypertext Transfer Protocol (HTTP), Secure HTTP (HTTPS)
          4. Security: Secure Sockets Layer(SSL)/Transport Layer Security(TLS)
          5. Network services: Address Resolution Protocol (ARP), Bonjour, Domain Name System (DNS), Internet Control Message Protocol (ICMP), Link Layer Discovery Protocol(LLDP), Network Time Protocol (NTP), Protocol Independent Multicast-Sparse Mode (PIM-SM), Simple Network Management Protocol (SNMP v1/2c/3 – MIB-2), Universal Plug and Play (UPnP)
          6. Media: Real-Time Transport Protocol (RTP), Real-Time Control Protocol, Real-Time Streaming Protocol (RTSP), Secure Real-Time Transport Protocol(SRTP)
          7. Multicast: Internet Group Management Protocol (IGMP)
          8. Notifications: File Transfer Protocol (FTP), Simple Mail Transfer Protocol (SMTP)
       3. DDNS
          1. The 2M camera shall support DDNS services offered by the Manufacturer and other publicly available service offerings.
       4. Quality of Service (QoS)
          1. Layer 3 DSCP
       5. Security features
          1. HTTPS(SSL) Login Authentication
          2. Digest Login Authentication
          3. IP Address Filtering
          4. User access log
          5. 802.1X Authentication(EAP-TLS, EAP-LEAP)
          6. Device Certificate(Hanwha Techwin Root CA)
       6. Application Programming Interface
          1. ONVIF Profile S / T, SUNAPI(HTTP API), Wisenet open platform
       7. Discovery
          1. Manufacturer shall offer a discovery program to identify all devices of his manufacture on the network.
    2. Audio
       1. Direction : bi-directional
       2. Audio In
          1. Selectable (Mic in / Line in), Supply voltage: 2.5V DC (4mA)
          2. Input impedance: approx. 2K Ohm
       3. Audio Out
          1. Line out, Max output level : 1Vrms
       4. Compression
          1. G.711 u-law / G.726 Selectable
          2. G.726 (ADPCM) 8KHz, G.711 8KHz
          3. G.726: 16Kbps, 24Kbps, 32Kbps, 40Kbps
          4. AAC-LC: 48Kbps at 16KHz
    3. Electrical
       1. Input Voltage : HPoE (IEEE802.3bt, Class6, Type3, Injector included)
       2. Power consumption
          1. Max 33W, Typical 20W
    4. Mechanical And Environmental
       1. Material : Aluminum
       2. Dimensions : Ø251 x 116.5mm (Ø9.88 x 4.58”)
       3. Weight : 3kg (6.6lb)
       4. Temperature And Humidity
          1. Operating : -40°C ~ +55°C(-40°F ~ +131°F) / Less than 90% RH (\*Start up should be above at -35°C)
          2. Storage : -50°C ~ +60°C(-58°F ~ +140°F) / Less than 90% RH
       5. Environmental Rating
          1. IP66
          2. IK10
          3. NEMA4X
       6. RAL Code
          1. RAL9003
       7. Compatible Conduit hole / Gangbox
          1. 3/4" (M25)
          2. single, double, 4" octagon, 4" square
       8. Hanging Mount (Dome) : SBP-317HMW
    5. EMC & Safety
       1. FCC 47 CFR Part 15 Subpart B
          1. ANSI C63.4-2014 Class A
       2. IC Regulation ICES-003:2016
          1. ANSI C63.4-2014 Class A
       3. CE EMC-Directive 2014/30/EU
          1. EN 55032:2012/AC:2013 Class A
          2. EN 50130-4:2011
          3. EN 61000-3-2:2014
          4. EN 61000-3-3-2013
       4. VCCI-CISPR 32: Class A
       5. AS/NZS CISPR32:2015 Class A
       6. UL listed
       7. CE EN 50581:2012 (hazardous substances)

END OF SECTION