

# CITY OF HERMOSA BEACH

## Request for Proposals SECURITY CAMERA SERVICES

PROPOSING COMPANY:

AM-TEC TOTAL SECURITY INC.

4075 Schaefer Avenue

CHINO, CA 91710

909-573-4678 office

909-627-1757 fax

[www.amtecsecurity.com](http://www.amtecsecurity.com)

**BID SHALL REMAIN VALID FOR A PERIOD OF 150 DAYS  
FROM DATE SUBMIT**

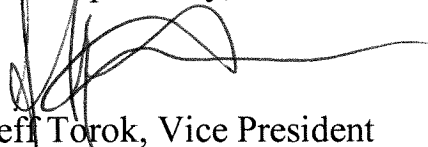
**COVER LETTER:**

City of Hermosa Beach  
1315 Valley Drive  
Hermosa Beach, CA 90254

Am-Tec Total Security, Inc., a California corporation, is pleased to submit a cost proposal through this transmittal letter to the City of Hermosa Beach in response to their Request for Proposals for Security Camera Services. Am-Tec has successfully demonstrated that it is a trusted and reliable vendor and partner. We are tremendously proud of the impact that we have made in helping municipalities serve, protect, and improve the lives of its citizens and communities.

We believe that our response meets the requirements as called out in the Request for Proposals for Security Camera Services. If City of Hermosa Beach determines that Am-Tec's response is deficient in any way, Am-Tec respectfully requests to be promptly notified and be given the opportunity to correct any such deficiency. Please forward any questions regarding this solicitation response to Jeff Torok. My contact information is provided below.

Respectfully,



Jeff Torok, Vice President  
4075 Schaefer Avenue  
Chino, CA 91710

[jeff@amtecsecurity.com](mailto:jeff@amtecsecurity.com)

909-573-4678 – office number

909-573-9385 -- direct cell

\*\*\*Am-Tec Total Security, Inc. acknowledges receipt of Addendum #1 – see attached

## ACKNOWLEDGEMENT OF ADDENDUM No. 1

### RFP 23-007 SECURITY CAMERA SERVICES

Complete and sign this acknowledgement form. Enclose the original copy of the acknowledgement in your bid. Failure to do so may result in disqualification of your firm's bid.

The undersigned acknowledges receipt of Addendum No. 1 dated October 17, 2023.


ATTEST:

Principal:

Address:

By:

Title:

Acknowledged /   
Ruth Torok / Amtec Security  
4095 Schaefer Ave Chino CA 91710  
Ruth Torok  
President

## **FIRM PROFILE:**

Am-Tec Total Security, Inc., is a local Chino-based company that has been registered in the State of California as an S-Corporation since 2011. Prior to 2011, Am-Tec was run as a sole-proprietorship beginning in September 1983. We have one office located in Chino California employing an average of 10 full-time office employees and 20 full-time field technicians. Our EIN number is 45-3975628.

Am-Tec has over 40 years of experience with complex as well as straightforward security solutions. Our expertise and applications include:

- Highly trained and certified technicians
- Licensed and bonded technicians through California State Licensing Board, Bureau of Consumer Affairs, and Fire and Light Safety.
- OSHA compliance trained and certified technicians.
- 24-hour 365 days a year availability for customer service, technical phone support, and deployment of technicians.
- CSLB C-10/C-7 licensed
- Administrative team to supervise and manage all projects, installations, service calls, and system monitoring related to the City of Hermosa Beach.
- Possesses all suitable equipment needed to perform work as requested by the City of Hermosa Beach.

Am-Tec Total Security, Inc. has never failed nor refused to complete a public works contract.

## **Scope of Work:**

Please see attached scope of work which covers items:

Statement of Project Understanding  
Approach to Work Program  
Roles and Responsibilities of City Staff  
Project Scheule  
Communications Approach

### **Quality Assurance/Quality Control Approach:**

Our Quality Assurance Program has been a natural outgrowth of over 40 prior years of dedication to quality products and services; of which Am-Tec Total Security, Inc. is justly proud.

### **Company Quality Assurance Policy Statement:**

Commitment to Quality begins with the company officers and extends to every member of the Am-Tec Total Security, Inc. team. Quality efforts, directed toward a common goal, result from clear agreements between Am-Tec Total Security, Inc. and our clients. Quality is based on fulfilling the agreement with our client and adherence to accepted standards, codes and practices applicable to the work we do. We are committed to provide:

- Professional executed services and projects
- Recognition and adherence to appropriate standards and procedures.
- Full and open communication on a personal basis.
- Adherence to our agreed upon task or project objective.
- Professional and ethical conduct.

Each Am-Tec Total Security, Inc. employee has the authority and responsibility to notify the Quality Assurance Manager or an Officer of the Company of any condition, which could affect the quality, reliability, or safety of an item covered by this program.

The Quality Control (QC) Manager, (TBD), or their designer, is responsible for overseeing the overall implementation of the Quality Control Plan and reporting matters directly to the Project Manager. The QC Manager or their designee has the authority to intercede directly and stop unsatisfactory work and control further processing, delivery, or installation of non-conforming material.

### **Duties:**

- Implementation of the CQC Plan
- Ensure that all materials and construction are in accordance with the requirements for the completeness, accuracy, and constructability in accordance with applicable building codes.
- Carry out and participate in weekly progress and QC meetings.

## **Preparatory Meetings:**

Preparatory Meetings are performed prior to the beginning of any major Definable Feature of Work. A meeting is held for each crew performing such feature or when members of the crew change. The following items are discussed at each meeting:

1. Review of applicable specifications.
2. Review of applicable plans and shop drawings and verify plans are most current.
3. Review of related submittals and a check that all related submittals, shop drawings and materials have been tested (if applicable), submitted and approved.
4. Review of the detailed sequence of the execution of the work.
5. Review provisions to ensure controlled inspection and testing.
6. Examination of the work area to ensure that all the required preliminary work has been completed and is in compliance with the plans and/or specifications.
7. Examination of the related material.
8. Review of the Site Safety Plan to ensure that all safety precautions are met, and the required safety equipment has been purchased and is available.
9. Review the document and the workmanship expected for the Definable Feature of Work.

## **Initial Inspections:**

Initial Inspections are performed at the beginning of any Definable Feature of Work and must be repeated at any time new workmen or new crews are assigned to the work or if the required standard of work is not being met. The following is accomplished during these meetings:

1. Review the Preparatory Meeting and verify that the work complies with the design documents (i.e. submittals, specifications and/or shop drawings). Verify drawing plans are the most current.
2. Resolve all differences.
3. Verify adequacy of inspection and testing.

4. Establish a level of workmanship and verify that it meets the requirements.
5. Provide documentation of the previous inspection of the work area.
6. Re-examine the work area for compliance.

**Final Inspections:**

Upon completion of the items listed in the Pre-Final Inspection “Punch List,” the QC Manager or their designee notifies project manager.

**RELEVANT PROJECTS:**

**Year Started:** 2012 - present

**Contracting Agency & Department:** City of Chino/Public Works

**Project Description:** Point to point radios installed for camera system and communication system.

**Key Personnel Assigned:** Jeff Torok, Joseph Pallas, Rey Valdes, Roger Cortez

**Contract Value:** \$1,500,000.00

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**Year Started:** 2019 - present

**Contracting Agency & Department:** City of Torrance/Police Department

**Project Description:** Point to point radios installed for camera system.

**Key Personnel Assigned:** Jeff Torok, Joseph Pallas, Roger Cortez

**Contract Value:** \$50,000

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**Year Started:** 2010 - 2023

**Contracting Agency & Department:** City of La Verne/Public Works

**Project Description:** Point to point radios installed for camera system, traffic control and communication system.

**Key Personnel Assigned:** Jeff Torok, Joseph Pallas, Rey Valdes

**Contract Value:** \$750,000.00

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**Year Started:** 2022 - present

**Agency:** City of Ventura/Public Works Department

**Project Description:** Point to point radios installed for camera system and communication system.

**Key Personnel Assigned:** Jeff Torok, Joseph Pallas, Roger Cortez

**Contract Value:** \$189,000.00

**REFERENCES:**

**Agency:** City of Ventura/Public Works Department

**Address:** 800 S. Victoria Avenue Ventura, CA 93009

**Contact Name:** Matthew Moore

**Phone Number:** 805-339-4370

**Email Address:** mmoore@cityofventura.ca.gov

**Description of Project/Services Provided:** Point to point radios installed for camera system and communication system.

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**Agency:** City of Rancho Cucamonga

**Address:** 10500 Civic Center Drive Rancho Cucamonga, CA 91730

**Contact Name:** Karen Hunt

**Phone Number:** 909-774-2833

**Email Address:** khunt@sbcasd.org

**Description of Project/Services Provided:** Maintenance and limited installation adding to existing point to point radios installed for camera system and communication system.

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**Agency:** Fullerton Joint Union High School District

**Address:** 1051 W. Bastanchury Road, Fullerton, CA

**Contact Name:** Brian Poertner

**Phone Number:** 714-388-7504

**Email Address:** bpoertner@fjuhsd.org

**Description of Project/Services Provided:** Preparatory installation of cabling as well as cameras for school surveillance project.

## **ORGANIZATIONAL CHART/PROPOSED PERSONNEL:**

### **Account Manager**

Jeff Torok, Vice President and Founding Principal of Am-Tec Total Security, Inc.

#### **Qualifications:**

- 40 years of experience with installations requiring network connectivity from all aspects including sales, installation, and overseeing of project.
- designing, installing and servicing multiple complex networks for both large industrial clients as well as municipalities.

#### **City of Hermosa Beach Responsibilities:**

- all pricing/bidding
- general overseeing of project to ensure budget and timeline are met as quoted

#### **Certifications:**

Hanwa Certified

#### **Previous Projects Similar in Scope:**

City of Montebello

City of La Verne

City of Yucaipa

### **Lead Project Manager**

Roger Cortez

#### **Qualifications:**

- 8 years of management experience with an emphasis on safety and human resources

#### **City of Hermosa Beach Responsibilities:**

- site safety compliance
- periodic site inspections
- ensure installation crew meets time deadline

#### **Certifications:**

OSHA 10

Hanwa Certified

#### **Previous Projects Similar in Scope:**

City of Rancho Cucamonga

City of Yucaipa

City of La Mirada

### **Lead I/T Technician**

Joseph Pallas

#### Qualifications:

- 4 year degree from Cal Poly Pomona
- extensive training in building, maintaining, and programming servers and switches

#### City of Hermosa Beach Responsibilities:

- overseeing any issues/programming related to the proper functioning of the alarm and fire suppression systems.

#### Certifications:

Hanwa Certified

Wave Certified

#### Previous Projects Similar in Scope:

City of Laguna Beach

City of Brea

City of San Jacinto

### **Lead Installer**

Rey Valdes

#### Qualifications:

- 15 years of on-the-job training in both leadership and management skills to successfully oversee a crew from beginning to end of complex projects
- well versed and experienced with Am-Tec Security's policies and procedures as well as safety expectations and time-lines
- extensive experience in building, testing and certifying fiber and copper network systems

#### Certifications:

OSHA 10

Hanwa Certified

#### City of Hermosa Beach Responsibilities:

- overseeing the installation team and any service teams dispatched

#### Previous Projects Similar in Scope:

City of Laguna Beach

City of Yucaipa

City of La Verne

All personnel listed above will be assigned to the City of Hermosa Beach project. Personnel are available in office Monday – Friday 6:00 AM – 6:00 PM and via after hours on-call phones for all non-office hours including weekends and holidays. All personnel assigned to this project will remain continuous throughout the installation phase as well as once completed.

### **Emergency Information**

Office After Hours/Holiday Hours – 1-800-609-2527 (on-call technician)

On-call operators at our alarm central station will reach out to our on-call technician.

On-call technician is backed up by Jeff Torok. Jeff Torok can be reach at 1-800-609-2527 or directly at 909-573-9385

### **Additional Support Personnel:**

In-Office	I/T Support Desk Customer Service Support Desk Scheduling Department Accounting Department
In-Field	Assistant Field Technicians 3 Assistant per Crew Lead

# AM-TEC SECURITY, INC

## PROJECT SCOPE

October 26, 2023

### OVERVIEW

#### 1. Project Background and Description

Am-Tec Security, Inc. was solicited by City of Hermosa Beach, at 1101 Hermosa Beach Ave, Hermosa Beach CA 90254, to install a new camera system around Parking lots and streets. The cameras will record all activity and use analytics to address the increase of crime and vandalism in the City of Hermosa Beach at 7 locations. The camera system will be able to use analytics to send alerts to city employees and law enforcement when suspicious activity accrues.

#### 2. Project Scope

Software Installation includes:

- \*Setting up server-based software (VMS), for notification, viewing, recording and health monitoring for the City of Hermosa Beach.

Network Installation includes:

- \*Connecting cameras to existing and new cable to switches and radios.

- \*Building a private network using separate switches and cable.

- \*Testing of network and connectivity.

Hi Res Camera Installation includes:

- \*Terminating of all cables.

- \*Mounting of Cameras.

- \*Aiming and focusing to the Cameras to City of Hermosa Beach specifications.

Command Center Installation includes:

- \*Does not apply.

Point to Point Wireless:

- \*AM-TEC will use wireless point-to-point and mesh radios for remote cameras to connect to City's network and servers.

Client Software installation:

- \*AM-TEC will install software on the computer as directed by City of Hermosa Beach employees for viewing cameras, access control and alarm.

Exterior and Interior Conduit Installation includes:

- \*AM-TEC will install all conduit as needed to protect cable on parking structures and buildings.

#### 3. High-Level Requirements

Provided by AM-TEC Security to ensure the safety of visitors, employees, and property at the 7 Hermosa Beach locations.

## **4. Roles and Responsibilities for City Staff**

It is expected that the City of Hermosa Beach IT department will provide connectivity to City network and Internet. AM-TEC will provide all equipment and material for this project.

## **5. 4.2.4 Project Management Plan**

When a written approval of the project is given, an order will be placed by Am-Tec Security, Inc. with their suppliers and all equipment will be ordered. AM-TEC will schedule with the city of Hermosa Beach a kickoff meeting to go over the project, scheduling and introduce the City to AM-TEC employees. When the project begins, Am-Tec Security, Inc. Project Manager will meet with the City Hermosa Beach to go over all camera locations and establish a staging area at a designated area that is best for the City of Hermosa Beach were Am-Tec Security, Inc. staff members can store parts, tools etc.

## **6. Project Schedule**

Once a date is approved by the City of Hermosa Beach AM-TEC will be ready to install the system. Once installation begins, installation of headend radios will take 2 days. installation of cameras/radios in lot A will take 2 days. Pier Plaza will take 2 days. Installing Hermosa Ave/Pier Ave will take 1 day. Hermosa Ave/parking structure will take 1 day. The parking structure cameras will take 2 days. Testing and programing of the VMS system will take 2 days. Training will take 1 day.

## **7. Communications Approach**

City of Hermosa Beach: AM-TEC will designate a Project Manager for this project. He will be available M-F from 6:00am to 4:00pm on 800-609-2527. His cell phone number will also be available once the PM is assigned the project. In addition, AM-TEC uses a program called SimPro that tracks all employees and can give instant status to the city of where the technicians are located. The technicians are required each day to log hours and provide a detailed report with pictures of their progress. This information can be emailed to an unlimited number of City of Hermosa Beach staff. It can also be made available at any time upon request.

## **8. Statement of Project Understanding**

AM-TEC is certified in all major video management systems, point-to-point communications, and camera manufactures. We are a gold partner in Axis cameras, Hanwha cameras, Avigilon cameras, and our technicians are certified by the manufacturers in all these systems and much more. Furthermore, we have a long history of successful implementation of camera system of deployment of over 1000 cameras and have been maintaining these systems for years. We also hold certifications with Belden and CommScope for fiber and all types of category cable. AM-TEC is very confident that this project will be a complete success and we look forward to building a long relationship with the City of Hermosa Beach.

## **9. Approach to Work Program**

AM-TEC approach to the installation is as follows: Installation of headend radios to receive camera signal will be first, establishing power and installation of cameras/radios in lot A will be second, establishing power and installation of cameras/radios in pier plaza will be Third, establishing power and installation of cameras/radios at Hermosa Ave/Pier Ave will be Forth, establishing power and installation of cameras/radios at Hermosa Ave/parking structure fifth, establishing power and installation of cameras/radios at parking structure will be six, aiming of cameras seven, installation of VMS software eight, installation of additional storage nine, setting up of viewing clients ten. Eleven will be training once everything is complete.

## **10. Affected Parties**

Work on the camera system will take place Tuesday through Friday between the hours of 6:00 AM and 4:00 PM keeping the impacted parties to a minimum.

## **11. Affected Business Processes or Systems**

AM-TEC will be installing standalone equipment and building a privet network and will not be interfering with daily activity or affecting any of the City of Hermosa Beach events.



Patrick Donegan, City Attorney

## 7.2 Required Forms

### 7.2.1 Certification of Proposal

RFP #: 23-007

The undersigned hereby submits its proposal and agrees to be bound by the terms and conditions of this Request for Proposal (RFP).

1. Proposer declares and warrants that no elected or appointed official, officer or employee of the City has been or shall be compensated, directly or indirectly, in connection with this proposal or any work connected with this proposal. Should any agreement be approved in connection with this Request for Proposal, Proposer declares and warrants that no elected or appointed official, officer or employee of the City, during the term of his/her service with the City shall have any direct interest in that agreement, or obtain any present, anticipated or future material benefit arising therefrom.
2. By submitting the response to this request, Proposer agrees, if selected to furnish services to the City in accordance with this RFP.
3. Proposer has carefully reviewed its proposal and understands and agrees that the City is not responsible for any errors or omissions on the part of the Proposer and that the Proposer is responsible for them.
4. It is understood and agreed that the City reserves the right to accept or reject any or all proposals and to waive any informality or irregularity in any proposal received by the City.
5. The proposal response includes all of the commentary, figures and data required by the Request for Proposal
6. The proposal shall be valid for 90 days from the date of submittal.
7. Proposer acknowledges that the City may issue addendums related to this RFP and that the proposer has reviewed the following addendums which have been issued:

Addendum: #1

Addendum: \_\_\_\_\_

Addendum: \_\_\_\_\_

Addendum: \_\_\_\_\_



- 8. Proposer further acknowledges the provisions of any addendums issued have been incorporated into their proposal.

Signature of Authorized Representative:

*[Handwritten Signature]*

Printed Name and Title:

Ruth Topok President



7.2.2 Non-Collusion Affidavit

RFP #: 23-007

The undersigned declares states and certifies that:

1. This proposal is not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization or corporation.
2. This proposal is genuine and not collusive or sham.
3. I have not directly or indirectly induced or solicited any other Proposer to put in a false or sham proposal and I have not directly or indirectly colluded, conspired, connived, or agreed with any other Proposer or anyone else to put in a sham proposal or to refrain from submitting to this RFP.
4. I have not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the proposal price or to fix any overhead, profit or cost element of the proposal price or to secure any advantage against the City of Hermosa Beach or of anyone interested in the proposed contract.
5. All statements contained in the Proposal and related documents are true.
6. I have not directly or indirectly submitted the proposal price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any person, corporation, partnership, company, association, organization, RFP depository, or to any member or agent thereof, to effectuate a collusive or sham proposal.
7. I have not entered into any arrangement or agreement with any City of Hermosa Beach public officer in connection with this proposal.
8. I understand collusive bidding is a violation of State and Federal law and can result in fines, prison sentences, and civil damage awards.

Signature of Authorized Representative:

A handwritten signature in black ink, appearing to read 'Ruth Torok', written over a horizontal line.

Printed Name and Title:

Ruth Torok President



7.2.3 Compliance with Insurance Requirements

RFP #: 23-007

The selected consultant will be expected to comply with the City's insurance requirements contained within this RFP.

The undersigned declares states and certifies that:

1. Proposer agrees, acknowledges and is fully aware of the insurance requirements as specified in the Request for Proposal.
2. If selected, proposer agrees to accept all conditions and requirements as contained therein.

Signature of Authorized Representative:

  
\_\_\_\_\_

Printed Name and Title:

Keith Torok President



7.2.4 Acknowledgement of Professional Services Agreement


RFP #: 23-007

The selected consultant will be expected to comply with and sign the City's Professional Services Agreement. Proposers should identify and/or indicate any exceptions to the Sample Professional Services Agreement included in Section 6.2. The City Attorney or their designee retains the discretion to accept or reject proposed exceptions or modifications to the City's Professional Services Agreement.

1. Proposer agrees, acknowledges and is fully aware of the conditions specified in the City's Sample Professional Services Agreement.
2. Proposer agrees to accept all conditions and requirements as contained therein with exceptions noted as follows:

None  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signature of Authorized Representative:



Printed Name and Title:

Ruth Torok, President



10/25/2023

Suja Lowenthal, City Manager  
City of Hermosa Beach  
1315 Valley Drive  
Hermosa Beach, CA 90254

RE: Mandatory COVID-19 Vaccination for City of Hermosa Beach Consultants

Dear Ms. Lowenthal:

Per this letter, Am-Tec Total Security, Inc., certifies that all of its officers, agents, employees, subcontractors, representatives, and volunteers servicing the City of Hermosa Beach on-site within the City pursuant to the RFP23-007 for Security Camera Services dated, 10/26/2023, are or will be fully vaccinated or covered by an approved medical or religious exemption prior to the implementation of the scope of work located within the above referenced agreement.

Respectfully,

A handwritten signature in black ink, appearing to read "Ruth Torok", is written over a horizontal line that extends to the right.

Ruth Torok  
President

**Hanwha Techwin America**  
Frank W. Burr Blvd., Suite 43  
Teaneck, New Jersey 07666  
877.213.1222 | Fax: 201.373.0124  
[Insidesales@hanwha.com](mailto:Insidesales@hanwha.com)



October 26, 2023

Am-Tec Security  
4075 Schaefer Ave  
Chino, CA 91710

To Whom It May Concern:

This letter confirms that the above named company holds the status of a Hanwha Techwin America Gold STEP Dealer Partner. This designation signifies that they are qualified to sell, install, program, service and we support up to 5 year warranty for the Hanwha product line except PTZ motors and hard disk drives if sold by a Gold STEP Dealer. We also extend a one year advance replacement program to our Gold STEP Dealers. Our warranty program as outlined on our web page, [www.hanwhasecurity.com](http://www.hanwhasecurity.com) and with all product documentation provide within all boxes. Am-Tec Security has over 15 certified technicians in the Southern California market and is a preferred vendor for our solutions.

Hanwha Techwin America looks forward to providing you the best products and services in the security marketplace and if there is anything that I can do for you don't hesitate reach out to me.

Thank you,

A handwritten signature in black ink, appearing to read "Alyssa", is written over a light gray circular watermark that contains the text "Alyssa VanSant".

Alyssa VanSant  
Inside Sales Manager  
North America Sales  
Hanwha Techwin America  
500 Frank W. Burr Blvd., Suite 43  
Teaneck, NJ 07666  
Office: 201-325-2634  
[a.vansant@hanwha.com](mailto:a.vansant@hanwha.com)  
[www.hanwhasecurity.com](http://www.hanwhasecurity.com)



# WISENET WAVE

Video Management System



# Wisenet WAVE Video Management System

## Simple. Reliable. Customizable.

Wisenet WAVE VMS features a very unique adaptive scaling technology that dynamically switches between the high resolution and low resolution images depending on the CPU usage of the client PC, resulting in an endlessly customizable IP video management platform for users, and platforms of all sizes and devices



## Intuitive and Easy to Use

- ✓ Design and create your own custom live and recorded camera viewing workspaces with an intuitive drag-and-drop tool
- ✓ Quick access to on-demand zoom windows to see close up details of live and recorded activity.
- ✓ Generate alerts and alarm notifications when specific motion detection or analytic triggered incidents occur.
- ✓ Local important video with ease with interactive flex timeline and powerful range of analytic based search tools for recorded video
- ✓ Nested search-based navigation menu to identify connected cameras and layouts
- ✓ Bird's eye view of all cameras using built in birds ground map imagery.
- ✓ Consolidated notification panel for dedicated alarm management

## Hanwha Vision Specific Features

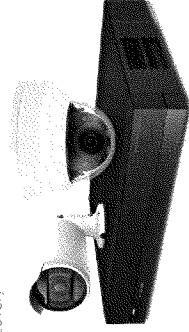
Deep camera integrations and NVR monitoring, search & playback

- H.265
- WiseStream
- All triggering events including sound classification and filtering
- Simple Focus / Initialize focus / Lens Control settings
- Multi-directional camera support
- Hallway view
- Camera profile / image configuration
- PTZ preset sync
- Imagery Settings
- Auto & HTTP discovery
- Digital I/O

## SUNAPI 2.0 Native Integration

WAVE utilizes the latest SUNAPI 2.0 driver for seamless interaction with Wisenet cameras and recorders. Rigorously tested with Wisenet P, X and Q series and supports

- Video/Audio streaming
- Event - advanced analytics, MD, alarm
- PTZ
- Device configurations



## Optimized for the operating system of your choice

Wisenet WAVE has applications for all major operating systems so users are not limited by what device or operating system they choose to use on their desktops, mobile devices, rack mount servers, or even low-powered embedded devices. (for embedded devices, please contact Hanwha Vision support)

### Server



A cloud-based service that enables simple, centralized remote access and insight into any Wisenet WAVE system. Merge systems, transfer ownership and view cameras on demand included.

### Desktop



A lightweight rich media player with enterprise level features to view and manage a single Wisenet WAVE system from desktop or laptop PC.

### WAVE Sync



A media server responsible for discovering, connecting to, and managing system devices and data.

### Mobile



A mobile app designed for viewing Wisenet WAVE system video and archives while on-the-go

Server OS Support	Desktop OS Support	Supported Browsers	Mobile OS Support
Microsoft Windows Ubuntu Linux	Microsoft Windows Ubuntu Linux Apple macOS	Google Chrome Mozilla Firefox Opera / Opera Neon Microsoft Edge Apple Safari	Google Android Apple iOS



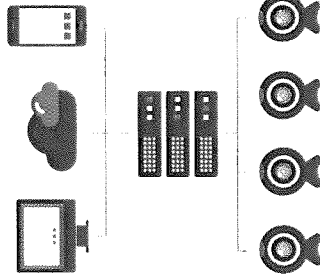


## Server

### Lightweight. Powerful. Server Hive.

The Wisenet WAVE server application is the foundation of the entire platform - with the ability to operate independently or as one part of a hive. It's available as a downloadable software application from the Hanwina Vision website which enables installers to quickly download, install and configure the full solution in minutes.

The server application also provides a detail user audit trail including viewing and exporting as well as real-time health and storage monitoring and camera failover support. The supporting web-based application enables each Wisenet WAVE platform to be managed as a stand alone system or as part of a larger, scalable video management solution.



#### Server Hive

Connect to any server with any client.

- Instant synchronization
- No single point of failure
- Automatic failover
- One-click upgrades

### Features

Discover	Manage	View	Integrate
IP Cameras (ONVIF, Custom)	IP Cameras / NVRs / DVRs	Live Video (adaptive)	HTTP Generic Events
RTSP/HTTP Streams	Advanced Routing	Recorded Video (adaptive)	HTTP Request-as-an-Action
I/O Devices	Storage (HDD/NAS/DAS)	Server Health	Server API
Servers / Systems	Events & Rules Engine	Log Files	Storage SDK
SAMBA NAS	Failover	Audit Trail	Video Source SDK
	Transcoding	Storage Status	Any Device or System
	HTTPS & Encrypted video traffic	Metadata SDK & Plugins	
	Server synchronized system data real time		

### Supported Operating Systems



Windows 8, Windows 8.1, Windows 10,  
Windows Server 2012,  
Windows Server 2012 R2,  
Windows Server 2016 (Long-term  
Service Channel) 1607, Windows Server  
2019, Windows Server 2022



Ubuntu Linux 16.04 LTS, Ubuntu Linux 18.04 LTS,  
Ubuntu Linux 20.04 LTS

### Specifications

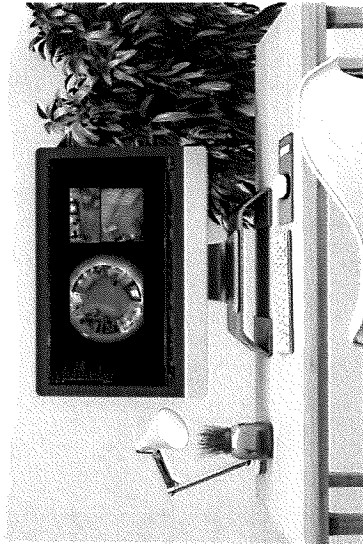
Supported Media Streaming				
Live Streams	Video: H.265, H.264, MJPEG Audio: AAC PCM (Mu-Law, A-Law) g726 MP3			
Live Streams (Available to pull from Server to 3rd Party)	Video: H.265, H.264, MJPEG, WebM Audio: AAC PCM (Mu-Law, A-Law) g726 MP3 Protocols: RTSP, MJPEG, WebM, HLS			
Other				
Automatic Camera Failover	~1 Min. Configurable			
Transcoding Database	Supported (For Web Client, Mobile, API) SQLITE + Proprietary Archive Index			
Single Sign On Security	LDAP / Active Directory Open SSL Salted MD5 Hash TLS/SSL, HTTPS			
Dev tools NAS	Server API (HTTP) / Video source SDK / Storage SDK / Metadata SDK SAMBA (Authenticated, Unauthenticated)			
Scalability				
# of Resources per System:	10,000			
# of Clients per System:	Unlimited			
# of Streams per Server:	128			
# of Servers in a Server Hive:	100 (100 is a recommended maximum. Contact technical support for more info).			
# of Users in a System:	1,000			
Hardware Recommendations				
Recommended based on # of Streams	Streams	RAM	NIC	CPU*
	Up to 16	2 GB	1 GB	Dual Core Atom
	Up to 32	4 GB	1 GB	Dual Core Atom
	Up to 64	8 GB	1 GB	Core i3
	Up to 128	16 GB	1 GB	Core i3
	*CPU's data correct at time of print.			



## Desktop

### Feature-rich flexibility

Wisenet WAVE Desktop is a cross-platform lightweight app capable of running seamlessly on a variety of devices, ranging from Atom-based tablets to Xeon-based servers. Designed exclusively for video-centric and investigative users, it offers a rich feature set that caters to their specific needs. With its user-friendly interface, reliability, and impressive performance, Wisenet WAVE Desktop provides an optimal solution for efficient and effective video management.



### Features

Usability	Media	Configuration	Search
Drag & Drop Everything	IP Cameras / Encoders / DVRs	Events & Rules Engine	Motion Search
Consolidated Notifications	RTSP/HTTP Streams	User Management	Keyword Search
Flex Timeline	I/O Devices	IP Cameras / Encoders	Calendar Search
Customizable Layouts	Web Pages	Server Management	Time-Slice Search
Digital Maps	Videos	I/O Device Management	Bookmarks
Adaptive Scaling	Images	Storage Management	Audit Trail
Synchronized recorded playback across systems		Easy Camera Replacement	Thumbnail Scrub Searching
Quick video exporting in AVI, MP4 or embedded EXE formats		Remote Log Retrieval	

### Supported Operating Systems

- Windows 8, Windows 8.1, Windows 10, Windows 11, Windows Server 2012, Windows Server 2012 R2, Windows Server 2016 (Long-term Service Channel) 1607, Windows Server 2019, Windows Server 2022
- Ubuntu Linux 16.04 LTS, Ubuntu Linux 18.04 LTS, Ubuntu Linux 20.04 LTS
- macOS Mojave 10.14, macOS Catalina 10.15, macOS Big Sur 11, macOS Monterey 12

### Specifications

Supported Media Playback On Grid	
Live Streams	Codecs: H.265 H.264 MJPEG
Offline Media	Videos: AVI MKV MP4 MOV TS M2TS MPEG MPG FLV WMV 3GP
Connected Devices	Images: JPG PNG GIF BMP TIFF I/O Devices: Status and Triggers Servers: Server Health Monitoring
Browser	Web Pages: Responsive Websites / Progressive Web Apps
Viewing Modes	
Media Player	View, edit, and export offline videos and images
Connected	Authorized and connected WAVE System
VideoWall	Put Desktop into VideoWall mode to control remotely
Showfeed	Cycle tour any camera view or layout in a fully customizable timed viewing
Maximum # of Grid Items	
64 Bit OS	64 Items (e.g. 64 live streams)
Hardware Requirements	
Minimum Supported Specs	Hard Drive: HDD/SSD/MSATA, RAM: 2GB, CPU: Quad Core Intel Celeron CPU or higher Graphics: Intel HD Graphics 3000 w/ Open GL2.1 support, Networking: 1GB NIC
Performance Specs	Hard Drive: Performance SSD, RAM: 16GB RAM, CPU: Intel Core i5 Graphics: NVIDIA GeForce GTX 1050 (OpenGL4.1 support is required) Networking: 10 GB NIC
Multi Language Support	Languages Supported: English (US), English (UK), French, Czech, German, Finnish, Russian, Spanish, Italian, Japanese, Korean, Turkish, Chinese (Simplified), Chinese (Traditional), Hebrew, Hungarian, Dutch (Belgium) or Flemish, Dutch (Netherlands), Norwegian, Polish, Portuguese (Brazil), Portuguese (Portugal), Ukrainian, Vietnamese, Thai, Swedish



## Simply connect, view, manage and scale.

WAVE Sync makes it easy to connect and view cameras across systems, merge sites, transfer ownership and configure systems for easy to use enterprise level management. It is a public cloud-based application hosted by Amazon AWS which enables remote access by an unlimited number of authorized users from anywhere in the world.

### Wisenet WAVE Sync Browser & Devices Interface



- ✓ **Cloud Connect**
  - Connect any Wisenet WAVE System for simple remote connectivity from anywhere using NAT Traversal and Cloud Data Proxy technology
- ✓ **User Management**
  - Add an unlimited number of users to a single Wisenet WAVE Sync System
  - Share access to your Wisenet WAVE system in seconds using only email addresses.
  - Create custom user groups and permission to quickly assign access to multiple Wisenet WAVE Sync connected systems

## Features

View	Manage	Scalability / Integration	Licensing
Live Video (adaptive)	System Settings	Unlimited # of Systems	Online activation for any license type
Recorded Video (adaptive)	User Permissions	Unlimited # of Users	
Camera Details	Cloud Connections	Unlimited # of Devices	
Keyword Search	Email Notifications	Cloud API	
Calendar Search	Cloud System Merge		
Flex Timeline			
Full Screen Functionality			

## The technical framework. How it all works.

Wisenet WAVE applications (Server, Desktop, Mobile) connect via an active internet connection to the Wisenet WAVE Sync (Cloud) and are automatically connected together using a combination of NAT Traversal (direct connection) and data proxy technologies. (connected via Wisenet WAVE Sync).



- step 1 Create Wisenet WAVE Sync Account
- step 2 Follow the on screen prompts to connect your account to an existing Wisenet WAVE System.
- step 3 View & Manage all connected system from anywhere.

## Supported Web Browsers



## Specifications

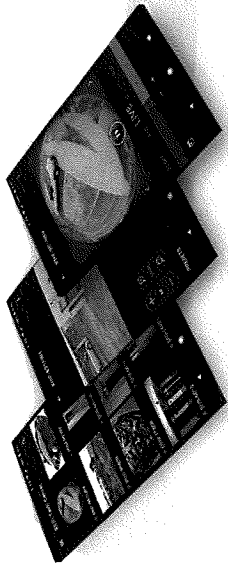
<b>SPECS</b>	
<b>Connectivity</b>	NAT Traversal. Connect directly to proxied Wisenet WAVE servers Cloud Data Proxy. Connect via AWS cloud proxy service
<b>Interface Tabs</b>	Systems: View connected system tiles Settings: View users / rename system / merge system / disconnect system View: Use Wisenet WAVE sync client to view live or recorded video
<b>Security</b>	Monitoring: Active monitoring of CPU, RAM, Storage and network resource activity Information: View system health alerts including server statistics, camera connectivity, recording status, event availability, storage status and network traffic
<b>Secure Password Recovery:</b>	Via email
<b>HTTPS:</b>	Open SSL encrypted server / client / cloud connections
<b>Email:</b>	TLS (Transport Layer Security)
<b>Passwords:</b>	Complex multi-level hash
<b>Developer Tools</b>	
<b>Cloud API</b>	Available upon request
<b>Scalability</b>	
<b># of Connected Systems</b>	Unlimited
<b># of Users</b>	Unlimited



## Mobile

### Smart Phone. Smart Video.

Wisenet WAVE Mobile is a user-friendly mobile application available for both iOS and Android devices. With a custom-designed media player, this low-latency app allows users to seamlessly connect to, view, search, and control IP cameras over Wi-Fi or data networks. Whether you're on-site or on the move, Wisenet WAVE Mobile provides the convenience of remotely accessing key functions of Wisenet WAVE from your smart device. Stay informed and take prompt action by viewing and responding to incidents captured by Wisenet cameras, empowering you to effectively manage surveillance operations while on the go.



**Wisenet Mobile**  
Connect. View. Search. Control.

## Features

Connect	View	Search	Control
Wifi	Live Video (adaptive)	Keyword	Advanced PTZ / Standard PTZ
Data 4G/LTE	Recorded Video (adaptive)	Calendar	Fisheye Dewarping
NAT Traversal	Layouts	Flex Timeline	2 Way Audio
Data Proxy Via Cloud	Available Systems	Motion Search	Push Notifications
Encrypted Connections	Camera Status		
Encrypted Video	Adjustable Resolutions		
	Portrait & Landscape Viewing Modes		
Features			
Remote Connect	Login using local or Wisenet WAVE Sync credentials		
Live Thumbnails	Thumbnails refresh in real time		
Keyword Search	Search for cameras or layouts by name		
Calendar Search	Search by date and time		
Motion Search	Search motion events within the entire video or specific region		
Advanced PTZ	Point pan, zoom, tilt controls, PTZ presets		
Fisheye Dewarping	Dewarp fisheye images		
Adaptive Scaling	Hi / Low resolution switching transcoding		
Layouts	View thumbnails of System Layouts		
Quick System Switch	Quickly switch between multiple Wisenet WAVE systems		
Push Notification	Receive customizable push notifications using WAVE VMS rules		
Bookmarks	View existing bookmarks from WAVE VMS		

## Supported Operating Systems

Oreo	8.0 - 8.1	iOS 12	12.0
Pie	9.0	iOS 13	13.0
Android 10	10.0	iOS 14	14.0
Android 11	11.0	iOS 15	
Android 12		iPadOS 15	

AVAILABLE AT:



## Specifications

Supported Media Playback Streams

Codecs: H.265, H.264, HLS

For more information visit us at  
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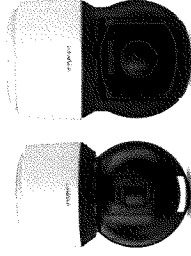
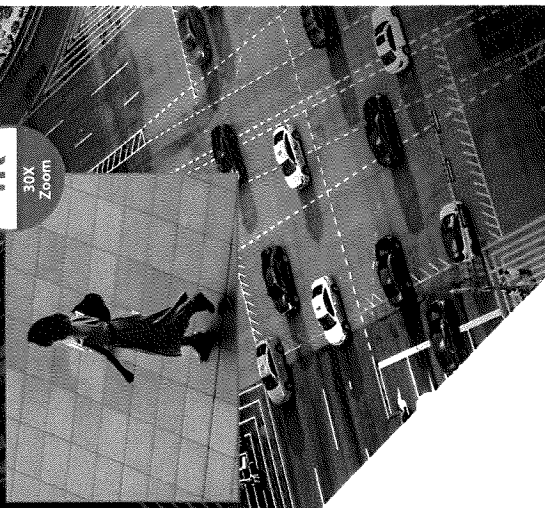
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# New Generation PTZ

4K  
30X  
Zoom



4K/6MP/2MP

## WISENET PTZ PLUS

XNP-9300RW/9250R/9250

XNP-8300RW/8250R/8250

XNP-6400RW/6400R/6400

- Clear images with up to 4K resolution, 40x, 30x, 25x optical zoom ratio
- Up to 200 meters of IR viewable length with Wise IR
- Enhanced preset with accuracy of  $\pm 0.1^\circ$
- Quick Pan, Tilt correction (within 1 second)
- Built-in wiper, quick spin, and heater for the perfect water removal
- Easy and safe installation with compact and light-weighted camera body
- AI deep learning based object tracking (Target-lock tracking with right click)
- Wisenet7 SoC applied

Learn more about  
PTZ PLUS



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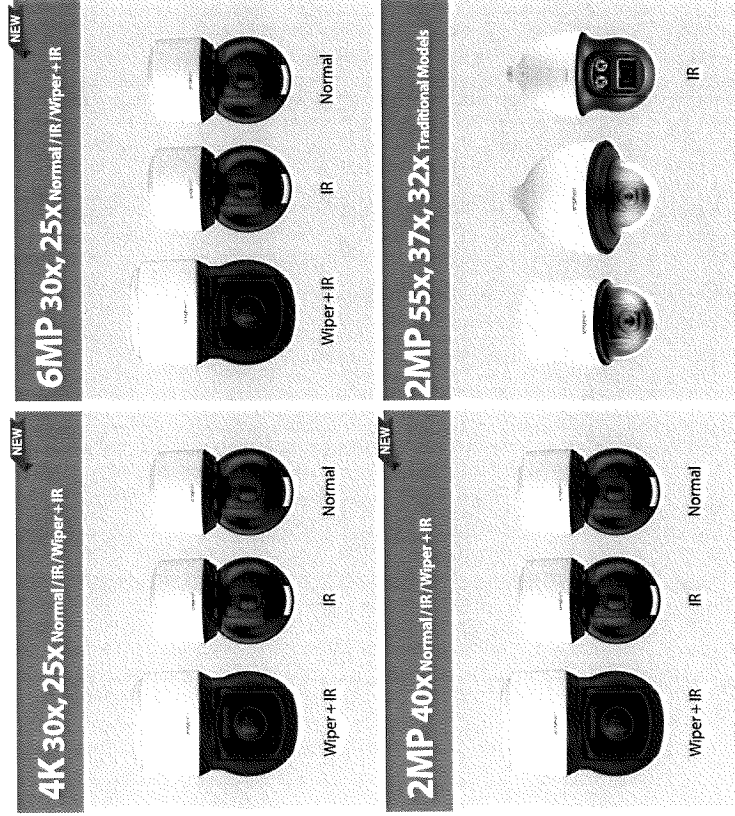
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HS-AN-19-000001

Diverse PTZ Lineup

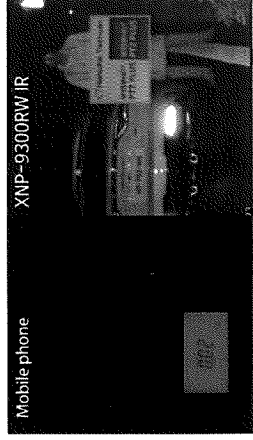
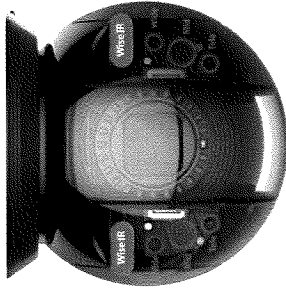
Hanwha Techwin's PTZ product portfolio has been reinforced with the release of PTZ PLUS. Products with the resolutions ranging from 2MP and 6MP to up to 4K, and powerful optical zoom up to 55x are available. And the built-in wiper and IR add variety in portfolio as well. You can experience Hanwha Techwin's latest technology with the compact size 4K 30x, 2MP 40x PTZ cameras.



Powerful Performance

**Clear images both in dark and distant scenes with high resolution, high optical zoom and Wise IR**

4K/6MP/2MP Wisenet PTZ PLUS offers the best PTZ experience with Hanwha Techwin's in-house developed 4K 30x optical lens and structure. Also the Wise IR which optimizes amount of IR coverage and zoom ratio allows vivid view up to 200 meters in complete dark scenes.

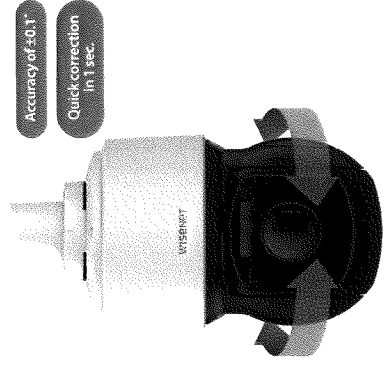


Accurate pre-set and quick Pan and Tilt correction

PTZ PLUS supports a pre-set accuracy  $\pm 0.1^\circ$ , and quickly resumes the original position within one second when an unintended distortion of Panning and tilting is detected.

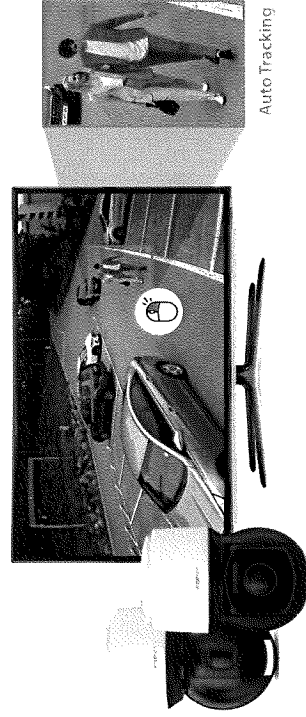
Also, as PTZ cameras are often used for long distance monitoring with the extreme zoom, returning to its original position after Pan and Tilt movement is very important. Even a small error in returning to its original position can greatly affect the accuracy of zoom. PTZ PLUS resolves such issues and provides accurate preset with the accuracy of  $\pm 0.1^\circ$ .

When detecting the distortion of Panning and tilting, the camera resumes its original position within one second.



### AI-based Object Auto Tracking

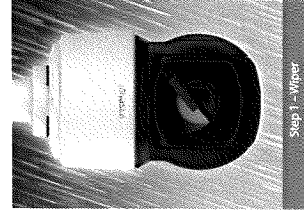
PTZ PLUS utilizes AI algorithms to automatically designate people or vehicles for object tracking. They also allow users to manually target objects on screen for continuous tracking.



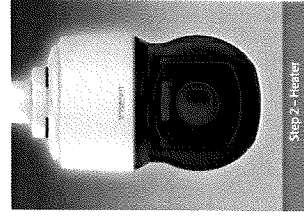
### 2-step perfect water removal

Since the PTZ cameras generally used outdoors, the lens can be affected by snow, rainwater, or dust and when they are adhered to the lens, they can limit the view. PTZ PLUS uses built-in wiper to initially get rid of water or dust and then activates heater on the lens to dry remaining water and remove water perfectly. Models without built-in wiper quickly spin the camera body to remove water first, then dries remaining water with the heater. It minimizes impacts of external environments and secures clear and vivid images.

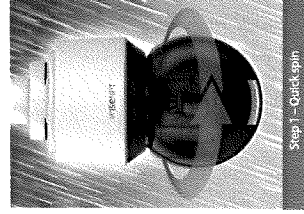
Models with built-in wiper  
(XNP-9300RW/8300RW/6400RW)



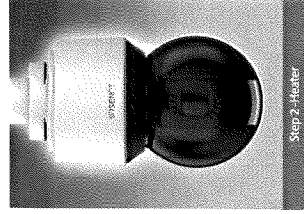
Step 1 - Wiper



Step 2 - Heater



Step 1 - Quick spin



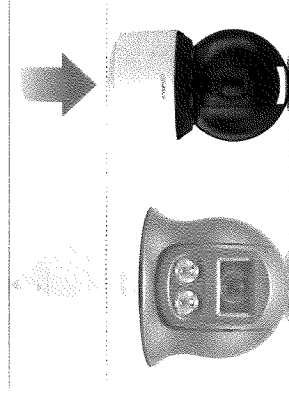
Step 2 - Heater

Models without built-in wiper  
(XNP-9250R/9250R/8250R/8250/6400R/6400)

### User Convenience

#### Weight and size reduced up to 65%, better performance, easier Installation

PTZ PLUS reduced the weight by up to 65% for the Dome type (For XNP-9250) and the size became more compact than conventional PTZ cameras. More compact and lighter design significantly reduce the burden of installation. Moreover, the lightened head increased the speed of Pan/Tilt.

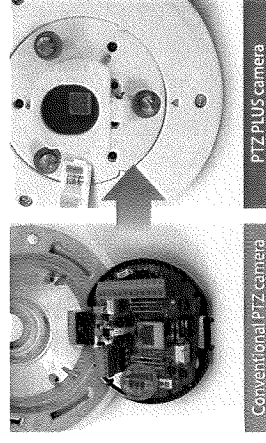


7.1Kg, Ø237 x 408mm

3.5Kg, Ø158 x 293.3mm

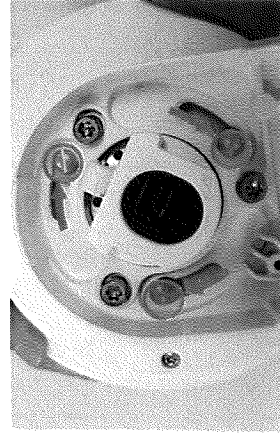
#### 5 to 1, easy cable connection making the perfect waterproof

PTZ PLUS is connected to a single RJ45 cable, supporting easy connection. Compared to conventional models which required 5 cables for the connection, the connection became so much simple. And this simple-1-cable structure and the Flexible bush secure the perfect waterproof without needs for extra waterproofing.



#### Quick and easy camera-mount installation

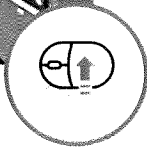
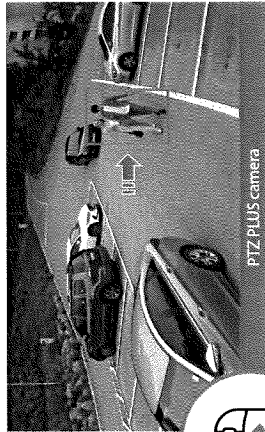
When connecting PTZ PLUS camera onto the mount, installers can simply match three joints and twist for the initial connection. This allows installers work with both hands, and therefore, greatly improves work efficiency.



## Improved features

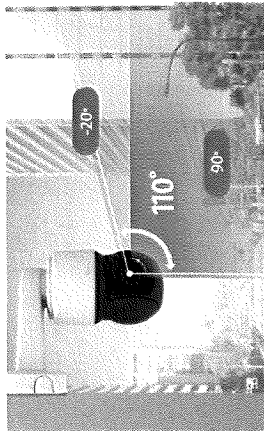
### Precise PTZ control

PTZ PLUS supports delicate and precise PTZ control. Conventional PTZ cameras had challenges in offering precise monitoring of moving objects due to its pre-set centered movement. PTZ PLUS provides stable object monitoring using precise PTZ control when a user wants to track moving objects manually.



### Widened Tilt angle

PTZ PLUS offers 110° (-20° ~ 90°) of Tilt angle, enabling effective monitoring of objects positioned above the camera level and objects in sloped environment.



### Focus save function of up to 32 areas

Using focus save, the camera automatically sets focus when a camera moves to the user's predefined area. The feature enables clear monitoring of an area of interest by quickly setting focus when an event occurs. Do not miss any event. (Can configure up to 32 areas)

## PTZ PLUS lineup main Specification



**XNP-9300RW**  
4K/30x-Wiper + IR/PTZ camera



**XNP-8300RW**  
6MP/30x-Wiper + IR/PTZ camera



**XNP-6400RW**  
2MP/40x-Wiper + IR/PTZ camera

1/2.8" CMOS

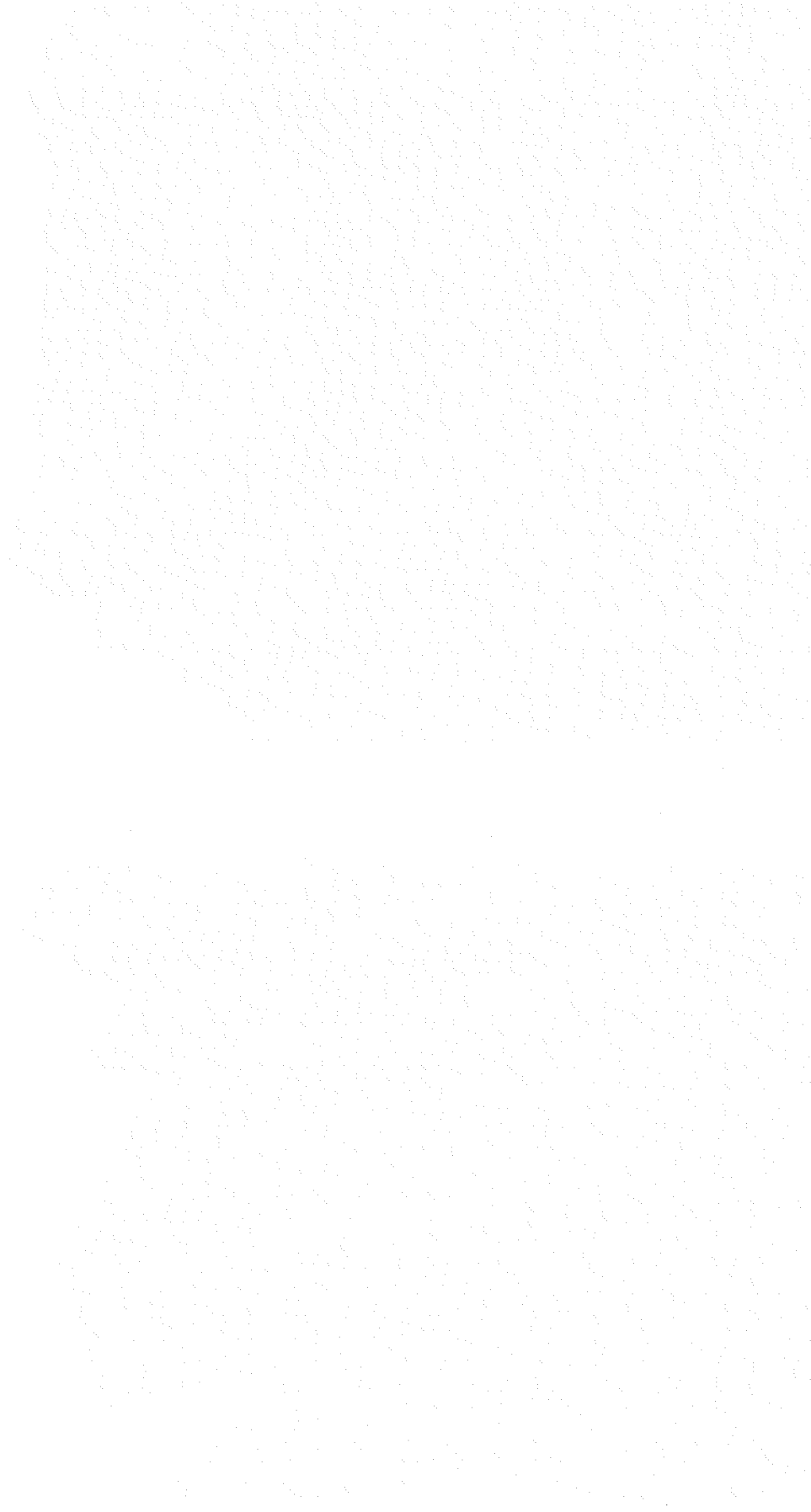
Imaging Device			
Resolution / Max. Frame Rate	3840x2160 / 30fps	3328x1872 / 30fps	1920x1080 / 60fps
Focal length	5~150mm(30x) zoom		4.25~170mm(40x) zoom
Max. Illumination	Color: 0.1Lux (F1.6, 1/30sec) BW: 0Lux (IR-LED On)		Color: 0.05Lux (F1.6, 1/30sec) BW: 0Lux (IR-LED On)
IR Wavelength	200m(656.17nm), Wise IR		
Pan / Tilt / Rotate	360° Endless / 110° (-20° ~ 90°)		
Pan Speed	Max. 500°/sec, Manual: 0.024°/sec ~ 250°/sec		
Tilt Speed	Max. 350°/sec, Manual: 0.024°/sec ~ 250°/sec		
Preset Accuracy	±0.1°		
Alarm / Audio	Compatible with NW/IO Box (optional)		
Edge Storage	Micro SD / SDHC / SDXC 2slot 1TB		
Operating Temperature / Humidity	-40°C ~ +60°C (-40°F ~ +140°F) / Less than 95% RH (Non-condensing) Maximum Temperature based on NEMA-TS 2 (2.2.7): +74°C (+165°F)		
Certification	IP66, IK10 (Camera body only), NEMA4X, NEMA-TS 2 (2.2.8, 2.2.9)		IP66, IK10 (Camera body only), NEMA4X
Power	HPoE: Typical 20W, Max 42W		
Dimensions (WxHxD) / Weight	Ø184.9x318.8mm (7.28x12.55") / 5.4kg (11.90lb)		
Focus Control	Oneshot AF, Focus save		
Auto tracking	Object tracking (Human/Vehicle), Target lock tracking		
Cybersecurity	Basic + Device certificate (Hannuha Tech/In Root CA) + Cyber security assurance program UL CAPUL 2900-1		

PTZ PLUS lineup  
main specification

	 <b>XNP-9250R</b> 4K 25x IR PTZ camera	 <b>XNP-8250R</b> 6MP 25x IR PTZ camera	 <b>XNP-6400R</b> 2MP 40x IR PTZ camera	 <b>XNP-9250</b> 4K 25x PTZ camera	 <b>XNP-8250</b> 6MP 25x PTZ camera	 <b>XNP-6400</b> 2MP 40x PTZ camera
Imaging Device	1/2.8" CMOS					
Resolution/Max. Frame Rate	3840x2160 / 30fps	3328x1872 / 30fps	1944x1212 / 60fps	3840x2160 / 30fps	3328x1872 / 30fps	1944x1212 / 60fps
Focal Length	5~125mm(25x) zoom	5~125mm(25x) zoom	4.25~170mm(40x) zoom	5~125mm(25x) zoom	5~125mm(25x) zoom	4.25~170mm(40x) zoom
Min. Illumination	Color: 0.1Lux (F1.6, 1/30sec) BW: 0Lux (IR LED On)	Color: 0.1Lux (F1.6, 1/30sec) BW: 0Lux (IR LED On)	Color: 0.05Lux (F1.6, 1/30sec) BW: 0Lux (IR LED On)	Color: 0.1Lux (F1.6, 1/30sec) BW: 0.01Lux (IR LED On)	Color: 0.1Lux (F1.6, 1/30sec) BW: 0.01Lux (IR LED On)	Color: 0.05Lux (F1.6, 1/30sec) BW: 0.005Lux (IR LED On)
IR Viewable Length	200m(656.17ft), WISE IR	200m(656.17ft), WISE IR		200m(656.17ft), WISE IR	200m(656.17ft), WISE IR	
Pan/Tilt/Rotate	360° Endless / 110°(±20°~90°)	360° Endless / 110°(±20°~90°)		360° Endless / 110°(±20°~90°)	360° Endless / 110°(±20°~90°)	
Pan Speed	Max. 700°/sec, Manual: 0.024°/sec~250°/sec	Max. 700°/sec, Manual: 0.024°/sec~250°/sec		Max. 700°/sec, Manual: 0.024°/sec~250°/sec	Max. 700°/sec, Manual: 0.024°/sec~250°/sec	
Tilt Speed	Max. 500°/sec, Manual: 0.024°/sec~250°/sec	Max. 500°/sec, Manual: 0.024°/sec~250°/sec		Max. 500°/sec, Manual: 0.024°/sec~250°/sec	Max. 500°/sec, Manual: 0.024°/sec~250°/sec	
Reset Accuracy	Up to ±0.1°, Pan/Tilt correction	Up to ±0.1°, Pan/Tilt correction		Up to ±0.1°, Pan/Tilt correction	Up to ±0.1°, Pan/Tilt correction	
Digital Image Stabilization	Support					
Alarm/Audio	Compatible with NW/IO Box(optional)					
Edge Storage	Micro SD/SDHC/SDXC 2slot 1TB					
Operating Temperature / Humidity	-40°C~+60°C(40°F ~ +140°F) / Less than 95% RH(Non-condensing) Maximum Temperature based on NEMA-TS 2(2.2.7): +74°C(+165°F)					
Certification	IP66, IK10, NEMA TS-2 (2.2.8, 2.2.9)					
Power	PoE+: Typical 20W, Max 40W					
Dimensions (WxHxD) / Weight	Ø158x293.3mm(6.22x11.55")/3.2Kg(7.05lb)					
Focus Control	Oneshot AF, Focus save					
Auto tracking	Object tracking (Human/Vehicle), Target lock tracking					
Cybersecurity	Basic + Device certificate (Hanuha Techno Root CA)					

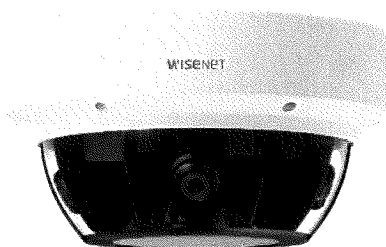
MEMO

MEMO



# PNM-9002VQ

2MP/5MP x 4CH Multi-directional Camera



## Key Features

- Exchangeable 4ea x 2MP / 5MP lens modules
- 8MP to 20MP resolution  
(depend on the combination of lens modules)
- 60fps@2MP (H.265 / H.264)
- WDR 150dB (2MP), 120dB (5MP)
- 2.4mm, 2.8mm, 3.6mm, 6mm fixed lens (2MP module)
- 3.7mm, 4.6mm, 7mm fixed lens (5MP module)
- H.265, H.264, MJPEG codec, Multi streaming support
- Video analytics, WiseStream II
- IP66, IK10
- PoE+

## Accessories (Optional)



SLA-5M7000Q



SLA-5M4600Q



SLA-5M3700Q



SLA-2M6000Q



SLA-2M3600Q



SLA-2M2800Q



SLA-2M2400Q

<b>Video</b>	
Resolution	1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
Maximum Framerate	H.265/H.264: 2MP Maximum 60fps MJPEG: Maximum 30fps
Video Out	CVBS : 1.0 Vp-p / 75Ω composite, 720x480 for installation
<b>Lens</b>	
Optional Lens	SLA-2M2400Q(2MP 2.4mm) SLA-2M2800Q(2MP 2.8mm) SLA-2M3600Q(2MP 3.6mm) SLA-2M6000Q(2MP 6.0mm) SLA-5M3700Q(5MP 3.7mm) SLA-5M4600Q(5MP 4.6mm) SLA-5M7000Q(5MP 7.0mm)
<b>Operational</b>	
Camera Title	Displayed up to 85 characters
Day & Night	Auto(Electrical)
Backlight Compensation	BLC, HLC, WDR, SDR
Wide Dynamic Range	150dB
Digital Noise Reduction	SSNR V
Digital Image Stabilization	Support
Defog	Support
Motion Detection	8ea, 8point polygonal zones
Privacy Masking	32ea, polygonal zones - Color: Grey/Green/Red/Blue/Black/White - Mosaic
Gain Control	Low / Middle / High
White Balance	ATW / AWC / Manual / Indoor / Outdoor
LDC	Support
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (2~1/12,000sec)
Video Rotation	Flip, Mirror, Hallway view(90°/270°)
Analytics	Defocus detection, Directional detection, Face detection, Fog detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line
Alarm Triggers	Analytics, Network disconnect
Alarm Events	File upload via FTP and e-mail Notification via e-mail SD/SDHC/SDXC recording at event triggers
<b>Network</b>	
Ethernet	Metal shielded RJ-45(10/100/1000BASE-T)
Video Compression	H.265/H.264: Main/Baseline/High, MJPEG
Smart Codec	Manual(Sea area), WiseStream II
Bitrate Control	H.264/H.265: CBR or VBR MJPEG: VBR
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles)

Protocol	IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP,RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour, LLDP
Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access log 802.1X Authentication(EAP-TLS, EAP-LEAP)
Application Programming Interface	ONVIF Profile S/T SUNAPI(HTTP API)
<b>General</b>	
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Edge Storage	Micro SD/SDHC/SDXC 4 slots maximum 256GB each (1 per each channel)
Memory	3GB RAM, 768MB Flash
<b>Environmental &amp; Electrical</b>	
Operating Temperature / Humidity	-40°C ~ +55°C(-40°F ~ +131°F) / Less than 90% RH
Storage Temperature / Humidity	-50°C ~ +60°C(-58°F ~ +140°F) / Less than 90% RH
Certification	IP66, IK10
Input Voltage	PoE+(IEEE802.3at, Class4)
Power Consumption	Max 25.5W
<b>Mechanical</b>	
Color / Material	White / Aluminum
RAL Code	RAL9003
Product dimensions / weight	Ø253mmx130mm, 3000g

- The latest product information / specification can be found at [hanwhasecurity.com](http://hanwhasecurity.com)
- Design and specifications are subject to change without notice.
- Wisenet is the proprietary brand of Hanwha Techwin , formerly known as Samsung Techwin.



## NanoBeam<sup>®</sup> AC GEN2

airMAX<sup>®</sup> ac CPE with Dedicated Management Radio

Model: NBE-5AC-Gen2

Uniform Beamwidth Maximizes Noise Immunity

Dedicated Wi-Fi Radio for Management

airMAX ac Processor for Superior Performance

# Overview

Ubiquiti Networks launches the latest generation of airMAX® CPE (Customer Premises Equipment), the NanoBeam® 5AC Gen 2.

## Improved Noise Immunity

The NanoBeam 5AC Gen 2 directs RF energy in a tighter beamwidth. With the focus in one direction, the NanoBeam 5AC Gen 2 blocks or spatially filters out noise, so noise immunity is improved. This feature is especially important in an area crowded with other RF signals of the same or similar frequency.

## Integrated Design

The radio and antenna are combined to create a more efficient and compact CPE. The NanoBeam 5AC Gen 2 gets maximum gain out of the smallest footprint.

Providing high performance and an innovative form factor, the NanoBeam 5AC Gen 2 is versatile and cost-effective to deploy.

# Software

## airOS® 8

airOS® 8 is the revolutionary operating system for Ubiquiti® airMAX ac products.

## Powerful Wireless Features

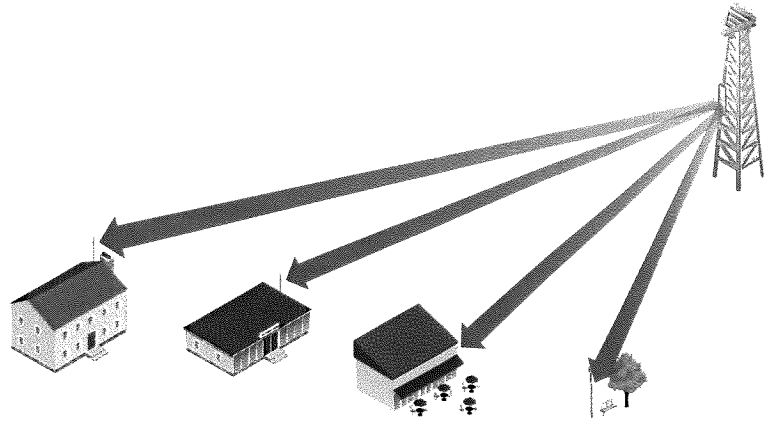
- Access Point PtMP airMAX Mixed Mode
- airMAX ac Protocol Support
- Long-Range Point-to-Point (PtP) Link Mode
- Selectable Channel Width
  - PtP: 10/20/30/40/50/60/80 MHz
  - PtMP: 10/20/30/40 MHz
- Automatic Channel Selection
- Transmit Power Control: Automatic/Manual
- Automatic Distance Selection (ACK Timing)
- Strongest WPA2 Security

## Usability Enhancements

- airMagic® Channel Selection Tool
- Redesigned User Interface
- Dynamic Configuration Changes
- Instant Input Validation
- HTML5 Technology
- Optimization for Mobile Devices
- Detailed Device Statistics
- Comprehensive Array of Diagnostic Tools, including RF Diagnostics and airView® Spectrum Analyzer

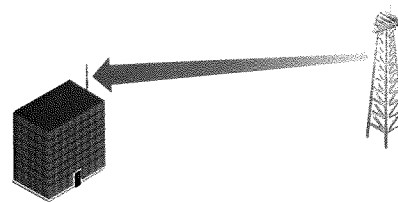
# Application Examples

## PtMP Client Links

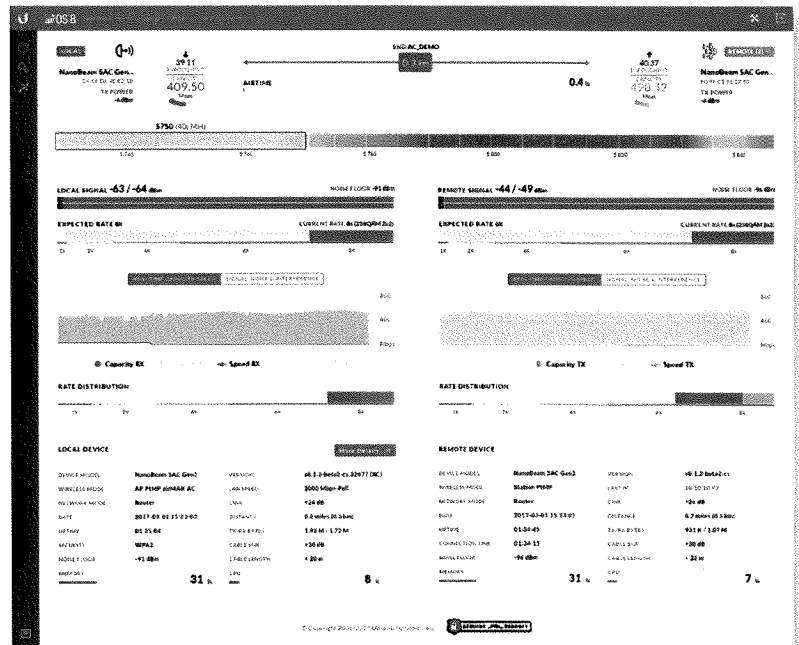


The NanoBeam 5AC Gen 2 used as a CPE device for each client in an airMAX PtMP network.

## PtP Link



Use a NanoBeam 5AC Gen 2 on each side of a PtP link.



## Advanced RF Analytics

airMAX ac devices feature a multi-radio architecture to power a revolutionary RF analytics engine.

An independent processor on the PCBA powers a second, dedicated radio, which persistently analyzes the full 5 GHz spectrum and every received symbol to provide you with the most advanced RF analytics in the industry.

## Real-Time Reporting

airOS 8 displays the following RF information:

- Persistent RF Error Vector Magnitude (EVM) constellation diagrams
- Signal, Noise, and Interference (SNI) diagrams
- Carrier to Interference-plus-Noise Ratio (CINR) histograms

## Spectral Analysis

airView allows you to identify noise signatures and plan your networks to minimize noise interference. airView performs the following functions:

- Constantly monitors environmental noise
- Collects energy data points in real-time spectral views
- Helps optimize channel selection, network design, and wireless performance

airView runs in the background without disabling the wireless link, so there is no disruption to the network.

In airView, there are three spectral views, each of which represents different data: waveform, waterfall, and ambient noise level.

airView provides powerful spectrum analyzer functionality, eliminating the need to rent or purchase additional equipment for conducting site surveys.

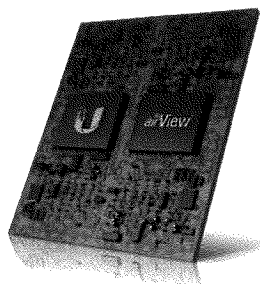
## UNMS App

The NanoBeam 5AC Gen 2 integrates a separate Wi-Fi radio for fast and easy setup using your mobile device.

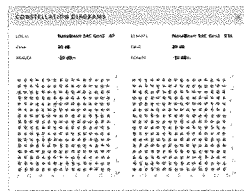
### Accessing airOS via Wi-Fi

The UNMS™ app provides instant accessibility to the airOS configuration interface and can be downloaded from the App Store (iOS) or Google Play™ (Android). UNMS allows you to set up, configure, and manage the NanoBeam 5AC Gen 2 and offers various configuration options once you're connected or logged in.

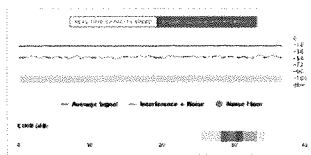
## Multi-Radio Architecture



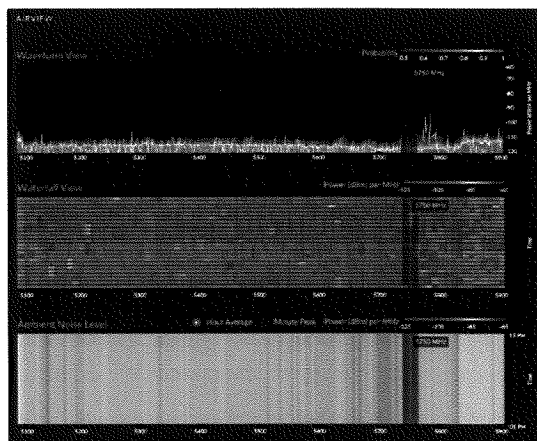
## Constellation Diagrams



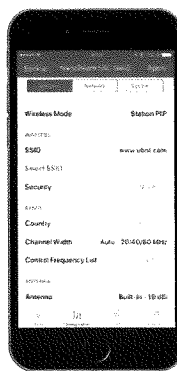
## SNI Diagram and CINR Histogram



## Dedicated Spectral Analysis



## UNMS Configuration Screen



# Technology

## airMAX ac

Unlike standard Wi-Fi protocol, Ubiquiti's Time Division Multiple Access (TDMA) airMAX protocol allows each client to send and receive data using pre-designated time slots scheduled by an intelligent AP controller.

This time slot method eliminates hidden node collisions and maximizes airtime efficiency, so airMAX technology provides performance improvements in latency, noise immunity, scalability, and throughput compared to other outdoor systems in its class.

**Intelligent QoS** Priority assigned to voice/video for seamless streaming.

**Scalability** High capacity and scalability.

**Long Distance** Capable of high-speed, carrier-class links.

### Superior Performance

The next-generation airMAX ac technology boosts the advantages of our proprietary TDMA protocol.

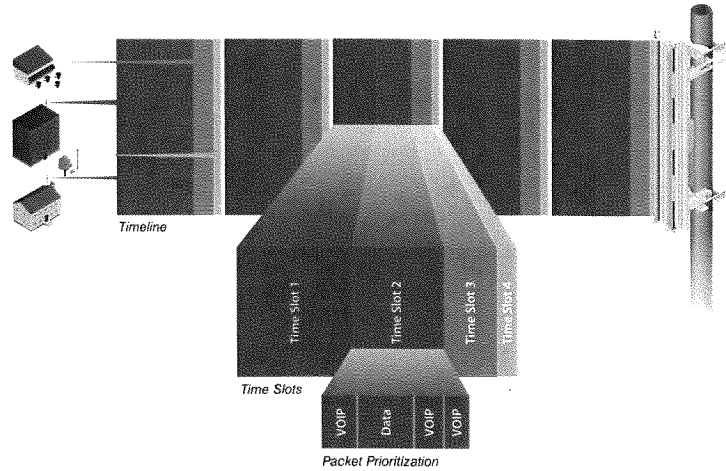
Ubiquiti's airMAX engine with custom IC dramatically improves TDMA latency and network scalability. The custom silicon provides hardware acceleration capabilities to the airMAX scheduler, to support the high data rates and dense modulation used in airMAX ac technology.

### Throughput Breakthrough

airMAX ac supports high data rates, which require dense modulation: 256QAM – a significant increase from 64QAM, which is used in airMAX.

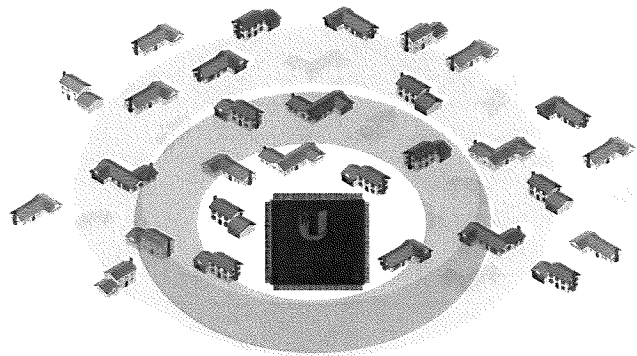
With their use of proprietary airMAX ac technology, airMAX ac products supports up to 450+ Mbps real TCP/IP throughput – up to triple the throughput of standard airMAX products.

## airMAX ac TDMA Technology

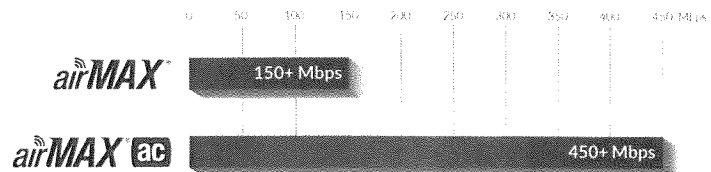


Up to 100 airMAX ac stations can be connected to an airMAX ac Sector; four airMAX ac stations are shown to illustrate the general concept.

## airMAX Network Scalability



## Superior Throughput Performance



# Hardware Overview

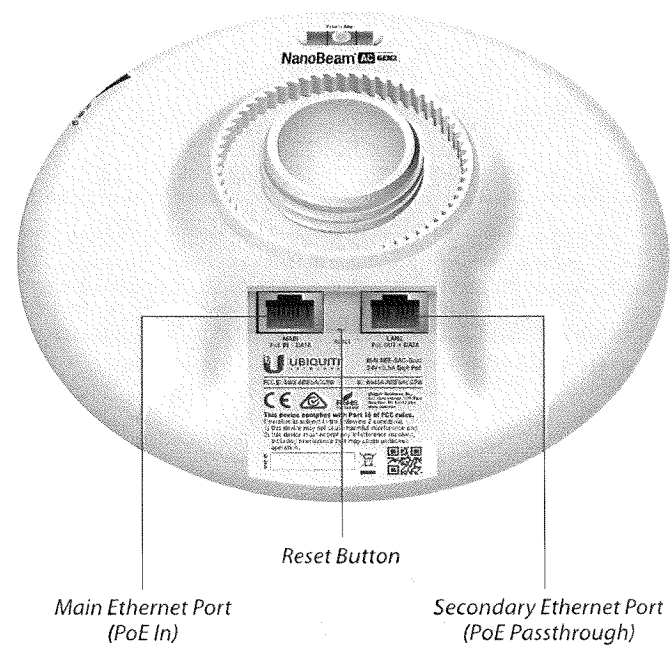
The NanoBeam 5AC Gen 2 features airMAX ac technology and enhanced protection against ESD events.

## Ease of Installation

- **Quick Installation** No fasteners are required for pole-mounting, and a single wall fastener (not included) is required for wall-mounting.
- **Convenient Alignment** The NanoBeam 5AC Gen 2 pivots on its ball joint 3-axis mount for easy aiming.

## Innovative Mechanical Design

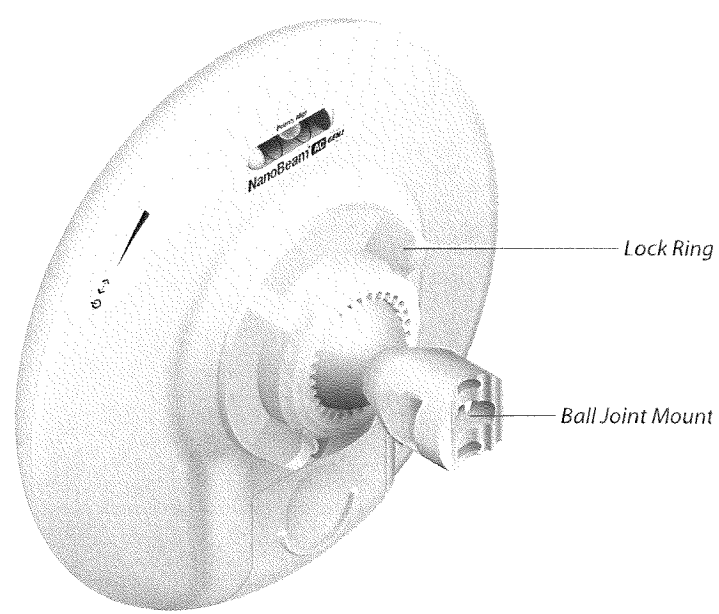
- **Efficient Footprint** The radio and antenna are combined into a single body that takes up minimal space. The form factor features the highest gain for its size.
- **Aesthetics** The NanoBeam 5AC Gen 2 is small enough to blend discreetly into the background at a customer's location.
- **Versatile Mounting** The NanoBeam 5AC Gen 2 can be mounted in almost any position needed for line of sight.



Main Ethernet Port (PoE In)

Reset Button

Secondary Ethernet Port (PoE Passthrough)



Lock Ring

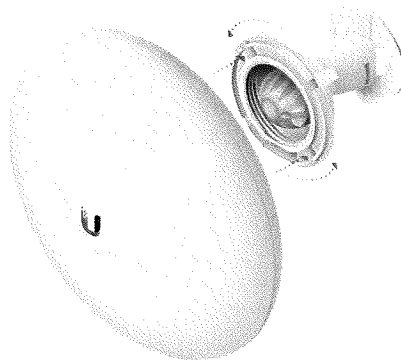
Ball Joint Mount

## Mounting Accessories

### NanoBeam® Wall Mount Kit

**Model: NBE-WMK**

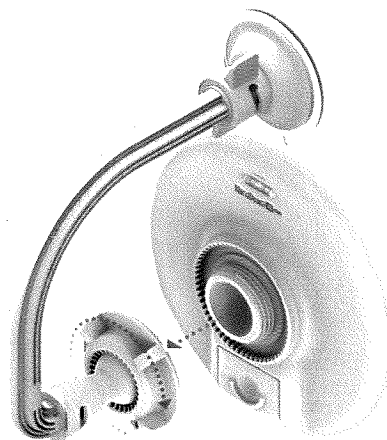
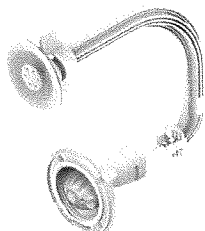
A wall mount kit is available as an optional accessory to enhance stability for wall-mounting.



### NanoBeam® Window Mount

**Model: NBE-19-WM**

A suction cup mount is available as an optional accessory to mount the NanoBeam 5AC Gen 2 on a window.

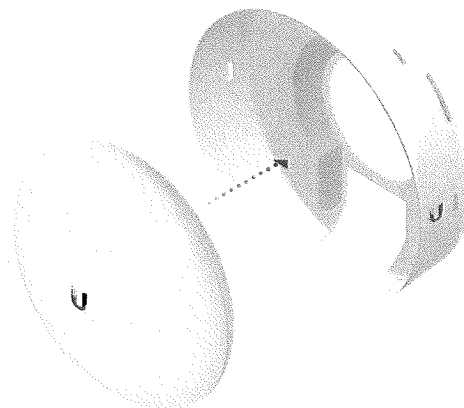
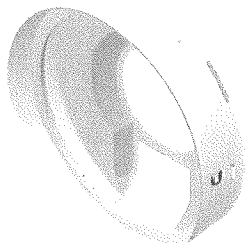


## IsoBeam Accessory

### IsoBeam™

**Model: ISO-BEAM-19**

An RF isolator shield is available as an optional accessory to enhance signal isolation.



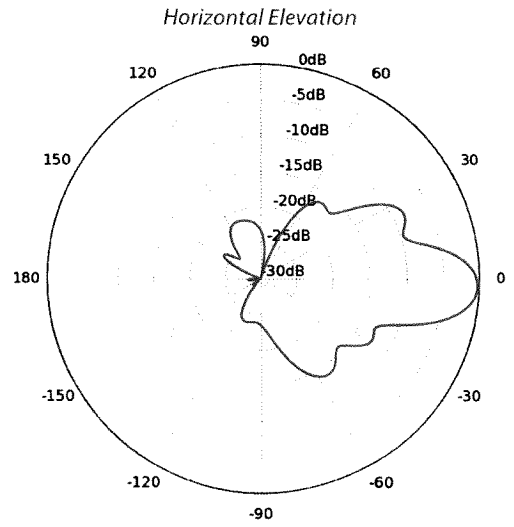
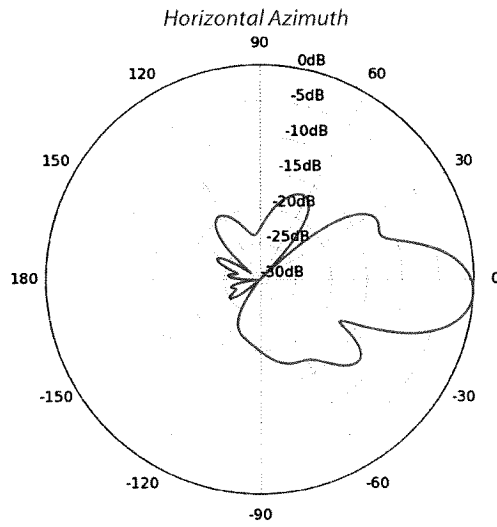
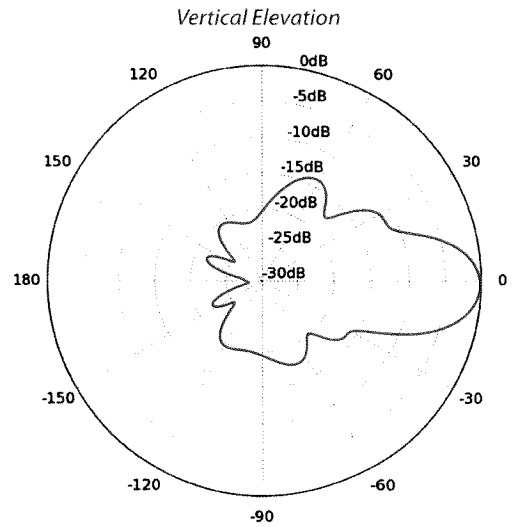
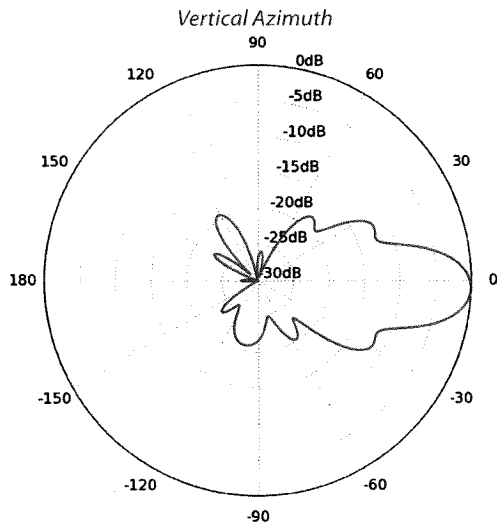
# Specifications

NBE-5AC-Gen2		
Dimensions (Mount Included)	189 x 189 x 125 mm (7.44 x 7.44 x 4.92")	
Weight (Mount Included)	0.530 kg (1.17 lb)	
Power Supply	24V, 0.5A Gigabit PoE Adapter (Included)	
Max. Power Consumption	8.5W	
Gain	19 dBi	
Networking Interface	(2) 10/100/1000 Ethernet Ports Wi-Fi for Management	
Processor Specs	Atheros MIPS 74Kc, 720 MHz	
Memory	128 MB DDR2, 8 MB Flash	
LEDs	Power, Ethernet, (4) Signal Strength	
Signal Strength LEDs	Software-Adjustable to Correspond to Custom RSSI Levels	
Max. VSWR	1.5:1	
Channel Sizes	PtP Mode	PtMP Mode
	10/20/30/40/50/60/80 MHz	10/20/30/40 MHz
Polarization	Dual Linear	
Enclosure	Outdoor UV Stabilized Plastic	
Mounting	Pole-Mount (Kit Included), Wall-Mount	
Wind Loading	45.4 N @ 200 km/h (10.2 lbf @ 125 mph)	
Wind Survivability	200 km/h (125 mph)	
ESD/EMP Protection	Air: ± 24 kV, Contact: ± 24 kV	
Operating Temperature	-40 to 80° C (-40 to 176° F)	
Operating Humidity	5 to 95% Noncondensing	
Certifications	CE, FCC, IC	
RoHS Compliance	Yes	
Salt Fog Test	IEC 68-2-11 (ASTM B117), Equivalent: MIL-STD-810 G Method 509.5	
Vibration Test	IEC 68-2-6	
Temperature Shock Test	IEC 68-2-14	
UV Test	IEC 68-2-5 at 40° C (104° F), Equivalent: ETS 300 019-1-4	
Wind-Driven Rain Test	ETS 300 019-1-4, Equivalent: MIL-STD-810 G Method 506.5	

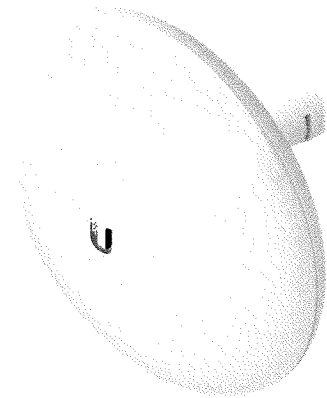
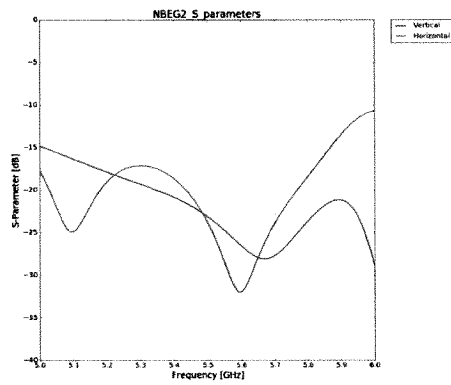
Operating Frequency (MHz)				
Worldwide	5150 - 5875			
USA	U-NII-1: 5150 - 5250	U-NII-2A: 5250 - 5350 MHz	U-NII-2C: 5470 - 5725 MHz	U-NII-3: 5725 - 5850

Management Radio (MHz)	
Worldwide	2412 - 2472
USA	2412 - 2462

NBE-5AC-Gen2 Output Power: 25 dBm							
TX Power Specifications				RX Power Specifications			
Modulation	Data Rate	Avg. TX	Tolerance	Modulation	Data Rate	Sensitivity	Tolerance
<b>airMAX ac</b>	1x BPSK (1/2)	25 dBm	± 2 dB	<b>airMAX ac</b>	1x BPSK (1/2)	-96 dBm	± 2 dB
	2x QPSK (1/2)	25 dBm	± 2 dB		2x QPSK (1/2)	-95 dBm	± 2 dB
	2x QPSK (3/4)	25 dBm	± 2 dB		2x QPSK (3/4)	-92 dBm	± 2 dB
	4x 16QAM (1/2)	25 dBm	± 2 dB		4x 16QAM (1/2)	-90 dBm	± 2 dB
	4x 16QAM (3/4)	25 dBm	± 2 dB		4x 16QAM (3/4)	-86 dBm	± 2 dB
	6x 64QAM (3/4)	24 dBm	± 2 dB		6x 64QAM (3/4)	-83 dBm	± 2 dB
	6x 64QAM (3/4)	23 dBm	± 2 dB		6x 64QAM (3/4)	-77 dBm	± 2 dB
	6x 64QAM (3/4)	22 dBm	± 2 dB		6x 64QAM (3/4)	-74 dBm	± 2 dB
	8x 256QAM (3/4)	21 dBm	± 2 dB		8x 256QAM (3/4)	-69 dBm	± 2 dB
8x 256QAM (3/4)	20 dBm	± 2 dB	8x 256QAM (3/4)	-65 dBm	± 2 dB		



**Return Loss**



Specifications are subject to change. Ubiquiti products are sold with a limited warranty described at: [www.ubnt.com/support/warranty](http://www.ubnt.com/support/warranty)  
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## CUSTOMER ESTIMATE NO. 4276

City of Hermosa Beach  
1315 Valley Dr  
Hermosa Beach CA 90254

**Created Date:** 10/25/2023  
**Date:** 10/26/2023  
**Valid For:** 30 Day(s)  
**Site:** Hermosa Beach Parking  
**Salesperson:** Jeffrey Torok

### City-Wide Camera System:

#### Camera Equipment:

This section is for cameras and camera mounts. There are 4-6MP PTZ cameras with AI and 3-20MP multi sensor cameras. Each multi sensor camera has 4 seperit 5MP images.

The cameras for this project will provide 16 seperit camera views.

Part #	Item	Quantity	Unit Price	Total
XNP-C8253	Powered by WN7 PTZ Plus with AI, 6MP @ 30FPS resolution, 5mm~125mm (25x) lens, extreme WDR 120dB, Day & Night ICR, H.265, H.264, MJPEG codec support, Analytics events based on AI engine: Object detection (Person/Face/Vehicle/License plate), IVA (Virtual line/Area, Enter/Exit, Loitering, direction, intrusion), Analytics events: Defocus detection, Motion detection, Tampering, Fog detection, Audio detection, Sound classification (with NW I/O box), Object auto-tracking (Person/Vehicle), Target lock track, BLC, HLC, SSSDR, lens heater for water/snow removal, IP66, IK10, NEMA4X, NEMA-TS 2(2.2.8, 2.2.9), FIPS 140-2, Power: PoE+, Operating Temperature -40°C~+55°C(-40°F ~ +131°F), (Compatible with I/O Box SPM-4210)	4.00	\$2,576.07	\$10,304.28
PNM-9002VQ	Network vandal outdoor Multi-sensor Multi-Directional dome camera, (2MP/5MP X 4 sensors sold separately) 8MP ~20MP (2MP @ 60fps or 5MP @30fps), fixed focal lens modules, triple codec H.265/H.264/MJPEG with WiseStream II technology, 150dB WDR @ 2MP or 120dB @ 5MP, defocus detection, built in analytics, PTZ handover, 4x SD card, hallway view, HLC, defog detection, DIS(Gyro Sensor), PoE+, IP66/IK10, -40°C ~ +55°C (-40°F ~ +131°F) 2MP Lens modules: SLA-2M2400Q (2.4mm), SLA-2M2800Q (2.8mm), SLA-2M3600Q (3.6mm), SLA-2M6000Q (6mm) 5MP Lens modules: SLA-5M3700Q (3.7mm), SLA-5M4600Q (4.6mm), SLA-5M7000Q (7.0mm). WHITE COLOR	3.00	\$1,042.70	\$3,128.10
SLA-5M3700Q	1/1.8" 5MP CMOS with a 3.7mm fixed focal lens, FoV: H: 97.5°, V: 71.9° for the PNM-9000VQ	12.00	\$161.56	\$1,938.72
SBP-156WMW	Wall/Pole mount, Material : Aluminum, Color : White, Dimensions :135(W)x183(H)x302(D)mm (5.31x7.20x11.89"), Compatible with: XNP-9300RW/8300RW/6400RW, QNP-6320R/6250R/6320H/6250H. Stainless Steel	4.00	\$103.99	\$415.96

## CUSTOMER ESTIMATE NO. 4276

### Camera Equipment:

Part #	Item	Quantity	Unit Price	Total
	Pole straps are not included.			
SBP-100S	Stainless steel mount strap (QTY of 2) for wall pole mount: SBP-156WMW, SBP-300PMW, SBP-300PM	8.00	\$14.50	\$116.00
SBP-276HMW	Cap adapter for the PNM-9084QZ, PNM-8082VT, PNM-9022V, PNM-9031RV	3.00	\$52.35	\$157.05
SBP-300WMW 1	Wall Mount Accessory (white), Compatible with white hanging caps	3.00	\$55.14	\$165.42
SBP-300PMW1	Pole Mount Adapter Accessory, use with SBP-300WMW1, White color, made of aluminum	3.00	\$55.14	\$165.42
<b>Total</b>				<b>\$16,390.95</b>
<b>Incl. Tax of</b>				<b>\$0.00</b>

### Camera License and Storage for Additional Cameras:

AM-TEC will be replacing the current software ONSSI used to monitor the current cameras recording at Life Guard Tower and Parking Structure. This section is for the licenses needed for the new cameras and additional storage to recode new cameras.

AM-TEC will provide at no cost to the city the licenses to replace the ONSSI software. The new software WAVE is more efficient and has no ongoing cost. Wave comes with free upgrades for life, free cell phone app, and free client software. The WAVE software is used by many Cities and Police Department across Sothern California. Some of this Cities and Police Departments installed by AM-TEC are City of Torrance, City of Laguna Beach, City of Alhambra, City of West Covina, City of Azusa, and many more.

Part #	Item	Quantity	Unit Price	Total
WAVE-PRO-01	WAVE Professional License. Enables one (1) IP stream recording, includes life-time SW upgrade. No annual & maintenance cost required.	3.00	\$101.21	\$303.63
WAVE-PRO-04	WAVE Professional License. Enables four (4) IP stream recording, includes life-time SW upgrade. No annual & maintenance cost required.	1.00	\$404.81	\$404.81
ST10000VX000 4	Seagate Surveillance 10TB	6.00	\$456.74	\$2,740.44
ZRM&E	2pcs Chassis Hard Drive Mounting Plastic Rails 5.71x0.47 Inch for Cooler Master 3.5" HDD Bracket, Black	6.00	\$20.65	\$123.90
<b>Total</b>				<b>\$3,572.78</b>
<b>Incl. Tax of</b>				<b>\$0.00</b>

### Camera Network:

This is the necessary point-to-point radios, switches, POE injectors, and NEMA enclosures for the 7 locations.

Part #	Item	Quantity	Unit Price	Total
NBE-5AC-GEN2-US	UBIQUITI NETWORKS NANO BEAM AC 5GHZ	10.00	\$187.59	\$1,875.90
TPE-215GI	Trendnet 2.5g Poe+ Injector	7.00	\$64.98	\$454.86
WQ-66	Hinged Waterproof Box 11.81 x 11.81 x 7.15 in / 300 x 300 x 182 mm / 3.92 lbs	7.00	\$120.75	\$845.25
Polycase PK-121	Pole Mount Kit	7.00	\$89.92	\$629.44
DR-20	DIN Rail Kit 9.84 x 1.38 x 0.30 in / 250 x 35 x 8 mm / 0.19 lbs	7.00	\$15.06	\$105.42

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### Camera Network:

Part #	Item	Quantity	Unit Price	Total
TPE-TG82G	TRENDNET 8 PORT GIGABIT POE+ SWITCH	2.00	\$142.55	\$285.10
PLATINUM 202010J	PLATINUM 202010J CAT6+ CONN 100/JAR *PM=MOD PLUG RJ45 8C C6	40.00	\$1.70	\$68.00
	Shipping	1.00	\$38.00	\$38.00
<b>Total</b>				\$4,301.97
<b>Incl. Tax of</b>				\$0.00

### Camera Cable and Conduit:

Camera cable, conduit, needed for the 7 new locations, wireless radios on poles/buildings, and necessary 120 volt electrical.

Part #	Item	Quantity	Unit Price	Total
6ESOSPBK2	WAVENET CAT6E OUTDOOR SHIELDED CABLE	1.00	\$317.92	\$317.92
Wavenet 09W-6EA4-6	Wavenet 09W-6EA4-6 Cat6 cable white 1000' box	1.00	\$195.25	\$195.25
4105012025	1/2 in. Dia x 25 ft. - Flexible PVC Non Metallic UL Liquid Tight Electrical Conduit	1.00	\$25.17	\$25.17
58133602	1/2 in. Uninsulated Liquidtight Connector	14.00	\$5.07	\$70.98
27693	HALEX 1/2 " NM Strain Relief Cord Connector	7.00	\$4.28	\$29.96
853428	EMT 1/2 in. x 10 ft. Electric Metallic Tube (EMT) Conduit	30.00	\$8.80	\$264.00
051411262303	1/2 in. Electrical Metallic Tube (EMT) Compression Connectors (5-Pack)	2.00	\$5.98	\$11.96
051411262419	1/2 in. Electrical Metallic Tube (EMT) Compression Coupling (5-Pack)	5.00	\$5.07	\$25.35
Halex 26151	1/2 in. Standard Fitting Electrical Metallic Tube (EMT) 1-Hole Straps (25-Pack)	3.00	\$9.40	\$28.20
WSB350G	COMMERCIAL ELECTRIC 1/2 in. 1-Gang 3-Holes Weatherproof Box, Gray	6.00	\$9.59	\$57.54
5173-0	BELL 1-Gang Weatherproof Cover, Vertical/Horizontal, Blank, Gray	6.00	\$3.53	\$21.18
112-1472CR	100 ft. 14 Gauge White Solid Copper THHN Wire	1.00	\$56.13	\$56.13
112-1471CR	100 ft. 14 Gauge Black Solid Copper THHN Wire	1.00	\$56.13	\$56.13
112-1475CR	100 ft. 14 Gauge Green Solid Copper THHN Wire	1.00	\$56.13	\$56.13
<b>Total</b>				\$1,215.90
<b>Incl. Tax of</b>				\$0.00

### Labor:

AM-TEC will install cameras at 7 locations, make all connections, install radios, configure system, install new software, program, and provide training to the City of Hermosa Beach.

Labor rate is \$165.00 per hour for a total of 160 hours. Refer to SOW for hours broken down per areas of installation.

Part #	Item	Quantity	Unit Price	Total
	Bucket Lift (1-Day Use)	10.00	\$150.00	\$1,500.00
	PW LA Labor			\$26,400.00
<b>Total</b>				\$27,900.00
<b>Incl. Tax of</b>				\$0.00

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- Please respond to SALES@AMTECSECURITY.COM with a confirmation of acceptance if you would like to proceed.
  - Please verify with your local authority if you will require a permit.
  - Note that any unexpected condition or exception beyond the standard scope of installation will/may require a change order.
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<b>Labor</b>	\$27,900.00
<b>Materials</b>	\$25,481.60
<b>Total</b>	\$53,381.60
<b>Incl. Tax of</b>	\$0.00

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Hermosa Beach

