

Hanwha Techwin is a global leading supplier of solutions for IP and analog video surveillance. 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-effectiveness. Hanwha Techwin is committed to the continued development of innovative systems products for professional security applications.

For additional information, visit http://www.hanwha-security.com/

1. **PRODUCTS**
   1. **EQUIPMENT**
      1. Manufacturer : Hanwha Techwin(http://www.hanwha-security.com/)
      2. Model : PNM-9084RQZ
      3. Alternates : None
   2. **GENERAL DESCRIPTION**
      1. The camera shall provide 360-degree field of view and produce video in quad view mode. It shall also provide digital PTZ along with automated video analytics to allow users to efficiently monitor large visual fields with capability to focus on certain areas when suspicious activity is observed.
      2. 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 : Max. 60fps/50fps(60Hz/50Hz)
            2. MJPEG : Max. 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. The camera shall be able to configure various resolution selections.
            1. 1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
         4. The camera shall support unicast video streaming up to 10 users.
         5. The camera shall support multicast video streaming up to 10 profiles
         6. The camera shall be able to configure Dynamic DNS (DDNS). DDNS shall be provided with no additional cost by the manufacturer.
         7. The camera shall provide WiseStream Ⅱ, Dynamic GOV and Dynamic fps to efficiently manage bit rate of the video stream and reduce storage.
            1. Viewing composition: Quad view
      3. Camera – The camera device shall have the following physical and performance properties:
         1. True day/night operation with removable IR cut filter
            1. Low light level operation to 0.05 lux at F1.6 in color mode and 0 Lux for Black and White mode with IR LED on.
         2. The camera shall be able to produce clear images in highly contrast scenes with multi-exposure wide dynamic range up to 120dB.
         3. The camera shall support digital noise reduction using both 2D and 3D noise reduction technology.
         4. The camera shall be able to configure 32 privacy masking areas with polygonal.
         5. The multi-directional camera shall be able to capture high contrast scenes with 120 dB multi-exposure wide dynamic range.
         6. The camera shall provide video display on smart phone (iPhone, Android) to adjust viewing angle, rotation and focus.
         7. One touch (Simple) or manual focus controllable remotely via network. The camera shall have motorized varifocal lens.
         8. Advanced digital image stabilization with built in gyro sensor. The camera shall be able to measure movements in three axes and accurately enhance images from distortions caused by instability.
         9. The camera shall support Pan/Tilt/Rotate through Remote adjustment by 200 cycles.
      4. Intelligence and Analytics – The camera shall have a suite of intelligent analytic functions.
         1. Motion detection with 8 definable detection areas with 8 point polygonal zones, and minimum/maximum object size.
         2. Detection of logical events of specified conditions from the camera’s video
            1. Defocus detection, Directional detection, Fog detection, Face detection, Motion detection
            2. Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line
            3. Audio detection
      5. Interoperability – The camera shall be ONVIF Profile S and T compliant.
      6. The camera shall possess the following further characteristics:
         1. Built-in web server, accessed via non-plugin browsers including Google Chrome, IE11, MS Edge, Mozilla Firefox and Apple Safari.
         2. Micro SD/SDHC/SDXC memory card with configurable pre-alarm and post-alarm recording intervals
         3. Alarms and notifications
            1. alarm notification triggers

Alarm input

Motion detection

Video analytics

Network disconnect

* + - * 1. available notification means upon trigger

File Upload via FTP and E-mail

Notification via E-mail

Local storage (SD / SDHC / SDXC) at event triggers

External output

* + - 1. Pixel Counter available in the web viewer.
      2. HPoE capable
      3. IP66, IK10, NEMA 4X capable
      4. This device has been verified using STP cable. The use of appropriate GND grounding and STP cable is recommended to effectively protect your product and property from transient voltage, thunder stroke, communication interruption.
      5. **NDAA Compliant**
  1. **DETAILED SPECIFICATIONS**
     1. Video
        1. Imaging device : 1/2.8" 2MP CMOS x 4ch
        2. Image Pixels
           1. Total: 1,945(H) x 1,109(V)
           2. Effective: 1,945(H) x 1,097(V)
        3. Scanning : Progressive
        4. Minimum Illumination
           1. Color : 0.05Lux (F1.6, 1/30sec)
           2. B/W : 0Lux (IR LED on)
        5. S/N Ratio : 50dB
     2. Lens
        1. Focal length : 3.2 ~ 10mm (3.1x) Motorized Varifocal
        2. Max. Aperture Ratio : F1.6(Wide) ~ F2.9(Tele)
        3. Field of View
           1. H: 109.0°(Wide)~33.2°(Tele)
           2. V: 57.4°(Wide)~18.7°(Tele)
           3. D: 132.0°(Wide)~38.0°(Tele)
        4. Min. Object Distance : 0.5m (1.64ft)
        5. Lens Type : DC Auto Iris
        6. Focus Control : Simple Focus
        7. Mount Type : Board-in Type
     3. Pan & Tilt & Rotate
        1. PTR Range : 0˚~360˚ / 30˚~90˚ / 0˚~90˚
        2. PTR Control : Motorized (Max. 200cycles)
     4. Operational Functions
        1. Camera Title
           1. Off / On (Displayed up to 85 characters)
           2. W/W : English / Numeric / Special characters
           3. Common : Multi-line (Max. 5), Color (Gray/Green/Red/Blue/Black/White), Transparency, Auto scale by resolution
        2. Day/Night Setting : Auto (ICR) / Color / B/W / Schedule
        3. IR Viewable Lingth : 30m
        4. Backlight Compensation : Off / BLC / WDR / SSDR
        5. WDR : 120dB
        6. Contrast Enhancement : Support (Level adjustment)
        7. Digital Noise Reduction : Support (SSNR V: 2D+3D Noise filter)
        8. Digital Image Stabilization : Support
        9. Defog : Support
        10. Motion Detection : Off / On (8ea, 8 point polygonal)
        11. Privacy Masking : Off / On (32 zones, polygonal)
            1. Color: Gray / Green / Red / Blue / Black / White
            2. Mosaic
        12. Gain Control : Off / Low / Middle / High
        13. White Balance : ATW / AWC / Manual / Indoor / Outdoor / Mercury / Sodium
        14. Lens Distortion Correction : Support
        15. Electronic Shutter Speed : Min / Max / Anti-flicker (2 ~ 1/12,000sec)
        16. Digital Zoom : None
        17. Digital PTZ : None
        18. Image Rotation
            1. Flip : Off / On
            2. Mirror : Off / On
            3. Hallway view(90°/270°)
        19. Alarm I/O : Input 1ea / Output 1ea
        20. Alarm Triggers
            1. Video Analytics
            2. Network Disconnection
            3. Alarm input
        21. Alarm Events
            1. File Upload via FTP and E-mail
            2. Notification via E-mail
            3. Local storage (SD/SDHC/SDXC) at event triggers
            4. Alarm output
            5. Handover
        22. Pixel Counter : Support
        23. Storage : Micro SD/SDHC/SDXC 256GB/1 slot (total 4 slots)
        24. Intelligent Analytics : Defocus Detection, Directional Detection, Fog Detection, Face Detection, Motion Detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual Line, Audio Detection
        25. Audio In : Selectable (Mic in/ Line in)
        26. Audio Out
            1. Line Out
            2. Max output level : 1Vrms
     5. Video Streams
        1. Video compression : H.265, H.264, MJPEG
        2. Resolution : 1920 x 1080, 1280 x 1024, 1280 x 960, 1280 x 720, 1024 x 768, 800 x 600, 800 x 448, 720 x 576, 720 x 480, 640 x 480, 640 x 360, 320 x 240
        3. Maximum Framerate
           1. H.265 / H.264 : Max. 60fps/50fps (60Hz/50Hz)
           2. MJPEG : Max. 30fps/25fps (60Hz/50Hz)
        4. Smart Codec
           1. Manual Mode (Area-based : 5EA)
           2. WiseStream Ⅱ
        5. Bitrate Control Method
           1. H.265 / H.264 : CBR or VBR
           2. MJPEG : VBR
        6. Streaming Capability : Multiple streaming (Up to 10 profiles)
        7. Streaming method : Unicast / Multicast
        8. Simultaneous Users : 20 maximum (Unicast)
        9. Profile set : Max. 10 ea
        10. Interoperability
            1. ONVIF Profile S / T
            2. SUNAPI
            3. Open Platform
     6. Network
        1. Connectivity – Metal Shielded 10/100 Base-T Ethernet via RJ-45 connector
        2. Protocol
           1. IP v4 / v6, TCP, UDP
           2. Configuration : DHCP, LLDP
           3. Web service : HTTP, HTTPS
           4. Network Service : ARP, Bonjour, DNS, ICMP, NTP, PIM-SM, SNMP v1/2c/3 – MIB-2, UPnP, LLDP
           5. Media : RTP, RTCP, RTSP
           6. Multicast : IGMP
           7. Notifications : FTP, SMTP
           8. Remote Access : PPPoE
        3. DDNS – The camera shall support DDNS services offered by the manufacturer and others publicly available service offerings
        4. QoS – Layer 3 DSCP
        5. Security Feature
           1. User password protection
           2. The device shall not provide a manufacture default password. Default password change shall be required to access the camera.
           3. A minimal level of password complexity shall be required by the camera.
           4. The camera shall not have a manufacture back-door password.
           5. The manufacturer shall provide a tool that provides the ability to make password changes to multiple cameras at the same time.
           6. IP address filtering – List of allowed or blocked IP addresses
           7. HTTPS(SSL) login authentication
           8. HTTPS(SSL) secured communication
           9. Digest login authentication
           10. User access log
           11. 802.1x authentication
        6. Discovery – The manufacturer shall offer a discovery program to identify all devices of them on the network.
        7. Configuration – The manufacturer shall offer a configuration program that remotely allows users to change settings on multiple cameras simultaneously.
        8. Firmware upgrade – The manufacturer shall offer a program capable of upgrading multiple cameras at the same time (not requiring access to individual cameras).
        9. Camera backup setting – The manufacturer shall provide a program that provides the ability to save multiple camera settings to a file and restore these camera settings if needed.
        10. Reporting – The manufacturer shall provide a tool that can generate a report including thumbnail view, MAC address, IP address, serial number and other camera settings.
     7. Electrical
        1. Power
           1. Input Voltage

HPoE (IEEE 802.3bt)

12VDC

* + - * 1. Power Consumption

Max 42W

Typical : 28W

* + 1. Mechanical And Environmental
       1. Color/Material : White / Aluminum
       2. Dimensions (W x H) : Total: Ø315 x 145.9mm (Ø 12.4" x 5.7")
       3. Weight : 5.2Kg (11.4 lb)
       4. Temperature
          1. Operating : -40°C ~ +55°C(-40°F ~ +131°F)

Start up should be above at -35°C

* + - * 1. Storage : -50°C ~ +60°C (-58°F ~ +140°F)
      1. Humidity : Less than 90% RH
      2. Environmental Rating
         1. Mechanical (Vandal) Protection : IK10
         2. Ingress Protection : IP66, NEMA 4x
    1. EMC & Safety
       1. FCC 47 CFR Part 15 Subpart B

1. ANSI C63.4-2014 Class A
   * + 1. IC Regulation ICES-003:2016
2. ANSI C63.4-2014 Class A
   * + 1. CE EMC-Directive 2014/30/EU
3. EN 55032:2015 Class A
4. EN 50130-4:2011+A1:2014
   * + 1. VCCI-CISPR 32: Class A
       2. AS/NZS CISPR32:2015 Class A
       3. UL listed
       4. CE EN 50581:2012 (hazardous substances)
     1. Ingress Protection and Vandal Resistance
        1. ANSI / IEC60529 – Degrees of Protection Provided by Enclosures – IP66/IP67
        2. IEC EN 62262 - Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts : IK10
        3. IEC 60068-2-75 : IK10
        4. NEMA 4X

END OF SECTION