



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/>

PART1 PRODUCTS

1.01 EQUIPMENT

- A. Manufacturer : Hanwha Techwin(<http://www.hanwha-security.com/>)
- B. Model : XND-C6083RV
- C. Alternates : None

1.02 GENERAL DESCRIPTION

- A. 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.
 - a. H.265 and H.264 : Max. 60/50fps(60Hz/50Hz)
 - b. 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.
 - a. 16:9 aspect ratio : 1920x1080, 1280x720, 800x448, 640x360
 - b. 4:3 aspect ratio : 1280x960, 1024x768, 800x600, 640x480, 320x240
 - c. 5:4 aspect ratio : 1280x1024, 720x576
 - d. 3:2 aspect ratio : 720x480
 4. The camera shall support unicast video streaming up to 20 users.
 5. The camera shall support multicast video streaming.
 6. The camera shall support multiple video streaming up to 10 profiles.
 7. The camera shall support 3 virtual channel support.
 8. The camera shall be able to configure Dynamic DNS (DDNS). DDNS shall be provided with no additional cost by the manufacturer.
 9. The camera shall provide WiseStream II/III, Dynamic GOV and Dynamic FPS to efficiently manage bit rate of the video stream and reduce storage.

10. The camera shall provide WiseNR II that working based on AI engine for reduce noise and blur on image.
- B. Camera – The camera device shall have the following physical and performance properties:
1. IK08 rated for protection against impacts.
 2. True day/night operation with scheduling and options for external devices.
 - a. Low light level operation to 0.011 lux(30fps/25fps)/0.022lux(60fps/50fps) at F1.4 in color mode, 0.0011 lux(30fps/25fps)/0.0022lux(60fps/50fps) in black and white mode.
 - b. Black and white mode operation to 0 lux with IR LED on.
 3. The camera shall be able to produce clear images in highly contrast scenes with multi-exposure wide dynamic range up to 150dB.
 4. The camera shall be able to produce clear images in highly contrast scenes with multi-exposure wide dynamic range.
 5. The camera shall be able to configure 32 privacy masking areas with quadrangle zones.
 6. The camera shall have the defog feature to remove fogginess of scene which can be triggered automatically from the fog detection event.
 7. The camera shall provide video display on smart phone (iPhone, Android) to adjust viewing angle, rotation and focus.
- C. Intelligence and Analytics – The camera shall have a suite of intelligent analytic functions.
1. Analytics events based on AI engine
 - a. Object detection : Person/Face/Vehicle(car/truck/bus/bicycle/motorcycle)/License plate
 - b. IVA : Virtual line/Area, Enter/Exit, Loitering, direction, intrusion
 2. Analytics events : Defocus detection, Motion detection, Tampering, Fog detection, Audio detection, Sound classification, Shock detection, Appear/Disappear
 - a. Motion detection with 8 definable detection areas with 8 point polygonal zones, and minimum/maximum object size.
 - b. Detection and classification of the following sound.
 - 1) Scream
 - 2) Gunshot
 - 3) Explosion
 - 4) Crashing glass
 3. Business Intelligence : Based on AI engine
 - a. People counting
 - b. Queue management
 - c. Heatmap
- D. Interoperability – The camera shall be ONVIF Profile S / G and T compliant.
- E. The camera shall possess the following further characteristics
1. Micro SD/SDHC/SDXC memory card with configurable pre-alarm and post-alarm recording intervals
 2. NAS recording option with configurable pre-alarm and post-alarm recording intervals
 3. Alarms and notifications
 - a. alarm notification triggers
 - 1) Analytics

- 2) Network disconnect
- 3) Alarm input
- 4) App event
- 5) Time schedule
- b. available notification means upon trigger
 - 1) File upload(image) : e-mail/FTP
 - 2) Notification : e-mail
 - 3) Recording : SD/SDHC/SDXC or NAS recording at event triggers
 - 4) Alarm output
 - 5) Handover(PTZ preset, Send message by HTTP/HTTPS/TCP)
 - 6) Audio clip playback
4. Pixel Counter available in the web viewer.
5. IP52/IK08
6. 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.
7. NDAA Compliant

1.03 DETAILED SPECIFICATIONS

A. Video

1. Imaging device : 1/2.8" CMOS
2. Scanning : Progressive
3. Minimum Illumination
 - a. 30/25fps
 - 1) Color: 0.011Lux(F1.4, 1/30sec, 30IRE)
 - 2) B/W: 0.0011Lux(F1.4, 1/30sec, 30IRE), 0Lux(IR ILED On)
 - b. 60/50fps
 - 1) Color: 0.022Lux(F1.4, 1/30sec, 30IRE)
 - 2) B/W: 0.0022Lux(F1.4, 1/30sec, 30IRE), 0Lux(IR ILED On)
4. Video out for installation
 - a. USB : Micro USB Type B, 1280x720

B. Lens

1. Focal length : 2.8~12mm(4.3x) motorized varifocal
2. Max. Aperture Ratio : F1.4(Wide) ~ F3.6(Tele)
3. Field of View
 - a. H : 119.5°(Wide)~27.9°(Tele)
 - b. V : 62.8°(Wide)~15.7°(Tele)
 - c. D : 142.1°(Wide)~32.0°(Tele)
4. Min. Object Distance : 0.5m(1.64ft)
5. Focus Control : Simple focus, Manual
6. Lens Type : DC auto iris with hall sensor (IR corrected)

C. Pan & Tilt & Rotate

1. PTR Range : 0°~360° / -45°~75° / 0°~355°
- D. Operational Functions
 1. IR Viewable Length : WiseIR 40m(131.23ft)
 2. Camera Title
 - a. Off / On (Displayed up to 85 characters)
 - b. English / Numeric / Special characters
 - c. Multi-line (Max. 5lines), Color (Grey / Green / Red / Blue / Black / White), Transparency, Auto scale by resolution
 3. Day/Night Setting : Auto (ICR) / Color / B/W / Schedule
 4. Backlight Compensation : Off / BLC / HLC / extremeWDR(150dB)
 5. Contrast Enhancement : SSDR
 6. Digital Noise Reduction WiseNRⅡ(Based on AI engine), SSNR V
 7. Digital Image Stabilization : Support (built-in gyro sensor)
 8. Defog : Support
 9. Motion Detection : Off / On (8ea, 8-point polygonal)
 10. Privacy Masking : Off / On (32ea, Quadrangle zones)
 - a. Color: Grey / Green / Red / Blue / Black / White
 - b. Mosaic
 11. Gain Control : Off / Manual / Max Gain
 12. White Balance : ATW / Narrow ATW / AWC / Manual / Indoor / Outdoor
 13. LDC : Support (Fill/stretch mode)
 14. Electronic Shutter Speed : Min / Max / Anti-flicker (2 ~ 1/12,000sec)
 - a. Prefer shutter control (Based on AI engine)
 15. Image Rotation
 - a. Flip: Off / On
 - b. Mirror: Off / On
 - c. Hallway view (90°/270°)
 16. Digital PTZ : Support
 17. Alarm I/O : 2 configurable I/O ports
 18. Alarm Triggers
 - a. Analytics
 - b. Network disconnect
 - c. Alarm input
 - d. App event
 - e. Time schedule
 19. Alarm Events
 - a. File upload(image) : e-mail/FTP
 - b. Notification : e-mail
 - c. Recording : SD/SDHC/SDXC or NAS recording at event triggers
 - d. Alarm output
 - e. Handover(PTZ preset, Send message by HTTP/HTTPS/TCP)

- f. Audio clip playback
- 20. Pixel Counter : Support
- 21. Storage : Micro SD/SDHC/SDXC 1slot 512GB
- 22. Analytics : Analytics events based on AI engine
 - a. Object detection : Person/Face/Vehicle (car/truck/bus/bicycle/motorcycle)/License plate
 - b. IVA : Virtual line/Area, Enter/Exit, Loitering, direction, intrusion
- 23. Business Intelligence : Based on AI engine
 - a. People counting
 - b. Queue management
 - c. Heatmap
- 24. Analytics events: Defocus detection, Motion detection, Tampering, Fog detection, Audio detection, Sound classification, Shock detection, Appear/Disappear
- 25. Memory : 2GB RAM, 512MB Flash
- E. Video Streams
 - 1. Video compression : H.265, H.264, MJPEG
 - 2. Resolution : 1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
 - 3. Maximum Framerate
 - a. H.265 / H.264 : Max. 60fps/35fps(60Hz/50Hz)
 - b. MJPEG : Max. 30fps/25fps(60Hz/50Hz)
 - 4. Smart Codec
 - a. Manual(5ea area)
 - b. WiseStream II
 - c. WiseStream III(Based on AI engine support)
 - 5. Bitrate Control Method
 - a. H.265 / H.264 : CBR or VBR
 - b. MJPEG : VBR
 - 6. Streaming Capability : Unicast(20 users) / Multicast, Multiple streaming (Up to 10 profiles, 3 virtual channel support)
 - 7. Streaming method : Unicast / Multicast
 - 8. Simultaneous Users : 20 maximum (Unicast)
 - 9. Profile set : Max. 10 ea
 - 10. Interoperability
 - a. ONVIF Profile S / G / T
 - b. SUNAPI (HTTP API)
 - c. Wisenet Open Platform
- F. Audio
 - 1. Audio In
 - a. Selectable(mic in/line in)
 - b. Supply voltage : 2.5V DC (4mA)
 - c. Input impedance : 2K Ohm

2. Audio Out
 - a. Line out
 - b. Max Output level 1Vrms
3. Audio Compression
 - a. G.711 u-law /G.726 Selectable
 - b. G.726 (ADPCM) 8KHz, G.711 8KHz
 - c. G.726: 16Kbps, 24Kbps, 32Kbps, 40Kbps
 - d. AAC-LC: 48Kbps at 16KHz

G. Network

1. Connectivity : Metal shielded RJ-45(10/100/1000BASE-T)
2. Protocol
 - a. IP v4 / v6, TCP, UDP
 - b. Configuration : DHCP, LLDP
 - c. Web service : HTTP, HTTPS
 - d. Network Service : ARP, Bonjour, DNS, ICMP, NTP, PIM-SM, SNMPv1/v2c/v3(MIB-2), UPnP
 - e. Media : RTP, RTCP, RTSP
 - f. Unicast : SRTP
 - g. Multicast : IGMP, PIM-SM
 - h. Notifications : FTP, SMTP
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
 - a. UL-CAP Certified
 - b. User password protection
 - c. The device shall not provide a manufacture default password. Initial password setting shall be required to access the camera.
 - d. A minimal level of password complexity shall be required by the camera.
 - e. The camera shall not have a manufacture back-door password.
 - f. The manufacturer shall provide a tool that provides the ability to make password changes to multiple cameras at the same time.
 - g. IP address filtering – List of allowed or blocked IP addresses.
 - h. SRTP secured video communication for multicast.
 - i. Digest login authentication.
 - j. User access log.
 - k. 802.1X Authentication (EAP-TLS, EAP-LEAP)
 - l. Device Certificate (Hanwha Techwin Root CA)
 - m. HTTPS(SSL/TLS) login authentication and secured video communication with TLS v1.3
 - n. Disk encryption on SD card recording (AES-256)
 - o. File encryption on local disk recording via web browser (AES-256)
 - p. Mutual Authentication (Client Authentication) for secure communication

- q. Secure OS and Security Boot
 - 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.
- H. Electrical
- 1. Power
 - a. Input Voltage
 - 1) PoE(IEEE802.3af, Class3)
 - 2) 12VDC
 - b. Power Consumption
 - 1) PoE: Max 12.95W, typical 11.2W
 - 2) 12VDC: Max 13.2W, typical 10.8W
- I. Mechanical And Environmental
- 1. Color/Material
 - a. White / Aluminum + PC
 - b. Hard-coated dome bubble
 - 2. RAL Code : RAL9003
 - 3. Dimensions (W x H) : Ø160x118mm(Ø6.30x4.65")
 - 4. Weight : 1,350g(2.98 lb)
 - 5. Temperature
 - a. Operating : -10 °C ~ 50 °C(-14°F ~ +122°F)
 - 1) Maximum temperature: +55°C (intermittent)
 - b. Storage : -50°C ~ +60°C(-58°F ~ +140°F)
 - 6. Humidity
 - a. Operating : Less than 95% RH (non-condensing)
 - 1) Humidity control /w GORE vent
 - b. Storage : Less than 90% RH (non-condensing)
 - 7. Ingression Protection : IP52
 - 8. Vandal Resistance : IK08
- J. DORI
- 1. Detect (25PPM/ 8PPF) : Wide: 22.4m(73.47ft) / Tele: 154.6m(507.18ft)
 - 2. Observe (63PPM/ 19PPF) : Wide: 9.0m(29.39ft) / Tele: 61.8m(202.87ft)
 - 3. Recognize (125PPM/ 38PPF) : Wide: 4.5m(14.69ft) / Tele: 30.9m(101.44ft)
 - 4. Identify (250PPM/ 76PPF) : Wide: 2.2m(7.35ft) / Tele: 15.5m(50.72ft)
- K. EMC & Safety

1. FCC 47 CFR Part 15 Subpart B
 - a. ANSI C63.4-2017 Class A
2. IC Regulation ICES-003 Issue7
 - a. CAN/CSA CISPR 32-17 Class A
3. CE EMC-Directive 2014/30/EU and 2011/65/EU
 - a. EN 55032:2015/A11:2020
 - b. EN 50130-4:2011
 - c. EN 610003-2:2014
 - d. EN 610003-3:2013
4. VCCI-CISPR 32:2016 Class A
5. AS/NZS CISPR32:2015 Class A
6. UL listed
7. CE EN 50581:2012 (hazardous substances)

END OF SECTION