

THE CITY OF KEY WEST
Key West Historic Seaport

201 William Street
Key West, FL 33040
PHONE: (305) 809-3803
FAX: (305) 293-6438

April 10, 2015

RE: RFP #05-015 – Clarification Request

Please clarify the following:

1. Verify that your company is able to provide required licenses per City of Key West Ordinance Chapter 66 Section 87 within 10 days of notice of award.
2. Provide Certificate of Insurance.
3. Verify Surety is licensed and qualified to do business in the State of Florida.
4. Verify all equipment is mounted on or within City property. See attached coverage layout.
5. Describe any training to be provided.
6. Verify all cameras can be viewed and operated from both 201 William Street and Dockmaster Office.
7. Confirm permit fees are included in Proposal.
8. Verify that there are no reoccurring licensing fees.
9. Verify bid prices are firm and will not change during engineering process.
10. Verify 2 year warranty on all material and labor.
11. Verify all cameras are vandal-resistant.
12. Verify that camera humidity limitations are appropriate for waterfront environment.
13. Verify that cameras can withstand waterfronts corrosive environment.
14. Verify that all NVR's are full-HD.
15. Verify 30 day back-up storage capability.
16. Verify recording parameters are 15 frames per second on motion minimum.
17. Verify 5th location of PZT camera at Dockmaster Office.
18. Verify antenna location at Half Shell Raw Bar.
19. Verify 10 camera locations at 201 William Street.
20. Verify 11th fixed camera location at Ferry Terminal

The City of Key West and the Vendor must abide by the City of Key West Ordinance Section 2-773 Cone of Silence. Any questions on the above request must be submitted in writing.

1. Verify that your company is able to provide required licenses per City of Key West Ordinance Chapter 66 Section 87 within 10 days of notice of award.

See below

2. Provide Certificate of Insurance.

See below

3. Verify Surety is licensed and qualified to do business in the State of Florida.

See below

4. Verify all equipment is mounted on or within City property. See attached coverage layout.

Items will be mounted on City property. Clarification on city owned properties and camera areas of view will have to be finalized prior to installation proceeding.

5. Describe any training to be provided.

Training will be divided into 2 levels. First is the administrators/maintenance users the second will be standard users.

Administrator training will cover the following.

- Startup and Shutdown of the system

- Recording Schedules

- User/Group permissions and access

- Using the system and event logs

- Storage maintenance

- Recording settings

- Notification

- Exporting video

- Remote software installation

- All items covered in the standard user training

Standard user training will cover the following.

- Playback and search features

- User login/logout

- Live Viewer navigation and controls

- Live Viewer screen configuration

6. Verify all cameras can be viewed and operated from both 201 William Street and Dockmaster Office.

The NVR's will process all recording and image processing for the system. The two workstations being provided 201 Williams and the Dockmaster Office will simply connect via TCP/IP connection to the NVR and view any/all cameras the on the system.

7. Confirm permit fees are included in Proposal.

Permits are included in this proposal cost

8. Verify that there are no reoccurring licensing fees.

The software is provided from the camera and NVR manufacturer and does not require reoccurring licensing.

9. Verify bid prices are firm and will not change during engineering process.

The price provided is firm and will not change our engineering. Prior to installation of the wireless system we will test the viability of the wireless system and if the area is determine not suitable it may be recommend using a different system.

10. Verify 2 year warranty on all material and labor.

All material and labor is warrantee for 2 years from system operation.

11. Verify all cameras are vandal-resistant.

All of the cameras are rated to an IK10 vandal resistant rating.

The degree of mechanical protection is defined by the letters IK according to EN 50102 June 1995.

IK rate	IK01	IK02	IK03	IK04	IK05	IK06	IK07	IK08	IK09	IK10
Energy at the impact (Joule)	0,14	0,2	0,35	0,5	0,7	1	2	5	10	20
Mass (Kg)	0,25	0,25	0,25	0,25	0,25	0,25	0,5	1,7	5	5
Stroke down (mm)	56	80	140	200	280	400	400	300	200	400

12. Verify that camera humidity limitations are appropriate for waterfront environment.

All camera are IP66 rated.

- **IP** stands for Ingress Protection
- The rating's first digit e.g. **IP66** relates to the ingress protection against dust (6 means dust tight, see the table below)
- The second digit e.g **IP66** relates to the ingress protection against water (6 means protected against heavy water jets, see the table below)

Protection against solid objects

1st Digit	Description	Definition
0	Non-protected	No special protection
1	Protected against solid objects greater than 50 mm	A large surface of the body such as the hand (no protection against deliberate access). Solid objects exceeding 50mm diameter
2	Protected against solid objects greater than 12 mm	Fingers or other objects not exceeding 80 mm in length. Solid objects exceeding 12 mm diameter
3	Protected against solid objects greater than 2.5 mm	Tools, wires, etc of diameter or thickness greater than 2.5 mm. Solid objects exceeding 2.5 mm diameter.
4	Protected against solid objects greater than 1.0 mm	Wires or strips of thickness greater than 1.0 mm. Solid objects exceeding 1.0 mm
5	Dust protected	Ingress of dust is not totally prevented but dust does not enter in sufficient quantity to interfere with satisfactory operation of the equipment
6	Dust-tight	No ingress of dust

Protection against liquids

2nd Digit	Description	Definition
0	Non-protected	No special protection
1	Protected against dripping water	Dripping water (vertically falling drops)

2	Protected against dripping water when tilted up to 15°	Vertically dripping water shall have no harmful effect when the enclosure is tilted at any angle up to 15° from its normal position
3	Protected against spraying water	Water falling as spray at an angle up to 60° from the vertical shall have no harmful effect
4	Protected against splashing water	Water splashed against the enclosure from any direction shall have no harmful effect
5	Protected against water jets	Water projected from a nozzle against the enclosure from any direction shall have no harmful effect
6	Protected against heavy seas	Water from heavy seas or water projected in powerful jets shall not enter the enclosure in harmful quantities
7	Protected against the effects of immersion	Ingress of water in a harmful quantity shall not be possible when the enclosure is immersed in water under defined conditions of pressure and time
8	Protected against submersion	The equipment is suitable for continuous submersion in water under conditions, which shall be specified by the manufacturer

13. Verify that cameras can withstand waterfronts corrosive environment.

14. Verify that all NVR's are full-HD.

Both the NVR's will record up to 5MP (2592x 1944) exceeding the full HD (1920 x 1080) requirement. To note if the NVR can only handle up to full HD the 3MP (2048 x 1536) fixed cameras will not be recording/view at their maximum settings.

15. Verify 30 day back-up storage capability.

Based on motion with high activity the system will require approximately 8TB. Based on continuous recording the system requires 27TB of storage. The system will exceed the requirement of 15fps on motion plus 15% growth.

16. Verify recording parameters are 15 frames per second on motion minimum.

Based on motion with high activity the system will require approximately 8TB. Based on continuous recording the system requires 27TB of storage. The system will exceed the requirement of 15fps on motion plus 15% growth.

17. Verify 5th location of PZT camera at Dockmaster Office.

The original RFP only depicted 3 PTZ cameras and the addendum added 1 additional camera to make a total of 4. Where did the 5th come from?

18. Verify antenna location at Half Shell Raw Bar.

Confirm antenna location at Half Shell Raw Bar

19. Verify 10 camera locations at 201 William Street.

Confirm 10 cameras at the 201 Williams Street Building

20. Verify 11th fixed camera location at Ferry Terminal

Confirm 11 fixed cameras at the Ferry Terminal

Danise D. Henriquez, CFC
Tax Collector
(305) 295-5063
P.O. Box 1129
Key West, FL 33041-1129

MONROE COUNTY,
FLORIDA APPLICATION FOR
LOCAL BUSINESS TAX

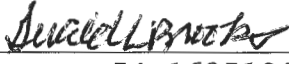
New (Rev. 5/10)

Transfer

Renewal

PLEASE PRINT OR TYPE

Date 04/15/2015

1. TRADE NAME Bazon-Cox and Associates inc.
(The name under which this business is to be known)
2. OWNERS NAME(S) John Lentini and Gerald Brooks
(If corporation, also include name of President or Vice President)
3. TYPE OF BUSINESS telecommunications and security installation contractor
(Briefly describe nature of business)
4. ACTUAL LOCATION OF BUSINESS 115 Hickory Street Suite 203 Melbourne FL 32905
5. MAILING ADDRESS OF BUSINESS 1244 Executive Blvd. Suite B113 Chesapeake VA 23320
6. BUSINESS PHONE NUMBER 757-410-2128
7. NAME AND ADDRESS OF PERSON RESPONSIBLE FOR TANGIBLE PERSONAL PROPERTY TAX
Gerald Brooks 11244 Executive Blvd. Suite B113 Chesapeake VA 23320
8. BUSINESS OWNER'S RESIDENCE PHONE NUMBER 757-477-2301
9. BUSINESS OWNER'S RESIDENCE ADDRESS 836 Blackthorne Drive Chesapeake VA 23322
10. PROPERTY OWNER'S NAME N/A
11. LEGAL DESCRIPTION OF PROPERTY N/A
12. ALTERNATE KEY AND RE NUMBER OF PROPERTY N/A
- APPLICANT'S SIGNATURE 
- SOCIAL SECURITY OR FID NUMBER 54-1635186

INSERT BELOW THE NUMBER REQUESTED (If applicable):

FOR A PUBLIC SERVICE, MANUFACTURING, CONTRACTOR'S LICENSE, OR RETAIL:
THE NUMBER OF EMPLOYEES: FL: 5 VA37

FOR AN APARTMENT, CONDO, HOUSE, COMMERCIAL RENTALS OR HOTEL, MOTEL LICENSE:
THE NUMBER OF UNITS: _____

TRANSIENT: _____ NON-TRANSIENT: _____
(Copy of State Hotel & Restaurant Commission License must accompany this application)

RESTAURANT: NUMBER OF SEATS: _____
(Copy of State Hotel & Restaurant Commission, License and copy of Monroe County Health Dept. Inspection must accompany application)

VENDING MACHINES: MERCHANDISE, AMUSEMENT AND LAUNDRY (Coin operated service)

NUMBER OF MACHINES: _____ TYPES OF MACHINES: _____

PROFESSIONAL LICENSE: _____
(You must include the number of your stat of Florida License or Registration Number.)

CERTIFICATE OF COMPETENCY NUMBER OF CONTRACTORS' 1

STATE OF FLORIDA SALES TAX NUMBER _____

IF YOU PAY ANY BUSINESS TAX TO ANY CITY IN MONROE COUNTY

INSERT LICENSE NUMBER _____

**WE MUST HAVE A COPY OF YOUR CORPORATE PAPERS OR PROOF OF
FICTITIOUS NAME BEING RECORDED WITH STATE OF FLORIDA**

Business Tax Receipt Application

City of Key West
City Hall Annex
PO Box 1409
Key West, FL 33041

Date Applied 04/15/2015

BTR # _____
Phone 305-809-3955
Fax 305-809-3978

Business Type: contractor

Business Name: Bazon-Cox and Associates Inc.

Business Location: 115 Hickory Street # 203 Melbourne FL 329054

Business Owner: John Lentini and Gerald Brooks

State Licensed Qualifier (if applicable): John Lentini

Mailing Address: 1244 Executive Blvd. Suite B113 Chesapeake VA 23320

EIN / SS # 54-1635186 Phone # 757-410-2128

John L. Lentini  4/15/15
Applicant name (printed) Applicant signature Date

State of ~~Florida~~ VIRGINIA
County of ~~Monroe~~ CHESAPEAKE CITY

The foregoing instrument was acknowledged before me this 15 day of APRIL, 2015, by JOHN L. LENTINI.

Auntal Sobel 144909 (stamp or seal). Personally known
Signature of Notary Public Produced id _____

- Sales Tax number 305-470-5001 (myflorida.com)
- Lease or deed
- State License DBPR 850-487-1395 (myflorida.com)
Dept Ag 800-435-7352 (freshfromflorida.com)
- Home occupation application
- Fictitious Name registration (sunbiz.org) Previous use _____
- Corporate or LLC registration (sunbiz.org)
- Liability / Worker's Comp Zoning _____
- Fire Inspector 292-8179
- CO / final inspection on any permits Category _____ Fee \$ _____
- Monroe County or local licensing

Required prior to opening for businessCommercial garbage Waste Mgmt 305-296-2794

Issued in accordance with Chapter 66, Key West Code of Ordinances

_____ Approved _____ Denied / Reason _____

Licensing Official Date



**STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION**

**ELECTRICAL CONTRACTORS LICENSING BOARD
1940 NORTH MONROE STREET
TALLAHASSEE FL 32399-0783**

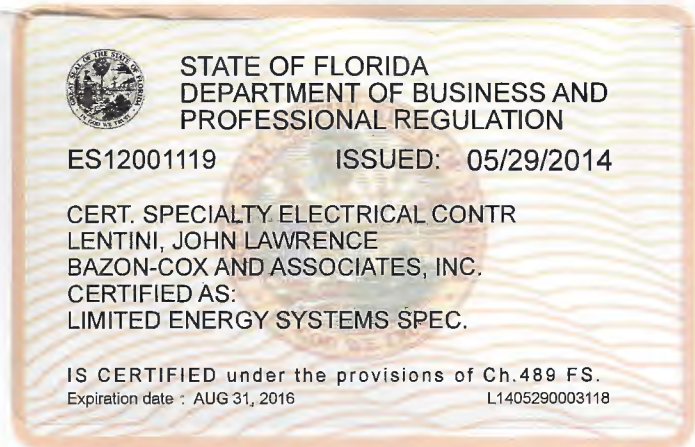
(850) 487-1395

LENTINI, JOHN LAWRENCE
BAZON-COX AND ASSOCIATES, INC.
836 BLACKTHORNE DRIVE
CHESAPEAKE VA 23322

Congratulations! With this license you become one of the nearly one million Floridians licensed by the Department of Business and Professional Regulation. Our professionals and businesses range from architects to yacht brokers, from boxers to barbeque restaurants, and they keep Florida's economy strong.

Every day we work to improve the way we do business in order to serve you better. For information about our services, please log onto www.myfloridalicense.com. There you can find more information about our divisions and the regulations that impact you, subscribe to department newsletters and learn more about the Department's initiatives.

Our mission at the Department is: License Efficiently, Regulate Fairly. We constantly strive to serve you better so that you can serve your customers. Thank you for doing business in Florida, and congratulations on your new license!



DETACH HERE

RICK SCOTT, GOVERNOR

KEN LAWSON, SECRETARY

**STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
ELECTRICAL CONTRACTORS LICENSING BOARD**

LICENSE NUMBER
ES12001119

The SPECIALTY ELECTRICAL CONTRACTOR
Named below IS CERTIFIED
Under the provisions of Chapter 489 FS.
Expiration date: AUG 31, 2016
AS A LIMITED ENERGY SYSTEMS SPECIALIST



LENTINI, JOHN LAWRENCE
BAZON-COX AND ASSOCIATES, INC.
115 HICKORY STREET
SUITE 203
MELBOURNE FL 32904

WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

This agreement shall not operate directly or indirectly to benefit anyone not named in the Schedule.

Schedule

ANY PERSON OR ORGANIZATION ON WHOSE BEHALF YOU ARE REQUIRED TO OBTAIN THIS WAIVER OF OUR RIGHT TO RECOVER FROM UNDER A WRITTEN CONTRACT OR AGREEMENT.

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)

Endorsement Effective

Policy No.

Endorsement No.

Insured

Premium \$

Insurance Company

Countersigned by _____

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**BLANKET ADDITIONAL INSURED – LIABILITY EXTENSION**

This endorsement modifies insurance provided under the following:

BUSINESSOWNERS LIABILITY COVERAGE FORM

Coverage afforded under this extension of coverage endorsement does not apply to any person or organization covered as an additional insured on any other endorsement now or hereafter attached to this Policy.

1. ADDITIONAL INSURED – BLANKET VENDORS

WHO IS AN INSURED is amended to include as an additional insured any person or organization (referred to below as vendor) with whom you agreed, because of a written contract or agreement to provide insurance, but only with respect to "bodily injury" or "property damage" arising out of "your products" which are distributed or sold in the regular course of the vendor's business, subject to the following additional exclusions:

1. The insurance afforded the vendor does not apply to:
 - a. "Bodily injury" or "property damage" for which the vendor is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that the vendor would have in the absence of the contract or agreement;
 - b. Any express warranty unauthorized by you;
 - c. Any physical or chemical change in the product made intentionally by the vendor;
 - d. Repackaging, except when unpacked solely for the purpose of inspection, demonstration, testing, or the substitution of parts under instructions from the manufacturer, and then repackaged in the original container;
 - e. Any failure to make such inspections, adjustments, tests or servicing as the vendor has agreed to make or normally undertakes to make in the usual course of business, in connection with the distribution or sale of the products;
 - f. Demonstration, installation, servicing or repair operations, except such operations performed at the vendor's premises in connection with the sale of the product;
 - g. Products which, after distribution or sale by you, have been labeled or relabeled or used as a container, part or ingredient of any other thing or substance by or for the vendor; or
 - h. "Bodily injury" or "property damage" arising out of the sole negligence of the vendor for its

own acts or omission or those of its employees or anyone else acting on its behalf. However, this exclusion does not apply to:

- (1) The exceptions contained in Subparagraphs d. or f.; or
- (2) Such inspections, adjustments, tests or servicing as the vendor has agreed to make or normally undertakes to make in the usual course of business, in connection with the distribution or sale of the products.

2. This insurance does not apply to any insured person or organization, from whom you have acquired such products, or any ingredient, part or container, entering into, accompanying or containing such products.
3. This provision 2. does not apply to any vendor included as an insured by an endorsement issued by us and made a part of this Policy.
4. This provision 2. does not apply if "bodily injury" or "property damage" included within the "products-completed operations hazard" is excluded either by the provisions of the Policy or by endorsement.

2. MISCELLANEOUS ADDITIONAL INSUREDS

WHO IS AN INSURED is amended to include as an insured any person or organization (called additional insured) described in paragraphs 2.a. through 2.h. below whom you are required to add as an additional insured on this policy under a written contract or agreement but the written contract or agreement must be:

1. Currently in effect or becoming effective during the term of this policy; and
2. Executed prior to the "bodily injury," "property damage" or "personal and advertising injury," but

Only the following persons or organizations are additional insureds under this endorsement and coverage provided to such additional insureds is limited as provided herein:

a. Additional Insured – Your Work

That person or organization for whom you do work is an additional insured solely for liability

due to your negligence specifically resulting from your work for the additional insured which is the subject of the written contract or written agreement. No coverage applies to liability resulting from the sole negligence of the additional insured.

The insurance provided to the additional insured is limited as follows:

- (1) The Limits of Insurance applicable to the additional insured are those specified in the written contract or written agreement or in the Declarations of this policy, whichever is less. These Limits of Insurance are inclusive of, and not in addition to, the Limits of Insurance shown in the Declarations.
- (2) The coverage provided to the additional insured by this endorsement and paragraph F.9. of the definition of "insured contract" under **Liability and Medical Expenses Definitions** do not apply to "bodily injury" or "property damage" arising out of the "products-completed operations hazard" unless required by the written contract or written agreement.
- (3) The insurance provided to the additional insured does not apply to "bodily injury," "property damage," or "personal and advertising injury" arising out of the rendering or failure to render any professional services.

b. State or Political Subdivisions

A state or political subdivision subject to the following provisions:

- (1) This insurance applies only with respect to the following hazards for which the state or political subdivision has issued a permit in connection with premises you own, rent, or control and to which this insurance applies:
 - (a) The existence, maintenance, repair, construction, erection, or removal of advertising signs, awnings, canopies, cellar entrances, coal holes, driveways, manholes, marquees, hoistway openings, sidewalk vaults, street banners, or decorations and similar exposures; or
 - (b) The construction, erection, or removal of elevators; or
- (2) This insurance applies only with respect to operations performed by you or on your behalf for which the state or political subdivision has issued a permit.

This insurance does not apply to "bodily injury," "property damage" or "personal and advertising injury" arising out of operations performed for the state or municipality.

c. Controlling Interest

Any persons or organizations with a controlling interest in you but only with respect to their liability arising out of:

- (1) Their financial control of you; or
- (2) Premises they own, maintain or control while you lease or occupy these premises.

This insurance does not apply to structural alterations, new construction and demolition operations performed by or for such additional insured.

d. Managers or Lessors of Premises

A manager or lessor of premises but only with respect to liability arising out of the ownership, maintenance or use of that specific part of the premises leased to you and subject to the following additional exclusions:

This insurance does not apply to:

- (1) Any "occurrence" which takes place after you cease to be a tenant in that premises; or
- (2) Structural alterations, new construction or demolition operations performed by or on behalf of such additional insured.

e. Mortgagee, Assignee or Receiver

A mortgagee, assignee or receiver but only with respect to their liability as mortgagee, assignee, or receiver and arising out of the ownership, maintenance, or use of a premises by you.

This insurance does not apply to structural alterations, new construction or demolition operations performed by or for such additional insured.

f. Owners/Other Interests – Land is Leased

An owner or other interest from whom land has been leased by you but only with respect to liability arising out of the ownership, maintenance or use of that specific part of the land leased to you and subject to the following additional exclusions:

This insurance does not apply to:

- (1) Any "occurrence" which takes place after you cease to lease that land; or

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- (2) Structural alterations, new construction or demolition operations performed by or on behalf of such additional insured.

g. Co-owner of Insured Premises

A co-owner of a premises co-owned by you and covered under this insurance but only with respect to the co-owners liability as co-owner of such premises.

h. Lessor of Equipment

Any person or organization from whom you lease equipment. Such person or organization are insureds only with respect to their liability arising out of the maintenance, operation or use by you of equipment leased to you by such person or organization. A person's or organization's status as an insured under this endorsement ends when their written contract or agreement with you for such leased equipment ends.

With respect to the insurance afforded these additional insureds, the following additional exclusions apply:

This insurance does not apply:

- (1) To any "occurrence" which takes place after the equipment lease expires; or
- (2) To "bodily injury," "property damage" or "personal and advertising injury" arising out of the sole negligence of such additional insured.

Any insurance provided to an additional insured designated under paragraphs b. through h. above does not apply to "bodily injury" or "property damage" included within the "products-completed operations hazard."

3. The following is added to Paragraph H. of the BUSINESSOWNERS COMMON POLICY CONDITIONS:

H. Other Insurance

- 4. This insurance is excess over any other insurance naming the additional insured as an insured whether primary, excess, contingent or on any other basis unless a written contract or written agreement specifically requires that this insurance be either primary or primary and noncontributing.

4. LEGAL LIABILITY – DAMAGE TO PREMISES

- A. Under B. Exclusions, 1. Applicable to Business Liability Coverage, Exclusion k.

Damage To Property, is replaced by the following:

k. Damage To Property

"Property damage" to:

- 1. Property you own, rent or occupy, including any costs or expenses incurred by you, or any other person, organization or entity, for repair, replacement, enhancement, restoration or maintenance of such property for any reason, including prevention of injury to a person or damage to another's property;
- 2. Premises you sell, give away or abandon, if the "property damage" arises out of any part of those premises;
- 3. Property loaned to you;
- 4. Personal property in the care, custody or control of the insured;
- 5. That particular part of any real property on which you or any contractors or subcontractors working directly or indirectly in your behalf are performing operations, if the "property damage" arises out of those operations; or
- 6. That particular part of any property that must be restored, repaired or replaced because "your work" was incorrectly performed on it.

Paragraph 2 of this exclusion does not apply if the premises are "your work" and were never occupied, rented or held for rental by you.

Paragraphs 1, 3, and 4, of this exclusion do not apply to "property damage" (other than damage by fire or explosion) to premises:

- (1) rented to you;
- (2) temporarily occupied by you with the permission of the owner, or
- (3) to the contents of premises rented to you for a period of 7 or fewer consecutive days.

A separate limit of insurance applies to Damage To Premises Rented To You as described in Section D – Liability and Medical Expenses Limits of Insurance.

Paragraphs 3, 4, 5, and 6 of this exclusion do not apply to liability assumed under a sidetrack agreement.

Paragraph 6 of this exclusion does not apply to "property damage" included in the "products-completed operations hazard."

B. Under B. Exclusions, 1. Applicable to Business Liability Coverage, the last paragraph of 2. Exclusions is deleted and replaced by the following:

Exclusions **c, d, e, f, g, h, i, k, l, m, n, and o**, do not apply to damage by fire to premises while rented to you or temporarily occupied by you with permission of the owner or to the contents of premises rented to you for a period of 7 or fewer consecutive days. A separate limit of insurance applies to this coverage as described in **Section D. Liability And Medical Expenses Limits Of Insurance**.

C. The first Paragraph under item 5. Damage To Premises Rented To You Limit of Section D. Liability And Medical Expenses Limits Of Insurance is replaced by the following:

The most we will pay under Business Liability for damages because of "**property damage**" to any one premises, while rented to you, or temporarily occupied by you, with the permission of the owner, including contents of such premises rented to you for a period of 7 or fewer consecutive days, is the Damage to Premises Rented to You limit shown in the Declaration.

5. Blanket Waiver of Subrogation

We waive any right of recovery we may have against:

- a. Any person or organization with whom you have a written contract that requires such a waiver.

6. Broad Knowledge of Occurrence

The following items are added to **E. Businessowners General Liability Conditions** in the **Businessowners Liability Coverage Form**:

- e. Paragraphs **a.** and **b.** apply to you or to any additional insured only when such "occurrence," offense, claim or "suit" is known to:

- (1) You or any additional insured that is an individual;

- (2) Any partner, if you or an additional insured is a partnership;
- (3) Any manager, if you or an additional insured is a limited liability company;
- (4) Any "executive officer" or insurance manager, if you or an additional insured is a corporation;
- (5) Any trustee, if you or an additional insured is a trust; or
- (6) Any elected or appointed official, if you or an additional insured is a political subdivision or public entity.

This paragraph **e.** applies separately to you and any additional insured.

7. Bodily Injury

Section F. Liability and Medical Expenses Definitions, item 3. "Bodily Injury" is deleted and replaced with the following:

"**Bodily injury**" means bodily injury, sickness or disease sustained by a person, including death, humiliation, shock, mental anguish or mental injury by that person at any time which results as a consequence of the bodily injury, sickness or disease.

8. Expanded Personal and Advertising Injury Definition

- a. The following is added to **Section F. Liability and Medical Expenses Definitions, item 14. Personal and Advertising Injury, in the Businessowners General Liability Coverage Form**:
 - h. Discrimination or humiliation that results in injury to the feelings or reputation of a natural person, but only if such discrimination or humiliation is:
 - 1. Not done intentionally by or at the direction of:
 - a. The insured; or
 - b. Any "executive officer," director, stockholder, partner, member or manager (if you are a limited liability company) of the insured; and
 - 2. Not directly or indirectly related to the employment, prospective employment, past employment or termination of employment of any person or person by any insured.
- b. The following is added to Exclusions, **Section B.:**

50020003250880928322853



(15) Discrimination Relating to Room, Dwelling or Premises

Caused by discrimination directly or indirectly related to the sale, rental, lease or sub-lease or prospective sale, rental, lease or sub-lease of any room, dwelling or premises by or at the direction of any insured.

(16) Fines or Penalties

Fines or penalties levied or imposed by a governmental entity because of discrimination.

- c. This provision (**Expanded Personal and Advertising Injury**) does not apply if

Personal and Advertising Injury Liability is excluded either by the provisions of the Policy or by endorsement.

9. Personal and Advertising Injury Re-defined

Section F. Liability and Medical Expenses Definitions, item 14, Personal Advertising Injury, Paragraph c. is replaced by the following:

- c. The wrongful eviction from, wrongful entry into, or invasion of the right of private occupancy of a room dwelling or premises that a person or organization occupies committed by or on behalf of its owner, landlord or lessor.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

COMMERCIAL AUTOMOBILE BROAD FORM ENDORSEMENT

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE FORM

To the extent that the provisions of this endorsement provide broader benefits to the "insured" than other provisions of the Coverage Form, the provisions of this endorsement apply.

1. BROAD FORM INSURED

A. Subsidiaries and Newly Acquired or Formed Organizations

The Named Insured shown in the Declarations is amended to include:

- (1) Any legal business entity other than a partnership or joint venture, formed as a subsidiary in which you have an ownership interest of more than 50% on the effective date of the Coverage Form. However, the Named Insured does not include any subsidiary that is an "insured" under any other automobile policy or would be an "insured" under such a policy but for its termination or the exhaustion of its Limit of Insurance.
- (2) Any organization that is acquired or formed by you and over which you maintain majority ownership. However, the Named Insured does not include any newly formed or acquired organization:
 - (a) That is a partnership or joint venture,
 - (b) That is an "insured" under any other policy,
 - (c) That has exhausted its Limit of Insurance under any other policy, or
 - (d) 180 days or more after its acquisition or formation by you, unless you have given us notice of the acquisition or formation.

Coverage does not apply to "bodily injury" or "property damage" that results from an "accident" that occurred before you formed or acquired the organization.

B. Employees as Insureds

Paragraph A.1. - WHO IS AN INSURED - of SECTION II - LIABILITY COVERAGE is amended to add:

- d. Any "employee" of yours while using a covered "auto" you don't own, hire or borrow in your business or your personal affairs.

C. Lessors as Insureds

Paragraph A.1. - WHO IS AN INSURED - of Section II - Liability Coverage is amended to add:

- e. The lessor of a covered "auto" while the "auto" is leased to you under a written agreement if:
 - (1) The agreement requires you to provide direct primary insurance for the lessor and
 - (2) The "auto" is leased without a driver.

Such a leased "auto" will be considered a covered "auto" you own and not a covered "auto" you hire.

D. Additional Insured if Required by Contract

- (1) Paragraph A.1. - WHO IS AN INSURED - of Section II - Liability Coverage is amended to add:
 - f. When you have agreed, in a written contract or written agreement, that a person or organization be added as an additional insured on your business auto policy, such person or organization is an "insured", but only to the extent such person or organization is liable for "bodily injury" or "property damage" caused by the conduct of an "insured" under paragraphs a. or b. of Who Is An Insured with regard to the ownership, maintenance or use of a covered "auto."

The insurance afforded to any such additional insured applies only if the "bodily injury" or "property damage" occurs:

- (1) During the policy period, and
- (2) Subsequent to the execution of such written contract, and
- (3) Prior to the expiration of the period of time that the written contract requires such insurance be provided to the additional insured.

(2) How Limits Apply

If you have agreed in a written contract or written agreement that another person or organization be added as an additional insured on your policy, the most we will pay on behalf of such additional insured is the lesser of:

- (a) The limits of insurance specified in the written contract or written agreement; or
- (b) The Limits of Insurance shown in the Declarations.

Such amount shall be a part of and not in addition to Limits of Insurance shown in the Declarations and described in this Section.

(3) Additional Insureds Other Insurance

If we cover a claim or "suit" under this Coverage Part that may also be covered by other insurance available to an additional insured, such additional insured must submit such claim or "suit" to the other insurer for defense and indemnity.

However, this provision does not apply to the extent that you have agreed in a written contract or written agreement that this insurance is primary and non-contributory with the additional insured's own insurance.

(4) Duties in The Event Of Accident, Claim, Suit or Loss

If you have agreed in a written contract or written agreement that another person or organization be added as an additional insured on your policy, the additional insured shall be required to comply with the provisions in LOSS CONDITIONS 2. - DUTIES IN THE EVENT OF ACCIDENT, CLAIM, SUIT OR LOSS - OF SECTION IV - BUSINESS AUTO CONDITIONS, in the same manner as the Named Insured.

E. Primary and Non-Contributory if Required by Contract

Only with respect to insurance provided to an additional insured in 1.D. - Additional Insured If Required by Contract, the following provisions apply:

(3) Primary Insurance When Required By Contract

This insurance is primary if you have agreed in a written contract or written agreement that this insurance be primary. If other insurance is also primary, we will share with all that other insurance by the method described in Other Insurance 5.d.

(4) Primary And Non-Contributory To Other Insurance When Required By Contract

If you have agreed in a written contract or written agreement that this insurance is primary and non-contributory with the additional insured's own insurance, this insurance is primary and we will not seek contribution from that other insurance.

Paragraphs (3) and (4) do not apply to other insurance to which the additional insured has been added as an additional insured.

When this insurance is excess, we will have no duty to defend the insured against any "suit" if any other insurer has a duty to defend the insured against that "suit". If no other insurer defends, we will undertake to do so, but we will be entitled to the insured's rights against all those other insurers.

When this insurance is excess over other insurance, we will pay only our share of the amount of the loss, if any, that exceeds the sum of:

- (1) The total amount that all such other insurance would pay for the loss in the absence of this insurance; and
- (2) The total of all deductible and self-insured amounts under all that other insurance.

We will share the remaining loss, if any, by the method described in Other Insurance 5.d.

2. AUTOS RENTED BY EMPLOYEES

Any "auto" hired or rented by your "employee" on your behalf and at your direction will be considered an "auto" you hire.

The OTHER INSURANCE Condition is amended by adding the following:

If an "employee's" personal insurance also applies on an excess basis to a covered "auto" hired or rented by your "employee" on your behalf and at your direction, this insurance will be primary to the "employee's" personal insurance.

3. AMENDED FELLOW EMPLOYEE EXCLUSION

EXCLUSION 5. - FELLOW EMPLOYEE - of SECTION II - LIABILITY COVERAGE does not apply if you have workers' compensation insurance in-force covering all of your "employees".

Coverage is excess over any other collectible insurance.

4. HIRED AUTO PHYSICAL DAMAGE COVERAGE

If hired "autos" are covered "autos" for Liability Coverage and if Comprehensive, Specified Causes of Loss, or Collision coverages are provided under this Coverage Form for any "auto" you own, then the Physical Damage Coverages provided are extended to "autos" you hire or borrow, subject to the following limit.

The most we will pay for "loss" to any hired "auto" is:

- (1) \$100,000;
- (2) The actual cash value of the damaged or stolen property at the time of the "loss"; or
- (3) The cost of repairing or replacing the damaged or stolen property,

whichever is smallest, minus a deductible. The deductible will be equal to the largest deductible applicable to any owned "auto" for that coverage. No deductible applies to "loss" caused by fire or lightning. Hired Auto Physical Damage coverage is excess over any other collectible insurance. Subject to the above limit, deductible and excess provisions, we will provide coverage equal to the broadest coverage applicable to any covered "auto" you own.

We will also cover loss of use of the hired "auto" if it results from an "accident", you are legally liable and the lessor incurs an actual financial loss, subject to a maximum of \$1000 per "accident".

This extension of coverage does not apply to any "auto" you hire or borrow from any of your "employees", partners (if you are a partnership), members (if you are a limited liability company), or members of their households.

5. PHYSICAL DAMAGE - ADDITIONAL TEMPORARY TRANSPORTATION EXPENSE COVERAGE

Paragraph A.4.a. of SECTION III - PHYSICAL DAMAGE COVERAGE is amended to provide a limit of \$50 per day and a maximum limit of \$1,000.

6. LOAN/LEASE GAP COVERAGE

Under SECTION III - PHYSICAL DAMAGE COVERAGE, in the event of a total "loss" to a covered "auto", we will pay your additional legal obligation for any difference between the actual cash value of the "auto" at the time of the "loss" and the "outstanding balance" of the loan/lease.

"Outstanding balance" means the amount you owe on the loan/lease at the time of "loss" less any amounts representing taxes; overdue payments; penalties, interest or charges resulting from overdue payments; additional mileage charges; excess wear and tear charges; lease termination fees; security deposits not returned by the lessor; costs for extended warranties, credit life Insurance, health, accident or disability insurance purchased with the loan or lease; and carry-over balances from previous loans or leases.

7. AIRBAG COVERAGE

Under Paragraph B. EXCLUSIONS - of SECTION III - PHYSICAL DAMAGE COVERAGE, the following is added:

The exclusion relating to mechanical breakdown does not apply to the accidental discharge of an airbag.

8. ELECTRONIC EQUIPMENT - BROADENED COVERAGE

a. The exceptions to Paragraphs B.4 - EXCLUSIONS - of SECTION III - PHYSICAL DAMAGE COVERAGE are replaced by the following:

Exclusions **4.c.** and **4.d.** do not apply to equipment designed to be operated solely by use of the power from the "auto's" electrical system that, at the time of "loss", is:

- (1) Permanently installed in or upon the covered "auto";
- (2) Removable from a housing unit which is permanently installed in or upon the covered "auto";
- (3) An integral part of the same unit housing any electronic equipment described in Paragraphs (1) and (2) above; or

- (4) Necessary for the normal operation of the covered "auto" or the monitoring of the covered "auto's" operating system.

b. Section III – Version CA 00 01 03 10 of the Business Auto Coverage Form, Physical Damage Coverage, Limit of Insurance, Paragraph C.2 and Version CA 00 01 10 01 of the Business Auto Coverage Form, Physical Damage Coverage, Limit of Insurance, Paragraph C are each amended to add the following:

\$1,500 is the most we will pay for "loss" in any one "accident" to all electronic equipment (other than equipment designed solely for the reproduction of sound, and accessories used with such equipment) that reproduces, receives or transmits audio, visual or data signals which, at the time of "loss", is:

- (1) Permanently installed in or upon the covered "auto" in a housing, opening or other location that is not normally used by the "auto" manufacturer for the installation of such equipment;
- (2) Removable from a permanently installed housing unit as described in Paragraph 2.a. above or is an integral part of that equipment; or
- (3) An integral part of such equipment.

c. For each covered "auto", should loss be limited to electronic equipment only, our obligation to pay for, repair, return or replace damaged or stolen electronic equipment will be reduced by the applicable deductible shown in the Declarations, or \$250, whichever deductible is less.

9. EXTRA EXPENSE - BROADENED COVERAGE

Under Paragraph A. - COVERAGE - of SECTION III - PHYSICAL DAMAGE COVERAGE, we will pay for the expense of returning a stolen covered "auto" to you.

10. GLASS REPAIR - WAIVER OF DEDUCTIBLE

Under Paragraph D. - DEDUCTIBLE - of SECTION III - PHYSICAL DAMAGE COVERAGE, the following is added:

No deductible applies to glass damage if the glass is repaired rather than replaced.

11. TWO OR MORE DEDUCTIBLES

Under Paragraph D. - DEDUCTIBLE - of SECTION III - PHYSICAL DAMAGE COVERAGE, the following is added:

If another Hartford Financial Services Group, Inc. company policy or coverage form that is not an automobile policy or coverage form applies to the same "accident", the following applies:

- (1) If the deductible under this Business Auto Coverage Form is the smaller (or smallest) deductible, it will be waived;
- (2) If the deductible under this Business Auto Coverage Form is not the smaller (or smallest) deductible, it will be reduced by the amount of the smaller (or smallest) deductible.

12. AMENDED DUTIES IN THE EVENT OF ACCIDENT, CLAIM, SUIT OR LOSS

The requirement in LOSS CONDITIONS 2.a. - DUTIES IN THE EVENT OF ACCIDENT, CLAIM, SUIT OR LOSS - of SECTION IV - BUSINESS AUTO CONDITIONS that you must notify us of an "accident" applies only when the "accident" is known to:

- (1) You, if you are an individual;
- (2) A partner, if you are a partnership;
- (3) A member, if you are a limited liability company; or
- (4) An executive officer or insurance manager, if you are a corporation.

13. UNINTENTIONAL FAILURE TO DISCLOSE HAZARDS

If you unintentionally fail to disclose any hazards existing at the inception date of your policy, we will not deny coverage under this Coverage Form because of such failure.

14. HIRED AUTO - COVERAGE TERRITORY

Paragraph e. of GENERAL CONDITIONS 7. - POLICY PERIOD, COVERAGE TERRITORY - of SECTION IV - BUSINESS AUTO CONDITIONS is replaced by the following:

- e. For short-term hired "autos", the coverage territory with respect to Liability Coverage is anywhere in the world provided that if the "insured's" responsibility to pay damages for "bodily injury" or "property damage" is determined in a "suit," the "suit" is brought in the United States of America, the territories and possessions of the United States of America, Puerto Rico or Canada or in a settlement we agree to.

15. WAIVER OF SUBROGATION

TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US - of SECTION IV - BUSINESS AUTO CONDITIONS is amended by adding the following:

We waive any right of recovery we may have against any person or organization with whom you have a written contract that requires such waiver because of payments we make for damages under this Coverage Form.

16. RESULTANT MENTAL ANGUISH COVERAGE

The definition of "bodily injury" in SECTION V-DEFINITIONS is replaced by the following:

"Bodily injury" means bodily injury, sickness or disease sustained by any person, including mental anguish or death resulting from any of these.

17. EXTENDED CANCELLATION CONDITION

Paragraph 2. of the COMMON POLICY CONDITIONS - CANCELLATION - applies except as follows:

If we cancel for any reason other than nonpayment of premium, we will mail or deliver to the first Named Insured written notice of cancellation at least 60 days before the effective date of cancellation.

18. HYBRID, ELECTRIC, OR NATURAL GAS VEHICLE PAYMENT COVERAGE

In the event of a total loss to a "non-hybrid" auto for which Comprehensive, Specified Causes of Loss, or Collision coverages are provided under this Coverage Form, then such Physical Damage Coverages are amended as follows:

- a. If the auto is replaced with a "hybrid" auto or an auto powered solely by electricity or natural gas, we will pay an additional 10%, to a maximum of \$2,500, of the "non-hybrid" auto's actual cash value or replacement cost, whichever is less,
- b. The auto must be replaced and a copy of a bill of sale or new lease agreement received by us within 60 calendar days of the date of "loss,"

- c. Regardless of the number of autos deemed a total loss, the most we will pay under this Hybrid, Electric, or Natural Gas Vehicle Payment Coverage provision for any one "loss" is \$10,000.

For the purposes of the coverage provision,

- a. A "non-hybrid" auto is defined as an auto that uses only an internal combustion engine to move the auto but does not include autos powered solely by electricity or natural gas.
- b. A "hybrid" auto is defined as an auto with an internal combustion engine and one or more electric motors; and that uses the internal combustion engine and one or more electric motors to move the auto, or the internal combustion engine to charge one or more electric motors, which move the auto.

19. VEHICLE WRAP COVERAGE

In the event of a total loss to an "auto" for which Comprehensive, Specified Causes of Loss, or Collision coverages are provided under this Coverage Form, then such Physical Damage Coverages are amended to add the following:

In addition to the actual cash value of the "auto", we will pay up to \$1,000 for vinyl vehicle wraps which are displayed on the covered "auto" at the time of total loss. Regardless of the number of autos deemed a total loss, the most we will pay under this Vehicle Wrap Coverage provision for any one "loss" is \$5,000. For purposes of this coverage provision, signs or other graphics painted or magnetically affixed to the vehicle are not considered vehicle wraps.

State of Florida

Department of State

I certify from the records of this office that BAZON-COX AND ASSOCIATES, INC. is a Virginia corporation authorized to transact business in the State of Florida, qualified on November 19, 2008.

The document number of this corporation is F08000004947.

I further certify that said corporation has paid all fees due this office through December 31, 2013, that its most recent annual report/uniform business report was filed on January 24, 2013, and its status is active.

I further certify that said corporation has not filed a Certificate of Withdrawal.

*Given under my hand and the
Great Seal of the State of Florida
at Tallahassee, the Capital, this is
the Twenty fourth day of January,
2013*



Ken DeJager
Secretary of State

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A

ACCREDITED SURETY AND CASUALTY COMPANY, INC. (NAIC #26379)

BUSINESS ADDRESS: PO Box 140855, Orlando, FL 32814 - 0855. PHONE: (407) 629-2131. UNDERWRITING LIMITATION b/: \$2,062,000. SURETY LICENSES c,ff: AL, AK, AZ, AR, CA, CO, CT, DE, DC, FL, GA, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VT, VA, WA, WV, WI, WY. INCORPORATED IN: Florida.

ACE American Insurance Company (NAIC #22667)

BUSINESS ADDRESS: 436 Walnut Street P.O. Box 1000, Philadelphia, PA 19106. PHONE: (215) 640-1000. UNDERWRITING LIMITATION b/: \$267,699,000. SURETY LICENSES c,ff: AL, AK, AZ, AR, CA, CO, CT, DE, DC, FL, GA, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, PR, RI, SC, SD, TN, TX, UT, VT, VA, VI, WA, WV, WI, WY. INCORPORATED IN: Pennsylvania.

ACE Property and Casualty Insurance Company (NAIC #20699)

BUSINESS ADDRESS: 436 WALNUT STREET, P.O. Box 1000, Philadelphia, PA 19106. PHONE: (215) 640-1000. UNDERWRITING LIMITATION b/: \$192,047,000. SURETY LICENSES c,ff: AL, AK, AZ, AR, CA, CO, CT, DE, DC, FL, GA, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OR, PA, PR, RI, SC, SD, TN, TX, UT, VT, VA, WA, WV, WI. INCORPORATED IN: Pennsylvania.

ACSTAR INSURANCE COMPANY (NAIC #22950)

BUSINESS ADDRESS: 30 SOUTH ROAD, FARMINGTON, CT 06032. PHONE: (860) 415-8400. UNDERWRITING LIMITATION b/: \$2,890,000. SURETY LICENSES c,ff: AL, AK, AZ, AR, CA, CO, CT, DE, DC, FL, GA, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, PR, RI, SC, SD, TN, TX, UT, VT, VA, WA, WV, WI, WY. INCORPORATED IN: Illinois.

Aegis Security Insurance Company (NAIC #33898)

BUSINESS ADDRESS: P.O. Box 3153, Harrisburg, PA 17105. PHONE: (717) 657-9671. UNDERWRITING LIMITATION b/: \$5,149,000. SURETY LICENSES c,ff: AL, AK, AZ, AR, CA, CO, CT, DE, DC, FL, GA, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VT, VA, WA, WV, WI, WY. INCORPORATED IN: Pennsylvania.

ALL AMERICA INSURANCE COMPANY (NAIC #20222)

BUSINESS ADDRESS: 800 S. Washington Street, VAN WERT, OH 45891 - 2357. PHONE: (419) 238-1010. UNDERWRITING LIMITATION b/: \$12,470,000. SURETY LICENSES c,ff: AZ, CA, CT, GA, IL, IN, IA, KY, MA, MI, NV, NJ, NY, NC, OH, OK, TN, TX, VA. INCORPORATED IN: Ohio.

Allegheny Casualty Company (NAIC #13285)

BUSINESS ADDRESS: One Newark Center, 20th Floor, Newark, NJ 07102. PHONE: (800) 333-4167 x-269. UNDERWRITING LIMITATION b/: \$2,045,000. SURETY LICENSES c,ff: AL, AK, AZ, AR, CA, CO, CT, DE,

COLONIAL SURETY COMPANY (NAIC #10758)

BUSINESS ADDRESS: 50 Chestnut Ridge Road , Montvale , NJ 07645. PHONE: (201) 573-8788.
 UNDERWRITING LIMITATION b/: \$2,597,000. SURETY LICENSES c/f/: AL, AK, AZ, AR, CA, CO, CT, DE, DC, FL, GA, GU, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MP, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, PR, RI, SC, SD, TN, TX, UT, VT, VA, VI, WA, WV, WI, WY. INCORPORATED IN: Pennsylvania.

Continental Casualty Company (NAIC #20443)

BUSINESS ADDRESS: 333 S. WABASH AVE, CHICAGO, IL 60604. PHONE: (312) 822-5000.
 UNDERWRITING LIMITATION b/: \$830,730,000. SURETY LICENSES c/f/: AL, AK, AZ, AR, CA, CO, CT, DE, DC, FL, GA, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, PR, RI, SC, SD, TN, TX, UT, VT, VA, VI, WA, WV, WI, WY. INCORPORATED IN: Illinois.

CONTINENTAL HERITAGE INSURANCE COMPANY (NAIC #39551)

BUSINESS ADDRESS: 6140 PARKLAND BLVD, STE 321, MAYFIELD HEIGHTS, OH 44124. PHONE: (440) 229-3420. UNDERWRITING LIMITATION b/: \$721,000. SURETY LICENSES c/f/: AZ, CA, CO, DC, FL, GA, ID, IL, IN, IA, KY, LA, ME, MD, MN, MS, NE, NV, NJ, ND, OH, PA, SC, SD, TN, TX, UT, VA, WA, WV. INCORPORATED IN: Florida.

Continental Insurance Company (The) (NAIC #35289)

BUSINESS ADDRESS: 333 S. WABASH AVE, CHICAGO, IL 60604. PHONE: (312) 822-5000.
 UNDERWRITING LIMITATION b/: \$136,686,000. SURETY LICENSES c/f/: AL, AK, AZ, AR, CA, CO, CT, DE, DC, FL, GA, GU, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MP, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, PR, RI, SC, SD, TN, TX, UT, VT, VA, VI, WA, WV, WI, WY. INCORPORATED IN: Pennsylvania.

CONTRACTORS BONDING AND INSURANCE COMPANY (NAIC #37206)

BUSINESS ADDRESS: 9025 N. Lindbergh Drive, Peoria, IL 61615. PHONE: (309) 692-1000.
 UNDERWRITING LIMITATION b/: \$11,149,000. SURETY LICENSES c/f/: AL, AK, AZ, AR, CA, CO, CT, DE, DC, FL, GA, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VT, VA, WA, WV, WI, WY. INCORPORATED IN: Washington.

Cooperativa de Seguros Multiples de Puerto Rico (NAIC #18163)

BUSINESS ADDRESS: PO BOX 363846. SAN JUAN, PR 00936 - 3846. PHONE: (787) 622-3575 x-2512.
 UNDERWRITING LIMITATION b/: \$17,930,000. SURETY LICENSES c/f/: PR. INCORPORATED IN: Puerto Rico.

CorePointe Insurance Company (NAIC #10499)

BUSINESS ADDRESS: 401 South Old Woodward Avenue, Suite 300, Birmingham, MI 48009. PHONE: (800) 732-9164. UNDERWRITING LIMITATION b/: \$13,374,000. SURETY LICENSES c/f/: AL, AK, AZ, AR, CA, CO, CT, DE, DC, FL, GA, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VT, VA, WA, WV, WI, WY. INCORPORATED IN: Michigan.

CUMIS INSURANCE SOCIETY, INC. (NAIC #10847)

BUSINESS ADDRESS: P. O. Box 1084, Madison, WI 53701. PHONE: (608) 238-5851. UNDERWRITING LIMITATION b/: \$55,708,000. SURETY LICENSES c/f/: AL, AK, AZ, AR, CA, CO, CT, DE, DC, FL, GA, GU, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, PR, RI, SC, SD, TN, TX, UT, VT, VA, VI, WA, WV, WI, WY. INCORPORATED IN: Iowa.

CUMIS Specialty Insurance Company, Inc. (NAIC #12758)

BUSINESS ADDRESS: Post Office Box 1084, Madison, WI 53701. PHONE: (608) 238-5851. UNDERWRITING LIMITATION b/: \$6,465,000. SURETY LICENSES c/f/: IA. INCORPORATED IN: Iowa.

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D**Darwin National Assurance Company (NAIC #16624)**

BUSINESS ADDRESS: 1690 New Britain Avenue, Suite 101, Farmington, CT 06032. PHONE: (860) 284-1300.
 UNDERWRITING LIMITATION b/: \$36,403,000. SURETY LICENSES c/f/: AL, AK, AZ, AR, CA, CO, DE, DC, FL, GA, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VT, VA, WA, WV, WI, WY. INCORPORATED IN: Delaware.

Developers Surety and Indemnity Company (NAIC #12718)

BUSINESS ADDRESS: P.O. BOX 19725, IRVINE, CA 92623 - 9725. PHONE: (949) 263-3300.
 UNDERWRITING LIMITATION b/: \$5,643,000. SURETY LICENSES c/f/: AL, AK, AZ, AR, CA, CO, CT, DE, DC, FL, GA, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VT, VA, WA, WV, WI, WY. INCORPORATED IN: Iowa.

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E**ELECTRIC INSURANCE COMPANY (NAIC# 21261)**

BUSINESS ADDRESS: 75 Sam Fonzo Drive, Beverly, MA 01915-1000. PHONE: (978) 921-2080.
 UNDERWRITING LIMITATION b/: \$52,256,000. SURETY LICENSES c/: AL, AK, AZ, AR, CA, CO, CT, DE, DC, FL, GA, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, PR, RI, SC, SD, TN, TX, UT, VT, VA, WA, WV, WI, WY. INCORPORATED IN: Massachusetts

SRN-4000



64CH 400Mbps Premium Network Video Recorder

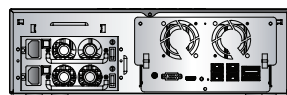
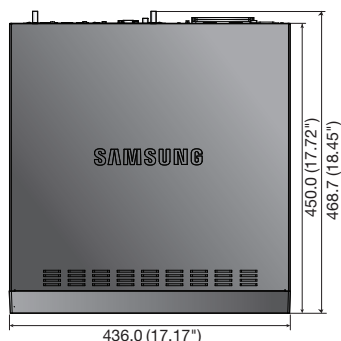


Key Features

- Up to 64CH and 5MP supported
- 400Mbps network camera recording
- Max. 12 hot swap HDDs (RAID 5/6)
- VGA/HDMI local monitor
- iSCSI storage supported
- Redundant hot swap power supply

Dimensions

Unit : mm (inch)



		SRN-4000
DISPLAY		
N/W Camera	Inputs	Up to 64CH
	Resolution	CIF ~ 5M
	Protocols	Samsung, ONVIF
Live	Local Display	HDMI / VGA
	Multi Screen Display	[Local monitor] : 1 / 4 / 9 / 16 / 1+5 / 1+7 / 1+12 / Sequence [Web] : 1 / 4 / 9 / 16 / 32 / 64 / Sequence
PERFORMANCE		
Operating System	Embedded	Linux
Recording	Compression	H.264, MPEG-4, MJPEG
	Recording Bit Rate	Max. 400Mbps (2M 64camera real-time recording)
	Resolution	CIF ~ 5M
	Mode	Manual, Schedule (Continuous / Event), Event (Pre / Post)
	Event Trigger	Alarm input, Video loss, Camera event (Sensor, MD, Video Analytics), VA (Upto 4CH selectable, Advanced MD, Object classification (People, Car))
Search & Playback	Event Action	E-mail, PTZ preset, Alarm out, Buzzer, Monitor out
	Playback Bandwidth	25Mbps (16CH simultaneously)
	Search Mode	Date & Time (Calendar) / Event log list
	Simultaneous Playback	[Local monitor] : Max. 16CH, [CMS] : Max. 16CH, [Web] : Max. 4CH
Storage	Resolution	CIF ~ 5M
	Playback Function	Fast forward / backward, Move one step up / down
	Built-In HDD	2TB 1ea
	Max. Internal HDDs	12ea (Hot swap), Max. 36TB
Back up	External RAID	NAS (iSCSI) : vesaRaid 1840i, Max. 192TB (JBOD) RAID-5/6
	File Back up (Via Web) Function	[GUI] : BU / Exe, [Network] : JPEG / AVI Single channel play, Date-time / Title display
Sensor	Input / Output	8 / 4 (NO/NC selectable)
	Audio	64CH (Network)
Audio	Compression	G.711, G.726
	Audio Communication	2-way
NETWORK		
Interface		RJ-45, Gigabit Ethernet 4ea
Protocol Support		TCP/IP, UDP/IP, RTP (UDP), RTP (TCP), RTSP, NTP, HTTP, DHCP, PPPoE, SMTP, ICMP, IGMP, ARP, DNS, DDNS, UPnP, ONVIF, HTTPS, SNMP
DDNS		Samsung iPOLiS DDNS
Network	Total Throughput Bandwidth	Max. 700Mbps
	Transmission Bandwidth	Max. 400Mbps
Max. Remote Users		Search 1 / Live unicast 10 / Live multicast 20
IP		IPv4 / IPv6
Security		IP address filtering, User access log, 802.1x authentication, Encryption
Language		English, French, German, Italian, Spanish, Russian, Turkish, Polish, Dutch, Swedish, Czech, Portuguese, Danish, Rumanian, Serbian, Croatian, Hungarian, Greek, Norwegian, Finnish, Korean, Chinese, Japanese, Thai
OS		Window XP (service pack 2 or above), Vista, 7, 8, Mac OS X (10.4.8 or above)
Web Browser		MS IE 8.x, 9.x, Google Chrome, Mac Safari, Firefox 2.x, 3.x
Viewer Software	Type	Webviewer, SmartViewer
Smart Phone	CMS Support	SDK / CGI
	OS	Android, iOS
Smart Phone	Protocol Support	RTP, RTSP, HTTP, CGI
	Max. Remote Users	Live 10, Playback 1
FUNCTIONS		
Camera Setup	Register	Auto, Manual
	Setup Items	1) IP Address, Add Profile Edit, Bitrate, Compression, GOP, Quality 2) Video setup (MD, ABF, Brightness/Contrast, Flip/Mirror, IRIS, WDR, D&N, SSNR, Shutter)
PTZ	Control	Via GUI, Webviewer
	Preset	256 presets
System Control		Mouse
INDICATOR / INTERFACE		
Front	Indicator	LED status indicator : HDD action 12, RAID status 1, Alarm 1, Power 1, Record 1, Back up 1, Network 1
	Switch	PWR switch 1ea, Key-lock 1ea
	VGA	1ea
	HDMI	1ea
Connections	Audio	Out (1ea, RCA, Line)
	Ethernet	RJ-45 Gigabit Ethernet 4ea [Camera 1] : 1ea, [Camera 2] : 1ea, [Viewer] : 1ea, [iSCSI] : 1ea
	Alarm	In 8ea (Terminal block) / Out 4ea (Terminal block)
	USB	2ea (Front)
	Reset	Switch 1ea
	Power Cord	AC Inlet 2ea
SYSTEM		
Log	Log List	Max. 20000 (System log, Event log, Back up log each)
GENERAL		
Electrical	Input Voltage / Current	100 ~ 240V AC ±10%, 50/60Hz, 4 ~ 1.5A (Dual SMPS)
	Power Consumption	Max. 217W (546 BTU with 2TB HDD 12ea)
Environmental	Operating Temperature	+0°C ~ +40°C (+32°F ~ +104°F)
	Operating Humidity	20% ~ 85% RH
Mechanical	Color / Material	Black / Metal
	Dimensions (WxHxD)	436.0 x 132.0 x 450.0mm (17.17" x 5.2" x 17.72") (3U)
	Weight	12.44Kg (27.43 lb) (2TB HDD 1ea included)
Approvals	Safety	UL
	EMC	CE, FCC, KCC, CCC, Gost-R

* The latest product information / specification can be found at www.samsungsecurity.com

SRN-1000



64CH 100Mbps Network Video Recorder

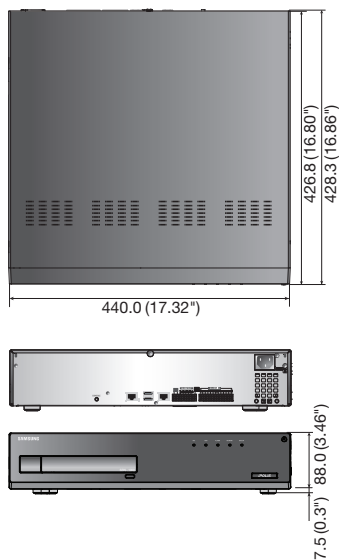


Key Features

- Up to 64CH 5MP supported
- 100Mbps network camera recording
- Max. 8 HDDs (RAID 5)
- iSCSI storage supported

Dimensions

Unit : mm (inch)



SRN-1000		
DISPLAY		
N/W Camera	Inputs	Up to 64CH
	Resolution	CIF ~ 5M
	Protocols	Samsung, ONVIF
Live	Multi Screen Display	1 / 4 / 9 / 16, Sequence
PERFORMANCE		
Operating System	Embedded	Linux
Recording	Compression	H.264, MPEG-4, MJPEG
	Recording Bit Rate	100/64 (RAID-5)Mbps
	Resolution	CIF ~ 5M
	Mode	Manual, Schedule (Continuous / Event), Event (Pre / Post)
	Event Trigger	Alarm input, Video loss, Camera event (Video analytics, MD, Audio detection)
	Event Action	E-mail, PTZ preset, Alarm buzzer
Search & Playback	Search Mode	Date/time, Event
	Simultaneous Playback	4CH
	Resolution	CIF ~ 5M
Storage	Playback Function	Fast forward / backward, Move one step up / down
	Internal HDD	Up to 8/6 (RAID-5) SATA HDDs
	External (e-SATA Interface)	e-SATA (2 ports), iSCSI storage (Max. 32TB)
	RAID	RAID-5 + Hot standby
	File Format (Back up)	JPEG, AVI via web browser
NETWORK		
Interface		RJ-45, Gigabit Ethernet x 2
Protocol Support		TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTSP, NTP, HTTP, DHCP, PPPoE, SMTP, ICMP, IGMP, ARP, DNS, DDNS, UPnP, ONVIF
DDNS		Samsung iPOLiS DDNS
Transmission Speed		Up to 64Mbps
Max. Remote Users		Search 3 / Live unicast 10 / Live multicast 20
IP		IPv4
Security		IP address filtering, User access log, 802.1x authentication
Monitoring		SmartViewer, Webviewer
Smart Phone	Platform	Android, iOS
	Protocol Support	RTP, RTSP, HTTP, CGI
	Max. Remote Users	Live 10, Playback 1
INTERFACE		
Audio	Input	64CH (Network)
	Compression	G.711, G.726
Alarm	Input / Output	Terminal 16 inputs (NO/NC), Terminal 4 outputs (Relay), Terminal 1 reset
Connections	Ethernet	2 RJ-45 10/100/1000 Base-T
	eSATA	2 ports
GENERAL		
Electrical	Input Voltage / Current	100 ~ 240V AC ±10%, 50/60Hz, 4 ~ 1.5A
	Power Consumption	Max. 45W (154 BTU with 1 HDD), Max. 170W (580 BTU with 8 HDD)
Environmental	Operating Temperature	+0°C ~ +40°C (+32°F ~ +104°F)
	Operating Humidity	20% ~ 85% RH
Mechanical	Dimensions (WxHxD)	440.0 x 88.0 x 426.8mm (17.32" x 3.46" x 16.80")
	Weight (1x Hard Disks)	Approx. 6.2Kg (13.67 lb)

* The latest product information / specification can be found at www.samsungsecurity.com

5GHz, Multi-Input WESII PoE Kits

Up to 4 & Up to 7 Inputs over a Single Point-to-Point Link
WESII-KT-P5 / WESII-KT-P5T / WESII-KT-P8 / WESII-KT-P8T

Product Description

KBC wireless kits provide all the transmission equipment required to set up a point-to-point wireless link.

The wireless units within these kits operate in the licence-free, 5GHz band, and are factory-set to minimize configuration time. Passive PoE injector modules (PIM) and transformers are supplied for the wireless units along with mounting brackets.

The multi-input PoE kits also include either a 5-port or 8-port PoE Ethernet switch to allow up to 7 inputs to be transmitted over a single point-to-point wireless link. The Ethernet switches provide either 5 ports with IEEE802.3af PoE on 4 ports or IEEE802.3at PoE+ on 8 ports. The switch PoE power supplies are available as standard or extended temperature units providing 48V at either 120W or 240W depending on the switch required. Please note: the PoE switch powers the camera but the PIM is required for the WESII units.



Product Features

WESII Units

- IEEE802.11a/n compliant
- Transmission Power Control
- Up to 23dBm output power
- Secure: WPA2 - AES or TKIP encryption
- Antenna alignment & site signal survey tools
- Distance adjustment for long range
- Range of antenna options
- IP66 protection class

Ethernet Switches

- 5 port switch: IEEE802.3af on 4 ports
- 8 port switch: IEEE802.3at on 8 ports
- Dual redundant power inputs
- Power failure alarm outputs
- Full & half duplex operation
- MDI/MDI-X

PoE Power Supplies

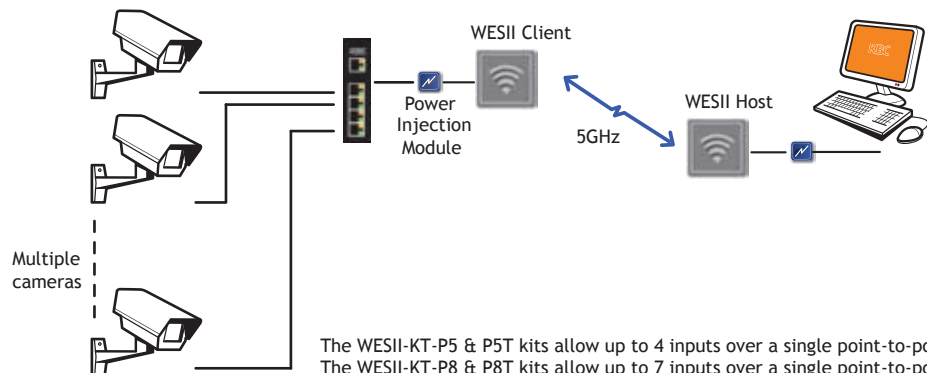
- Short circuit protection
- Overload protection
- Over temperature protection
- Cooling by free air convection
- Install on DIN rail TS-35/7.5 or 15
- UL 508 approved
- 100% full load burn-in test

Part Numbers & Kit Contents

Please note: the following wireless kits part numbers are applicable in the Americas only. For other regions, please contact your nearest KBC office.

WESII-KT-P5	2 x WESII RF modules, 2 x PIM, 2 x 24Vdc PSU, mounting hardware, 5 port industrial PoE switch & power supply (ESUL5P-D & DR120-48)
WESII-KT-P5T	2 x WESII RF modules, 2 x PIM, 2 x 24Vdc PSU, mounting hardware, 5 port industrial PoE switch & extended temp power supply (ESUL5P-D & SDR120-48)
WESII-KT-P8	2 x WESII RF modules, 2 x PIM, 2 x 24Vdc PSU, mounting hardware, 8 port industrial PoE+ switch & power supply (ESUG8P-D & DRP240-48)
WESII-KT-P8T	2 x WESII RF modules, 2 x PIM, 2 x 24Vdc PSU, mounting hardware, 8 port industrial PoE+ switch & extended temp power supply (ESUG8P-D & SDR240-48)

Typical System Configuration



Specifications



WESII Units

Standards

IEEE Standard

IEEE 802.3 10BASE-T
IEEE 802.3u 100BASE-TX
IEEE 802.3x Full Duplex
IEEE 802.11a 5GHz
IEEE 802.11h ETSI DFS & TPC
IEEE 802.11n MIMO

Radio

Frequency USA & Canada (FCC) U-NII3
Europe
Frequency Operation

5745 - 5825 MHz
5500 - 5700 MHz
Auto-select
User static selectable
Dynamic Frequency Selection
(ETSI DFS)
23dBm max⁽¹⁾
Transmit Power Control (ETSI TPC)
Selectable 5, 20 or 40MHz

Power Output

Channel Bandwidth Spectrum

Antenna Options

5dBi
9dBi

Omni-directional
Directional integrated patch
Dual polarization
Beamwidth:
Azimuth: Horizontal 65°, vert 65°
Elevation: Horizontal 33°, vert 33°
Directional integrated patch
Dual polarization
Beamwidth:
Azimuth: Horizontal 30°, vert 33°
Elevation: Horizontal 17°, vert 17°

17dBi

System

Data throughput⁽²⁾

HT5 HT20 HT40
17Mbps 99Mbps 99Mbps

Latency
Encryption

<10mS
TKIP / AES encryption up to 128 bit

Power

Power method

Passive PoE (see spec below)

Mechanical (unit)

Casing
Dimensions (L x W x D)
Weight (17dBi unit)
Installation

IP66 protection
245mm x 245mm x 76mm
(9.625" x 9.625" x 3")
1.36kg / 3lb
Wall-mount or pole-mount

Environmental

Operating Temperature
Storage Temperature
Operating Humidity

-40° - +74°C / -40° - +165°F
-40° - +90°C / -40° - +194°F
5 to 95% non-condensing

Connectors

10/100 Electrical

1 x RJ45

Approvals

FCC Part 15 Subpart C
CE
EN 55024 (IEC61000-4-2,3,4,5,6,8,11)
EN 55022 (CISPR 22)
EN 60 950: 1992+A1: 1993+A2:
1995+A4: 1996+A1: 1997
EN 300 328-2
EN 300 826
EN 301 489-17
EN 301 893
R&TT Directive (1999/5/EC)

Class B
Class B
Electromagnetic Immunity
Electromagnetic Interference
(Conduction & Radiation)
Low Voltage Directive

Ethernet Switches

Standards

IEEE Standard

Switch Performance

Switching Method
Transfer Rate

ESUL5P

IEEE 802.3 10BASE-T
IEEE 802.3u 100BASE-TX
IEEE 802.3x Full Duplex

Store & forward
14,881 pps
148,810 pps

Backplane Switch Capacity
Mac Address Table

1 Gbps
2k

PoE

Standard
Power Supplied (per port)

IEEE 802.3af
15.4W @+48Vdc

Contact Closure Alarm Output

Output
Switch rating

Normally closed
1A @24Vdc

Power

Power Input
Power Consumption

48 Vdc
3.4W (no PoE)
67W (full-load PoE)

Mechanical

Casing
Dimensions (W x H x D)

IP30 protection
30mm x 140mm x 95mm
(1.18" x 5.51" x 3.74")

Weight
Installation⁽³⁾

460g / 1lb
Wall-mount or DIN rail

ESUG8P

IEEE 802.3 10BASE-T
IEEE 802.3u 100BASE-TX
IEEE 802.3ab 1000BASE-T
IEEE 802.3x Full Duplex

Store & forward
14,881pps
148,810 pps
1,488,100 pps

16 Gbps
2k

IEEE 802.3at
30W @+50Vdc

Normally closed
1A @24Vdc

50-57 Vdc
8W (no PoE)
250W (full-load PoE)

IP30 protection
27mm x 145mm x 95mm
(1.07" x 5.71" x 3.74")

390g / 13.75oz
Wall-mount or DIN rail

Power Injection Modules

Mechanical

Physical
Dimensions (LxWxH)
Weight
Interface

Plastic housing,
36 x 44 x 23mm
25g (0.8oz)
2 x RJ45 connectors

Environmental

Operating Temperature

-40° - +74°C (-40° - +158°F)

Power

Power Supply

Input: 100 - 240Vac, 10W
Output: 24Vdc, 500mA
(UL / cUL listed wall transformer supplied)
Passive PoE "mid-span" compliant
(pins 4,5 positive -pins 7,8 ground)
LED - green
DC Jack 2.5mm x 5.5mm

Power-over-Ethernet (PoE)

Indicator
Connectors

1. Territory specific
2. Assumes ideal RF environment with max signal rates & within receive sensitivity specification. Max values - limited by 10/100 port
3. Unit is supplied with both DIN rail and wall-mount fittings.



PoE Power Supplies

	DR-120-48	SDR-120-48	DRP-240-48	SDR-240-48
Output				
DC Voltage	48Vdc	48Vdc	48Vdc	48Vdc
Rated Current	2.5A	2.5A	5A	5A
Current Range	0-2.5A	0-2.5A	0-5A	0-5A
Rated Power	120W	120W	240W	240W
Peak Current		3.75A		7.5A
Peak Power		189W (3 secs max)		360W (3 secs max)
Ripple & Noise (max) ⁽⁴⁾	100mVp-p	120mVp-p	150mVp-p	120mVp-p
Voltage Adj. Range	48-53Vdc	48-55Vdc	48-53Vdc	48-55Vdc
Voltage Tolerance ⁽⁵⁾	±1.0%	±1.0%	±1.0%	±1.0%
Line Regulation	±0.5%	±0.5%	±0.5%	±0.5%
Load Regulation	±1.0%	±1.0%	±1.0%	±1.0%
Setup, Rise Time	500ms, 70ms/230Vac	1500ms, 60ms/230Vac	800ms, 40ms/230Vac	1500ms, 60ms/230Vac
(at full load)	500ms, 70ms/115Vac	3000ms, 60ms/115Vac	800ms, 40ms/115Vac	3000ms, 60ms/115Vac
Hold Up Time	36ms/230Vac	20ms/230Vac	24ms/230Vac	20ms/230Vac
(at full load)	32ms/115Vac	20ms/115Vac	24ms/115Vac	20ms/115Vac
Input				
Voltage Range ⁽⁶⁾	88 - 132Vac/ 176 - 264Vac (by sw) 248 - 370Vdc	88 - 264Vac 124 - 370Vdc	88 - 264Vac 120 - 370Vdc	88 - 264Vac 124 - 370Vdc
Frequency Range	47 - 63Hz	47 - 63 Hz	47 - 63Hz	47 - 63 Hz
Efficiency (typ)	85%	90.5%	85%	94%
AC Current (typ)	2.6A/115Vac 1.6A/230Vac	1.4A/115Vac 0.7A/230Vac	2.8A/115Vac 1.4A/230Vac	2.6A/115Vac 1.3A/230Vac
Inrush Current (typ)	cold start 20A/115Vac 40A/230Vac	35A/115Vac 70A/230Vac	cold start 27A/115Vac 45A/230Vac	33A/115Vac 65A/230Vac
Leakage Current	<3.5mA/240Vac	<1mA/240Vac	<3.5mA/240Vac	<1mA/240Vac
Protection				
Overload	105 - 150% rated o/p power	110 - 150% rated output power for > 3 secs & then shuts down output voltage >150% rated power, constant current limiting with auto-recovery within 3 secs & shuts down output voltage after 3 secs.	105 - 150% rated output power Protection type: constant current limiting, auto-recovery after fault condition removed	110 - 150% rated output power for >3 secs & then shut down output voltage with auto-recovery. >150% rated power, constant current limiting with auto-recovery within 2 secs & may shut down after 2 secs.
Over Voltage	58 - 65V Protection type: shut down o/p voltage, repower on to recover	56 - 65V Protection type: shuts down o/p voltage, repower on to recover	54 - 60V Protection type: shut down o/p voltage, repower on to recover	56 - 65V Protection type: shut down o/p voltage, with auto-recovery
Over Temperature	90°C ±5°C (TSW1)	95°C ±5°C (TSW: detect on power switch heatsink). Protection type: shut down output voltage, auto-recovery after temp decreases.	100°C ±5°C (TSW1) detect on power transistor heat-sink. Protection type: shut down o/p voltage, auto-recovery after temp decreases	95°C ±5°C (TSW: detect on power switch heatsink). Protection type: shut down o/p voltage, auto-recovery after temp decreases.
Mechanical Dimensions	66mm x 126mm x 100mm (2.26" x 4.96" x 3.94")	40mm x 126mm x 114mm 1.57" x 4.96" x 4.49"	126mm x 126mm x 100mm (4.96" x 4.96" x 3.94")	63mm x 126mm x 114mm 2.48" x 4.96" x 4.49"
Weight	790g (1lb 11oz)	670g (1lb 8oz)	1.2kg (2lb 11oz)	1.03kg (2lb 5oz)
Environmental				
Operating Temperature ⁽⁷⁾	-10° - +60° C / 14° - 140° F	-25° - +70° C / -13° - 158° F	-10° - +70° C / 14° - 158° F	-25° - +70° C / -13° - 158° F
Operating Humidity	20 to 90% RH non-condensing	20 to 95% RH non-condensing	20 to 90% RH non-condensing	20 to 95% RH non-condensing
Storage Temperature	-20° - +85° C / 4° - 185° F	-40° - +85° C / -40° - 185° F	-20° - +85° C / 4° - 185° F	-40° - +85° C / -40° - 185° F
Temp Coefficient	±0.03%/°C (0 - 50°C) 10 - 500Hz, 2G 10 min/1 cycle	±0.03%/°C (0 - 50°C) Component: 10 - 500Hz, 2G 10min/1cycle	±0.03%/°C (0 - 50°C) 10 - 500Hz, 2G 10 min/1 cycle	±0.03%/°C (0 - 50°C) Component: 10 - 500Hz, 2G 10min/1cycle
Mean Time Between Failure (MBTF)	60 min each along X, Y, Z axis Mounting: IEC60068-2-6 136.8khrs min MIL-HDBK-217F (25°C)	60 min each along X, Y Z axes Mounting: IEC60068-2-6 289.9khrs min MIL-HDBK-217F (25°C)	60 min each along X, Y, Z axis Mounting: IEC60068-2-6 289.9khrs min MIL-HDBK-217F (25°C)	60 min each along X, Y Z axes Mounting: IEC60068-2-6 169.3khrs min MIL-HDBK-217F (25°C)
Approvals				
	UL508 UL60950-1 TUV EN60950-1 EN55011 EN55022 (CISPR22) Class B EN61000-3-2 EN61000-3-3 EN61000-4-2,3,4,5,6,8,11 EN61000-6-2 EN55024 EN61000-6-2	UL508 TUV EN60950-1 EN55022 (CISPR22) Class B EN61000-3-2 EN61000-3-3 EN61000-4-2,3,4,5,6,8,11 EN55024 EN61000-6-2 EN61204-3 SEMI F47, GL	UL508 UL60950-1 TUV EN60950-1 EN55011 EN55022 (CISPR22) Class B EN61000-3-2,3 EN61000-4-2,3,4,5,6,8,11 EN55024 EN61000-6-2	UL508 TUV EN60950-1 EN55022 (CISPR22) Class B EN61000-3-2,3 EN61000-4-2,3,4,5,6,8,11 EN55024 EN61000-6-2 EN61204-3 SEMI F47, GL

All parameters not specifically mentioned are measured at 230Vac input rated load and 25°C ambient temperature

The power supply is considered a component which will be installed with the final equipment. The final equipment must be re-confirmed to ensure it still meets the EMC directives

4. Ripple & noise are measured at 20MHz of bandwidth by using 12" twisted pair-wire terminated with a 0.1µf & 47µf parallel capacitor

5. Tolerance: includes set up tolerance, line regulation and load regulation

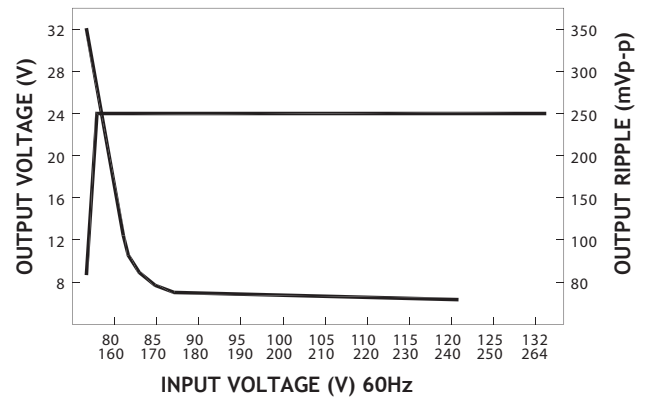
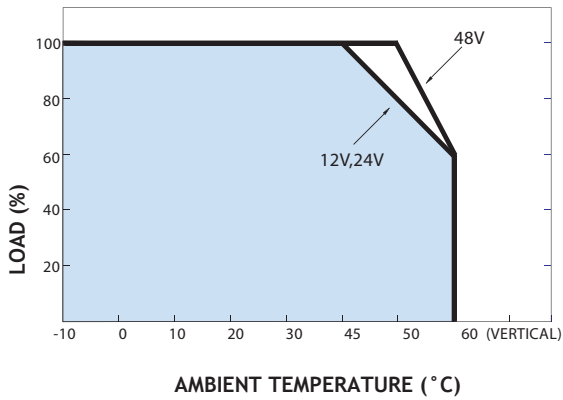
6. SDR-120-48: range de-rating may be needed under low input voltage. SDR-240-48: after 30 mins of burn-in

7. Installation clearances: 40mm above, 20mm below, 5mm either side are recommended when loaded permanently with full power. If the adjacent device is a heat source then 15mm clearance is recommended.

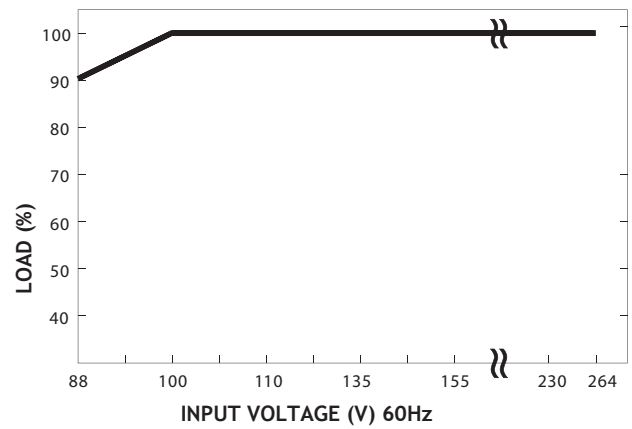
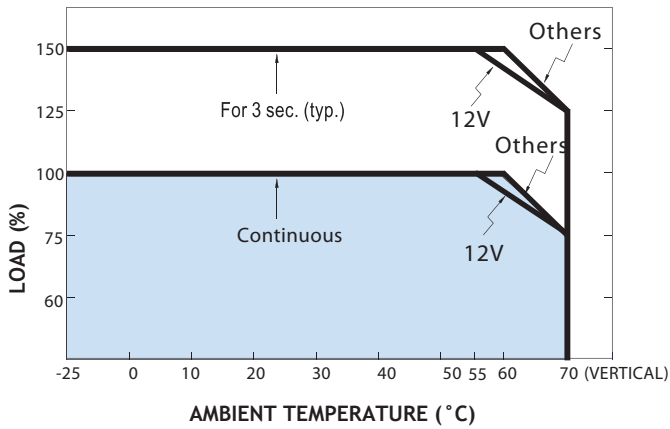
De-rating Curve

Output De-rating vs Input Voltage

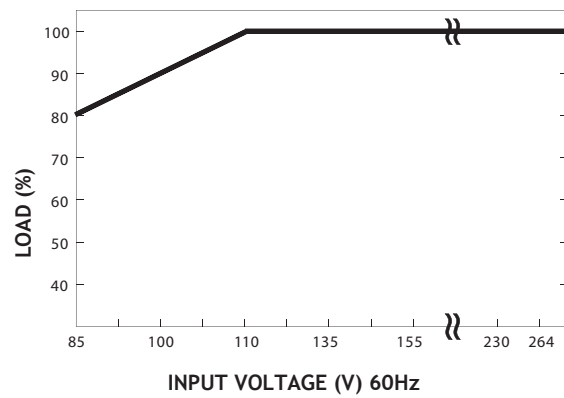
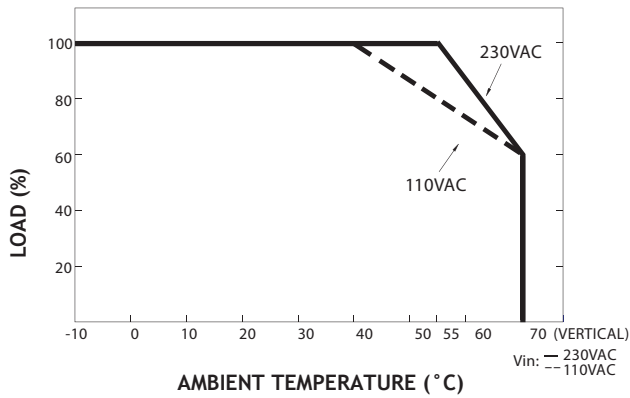
DR-120-48



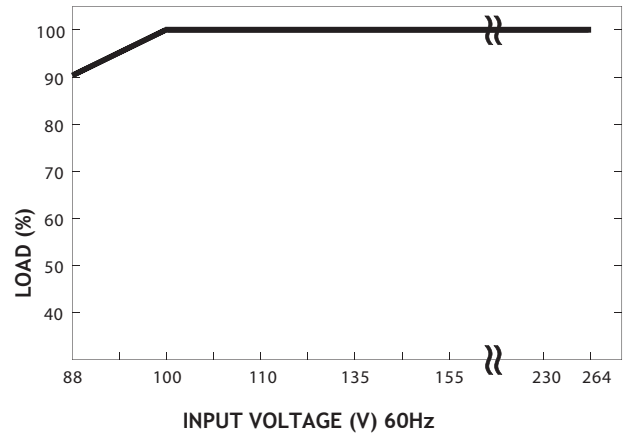
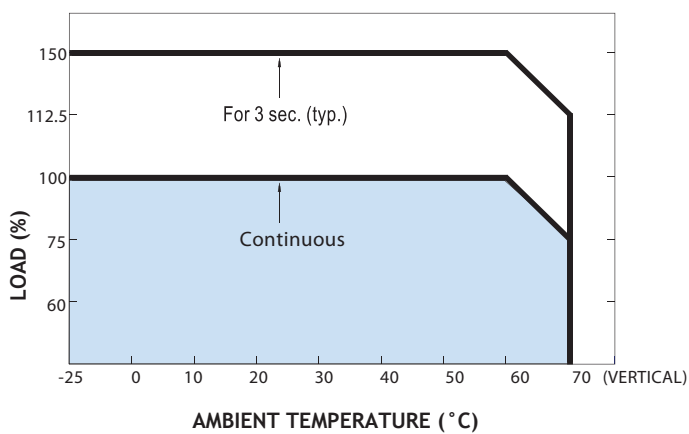
SDR-120-48



DRP-240-48



SDR-240-48



SNV-7084

3Megapixel Vandal-Resistant Network Dome Camera

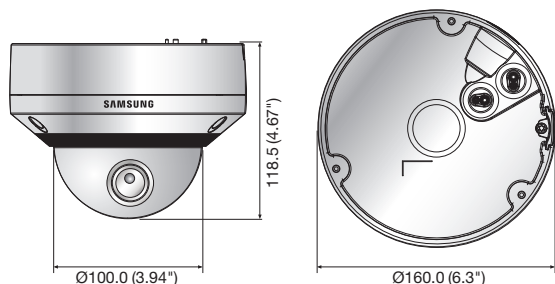


Key Features

- Max. 3M (2048 x 1536) resolution
- 30fps@2,048 x 1,536 / 60fps@1,920 x 1,080
- 3 ~ 8.5mm (2.8x) motorized varifocal lens
- Simple focus (Motorized VF), P-Iris
- Day & Night (ICR), Enhanced DIS, Defog
- 3M real-time WDR (Max. 120dB)
- Multi-crop streaming, Heater by PoE
- micro SD/SDHC/SDXC memory slot
- IP66, IK10, Bi-directional audio support

Dimensions

Unit : mm (inch)



Accessories (Optional)



* Data recorded on an SD memory card may be lost or damaged by data access during power-off, mechanical shock, memory card detachment, or other operations. Data loss or damage can also occur when a memory card reaches end of life, which varies according to operational conditions. No guarantee is given against damage (including passive damage).

SNV-7084N/P	
VIDEO	
Imaging Device	1/2.8" 3.2M CMOS
Total Pixels	2,065(H) x 1,565(V)
Effective Pixels	2,065(H) x 1,553(V)
Scanning System	Progressive
Min. Illumination	Color : 0.1Lux (F1.2, 50IRE), 0.06Lux (F1.2, 30IRE), 0.0017Lux (2sec, F1.2, 30IRE) B/W : 0.01Lux (F1.2, 50IRE), 0.006Lux (F1.2, 30IRE), 0.00017Lux (2sec, F1.2, 50IRE)
S / N Ratio	50dB
Video Output	CVBS : 1.0Vpp / 75Ω composite, 720 x 480(N), 720 x 576(P), for installation DIP connector type
LENS	
Focal Length (Zoom Ratio)	3 ~ 8.5mm (2.8x) motorized varifocal
Max. Aperture Ratio	F1.2
Angular Field of View	H : 100.12°(Wide) ~ 35.38°(Tele) / V : 73.76°(Wide) ~ 26.58°(Tele)
Min. Object Distance	0.5m (1.64ft)
Focus Control	Simple focus (Motorized V/F) / Manual, Remote control via network (Manual, Simple focus)
Lens Type / Mount Type	DC auto iris, P-Iris / Board-in type
PAN / TILT / ROTATE	
Pan / Tilt / Rotate Range	0° ~ 354° / 0° ~ 67° / 0° ~ 355°
OPERATIONAL	
Camera Title	Off / On (Displayed up to 45 characters)
Day & Night	Auto (ICR) / Color / B/W / External / Schedule
Backlight Compensation	Off / BLC / WDR
Wide Dynamic Range	120dB
Contrast Enhancement	SSDR (Samsung Super Dynamic Range) (Off / On)
Digital Noise Reduction	SSNR III (2D+3D noise filter) (Off / On)
Digital Image Stabilization	Off / On
Defog	Off / Auto / Manual
Motion Detection	Off / On (4 zones with 4-sided polygon)
Privacy Masking	Off / On (32 zones with 4-sided polygon)
Gain Control	Off / Low / Middle / High
White Balance	ATW / AWC / Manual / Indoor / Outdoor
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (1 ~ 1/12,000sec)
Flip / Mirror	Off / On
Intelligent Video Analytics	Tampering, Virtual line, Enter / Exit, (Dis)Appear, Audio detection, Face detection with metadata
Alarm I/O	Input 1ea / Output 1ea
Alarm Triggers	Motion detection, Tampering, Audio detection, Face detection, Network disconnection, Video analytics, Alarm input
Alarm Events	File upload via FTP and E-mail, Notification via E-mail, Local storage (SD/SDHC/SDXC) or NAS recording at Event, External output
NETWORK	
Ethernet	RJ-45 (10/100BASE-T)
Video Compression Format	H.264 (MPEG-4 part 10/AVC), MJPEG
Resolution	2048 x 1536, 1920 x 1080, 1600 x 1200, 1280 x 1024, 1280 x 960, 1280 x 720, 1024 x 768, 800 x 600, 800 x 450, 640 x 480, 640 x 360, 320 x 240, 320 x 180
Max. Framerate	H.264 : Max. 30fps@2048 x 1536, 1600 x 1200, Max 60fps@the other resolutions MJPEG : Max. 10fps@2048 x 1536 Max. 15fps@1920 x 1080, 1600 x 1200, 1280 x 1024, 1280 x 960, 1280 x 720, 1024 x 768 Max. 30fps@800 x 600, 800 x 450, 640 x 480, 640 x 360, 320 x 240, 320 x 180
Smart Codec	Manual mode (Area-based : 5ea), Face detection mode
Video Quality Adjustment	H.264 : Compression level, Target bitrate level control, MJPEG : Quality level control
Bitrate Control Method	H.264 : CBR or VBR, MJPEG : VBR
Streaming Capability	Multiple streaming (Up to 10 profiles)
Audio In	Selectable (Mic in / Line in), Supply voltage : 2.5V DC (4mA), Input impedance : approx. 2K Ohm
Audio Out	Line out (3.5mm mono jack), Max output level : 1Vrms
Audio Compression Format	G.711 u-law/G.726 selectable, G.726 (ADPCM) 8KHz, G.711 8KHz
Audio Communication	G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps
Audio Communication	Bi-directional audio
IP	IPv4, IPv6
Protocol	TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour
Security	HTTPS(SSL) login authentication, Digest login authentication IP address filtering, User access log, 802.1x authentication
Streaming Method	Unicast / Multicast
Max. User Access	15 users at unicast mode micro SD/SDHC/SDXC
Edge Storage	Motion images recorded in the SDXC/SDHC/SD memory card can be downloaded NAS (Network Attached Storage)
Application Programming Interface	ONVIF profile S, HTTP API (SUNAPI) 2.0, SVNP 1.2
Webpage Language	English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Swedish, Danish, Portuguese, Turkish, Polish, Czech, Rumanian, Serbian, Dutch, Croatian, Hungarian, Greek, Norwegian, Finnish
Web Viewer	Supported OS : Windows XP / VISTA / 7 / 8 / 8.1, MAC OS X 10.7 Supported Browser : Microsoft Internet Explorer (Ver. 11 ~ 8) Mozilla Firefox (Ver. 19 ~ 9) * Windows only Google Chrome (Ver. 25 ~ 15) * Windows only Apple Safari (Ver. 6.0.2(Mac OS X 10.8, 10.7 only), 5.1.7) * Mac OS X only
SmartViewer, SSM	
CENTRAL MANAGEMENT SOFTWARE	
ENVIRONMENTAL	
Operating Temperature / Humidity	-40°C ~ +55°C (-40°F ~ +131°F) / Less than 90% RH *Start up should be done at above -35°C (-31°F)
Storage Temperature / Humidity	-30°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP66
Vandal Resistance	IK10
ELECTRICAL	
Input Voltage / Current	24V AC, 12V DC, PoE (IEEE802.3af class 3) Max. 9.0W / 11.5W (12V DC, Heater off / on), Max. 10.0W / 12.5W (PoE, Heater off / on)
Power Consumption	Max. 11.0W / 13.0W (24V AC, Heater off / on)
MECHANICAL	
Color / Material	Ivory / Aluminum
Dimensions (WxH)	Ø160.0 x 118.5mm (Ø6.3" x 4.67")
Weight	960g (2.12 lb)

* The latest product information / specification can be found at www.samsungsecurity.com

SNP-6320H/6320

2Megapixel Full HD 32x Network PTZ Dome Camera



SNP-6320H



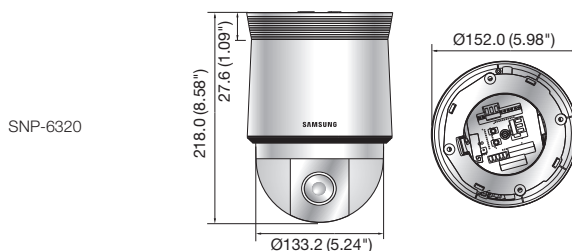
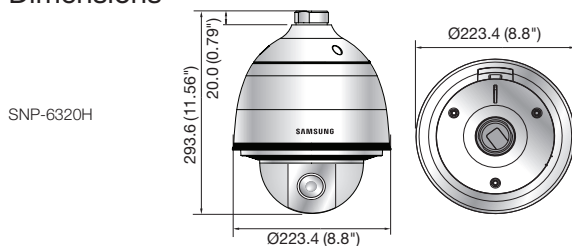
SNP-6320

Key Features

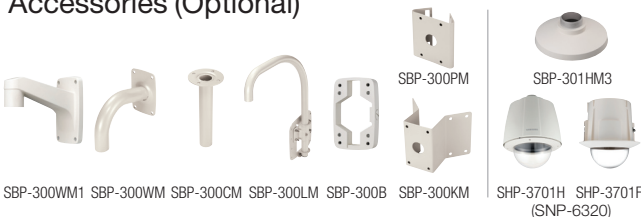
- Max. 2M (1920 x 1080) resolution
- 16 : 9 Full HD (1080p) resolution support
- 4.44 ~ 142.6mm (32x) optical zoom, 16x digital zoom
- H.264, MJPEG dual codec, Multiple streaming
- Day & Night (ICR), WDR (120dB)
- Auto tracking, Intelligent video analytics
- PoE+, SD/SDHC/SDXC memory slot, Bi-directional audio support
- IP66 / IK10 (SNP-6320H), IK10 (SNP-6320 + SHP-3701H only)

Dimensions

Unit : mm (inch)



Accessories (Optional)



* Data recorded on an SD memory card may be lost or damaged by data access during power-off, mechanical shock, memory card detachment, or other operations. Data loss or damage can also occur when a memory card reaches end of life, which varies according to operational conditions. No guarantee is given against damage (including passive damage).

	SNP-6320HN/HP	SNP-6320N/P
VIDEO		
Imaging Device	1/2.8" 2.38M CMOS	
Total / Effective Pixels	1,952(H) x 1,116(V), 2.18M pixels / 1,944(H) x 1,104(V), 2.14M pixels	
Scanning System	Progressive	
Min. Illumination	Color : 0.3Lux (1/30sec, F1.6, 50IRE) , 0.005Lux (2sec, F1.6, 50IRE) B/W : 0.03Lux (1/30sec, F1.6, 50IRE) , 0.0005Lux (2sec, F1.6, 50IRE) Color : 0.2Lux (1/30sec, F1.6, 30IRE) , 0.003Lux (2sec, F1.6, 30IRE) B/W : 0.01Lux (1/30sec, F1.6, 30IRE) , 0.0001Lux (2sec, F1.6, 30IRE)	
S / N Ratio	50dB	
Video Output	CVBS : 1.0Vpp / 75Ω composite, 720 x 480(N), 720 x 576(P), for installation	
LENS		
Focal Length (Zoom Ratio)	4.44 ~ 142.6mm (Optical 32x)	
Max. Aperture Ratio	F1.6(Wide) / F4.4(Tele)	
Angular Field of View	H : 62.8°(Wide) ~ 2.23°(Tele) / V : 36.8°(Wide) ~ 1.26°(Tele)	
Min. Object Distance	Wide : 1.4m (4.59ft), Tele : 1.9m (6.23ft) Wide : 1.5m (4.92ft), Tele : 2m (6.56ft)	
Focus Control	Auto / Manual / One push	
Lens / Mount Type	DC auto iris / Board-in type	
PAN / TILT / ROTATE		
Pan / Tilt Range	360° Endless / 210° (-15° ~ 195°)	
Pan / Tilt Speed	Preset : 700°/sec, Manual : 0.024°/sec ~ 120°/sec	
Preset / Preset Accuracy	255ea / ±0.2°	
Auto Tracking	Off / On	
OPERATIONAL		
Camera Title	Off / On (Displayed up to 15 characters)	
Day & Night	Auto (ICR) / Color / B/W	
Backlight Compensation	Off / BLC / HLC	
Wide Dynamic Range	120dB	
Contrast Enhancement	SSDR (Samsung Super Dynamic Range) (Off / On)	
Digital Noise Reduction	SSNR III (2D+3D noise filter) (Off / On)	
Digital Image Stabilization	Off / On	
Defog	Off / Auto / Manual	
Motion Detection	Off / On (4ea rectangle zone)	
Privacy Masking	Off / On (32 zones of rectangle zone)	
Gain Control	Off / Low / Middle / High	
White Balance	ATW / AWC / Manual / Indoor / Outdoor / Mercury / Sodium	
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (2 ~ 1/12,000sec)	
Digital Zoom	16x	
Flip / Mirror	Off / On	
Intelligent Video Analytics	Tampering, Virtual line, Enter / Exit, (Dis)Appear, Audio detection, Face detection	
Alarm I/O	Input 4ea / Output 2ea (Relay)	
Remote Control Interface	RS-485	
RS-485 Protocol	Samsung-T/E, Pelco-P/D, Sungjin, Panasonic, Honeywell, AD, Vicon, Bosch, GE	
Alarm Triggers	Motion detection, Tampering, Audio detection, Face detection, Video analytics, Alarm input, Network disconnection	
Alarm Events	File upload via FTP and E-mail, Notification via E-mail, TCP and HTTP, Local storage (SD/SDHC/SDXC) or NAS recording at network disconnected & event (Alarm triggers), External output	
NETWORK		
Ethernet	RJ-45 (10/100BASE-T)	
Video Compression Format	H.264 (MPEG-4 part 10 / AVC), MJPEG	
Resolution	1920 x 1080, 1280 x 1024, 1280 x 960, 1280 x 720, 1024 x 768, 800 x 600, 800 x 450, 640 x 480, 640 x 360, 320 x 240, 320 x 180	
Max. Framerate	H.264 : Max. 60fps at all resolutions MJPEG : 1920 x 1080, 1280 x 1024, 1280 x 960, 1280 x 720, 1024 x 768 : Max. 15fps 800 x 600, 800 x 450, 640 x 480, 640 x 360, 320 x 240, 320 x 180 : Max. 30fps	
Smart Codec	Manual mode (Area-based : 5ea), Face detection mode	
Video Quality Adjustment	H.264 : Compression level, Target bitrate level control, MJPEG : Quality level control	
Bitrate Control Method	H.264 : CBR or VBR, MJPEG : VBR	
Streaming Capability	Multiple streaming (Up to 10 profiles)	
Audio In	Selectable (Mic in / Line in), Supply voltage : 2.5V DC (4mA), Input impedance : approx. 2K Ohm	
Audio Out	Line out (3.5mm mono jack), Max output level : 1 Vrms G.711 u-law/G.726 selectable, G.726 (ADPCM) 8KHz, G.711 8KHz, G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps	
Audio Compression Format	Bi-directional audio	
Audio Communication	IPV4, IPV6	
Protocol	TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTSP, NTP, HTTP, HTTPS, SSL, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour	
Security	HTTPS(SSL) login authentication, Digest login authentication IP address filtering, User access log, 802.1x authentication	
Streaming Method	Unicast / Multicast	
Max. User Access	15 users at unicast mode SD/SDHC/SDXC (SNP-6320 : micro SD type, SNP-6320H : SD type)	
Edge Storage	Motion Images recorded in the SD/SDHC/SDXC memory card can be downloaded NAS (Network Attached Storage)	
Application Programming Interface	ONVIF profile S, SUNAPI (HTTP API), SVNIP 1.2	
Webpage Language	English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Swedish, Danish, Portuguese, Turkish, Polish, Czech, Rumanian, Serbian, Dutch, Croatian, Hungarian, Greek, Finnish, Norwegian	
Web Viewer	Supported OS : Windows XP / VISTA / 7 / 8 / 8.1, MAC OS X 10.7 / 10.8 Supported Browser : Microsoft Internet Explorer (Ver. 8 ~ 11), Mozilla Firefox (Ver. 9 ~ 19), Google Chrome (Ver. 15 ~ 32), Apple Safari (Ver. 6.0.2(Mac OS X 10.8, 10.7 Only), 5.1.7) * Mac OS X only	
Central Management Software	SmartViewer, SSM	
ENVIRONMENTAL		
Operating Temperature / Humidity	24V AC : -50°C ~ +55°C (-58°F ~ +131°F) / Less than ~ 90% RH PoE+ : -30°C ~ +55°C (-22°F ~ +131°F) / Less than 90% RH	
Storage Temperature / Humidity	-30°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH	
Ingress Protection / Vandal Resistance	IP66 / IK10 N/A / IK10 (With SHP-3701H)	
ELECTRICAL		
Input Voltage / Current	24V AC, PoE+ (IEEE802.3at class3)	
Power Consumption	Max. 24W (Heater off), Max. 65W (Heater on, 24VAC) Max. 20W	
MECHANICAL		
Color / Material	Ivory / Plastic + Metal	
Dimensions (WxH)	223.4 x 293.6mm (8.8" x 11.56") 152.0 x 218.0mm (5.98" x 8.58")	
Weight	3.3Kg (7.28 lb) 2.2Kg (4.85 lb)	

* The latest product information / specification can be found at www.samsungsecurity.com

Performance & Reliability

The iES4024GP provides wire speed 10/100/1000 Gigabit Ethernet PoE/Non-PoE switching features that are targeted for high quality video over IP. This Samsung technology provides 2 combo ports for high speed connectivity showing a high price/performance ratio. The IP clustering feature in the iES4024GP allows for the interconnection of 36 switches to be managed in a logical group using a single IP address. Advanced QoS features are provided to minimize latency and give priority for IP video packets. The standards based 802.3af PoE provides up to 15.4W per port across all 24 ports.

iES4024GP

24 Ports Gigabit PoE switch

- 22 ports 10/100/1000 Base-T with PoE
- 2 ports 10/100/1000 Base-T Combo with PoE
- 1 Console Port
- IEEE802.3af Power over Ethernet supported in all the access ports
- Up to 36 switches can be managed in a single logical group using a single IP address
- Supports 802.1Q and port-based VLAN.
- Dynamic VLAN supported through GVRP Voice
- Save bandwidth and improve throughput by sending multicast traffic only to ports with registered multicast group members
- Bundle multiple Ethernet Ports to maximize bandwidth pipe
- L2 ~L4 ACL, Radius, TACACS+, SSH, SSL, 8021x based Port Security, DHCP Snooping



iES Series Ethernet Switch
iES4024GP



Specifications

	iES4024GP	
HARDWARE		
Ports	22 10/100/1000BASE-T ports with POE, 2 Gigabit combo ports with POE, 1 Console port	
Switching Fabric	48Gbps, 35.7Mpps	
Switching DB	8K MAC address entries	
Weight	4.33kg (9.53 lbs)	
Dimensions	4.3 x 44 x 32 cm (1.7 x 17.3 x 12.6inch)	
AC Input	100 to 240 V, 50-60 Hz	
Power Consumption	225W (System 45W, POE 180W)	
Power-Over-Ethernet	Maximum output power per port: 15.4 W, Maximum output power per port: 7.5 W simultaneously	
Network Interface	N/A	
SOFTWARE		
Flow Control	IEEE 802.3x for full duplex mode, Back pressure flow control half duplex mode	
Spanning tree	<ul style="list-style-type: none"> • IEEE 802.1D STP • IEEE 802.1w RSTP • IEEE 802.1s MSTP • Spanning Tree Fast Forwarding • Auto Edge • Loop Protection 	
VLAN	<ul style="list-style-type: none"> • 802.1Q Tag-based VLAN • 802.1Q Port-based VLAN • 802.1v Protocol-based VLAN • 256 VLANs entries out of 4K VLAN IDs • GVRP • Voice VLAN 	
IGMP snooping	<ul style="list-style-type: none"> • V1, v2, v3 • Querier • Immediate Leave • Filtering and throttling 	
Link Aggregation	IEEE 802.3ad with LACP (-8 aggregation groups up to 8 ports)	
MVR	Yes	
Jumbo Frame	10K in gigabit ports	
QnQ	Yes	
Quality of Service	<ul style="list-style-type: none"> • Priority queue <ul style="list-style-type: none"> -Scheduling : Strict priority, WRR -4 queues per port • DiffServ • COS <ul style="list-style-type: none"> -IEEE 802.1p, DSCP based COS • Rate limiting (Per Port based) <ul style="list-style-type: none"> -Ingress, Egress 	
Security	<ul style="list-style-type: none"> • Storm Control <ul style="list-style-type: none"> - Broadcast storm - Multicast storm - DLF (Destination Lookup Failure) • MAC Address filtering • Username/Password authentication • Access control list (L2/L3/L4) • AAA <ul style="list-style-type: none"> - RADIUS, TACACS+ • MAC based Authentication • HTTPS/SSL • SSHv1/v2 • 802.1x <ul style="list-style-type: none"> - Port-Based - Supplicant Support - VLAN Assignment - Guest VLAN - Co-works with Radius, TACACS+ server • Management Interface Access filtering <ul style="list-style-type: none"> - SNMP, WEB, Telnet • DHCP Snooping • IP Source Guard • Management method <ul style="list-style-type: none"> - Web-based - Telnet (4 sessions) 	<ul style="list-style-type: none"> • Software download <ul style="list-style-type: none"> - TFTP, Xmodem • Dual Firmware Images • Configuration file download <ul style="list-style-type: none"> - TFTP • SNMP v1/v2c/v3 • RMON (group 1, 2, 3, 9) • BOOTP <ul style="list-style-type: none"> - Client • DHCP <ul style="list-style-type: none"> - Client - Relay(Option82) • Port mirroring (one-to-many) • Event/Error Log <ul style="list-style-type: none"> - Local, Syslog, SMTP • Remote Ping • STP • NTP • IEEE 802.1ab(LLDP) • UPnP • Banner • Web authentication • IP Clustering (36 members)



The **Eco mark** represents Samsung Techwin's will to create environment-friendly products, and indicates that the product satisfies the EU RoHS Directive.

Design and specifications are subject to change without notice.

■ DISTRIBUTED BY

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