BLOCK 670 LOT 4 QUALIF /CODE _____ ADDRESS (SITE) 2770 Hooper Ave PERMIT NO. 18-0020

CONSTRUCTION PERMIT APPLICATION

NEW JERSEY UNIFORM CONSTRUCTION CODE

C17-005042

Applicant Completes: Sections I,II,II (optional). IV, VI, and VII

I. IDENTIFICATION

1. Proposed Work Site at: 2770 Hooper Ave Bricktown NJ
2. Name of Owner in Fee: Kennedy Mall Associates
   Tel. (_____) _____ e-mail _____
   Address: 641 Shunpike Rd Chatham NJ 07928 (street / municipality / zip code)
3. Ownership in Fee: Public _____ Private _____
4. Principal Contractor: BH Security Tel. (908) 277-0070
   Address 10 Progress St Union e-mail _____
   License No. OR, if new home, Builder Reg. No. P00841 Exp. Date _____
   Home Improvement Contractor Registration No. or Exemption Reason (if applicable): _____
   Federal Emp. ID No. 22-2263454 Fax (_____) _____
5. Architect or Engineer _____ Contact _____
   Address _____ e-mail _____
   Tel. (_____) _____ FAX (_____) _____
6. Responsible Person in Charge once Work has Begun Donna Deitrich
   Tel (908) 277-0070 FAX (908) 686-2513

Land Lord 641 Shunpike Rd Chatham NJ 07928 Needs Harbor Freight

V. FEE SUMMARY (for office use only)

		Update	Update
1. Building	$	150	
2. Electrical			
3. Plumbing			
4. Fire Protection		116	
5. Elevator Devices			
6. Subtotal			
7. Less 20% for State Plan Review	$		
8. Subtotal	$		
9. State Permit Surcharge Fee		1-	
10. Subtotal	$		
11. Cert. of Occupancy			
12. Other			
13. TOTAL	$		

VI. BUILDING/SITE CHARACTERISTICS (office use only)

COMMERCIAL

1. Number of Stories _____
2. Height of Structure _____ ft.
3. Area—Largest Floor _____ sq. ft.
4. New Building Area _____ sq. ft.
5. Volume of New Structure _____ cu. ft.
6. Max. Live Load _____
7. Max Occupancy Load _____
8. If Industrialized Building: State Approved _____ HUD _____
9. Total Land Area Distrubed _____ sq. ft.
10. Flood Hazard Zone _____
11. Base Flood Elevation _____ ft.
12. Wetlands yes _____ no _____

IIa. PROPOSED WORK:

- ☐ Minor Work — Alarm
- ☐ Repair
- ☐ Asbestos Abat. -Subch. 8
- ☐ New Building
- ☐ Alteration
- ☐ Lead Hazard Abatement
- ☐ Addition
- ☐ Renovation
- ☐ Radon Remediation
- ☐ Demolition
- ☐ Reconstruction
- ☐ Annual Permit

IIb. SUBCODES: (Check all that apply)

- ☐ Building
- ☑ Electrical
- ☐ Plumbing
- ☑ Fire Protection
- ☐ Elevator

FOR OFFICE USE ONLY (Optional)

Est. Cost	Plans Rec'd by	Date Rec'd	Rejection Date	Approval Date	Re-viewer	Resubmission Dates Approval	Resubmission Dates Rejection	Re-viewer
	Mail In							
				11/20/17	PSE			
				11/21/17	CD			
TOTAL COSTS								

VII. DESCRIPTION OF BUILDING USE

A. RESIDENTIAL (primary use)

1. State Specific Use:
2. Use Group, Proposed: _____
3. Change in Use Group, Indicate Former:
4. No. of dwelling units: *Total Units* *Income-restricted*
   - Gained, Sale
   - Gained, Rental
   - Lost, Sale
   - Lost, Rental

B. NON-RESIDENTIAL *(primary use)*

1. State Specific Use:
2. Use Group, Proposed: _____
3. Change in Use Group, Indicate Present:

C. MIXED USE -List secondary use(s): _____

D. Construct. Classification: Present _____ Proposed _____

III. DO YOU WANT: (optional)

1. ☐ Partial Releases
2. ☐ Prototype Processing

IV. DOES OR WILL YOUR BUILDING CONTAIN ANY OF THE FOLLOWING?

1. ☐ Elevators/Escalators/Lifts/ Dumbwaiters/Moving Walks
2. ☐ High Pressure Boilers
3. ☐ Pressure Vessels
4. ☐ Refrigeration Systems
5. ☐ Cross-Connections/Backflow Preventers
6. ☐ Hazardous Uses/Places of Assembly
7. ☐ Sprinklers
8. ☐ Smoke Control Systems in Open Wells
9. ☐ Undergroound Storage Tanks
10. ☐ Swimming Pools, Spas and Hot Tubs
11. ☐ LP Gas Tanks

RECEIVED NOV 13 2017 BY CS

Brick Township
401 Chambersbridge Rd
Brick, NJ 08723

Date Issued 2/23/2018
Control Number C-17-005042
Permit Number 18-0020
Permit Issue Date 1/3/2018
Certificate Number 18-0020

Certificate

Construction Code Division

(Certificate of Approval)

Identification

Work Site Location: 2770 HOOPER AVE. Brick Township, NJ Block: 670 Lot: 4 Qual:

Owner in Fee: KENNEDY MALL ASSOCIATES

Owner Address: 641 SHUNPIKE RD. CHATHAM NJ 07928

Telephone:

Contractor BH SECURITIES

Address 10 PROGRESS ST UNION NJ 07083

Telephone: (908) 277-0070 Fax:

License Number or Builders Registration Number: Federal Emp. Number:

Home Warranty Number:

Type of Warranty Plan: ☐ State ☐ Private

Use Group: B Construction Classification:

Maximum Live Load: 0 Maximum Occupancy Load: 0

Description of Work/Use: ALARM SYSTEM (BURGLAR OR FIRE) - RIVERWALK ...LANDLORD UTILITY ROOM

Certificate Comments:

☐ **Certificate of Occupancy**
This serves notice that said building or structure has been constructed in accordance with the New Jersey Uniform Construction Code and is approved for occupancy.

☑ **Certificate of Approval**
This serves notice that the work completed has been constructed or installed in accordance with the New Jersey Uniform Construction Code and is approved. If the permit was issued for minor work, this certificate was based upon what was visible at the time of inspection.

☐ **Certificate of Continued Occupancy**
This serves notice that based on a general inspection of the visible parts of the building there are no imminent hazards and the building is approved for continued occupancy.

☐ **Temporary Certificate of Compliance**
The following conditions must be met no later than
or the owner will be subject to fine or order to vacate:
This certificate has an expiration date of:
Conditions to be met:

☐ **Certificate of Clearance - Lead Abatement 5:17**
This serves notice that based on written certification, lead abatement was performed as per NJAC5:17 to the following extent.

☐ Total removal of lead-based paint hazards in scope of work
☐ Partial or limited time period (years); see file

☐ **Certificate of Clearance - Asbestos Abatement**
This serves notice that based on written certification, asbestos abatement was performed to the following extent.

☐ Total removal of asbestos hazards in scope of work
☐ Partial or limited time period (years); see file

☐ **Certificate of Compliance**
This serves notice that said potentially hazardous equipment has been installed and/or maintained in accordance with the New Jersey Uniform Construction Code and is approved for use until

☐ **Temporary Certificate of Occupancy**
The following conditions must be met no later than:
or the owner will be subject to fine or order to vacate:
This certificate has an expiration date of:
Conditions to be met:

Construction Official

Fee: $0.00
Check Number:
Collected By:

Date Printed: 2/23/2018

U.C.C. F260 (rev. 08/05)

CERTIFICATION IN LIEU OF OATH

I. OWNER SECTION (to be completed if the applicant is the owner in fee)

I hereby certify that I am the owner in fee of the property listed on Page 1.

Mark the following applicable boxes:

A. ( ) I further certify that a new home (private residence) will be constructed on this property for my own use and occupancy. This dwelling is to be occupied by myself and is not to be used for any purpose other than single family residential use. I attest that all construction, plumbing, or electrical work will be done, in whole or in part, by me or by subcontractors under my supervision, in accordance with all applicable laws; and, I further acknowledge that said new home is not covered under the New Home Warranty and Builders Registration Act (N.J.S.A. 46:3B-1 et seq.) and that such fact shall be disclosed to any person purchasing this property within ten years of the date of issuance of a certificate of occupancy.

I UNDERSTAND THAT IN MARKING BOX A, I ACKNOWLEDGE THAT I AM ASSUMING RESPONSIBILITY FOR THE WORK DONE ON SAID PROPERTY, THE CONDITION OF THE PROPERTY PRIOR TO, DURING, AND AFTER ANY WORK PERFORMED, AND FOR THE PERFORMANCE OF THE SUBCONTRACTORS I HIRE, EMPLOY, OR OTHERWISE CONTRACT OR WITH WHOM I MAKE AGREEMENTS TO PERFORM WORK. I AM VOLUNTARILY AND KNOWINGLY ASSUMING THIS RESPONSIBILITY.

B. ( ) I further certify the following as required by the New Jersey Uniform Construction Code, N.J.A.C. 5:23-2.15(f)1.ix:

I personally prepared the plans submitted for: 1) the new home referred to in A.; or, 2) an addition, alteration, renovation, or repair to an existing single family residence owned and occupied by myself and located on the property listed on Page 1; or, 3) a new structure that will be physically separate from, but that will be deemed part of, an existing single family residence that is owned and occupied by myself and located on the property listed on Page 1.

C. ( ) I further certify that I will perform or supervise the following work:
C.1. ( ) Building C.2. ( ) Fire Protection

I further certify that I will perform the following work:
C.3. ( ) Electrical C.4. ( ) Plumbing

D. ( ) I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals have been given, including such certification as the construction official may require.

I understand that if any of the above statements are willfully false, I am subject to punishment.

Signature _____ Date _____

II. AGENT SECTION (to be completed if the applicant is not the owner in fee)

I hereby certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(d): the proposed work is authorized by the owner in fee; and I have been authorized by the owner in fee to make this application as his agent.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals have been given, including such certification as the construction official may require.

I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I understand that if any of the above statements are willfully false, I am subject to punishment.

(✓ Check if contractor.

Agent Name BH Security Dona Deitrich

Address 10 Progress St

Union NJ 07083

Telephone (908) 277-0070

Signature Dona Deitrich

III. ( ) LEAD HAZARD ABATEMENT: Include Homeowner or Building Owner Affidavit as per N.J.A.C. 5:17.

FIRE PROTECTION SUBCODE
TECHNICAL SECTION

NW

Date Received 1/3/18
Control #
Date Issued
Permit # 18-0020

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 670 Lot 4 Qualification Code

Work Site Location 2770 Hooper Ave (Landlord Utility RM next to harbor freight)
Bricktown NJ 08723

Owner in Fee: Kennedy Mall Association

Tel. e-mail

Address 641 Shunpike Road Chatham NJ 07928
street municipality zip code

Contractor: B&H Security Tel. (908) 277-0070

Address 10 Progress Street e-mail ddeitrich@bhsecurityonline.
Union, NJ 07083

Fire Protection Equipment, NJ Div of Fire Safety Permit No. P00841

Fire Protection Equipment, NJ Div of Fire Safety Installer No. 34FA00116300

Fire Alarm Contractor No. Exp. Date

Home Improvement Contractor Registration No. or Exemption Reason (if applicable):

Federal Emp. ID No. 222-263-454/000 FAX: (908) 686-2513

B. FIRE PROTECTION CHARACTERISTICS

Use Group: Present Proposed

Constr. Class: Present Proposed

Heating System: [ ] New OR [ ] Modification to Existing OR [ ] Conversion OR [ ] Replacement

Fuel Type: [ ] Gas [ ] Oil [ ] Electric [ ] Solar [ ] Other

Location:

Total Cost of Fire Protection Work $ 100

Fuel Storage Tank:
Fuel Type: [ ] Flammable OR [ ] Combustible
Capacity

Fire Alarm System: [ ] New OR [X] Existing
Location of Panel:

Fire Suppression/Standpipe System:
[ ] New OR [ ] Existing
Location of Main Control Valve:

JOB SUMMARY (Office Use Only)

PLAN REVIEW
[ ] No Plans Required
[ ] Partial -Underslab Utilities Approved
Date: Approved by:
[X] Fire Protection Plans Approved
Date: 1/12/18 Approved by:
Joint Plan Review Required:
[ ] Bldg. [ ] Elec. [ ] Plumb. [ ] Elev.

SUBCODE APPROVAL for PERMIT
Date: 1-23-18
Approved by:

SUBCODE APPROVAL for CERTIFICATE
[ ] CO [ ] COO [ ] CA
Date: 2-23-18
Approved by:

INSPECTIONS Type:	Dates (Month/Day) Failure	Failure	Approval	Initial
Alarm System			2-16-18	JM
Suppression Sys.				
Standpipe				
Fire Pump				
Pre-Eng. System				
Mechanical				
Smoke Control				
TCO				
Flam/Combust Tanks				
Fireplace Venting				
Final			2-16-18	JM
Other				

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

Applicant/Contractor sign here:

Print name here: Donna Deitrich

D. TECHNICAL SITE DATA [X] Certified Contractor [ ] Exempt Applicant

COMMERCIAL

DESCRIPTION OF WORK:
Water Supply Source AES Radio Communicator
Method of Alarm/Suppression System Supervision

	NUMBER	FEE (Office Use Only) $
Flammable/Combustible Tanks		
Alarm Systems		
[X] System		
[ ] 110v Interconnected		
[ ] CO Detectors/110v		
Alarm Devices (i.e., smoke, heat, pulls, water/flow)		
Supervisory Devices (i.e., tampers, low/high air)		
Signaling Devices (i.e., horn/strobes, bells)		
Other Devices AES Radio	1	
TOTAL	1	
Suppression Systems		
Fire Pump ____ GPM Type ____		
Dry Pipe/Alarm Valves		
Pre-action Valves		
Sprinkler Heads (Dry and Wet)		
Standpipes		
Pre-engineered Systems		
Wet Chemical		
Dry Chemical		
CO_2 Suppression		
Foam Suppression		
FM200 Suppression		
Other		
Other Systems		
Kitchen Hood Exhaust System		
Smoke Control System		
Fuel-Fired Appliances [ ] Gas [ ] Oil [ ] Solid		
Fireplace Venting/Metal Chimney		
Other		

Administrative Surcharge $
Minimum Fee $
State Permit Surcharge Fee $
TOTAL FEE $

U.C.C. F140 (rev. 02/14) Internet version

Applicant: When submitting this form to your Local Construction Code Enforcement Office, please provide one original plus three photocopies.

SYSTEM RECORD OF COMPLETION

This form is to be completed by the system installation contractor at the time of system acceptance and approval.
It shall be permitted to modify this form as needed to provide a more complete and/or clear record.
Insert N/A in all unused lines.
Attach additional sheets, data, or calculations as necessary to provide a complete record.

Form Completion Date: 2-16-18 Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Name of property: Kennedy Mall

Address: 2770 Hooper Ave Bricktown, NJ 08723

Description of property: Commercial

Name of property representative: David

Address: PO Box 36212 Charlotte, NC 28236

Phone: 973 966-2800 x 250 Fax: _____ E-mail: dvoight@fedelityland.net

2. INSTALLATION, SERVICE, TESTING, AND MONITORING INFORMATION

Installation contractor: BH Security

Address: 10 Progress Street Union, NJ 07083

Phone: 800 287-0074 Fax: 908 686-2513 E-mail: bhsecurityonline.com

Service organization: BH Security

Address: 10 Progress Street Union, NJ 07083

Phone: 800 287-0074 Fax: 908 686-2513 E-mail: bhsecurityonline.com

Testing organization: BH Security

Address: 10 Progress Street Union, NJ 07083

Phone: 800 287-0074 Fax: 908 686-2513 E-mail: bhsecurityonline.com

Effective date for test and inspection contract: 2-16-18 8-12 pm

Monitoring organization: Criticom

Address: 2210 Landmark Pl, Manasquan, NJ 08736

Phone: (732) 528-3900 Fax: _____ E-mail: cmsdealer.com

Account number: AES 9066 Phone line 1: _____ Phone line 2: _____

Means of transmission: Aes Radio

Entity to which alarms are retransmitted: _____ Phone: _____

3. DOCUMENTATION

On-site location of the required record documents and site-specific software: _____

4. DESCRIPTION OF SYSTEM OR SERVICE

This is a: ☐ New system ☒ Modification to existing system Permit number: 18-0020

NFPA 72 edition: _____

4.1 Control Unit

Manufacturer: Firelite Model number: 9200ud

4.2 Software and Firmware

Firmware revision number: _____

4.3 Alarm Verification

☐ This system does not incorporate alarm verification.

Number of devices subject to alarm verification: _____ *Alarm verification set for* _____ *seconds*

5. SYSTEM POWER

5.1 Control Unit

5.1.1 Primary Power

Input voltage of control panel: 120 V Control panel amps: 20 AMP

Overcurrent protection: Type: _____ Amps: _____

Branch circuit disconnecting means location: Throw Breaker Number: 8

5.1.2 Secondary Power

Type of secondary power: _____

Location, if remote from the plant: _____

Calculated capacity of secondary power to drive the system:

In standby mode (hours): _____ In alarm mode (minutes): _____

5.2 Control Unit

☐ This system does not have power extender panels

☐ Power extender panels are listed on supplementary sheet A

6. CIRCUITS AND PATHWAYS

Pathway Type	Dual Media Pathway	Separate Pathway	Class	Survivability Level
Signaling Line				
Device Power				
Initiating Device				
Notification Appliance				
Other (specify):				

7. REMOTE ANNUNCIATORS

Type	Location

8. INITIATING DEVICES

Type	Quantity	Addressable or Conventional	Alarm or Supervisory	Sensing Technology
Manual Pull Stations				
Smoke Detectors				
Duct Smoke Detectors				
Heat Detectors				
Gas Detectors				
Waterflow Switches				
Tamper Switches				

9. NOTIFICATION APPLIANCES

Type	Quantity	Description
Audible		
Visible		
Combination Audible and Visible		

10. SYSTEM CONTROL FUNCTIONS

Type	Quantity
Hold-Open Door Releasing Devices	
HVAC Shutdown	
Fire/Smoke Dampers	
Door Unlocking	
Elevator Recall	
Elevator Shunt Trip	
1- AES Radio	1

11. INTERCONNECTED SYSTEMS

☐ This system does not have interconnected systems.

☐ Interconnected systems are listed on supplementary sheet _____ .

12. CERTIFICATION AND APPROVALS

12.1 System Installation Contractor

This system as specified herein has been installed according to all NFPA standards cited herein.

Signed: AC Printed name: Anthony Catellano Date: 2-16-18

Organization: BH Title: PM Phone: 908 591-3381

12.2 System Operational Test

This system as specified herein has tested according to all NFPA standards cited herein.

Signed: DY Printed name: Danny Yantin Date: 2-16-18

Organization: BH Title: IM Phone: 908 591-4059

12.3 Acceptance Test

Date and time of acceptance test: 2-16-18 8-12 pm

Installing contractor representative: Anthony Castellano

Testing contractor representative: Danny Yantin

Property representative: David

AHJ representative: _____

Site Event History - KENNEDY MALL: CS# AES9066 Site# 301027831

Event Date	Zone	Event	Comment	User#	User Name	Area	Match	Comment/Location
02/16/2018 00:03:12	E602	Timer Test				0	2,CID,E602, (0),Task:2513	zone: 0
02/16/2018 05:29:51	R356	Restore LOG				0	2,CID,R356,Task:2513	
02/16/2018 05:29:51	2E140	Trbl (C) PR-CL [DE30]				0	1,CID,E140, (2),Task:2513	AES TROUBLE zone: 2Delay:30
02/16/2018 05:30:30	T173	Fire Trbl (C) PR-CL	zone: 173 Prev Alarm Delay Ended			0	1,CID,E380, (173),Task:2513	AES RADIO FAULT
02/16/2018 05:30:30	R173	Restore LOG				0	1,CID,R380, (173),Task:2513	zone: 173
02/16/2018 05:30:35	2R140	Restore LOG				0	1,CID,R140, (2),Task:2513	zone: 2
02/16/2018 05:32:36	E602	Timer Test				0	2,CID,E602, (0),Task:2513	zone: 0
02/16/2018 05:34:52		Alarm Accessed						
02/16/2018 05:35:01		Valid Restore						
02/16/2018 05:35:10		****** Full Clear ******						Full Clear
02/16/2018 07:47:01	2E140	Trbl (C) PR-CL [DE30]				0	1,CID,E140, (2),Task:2513	AES TROUBLE zone: 2Delay:30
02/16/2018 07:47:08	T173	Fire Trbl (C) PR-CL	zone: 173 Prev Alarm Delay Ended			0	1,CID,E380, (173),Task:2513	AES RADIO FAULT
02/16/2018 07:47:13		Alarm Accessed						
02/16/2018 07:47:16	2R140	Restore LOG				0	1,CID,R140, (2),Task:2513	zone: 2
02/16/2018 07:47:25	R173	Restore LOG				0	1,CID,R380, (173),Task:2513	zone: 173
02/16/2018 07:47:43		Valid Restore						
02/16/2018 07:47:50		* Partial Clear - NJ *						New priority:300
02/16/2018 07:58:39		Alarm Accessed						
02/16/2018 07:58:59		Quality Checked - Full Clear						Full Clear

<< < > >>

Site Event History - KENNEDY MALL: CS# AES9066 Site# 301027831

Event Date	Zone	Event	Comment	User#	User Name	Area	Match	Comment/Location
11/29/2017 14:35:11		Contact P/C Verified	B & H SECURITY INC		PCV			
11/29/2017 14:36:13		Placed On Test	Category GEN Cat: GEN Expires: 11/29/2017 17:00:00 All Zones		PCV			*Test
11/29/2017 14:36:26	173	Trbl (C) PR-CL				0	2,CID,E380,Task:2513	*Test AES RADIO FAULT SENSOR TROUBLEDelay:30
11/29/2017 14:36:36	E351	Trbl (C) PR-CL				0	2,CID,E351,Task:2513	*Test TELCO LINE #1Delay:30
11/29/2017 14:36:38	E352	Trbl (C) PR-CL				0	2,CID,E352,Task:2513	*Test TELCO LINE #2Delay:30
11/29/2017 14:36:44	173	Restore LOG				0	2,CID,R380,Task:2513	*Test AES RADIO FAULT
11/29/2017 14:37:24	R351	Restore LOG				0	2,CID,R351,Task:2513	*Test TELCO
11/29/2017 14:37:28	R352	Restore LOG				0	2,CID,R352,Task:2513	*Test TELCO
11/29/2017 14:39:02	E311	Trbl (C) PR-CL				0	2,CID,E311,Task:2513	*Test NO BATTERYDelay:30
11/29/2017 14:39:04	R311	Restore LOG				0	2,CID,R311,Task:2513	*Test NO BATTERY RESTORE
11/29/2017 14:39:23	1	[DFT]General Alarm(NON-BURG)				0	4,CID,E140,Task:2513	*Test SD UTILITY ROOM
11/29/2017 14:40:20	163	Fire (C) FD-PR-CL				0	2,CID,E115,Task:2513	*Test PS MAIN UTILITY ROOM MANUAL PULL
11/29/2017 14:40:33	3	[DFT]General Alarm(NON-BURG)				0	4,CID,E140,Task:2513	*Test
11/29/2017 14:40:47	3	Restore LOG				0	3,CID,R140,Task:2513	*Test GENERAL ALARM
11/29/2017 14:41:02	1	Restore LOG				0	3,CID,R140,Task:2513	*Test SD UTILITY ROOM GENERAL ALARM
11/29/2017 14:41:19	163	Restore LOG				0	2,CID,R115,Task:2513	*Test PS MAIN UTILITY ROOM FIRE SYSTEM
11/29/2017 14:41:26	R321	Restore LOG				0	2,CID,R321,Task:2513	*Test BELL CIRCUIT
11/29/2017 14:41:29	E321	Trbl (C) PR-CL				0	2,CID,E321,Task:2513	*Test BELL CIRCUIT #1Delay:30
11/29/2017 14:41:31	R322	Restore LOG				0	2,CID,R322,Task:2513	*Test BELL CIRCUIT
11/29/2017	2	[DFT]General				0	4,CID,E140,Task:2513	*Test

		BURG)			
11/29/2017 14:42:24	E322	Trbl (C) LOG	0	2,CID,E322,Task:2513	*Test BELL CIRCUIT #2
11/29/2017 14:42:24	R326	Restore LOG	0	2,CID,R326,Task:2513	*Test BELL CIRCUIT
11/29/2017 14:42:24	E326	Trbl (C) LOG	0	2,CID,E326,Task:2513	*Test BELL CIRCUIT #3
11/29/2017 14:42:43	2	Restore LOG	0	3,CID,R140,Task:2513	*Test GENERAL ALARM
11/29/2017 14:42:43	R321	Restore LOG	0	2,CID,R321,Task:2513	*Test BELL CIRCUIT
11/29/2017 14:42:51	R322	Restore LOG	0	2,CID,R322,Task:2513	*Test BELL CIRCUIT
11/29/2017 14:42:54	E322	Trbl (C) LOG	0	2,CID,E322,Task:2513	*Test BELL CIRCUIT #2
11/29/2017 14:43:01	2	[DFT]General Alarm(NON-BURG)	0	4,CID,E140,Task:2513	*Test
11/29/2017 14:43:01	R326	Restore LOG	0	2,CID,R326,Task:2513	*Test BELL CIRCUIT
11/29/2017 14:43:15	E326	Trbl (C) LOG	0	2,CID,E326,Task:2513	*Test BELL CIRCUIT #3
11/29/2017 14:43:23	E308	Trbl (C) LOG	0	2,CID,E308,Task:2513	*Test SYSTEM SHUTDOWN
11/29/2017 14:43:24	R322	Restore LOG	0	2,CID,R322,Task:2513	*Test BELL CIRCUIT
11/29/2017 14:43:30	R326	Restore LOG	0	2,CID,R326,Task:2513	*Test BELL CIRCUIT
11/29/2017 14:43:40	2	Restore LOG	0	3,CID,R140,Task:2513	*Test GENERAL ALARM
11/29/2017 14:43:56	R308	Restore LOG	0	2,CID,R308,Task:2513	*Test SYSTEM SHUTDOWN RSTR
11/29/2017 14:44:18	R322	Restore LOG	0	2,CID,R322,Task:2513	*Test BELL CIRCUIT
11/29/2017 14:44:29	R326	Restore LOG	0	2,CID,R326,Task:2513	*Test BELL CIRCUIT
11/29/2017 14:45:13	2	[DFT]General Alarm(NON-BURG)	0	4,CID,E140,Task:2513	*Test
11/29/2017 14:45:25		No Timer Test Received			Auto TT Nov 30, 2017 16:45
11/29/2017 14:45:33	2	Restore LOG	0	3,CID,R140,Task:2513	*Test GENERAL ALARM
11/29/2017 14:45:46	173	Trbl (C) PR-CL	0	2,CID,E380,Task:2513	*Test AES RADIO FAULT SENSOR TROUBLEDelay:30
11/29/2017 14:45:48	173	Restore LOG	0	2,CID,R380,Task:2513	*Test AES RADIO FAULT
11/29/2017 15:05:14	2	[DFT]General Alarm(NON-BURG)	0	4,CID,E140,Task:2513	*Test
11/29/2017 15:05:32	173	Trbl (C) PR-CL	0	2,CID,E380,Task:2513	*Test AES RADIO FAULT SENSOR TROUBLEDelay:30
11/29/2017 15:06:01	2	Restore LOG	0	3,CID,R140,Task:2513	*Test GENERAL ALARM
11/29/2017	173	Restore LOG	0	2,CID,R380,Task:2513	*Test AES RADIO

11/29/2017 15:06:12	R356	Restore LOG	0	2,CID,R356,Task:2513	*Test
11/29/2017 17:00:02		Expired Test		LATES-xtst	Cat: GEN
11/29/2017 22:44:02	2E140	Fire (C) FD-PR-CL	0	1,CID,E140, (2),Task:2513	AES TROUBLE zone: 2
11/29/2017 22:44:08		Alarm Accessed			

<< < 1 - 2 - 3 > >>

ELECTRICAL SUBCODE
TECHNICAL SECTION

Date Received 1/3/18
Control #
Date Issued
Permit # 18-0020

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 670 Lot 4 Qualification Code

Work Site Location 2770 Hooper Ave (Landlord Utility Rm - next to Harbor Freight)
Bricktown NJ 08723

Owner in Fee: Kennedy Mall Associates

Tel. e-mail

Address 641 Shunpike Road (street) Chatham NJ 07928 (municipality) zip code

Contractor: B&H Security Tel. (908) 277-0070

Address 10 Progress Street e-mail ddeitrich@bhsecurityonline.
Union, NJ 07083

Contractor License No. P00841 Exp. Date

Home Improvement Contractor Registration No. or Exemption Reason (if applicable):

Federal Emp. ID No. 222-263-454/000 FAX: (908) 686-2513

B. ELECTRICAL CHARACTERISTICS

Use Group Present Proposed

[ ] Pole/Pad # [ ] Temporary [ ] Other

Building Occupied as Utility Co.

Est. Cost of Elec. Work $ 100

JOB SUMMARY (Office Use Only)

PLAN REVIEW

[ ] No Plans Required

[ ] Partial -Underslab Utilities Approved

Date: Approved by:

[✓] Electric Plans Approved SPECS,

Date: 1/20/17 Approved by: RSE

Joint Plan Review Required:

[ ] Bldg. [ ] Plumb. [ ] Fire. [ ] Elev.

SUBCODE APPROVAL for PERMIT

Date: 1/30/17

Approved by:

SUBCODE APPROVAL for CERTIFICATE

[ ] CO [ ] CCO [✓] CA

Date: 2/16/18

Approved by:

INSPECTIONS

Type:	Failure	Failure	Approval	Initial
	Dates (Month/Day)			
Rough				
Barrier-Free				
Trench				
Temp. Serv.				
Constr. Serv.				
TCO				
Other				
Service				
Final 2-2-18 MM			2/16/18 RSE	
Barrier-Free				

Temp. Cut-in-Card Date Issued

Final Cut-in-Card Date Issued

Annual Pool Inspection

Date of Grounding and Bonding Certification

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application and perform the work listed on this application.

Applicant sign/Contractor sign and seal here:

Print name here: Donna Deitrich

[X] Licensed Elec. Contractor [ ] Certif'd Landscape Irrigation Cont'r [ ] Exempt Applicant

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK:
AES Radio Communicator Install

COMMERCIAL

QTY.	SIZE	ITEMS	FEE (Office Use Only)
		Lighting Fixtures	
		Receptacles	
		Switches	
		Detectors	
		Light Poles	
		Motors—Fract. HP	
		Emergency & Exit Lights	
		Communications Points	
1		Alarm Devices/A.C. Panel	
1		TOTAL NUMBERS	$
		Pool Permit/with UW Lights	
		Storable Pool/Spa/Hot Tub	
		KW Elec. Range/Receptacle	
		KW Oven/Surface Unit	
		KW Elec. Water Heater	
		KW Elec. Dryer/Receptacle	
		KW Dishwasher	
		HP Garbage Disposal	
		KW Central A/C Unit	
		HP/KW Space Heater/Air Handler	
		KW Baseboard Heat	
		HP Motors 1/+ HP	
		KW Transformer/Generator	
		AMP Service	
		AMP Subpanels	
		AMP Motor Control Center	
		KW Elec. Sign/Outline Light	

Administrative Surcharge $

Minimum Fee $

State Permit Surcharge Fee $

TOTAL FEE $

U.C.C. F120 (rev. 11/09)
Internet version

Applicant: When submitting this form to your Local Construction Code Enforcement Office, please provide one original plus three photocopies.

BACKGROUND AND MULTIPLE SECURITY FEATURES. PLEASE VERIFY AUTHENTICITY.

State of New Jersey
Department of Community Affairs
Division of Fire Safety

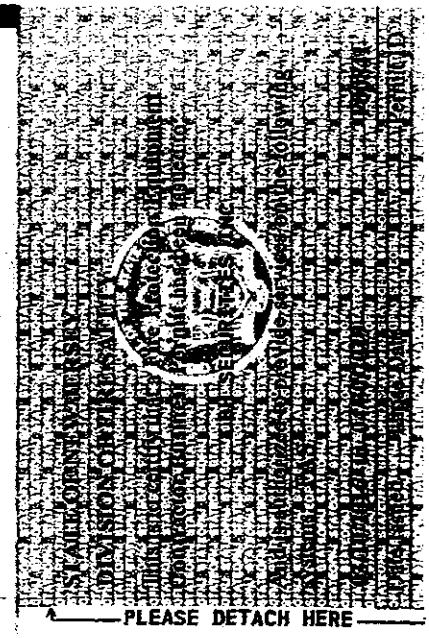
Hereby Issues To

BH SECURITIES INC

Fire Protection Equipment Contractor Business Permit

In The Following Fire Protection Areas:

Fire Alarm System



PLEASE DETACH HERE

P00841	03/10/2016 to 04/30/2019	
Permit ID	Date Issued	Lapse Date

Charles A. Richman
Commissioner

Fire Protection System Abbreviation Key:
AFPES-All Fire Protection Equipment Systems
FSS-Fire Sprinkler System
SHFSS-Special Hazard Fire Suppression System
FAS-Fire Alarm System
PFE-Portable Fire Extinguisher
KFSS-Kitchen Fire Suppression System

PLEASE DETACH HERE

Dear Contractor:

Congratulations on receiving a business permit as a Fire Protection Equipment Contractor. The business identified above is authorized by the New Jersey Department of Community Affairs to install, service, repair, inspect and maintain fire protection equipment on the systems/services identified on the permit. The services authorized by this permit are restricted to the Fire Protection Equipment services identified on the business permit application, and may be limited within each permit classification.

Let me commend you on your professional attitude and desire to provide a valuable service to the citizens of New Jersey. The business permit will be valid for a period of three years. At least one employee of the business must be certified within "each" specialty listed on the permit. An individual certified as a "All Fire Protection Equipment Systems" contractor is permitted to work on all fire protection equipment systems authorized by Public Law P.L. 2001, c. 289.

Please do not hesitate to contact our office if we may further assist you. Our mailing address is: Division of Fire Safety, Contractor Certification and Emblems Unit, P.O. Box 809, Trenton, New Jersey 08625-0809, or phone us at (609) 984-7860.

Sincerely,

Charles A. Richman
Commissioner

CONSTRUCTION PERMIT

Date Issued 11/3/18
Control # C-17-005042
Permit #

IDENTIFICATION Block: 670 Lot: 4 Qualifier
Work Site Location: 2770 HOOPER AVE. Brick Township, NJ
Owner in Fee KENNEDY MALL ASSOCIATES
641 SHUNPIKE RD. CHATHAM NJ 07928
Telephone:
Contractor BH SECURITIES
Address 10 PROGRESS ST. UNION NJ 07083
Telephone: (908) 277-0070
Lic. No. or Bldrs. Reg. No. P00841 P00841 P00841
Federal Employee. No.

Is hereby granted permission to perform the following work:

- ☐ BUILDING
- ☐ PLUMBING
- ☐ LEAD HAZARD ABATEMENT
- ☑ ELECTRICAL
- ☑ FIRE PROTECTION
- ☐ DEMOLITION
- ☐ ELEVATOR DEVICES
- ☐ ASBESTOS ABATEMENT (Subchapter 8 only)
- ☐ OTHER

DESCRIPTION OF WORK:
ALARM SYSTEM (BURGLAR OR FIRE) - RIVERWALK ...LANDLORD UTILITY ROOM

Note: If construction does not commence within one (1) year of date of issuance, or if construction ceases for a period of six (6) months, this permit is void.

Estimated Cost of Work $200

D. Huffman Jr. HP 11/20/17
Construction Official Date

PAYMENTS (Office Use Only)

Building	$0
Electrical	$150
Plumbing	$0
Fire Protection	$116
Elevator Devices	$0
Other	$0.00
DCA Training Fee	$1
CO Fee	
Other	$0
Total	$267
Check No.	30179
Cash	$0
Credit	$0
Collected By	

1000 ELECTRIC $150.00
FIRE $116.00
DCA $1.00
CHECK $267.00

U.C.C. F170
equiv (rev 1/04)

1 WHITE - INSPECTOR 2 CANARY - OFFICE 3 PINK - TAX ASSESSOR 4 GOLD - APPLICANT

REQUIRED INSPECTIONS

Construction work must be inspected in accordance with the State Uniform Construction Code Regulations N.J.A.C. 5:23-2.18. This agency will carry out such periodic inspections during the progress of work as are necessary to insure that the work installed conforms with the requirements of the Uniform Construction Code.

The owner or other responsible person in charge of work must notify this agency when work is ready for any required inspections specified below. Requests for inspections must be made at least 24 hours prior to the time the inspection is desired. Inspections will be performed within three business days of the time for which they are requested. The work must not proceed in a manner which will preclude the inspection until it has been made and approval granted.

☑ Required inspections for all subcodes for one- and two-family dwellings are as follows:

1. The bottom of footing trenches before placement of footings, except that in cases of pile foundations, inspections shall be made in accordance with the requirements of the building subcode.
2. Foundations and all walls up to grade level prior to back filling.
3. All structural framing, connections, wall and roof sheathing and insulation; electrical rough wiring, panel and service installation; rough plumbing. The framing inspection shall take place after the rough electrical and plumbing inspections and after the installation of the heating, ventilation and /or air conditioning duct system. The insulation inspection shall be performed after all other subcode rough inspections and prior to the installation of any interior finish material.
4. Installation of all finished materials, sealings of exterior joints, plumbing piping, trim and fixtures; electrical wiring, devices and fixtures; mechanical systems equipment.

Additional required inspections for all subcodes of construction, for other than one- and two-family dwellings, are fire suppression systems, heat producing devices and Barrier Free subcode accessibility, if applicable.

☐ Required special inspections. The applicant by accepting the permit will be deemed to have consented to these requirements:

☑ A final inspection is required for each applicable subcode area before a final Certificate of Occupancy or Approval may be issued. The final inspections include the installation of all interior and exterior finish materials, sealing of exterior joints, mechanical system and other required equipment; electrical wiring, devices and fixtures; plumbing pipes, trim and fixtures; tests required by any provision of the adopted subcodes, Barrier Free accessibility, if applicable; and verification of compliance with NJAC 5:23-3.5, "Posting structures".

☐ A complete copy of released plans must be kept on the job site.

If you do not understand any of this information, please ask.

ELECTRICAL SUBCODE
TECHNICAL SECTION

Date Received 1/3/18
Control #
Date Issued
Permit # 18-0020

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 670 Lot 4 Qualification Code

Work Site Location 2770 Hooper Ave (Landlocd Utility Em - next to Harbor Freight)
Bricktown NJ 08723

Owner in Fee: Kennedy Mall Associates

Tel. e-mail

Address 641 Shunpike Road (street) Chatham NJ 07928 (municipality) (zip code)

Contractor: B&H Security Tel. (908) 277-0070

Address 10 Progress Street e-mail ddeitrich@bhsecurityonline.
Union, NJ 07083

Contractor License No. P00841 Exp. Date

Home Improvement Contractor Registration No. or Exemption Reason (if applicable):

Federal Emp. ID No. 222-263-454/000 FAX: (908) 686-2513

B. ELECTRICAL CHARACTERISTICS

Use Group Present Proposed

[ ] Pole/Pad # [ ] Temporary [ ] Other

Building Occupied as Utility Co.

Est. Cost of Elec. Work $ 100

JOB SUMMARY (Office Use Only)

PLAN REVIEW

[ ] No Plans Required

[ ] Partial -Underslab Utilities Approved

Date: Approved by:

[✓] Electric Plans Approved SPECS

Date: 11/20/17 Approved by: RSC

Joint Plan Review Required:

[ ] Bldg. [ ] Plumb. [ ] Fire. [ ] Elev.

SUBCODE APPROVAL for PERMIT

Date: 11/20/17

Approved by:

SUBCODE APPROVAL for CERTIFICATE

[ ] CO [ ] CCO [ ] CA

Date:

Approved by:

INSPECTIONS Type:	Dates (Month/Day) Failure	Failure	Approval	Initial
Rough				
Barrier-Free				
Trench				
Temp. Serv.				
Constr. Serv.				
TCO				
Other				
Service				
Final				
Barrier-Free				

Temp. Cut-in-Card Date Issued

Final Cut-in-Card Date Issued

Annual Pool Inspection

Date of Grounding and Bonding Certification

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application and perform the work listed on this application.

Applicant sign/Contractor sign and seal here:

Print name here: Donna Deitrich

[X] Licensed Elec. Contractor [ ] Certif'd Landscape Irrigation Cont'r [ ] Exempt Applicant

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK:
AES Radio Communicator Install

QTY.	SIZE	ITEMS	FEE (Office Use Only)
		Lighting Fixtures	
		Receptacles	
		Switches	
		Detectors	
		Light Poles	
		Motors—Fract. HP	
		Emergency & Exit Lights	
		Communications Points	
1		Alarm Devices/P.A.C. Panel	
1		TOTAL NUMBERS	$
		Pool Permit/with UW Lights	
		Storable Pool/Spa/Hot Tub	
		KW Elec. Range/Receptacle	
		KW Oven/Surface Unit	
		KW Elec. Water Heater	
		KW Elec. Dryer/Receptacle	
		KW Dishwasher	
		HP Garbage Disposal	
		KW Central A/C Unit	
		HP/KW Space Heater/Air Handler	
		KW Baseboard Heat	
		HP Motors 1/+ HP	
		KW Transformer/Generator	
		AMP Service	
		AMP Subpanels	
		AMP Motor Control Center	
		KW Elec. Sign/Outline Light	

COMMERCIAL

Administrative Surcharge $
Minimum Fee $
State Permit Surcharge Fee $
TOTAL FEE $

U.C.C. F120 (rev. 11/09)
Internet version

Applicant: When submitting this form to your Local Construction Code Enforcement Office, please provide one original plus three photocopies.

FIRE PROTECTION SUBCODE
TECHNICAL SECTION

NEW JERSEY UNIFORM CONSTRUCTION CODE

Date Received 1/3/18
Control #
Date Issued
Permit # 18-0020

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 670 Lot 4 Qualification Code

Work Site Location 2770 Hooper Ave (Landlord Utility RM next to harbor freight)
Bricktown NJ 08723

Owner in Fee: Kennedy Mall Association

Tel. e-mail

Address 641 Shunpike Road Chatham NJ 07928
street municipality

Contractor: B&H Security Tel. (908) 277-0070
zip code

Address 10 Progress Street e-mail ddeitrich@bhsecurityonline.
Union, NJ 07083

Fire Protection Equipment, NJ Div of Fire Safety Permit No. P00841

Fire Protection Equipment, NJ Div of Fire Safety Installer No. 34FA00116300

Fire Alarm Contractor No. Exp. Date

Home Improvement Contractor Registration No. or Exemption Reason (if applicable):

Federal Emp. ID No. 222-263-454/000 FAX: (908) 686-2513

B. FIRE PROTECTION CHARACTERISTICS

Use Group: Present Proposed

Constr. Class: Present Proposed

Heating System: [ ] New OR [ ] Modification to Existing OR [ ] Conversion OR [ ] Replacement

Fuel Type: [ ] Gas [ ] Oil [ ] Electric [ ] Solar [ ] Other

Location:

Total Cost of Fire Protection Work $ 100

Fuel Storage Tank:
Fuel Type: [ ] Flammable OR [ ] Combustible
Capacity

Fire Alarm System: [ ] New OR [X] Existing
Location of Panel:

Fire Suppression/Standpipe System:
[ ] New OR [ ] Existing
Location of Main Control Valve:

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

Applicant/Contractor sign here:

Print name here: Donna Deitrich

COMMERCIAL

D. TECHNICAL SITE DATA [X] Certified Contractor [ ] Exempt Applicant

DESCRIPTION OF WORK:
Water Supply Source AES Radio Communicator
Method of Alarm/Suppression System Supervision

	NUMBER	FEE (Office Use Only) $
Flammable/Combustible Tanks		
Alarm Systems		
[X] System		
[ ] 110v Interconnected		
[ ] CO Detectors/110v		
Alarm Devices (i.e., smoke, heat, pulls, water/flow)		
Supervisory Devices (i.e., tampers, low/high air)		
Signaling Devices (i.e., horn/strobes, bells)		
Other Devices AES Radio	1	
TOTAL	1	
Suppression Systems		
Fire Pump GPM Type		
Dry Pipe/Alarm Valves		
Pre-action Valves		
Sprinkler Heads (Dry and Wet)		
Standpipes		
Pre-engineered Systems		
Wet Chemical		
Dry Chemical		
CO_2 Suppression		
Foam Suppression		
FM200 Suppression		
Other		
Other Systems		
Kitchen Hood Exhaust System		
Smoke Control System		
Fuel-Fired Appliances [ ] Gas [ ] Oil [ ] Solid		
Fireplace Venting/Metal Chimney		
Other		

Administrative Surcharge $
Minimum Fee $
State Permit Surcharge Fee $
TOTAL FEE $

JOB SUMMARY (Office Use Only)

PLAN REVIEW
[ ] *No Plans Required*
[ ] Partial -Underslab Utilities Approved
Date: Approved by:
[X] Fire Protection Plans Approved
Date: 1/17/18 Approved by:
Joint Plan Review Required:
[ ] Bldg. [ ] Elec. [ ] Plumb. [ ] Elev.

SUBCODE APPROVAL for PERMIT
Date: 1-23-18
Approved by:

SUBCODE APPROVAL for CERTIFICATE
[ ] CO [ ] CCO [ ] CA
Date:
Approved by:

INSPECTIONS Type:	Dates (Month/Day) Failure	Failure	Approval	Initial
Alarm System				
Suppression Sys.				
Standpipe				
Fire Pump				
Pre-Eng. System				
Mechanical				
Smoke Control				
TCO				
Flam/Combust Tanks				
Fireplace Venting				
Final				
Other				

U.C.C. F140 (rev. 02/11) Internet version

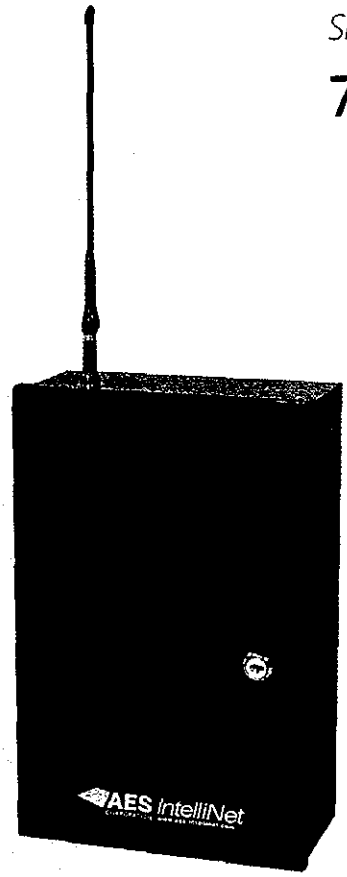
Applicant: When submitting this form to your Local Construction Code Enforcement Office, please provide one original plus three photocopies.

AES CORPORATION 40 Years of SECURITY INNOVATION

aes-corp.com

Smart Subscriber Transceivers for Commercial Fire Alarm Systems

7744F/7788F Series Fire Subscribers



Features

- AES *IntelliNet* - self forming, self-healing, highly scalable smart mesh radio networks
- Network owner-operators retain virtually 100% of RMR
- Never a worry of communication technology sunset as with cellular and AlarmNet
- Each Smart Subscriber has multiple paths to a central monitoring station
- Option to transmit full data from Fire Alarm Control Panel (FACP) digital dialer to AES-*MultiNet* receiver
- Each subscriber acts as transmitter/receiver/repeater
- Simple and fast activation on AES-*IntelliNet* network

Benefits

- Most stable and profitable fire alarm communication technology
- Meets UL 864 Commercial Fire Alarm requirements for primary standalone communication
- Ideal drop-in full-function replacement for phone lines
- Universal wireless Smart Subscriber Transceivers support all new and legacy FACPs

Advanced Wireless Fire Alarm Monitoring

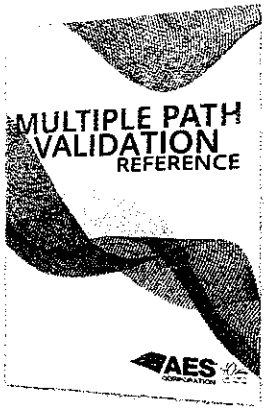
AES 7788F/7744F Series Subscribers are the ideal universal wireless communicators for any new or existing fire alarm system. AES-*IntelliNet* networks are built on AES Corporation's patented mesh radio communications technology. A Smart Subscriber at each alarm site acts as transmitter, receiver, and repeater of alarm signals within the same network. This creates a smart long-range radio network with multiple pathways between each alarm site and the central receiver. Multiple pathways mean multiple redundancies assuring the most reliable delivery of signals and compliance with the most rigorous industry standards. The AES network is self-forming, self-healing, and highly scalable meaning that it automatically adjusts to network changes to assure that signals always follow the shortest path as the network of Subscribers grows.

Highest Long-Term Stability and Profitability

In today's rapidly changing communication world, AES-*IntelliNet* remains the most stable and profitable fire alarm communication technology. With AES private wireless networks, there is never a worry of communication technology sunset as there is with every past, present, and future cellular technology and now with traditional phone lines. With AES-*IntelliNet* networks, owner-operators retain virtually 100% of the Recurring Monthly Revenue (RMR) generated from network services because signals are delivered without the need for a costly operations center or other third party as with AlarmNet-A and cellular services.

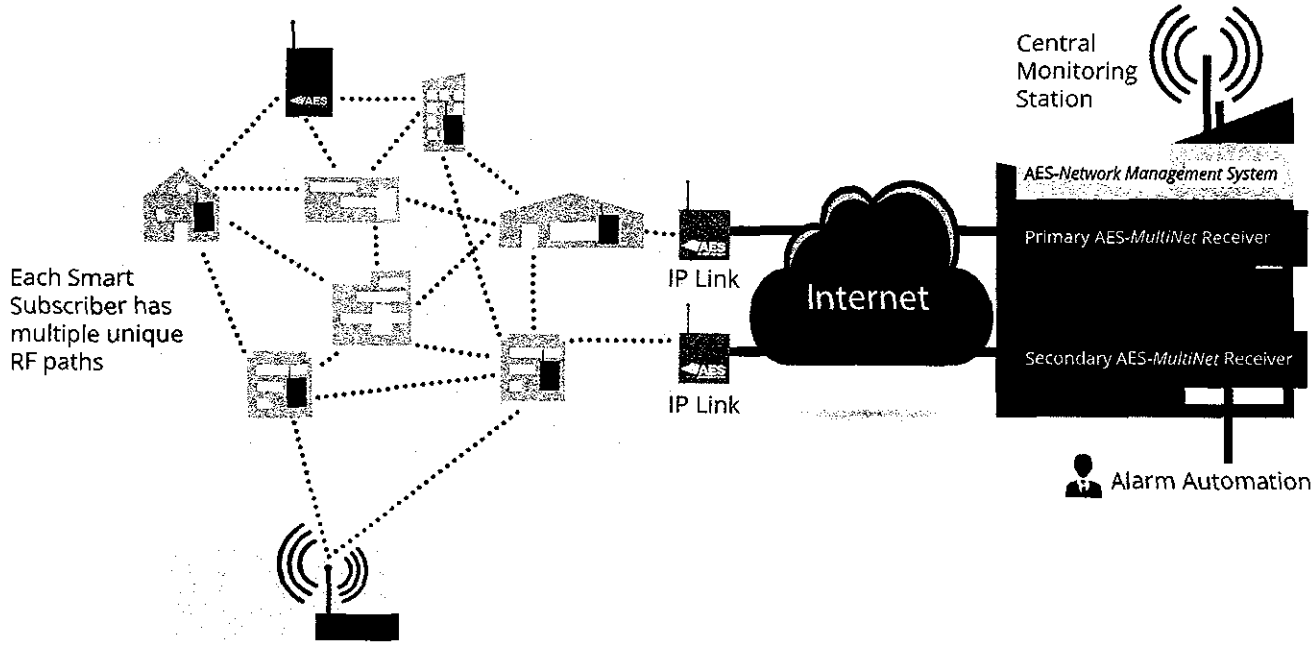
UL 864 Edition 9 Compliant – Primary Standalone Communicators

Most fire alarm communicators require either a second communication technology or a very costly service plan, as with sole path cellular communicators, in order to meet UL and NFPA requirements. With AES-*IntelliNet* communication technology, each standalone AES 7788F/7744F Subscriber provides multiple Radio Frequency (RF) pathways across the mesh radio network to the central monitoring station. To meet compliance standards, only 2 RF paths are required. Please refer to the official NFPA 72 National Fire Alarm and Signaling Code handbook, Chapter 26 (26.6.3.3.2/Technology Reference Comparison Table A.26.6.1).



Multiple RF Path Reference Guide

AES provides a Multiple Path Validation Reference guide detailing how to easily validate multiple RF paths at each AES 7788F/7744F Series Fire Subscriber. The guide also provides a complete listing of the codes and standards to which AES-*IntelliNet* products have been tested. To assist Authorities Having Jurisdiction (AHJs) with the fire alarm inspection process, the guide and other valuable installer tools are available for download from the company website (http://aes-corp.com/products/fire/fire-marshal-resources/).



Multiple RF Path Reference Guide

Each Smart Subscriber acts as transmitter, receiver, and repeater creating a smart long range radio network with multiple pathways and multiple redundancies. The AES network is self-forming, self-healing, highly scalable and assures that signals follow the shortest path as the network expands.

Cost Free Supervised Operation

AES Subscribers offer fully-supervised operation that includes monitoring of primary and back-up operating power as well as the radio connection to the AES-*IntelliNet* network. Each Subscriber performs "Check-ins" with the AES central station receiver at least once every 24 hours which complies with the UL 864 standard for commercial fire alarm communications. The supervision Check-in time can be set to as often as needed for the application. Because the central station owns and operates the long-range wireless network, there is no cost for air time to transmit supervisory signals. This is very different than any cellular alternative which requires a very aggressive supervision Check-in schedule in order to comply with UL 864 listing at a significant monthly cost for service that reduces RMR profit.

> There is no cost for air time to transmit supervisory signals.

Full Data Module Option - Ideal replacement for Phone Lines

AES Subscribers transmit consolidated alarm, trouble, and supervisory signals triggered by a FACP output relay and/or, with an integrated AES-*IntelliPro* Fire full data module, transmit full alarm zone and event codes captured off a panel's digital communicator. Both options individually meet UL and NFPA 72 requirements. AES Fire Subscribers with built in full data module are the ideal drop-in full-function replacement for phone lines for communicating signals from both new and existing UL commercial fire alarm systems. Replacing phone lines with AES-*IntelliNet* maximizes RMR profit because, unlike with cellular technology, there are no service charges to a third party network provider.

How to Order

AES Fire Subscribers

7744F	4x4 Zone Fire Subscriber, 4 Reversing Polarity, 4 Supervised Zones, Red Enclosure
7788F	8 Zone Fire Subscriber, 8 Supervised Zones, Red Enclosure
7744F-ULP	4x4 Zone Fire Subscriber, 4 Reversing Polarity, 4 Supervised, includes 7794 AES-*IntelliPro* Fire, Red Enclosure
7788F-ULP	8 Zone Fire Subscriber, 8 Supervised Zones, includes 7794 AES-*IntelliPro* Fire, Red Enclosure
7744F-ULP-P	4x4 Zone Fire Subscriber, 4 Reversing Polarity, 4 Supervised Zones , includes 7795 AES-*IntelliPro* Fire, Red Enclosure
7788F-ULP-P	8 Zone Fire Subscriber, 8 Supervised Zones, includes 7795 AES-*IntelliPro* Fire, Red Enclosure
7744F-C-ULP	8 Zone Fire Subscriber for Canada with 7794 AES-*IntelliPro* Fire, Red Enclosure (ULC)

Add on IntelliPro Fire Modules

7794	AES-*IntelliPro* Fire Full Data Module. UL listed for supplemental communication with fire radios
7795	AES-*IntelliPro* Fire Full Data Module (7794) with 7762 Hardware Supervisory Module. UL listed for sole path and primary communication with fire radios

Hardware Supervisory Module

7762	Add on module provides power/supervision for 7794 AES-*IntelliPro* Fire module and 7740 AES local trouble annunciator. Included with AES 7795 sole path AES-*IntelliPro* Fire and AES 7742 local annunciator kit.

Technical Specifications

7794

- Transmits full data to AES receiver using Contact ID or Pulse formats
- Formats Supported: Contact ID, Pulse 3+1, Pulse 4+1, Pulse 4+2, Modem IIe, and Modem IIIa2

Input/output Connections

- AES subscriber – data and power
- Handheld/PC programming port
- POTS incoming phone line
- Phone output connection from alarm panel
- Trouble output (form C relay)

Size

4 7/8 in. x 5 in. (12.3 cm x 12.7 cm)

Power Requirements

12 VDC nominal, primary and backup power provided by the AES RF Transceiver Unit

Current Consumption

350 mA nominal

7795

P/N 40-7795 is a kit that includes 7794 module and 7762 Hardware Supervisory module. For 7794, please see Technical Specifications above.

7762

Hardware Supervisory Module

Input/output Connections

- J1 - AES 7794 (J2) or Subscriber (J1)- data and power
- Input for Subscriber J4 Output
- Input for AES 7740 Local Annunciator- data and power
- AES 7740/AES 7794 Trouble Output to Subscriber input zone

Size

2 1/2 in. x 4 15/16 in. (6.3 cm x 12.5 cm)

Power Input

12VDC nominal, power supplied from AES 7794 module or AES 7744F/7788FSubscribers

Current Consumption

40 mA average; 100 mA peak

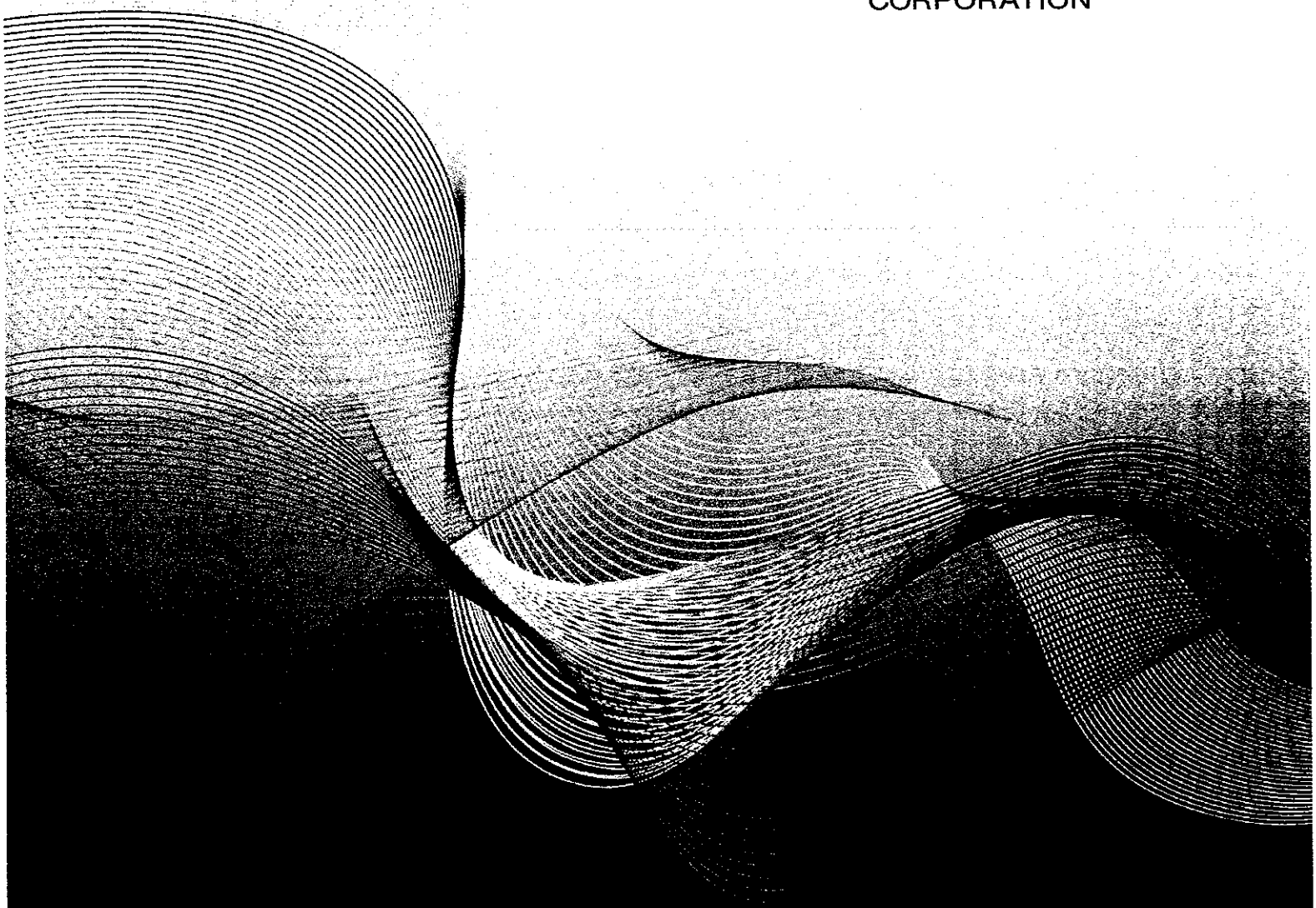
About AES Corporation

Established in 1974, AES Corporation empowers companies to grow profitable alarm monitoring businesses, and government agencies to enhance security anywhere in the world. By providing the industry's only patented operator-owned and controlled private wireless mesh networks, AES ensures superior reliability, low TCO and optimal RMR while reducing dependence on service provider infrastructures. The company's flagship AES-*IntelliNet* systems are deployed in over a half million locations worldwide.

For more information, go to or call
or contact us at

AES CORPORATION

40 Years of SECURITY INNOVATION



Authority Having Jurisdiction (AHJ)

RESOURCE GUIDE

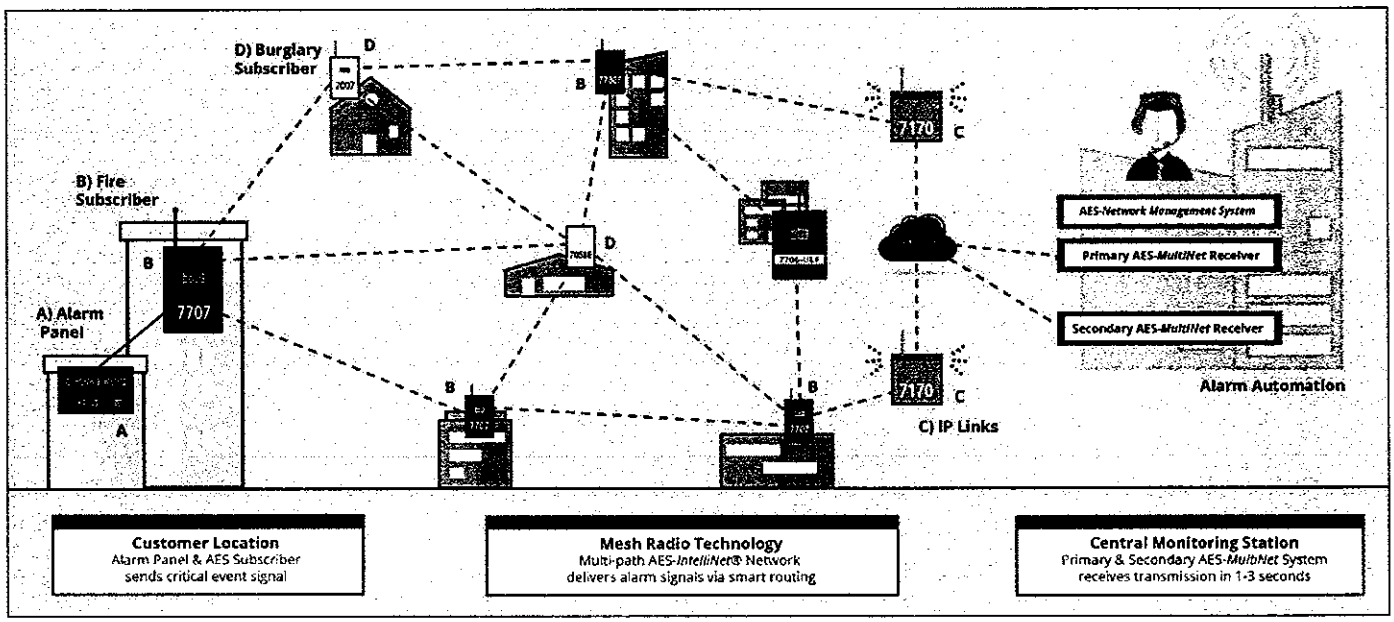
Purpose

The purpose of this document is to provide the local Authority Having Jurisdiction (AHJ) information regarding AES-*IntelliNet*® patented mesh radio technology. The AES-*IntelliNet* product line is based upon Radio Frequency (RF) technology. RF is used for the transport of alarm communications in accordance with NFPA 72 compliance guidelines. This document can be used to thoroughly understand the implementation of AES products for use as a **One-Way Private Radio Alarm System** as prescribed by NFPA 72 National Fire Alarm and Signaling Code. The applicable references in the NFPA 72 Code handbook for AES Corporation can be found under:

- **Year 2016 – 26.6.5.2/Technology Reference Comparison Table A.26.6.1**
- **Year 2013 – 26.6.3.3.2/Technology Reference Comparison Table A.26.6.1**
- **Year 2010 – 26.6.3.3.2/Technology Reference Comparison Table A.26.6.1**
- **Year 2007 – 8.6.3.5/Technology Reference Comparison Table A.8.6.1**
- **Year 2002 – 8.5.3.5/Technology Reference Comparison Table A.8.5.1**

AES-*IntelliNet* Multi-Path Private Wireless Mesh Network

AES-*IntelliNet* is a private wireless mesh radio network made up of Subscriber units each acting as a receiver, transmitter, and repeater. Each protected premise outfitted with an AES Subscriber unit is linked to the AES-*IntelliNet* network by this Subscriber unit. The network allows distant Subscriber units to use one of many other Subscriber units to relay the alarm message to the network receiver hub. Signals follow the shortest route of all the available path options at that particular moment, ensuring the fastest and most reliable alarm communications possible. An explanation of some of the technical terms commonly used is provided below.



LISTED NFPA® SIA CSAA NetOne

Technical Terms

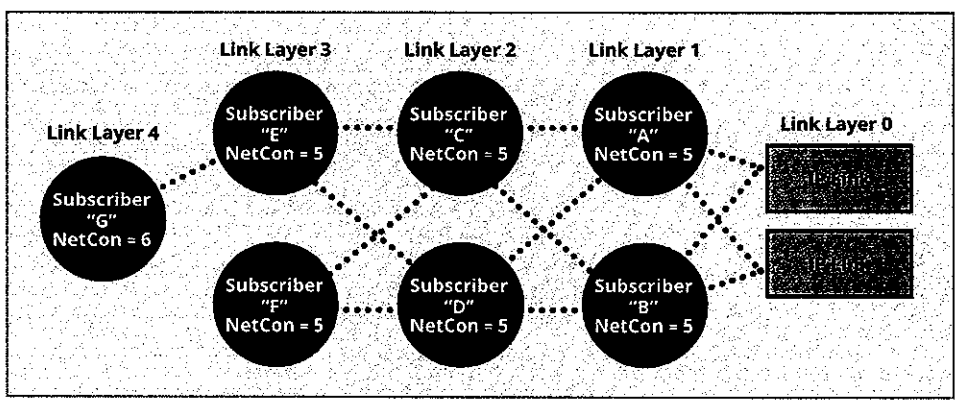
Account ID
Also referred to as the Unit ID, this is a unique four character hexadecimal code used as the identifier for Subscriber units and IP Links. When communications take place on the network, the Account ID is used to identify the unit that is communicating.

Cipher Code
This is a unique four character hexadecimal code used by all Subscriber units and IP Links on a network. The Cipher Code is similar to a password or key for a network. The Cipher Code protects communications that take place over the network. Each Subscriber unit must be programmed with a Unit ID (Account Number) AND a Cipher Code in order to communicate on the network. Once programmed, the Cipher Code cannot be viewed from the Handheld Programmer; it will always appear as X's. This is done to protect the Cipher Code from illegitimate use.

AES-*IntelliNet* Network
The AES-*IntelliNet* Network is a wireless mesh radio network, defined as a Radio Alarm System (RAS) in NFPA 72 2016 3.3.222. The mesh technology is self-healing and fault-tolerant providing no less than two transmission paths for Alarm, Supervisory, and Trouble signals from the protected premise to the supervising station.

IP Link
AES IP Links are also known as a Radio Alarm Repeater Station Receiver (RARSR), as defined in NFPA 72 3.3.220. IP Links receive Alarm, Supervisory, and Trouble signals from the mesh network and relay those signals via TCP/IP connections to the supervising station. Phone line connectivity as an optional secondary means of communications is also supported within the IP Link. Note, this is not required by NFPA or UL. To accomplish this, an active Plain Old Telephone Service (POTS) line may be connected to the Tip and Ring terminal block on the main board of the IP Link. IP Links are assigned Link Layer values of 0, as they are the termination point for RF transmissions. IP Links are also assigned a Network Connectivity (NetCon) value of 0 for the same reason. Descriptions of Link Layer and NetCon follow below.

Link Layer
The Link Layer defines the number of communication hops a Subscriber unit will take to reach an IP Link. A Link Layer of 2 indicates that there is one Subscriber unit between the reporting Subscriber unit and the IP Link. IP Links are always assigned a Link Layer of 0, as they are the last hop in the RF transmission path. The figure below depicts the Link Layer relationship:



AES-*MultiNet* Receiver
AES-*MultiNet* Receivers are also known as a Radio Alarm Supervising Station Receiver (RASSR) as defined in NFPA 72 2016 3.3.221. AES-*MultiNet* Receivers are installed in pairs (Primary and Secondary) to ensure redundancy in the event of a primary failure, satisfying the requirement of NFPA 72 2016 26.6.5.2.6(B) compliance.

Network Connectivity (NetCon)
Network Connectivity, commonly referred to as NetCon, is a unique algorithm developed by AES Corporation as a measure of transmission paths within a mesh radio network. NetCon calculations include evaluation of signal quality and Link Layer to derive a NetCon value. As described later in this document, a NetCon value of 5 indicates 2 or more viable transmission paths thus satisfying the requirement of NFPA 72 2016 26.6.5.2.1(B) compliance. The viable transmission paths may be viewed in the Routing Table.

Radio Frequency (RF)
The transmission medium used by the mesh radio network for the transmission of signals and data is often referred to as RF. AES-*IntelliNet* networks operate on federally licensed, protected, and regulated spectrum within the 450 MHz and 470 MHz bands. Network owners and operators (alarm dealers, installers, or Central Monitoring Stations) are required to obtain a Federal Communications Commission (FCC) license for operation on their own assigned frequency prior to bringing a network into service. Detailed information on the licensing process is available at **https://en.wikipedia.org/wiki/Broadcast_license**.

Radio/Transceiver
The silver box mounted within AES Subscriber units and IP Link units is also known as the transceiver. It receives and transmits RF messages exchanged between Subscriber units and IP Links. Subscriber units are also sometimes referred to as radios.

Subscriber Unit
Subscriber units are a Radio Alarm Transmitter (RAT) as defined in NFPA 72 2016 Code 3.3.223. They may also serve as a Radio Alarm Repeater Station Receiver (RARSR) as defined in NFPA 72 3.3.220. The Subscriber unit is the final unit assembly consisting of an antenna, various electronic boards and components, and the transceiver. Subscriber units are sometimes referred to as radios, but it's important to note that they are technically the transceiver.

Routing Table
The Routing Table is a record of viable transmission paths a Subscriber unit has available to it. A Routing Table itself may contain up to a maximum of 8 viable transmission paths, although the Subscriber unit may have many more than 8 transmissions paths available. These paths, or routes, are what a Subscriber unit will use when transmitting an Alarm, Supervisory, or Trouble signal to the supervising station. The Routing Table is dynamic. As conditions change, the table is modified and other paths are entered into the list. For example, when other Subscriber units encounter troubles or as the RF climate changes, the best path is always listed first.

A good path consists of the following elements:

- **The repeating Subscriber unit is at the same Link Layer or lower than that of the reporting Subscriber unit.**
- **The repeating Subscriber unit has a NetCon value of 5 or 6.**
- **The signal quality (Q) level is 02 or 03.**

The following are samples of routing tables:

1 9797 L:00 N:0 Q: Good (03)	5 6666 L:01 N:5 Q: Good (03)
2 9898 L:00 N:0 Q: Good (03)	6 8888 L:01 N:5 Q: Good (03)
3 7777 L:01 N:5 Q: Good (03)	7 4444 L:01 N:5 Q: Good (03)
4 EEEE L:01 N:5 Q: Good (02)	8 EEE1 L:01 N:5 Q: Good (03)

The routing table is read from the bottom to the top. Route 1 is the best possible route. The table is decoded as follows:

1 - Indicates routing table path # 1.
9797 – Account ID of the first Subscriber unit/IP Link in the pathway of the reporting Subscriber unit.
L:00 – A Link Layer of 0, this indicates that the reporting unit is to an IP Link. There are 0 hops from the reporting unit to the IP Link.
N:0 - Indicates the NetCon value unit the reporting Subscriber unit is transmitting to. IP Links are always a NetCon 0.
Q: Good (03) - This path has good signal quality.

Signal Quality
Signal Quality (Q Value) level is a measure of the RF signal. This measurement is used to evaluate the viability of communications between Subscriber units. The table below defines the signal quality values:

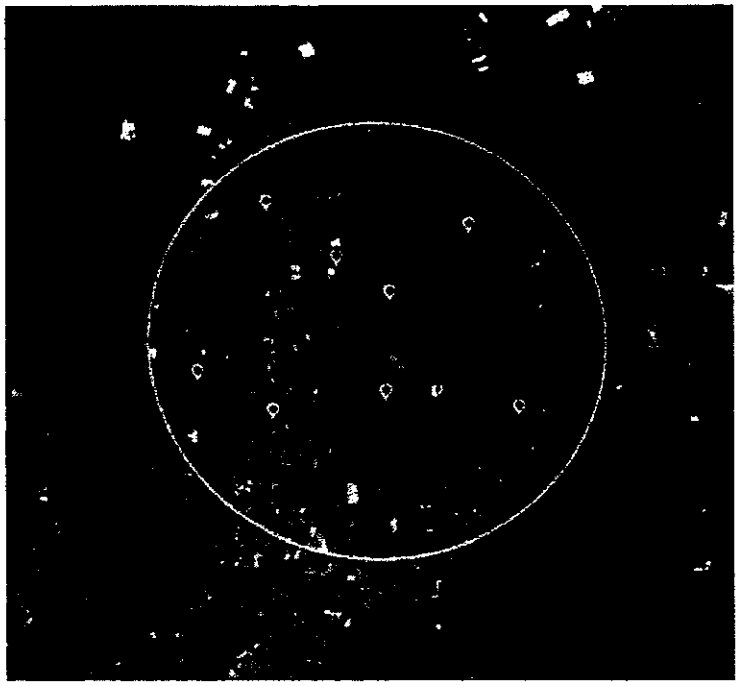
Q Value	Definition
01	Good RF signal strength, not heard in over 4 hours
02	Good RF signal strength, not heard in over 2 hours
03	Good RF signal strength, not heard recently
81	Very weak RF signal, not heard in over 4 hours
82	Carrier detection failure or weak RF signal, not heard in over 2 hours
83	Carrier detection failure or weak RF signal, not heard recently

Installation Recommendations

AES Recommended Best Practices

The following items are AES Corporation recommended Best Practices. By following these recommendations, installers will have met AES installation standards.

The AES-*IntelliNet* Network will ideally be built in expanding concentric rings, with the IP Links being at the center and the Subscriber units surrounding the IP Links. The following diagram depicts a well implemented AES-*IntelliNet* Network. In the center of the diagram, the green push pins represent the IP Links. Please note how they are positioned in the center of the rings. The red push pins represent Fire Subscriber units and the yellow push pins represent Burglary Subscriber units. The rings represent the concentric manner in which AES recommends the network be established. The green ring represents a three mile radius, this is followed by the yellow ring encompassing a six mile radius, and finally the red ring representing a nine mile radius. A network should be built within the three mile ring first, then expand to the six and nine mile rings, and grow incrementally from there. It is important to note that this diagram is only an example for reference. Actual ring radiuses are dependent upon geography, landscape, infrastructure, and antenna types. With those considerations taken into account, the rings may be as large as 10 miles and as small as one mile.



For an initial network build out, a minimum of 2 IP Links are required. The IP Links should be installed no more than 2 miles apart. The external antennas should be physically separated by at least twenty feet (20') horizontally.

The following bulleted items apply to both IP Links and Subscriber units:

- **External antenna is mounted at least 18 inches above the roof line.**
- **External antenna is at least 10 inches away from any parapet, wall, or obstruction.**
- **External antenna should have 360 degree visibility.**
- **All antennas must be plumb when mounted.**
- **External antennas must have a lightning protector installed (preferably as close to the antenna as possible).**
- **RG-58 cabling is no longer than twenty-five feet (25').**
- **RG-8 cabling is no longer seventy-five feet (75').**
- **LMR-400 (LMR-600 preferred) cabling is no longer than one-hundred twenty-five feet (125').**
- **Service Length: A little extra coax is reasonable and desirable to allow for servicing the devices attached. Typically no more than an additional 12 inches or so should be necessary. This is needed to allow movement of the cable to enable such things as connectors to be disconnected and antenna to be installed and removed for service.**
- **No Tight Bends: Coaxial cable does not tolerate being bent in a tight radius. Much as a solid pipe, the structure of the coax can kink if bent too much. As the cable is bent, the center conductor has the tendency to be pushed or driven toward the shield on the outside and away on the inside. Coax derives some of its characteristics from the distance between the center conductor and its shield. Tight bends can negatively affect those characteristics. Tight bending can permanently alter the coax such that it can never be corrected. 6 inch radius is the minimum recommended for the AES supplied RG-8 Coax.**

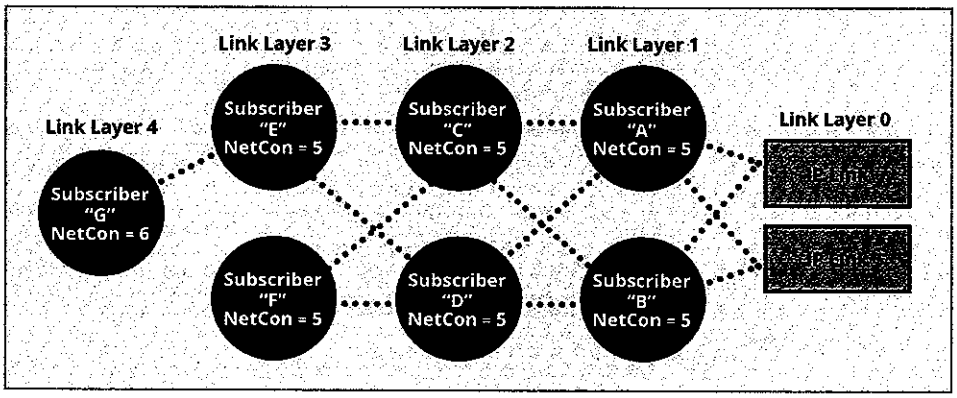
Technical Overview

Link Layer & NetCon Defined

AES Corporation utilizes a concept known as Network Connectivity (NetCon) to assess available transmission paths to Subscriber units on a network. There are three possible NetCon values that can be achieved by a Subscriber unit (see table below):

NetCon Value	Definition
7	1 weak transmission path or no available transmission paths
6	At least 1 viable transmission path
5	At least 2 viable transmission paths

A NetCon value of 5 is validation that the Subscriber unit has at least two viable transmission paths as required by NFPA 72 2016 Section 26.6.5.2.1(B). The algorithm for NetCon calculation is complex and involves measures of RF signal quality as well as Link Layer (position of a communication path relative to an available IP Link). Below is a graphical representation of mesh radio network and NetCon values for Subscriber units within that network:



In the graphic above, you can see that the IP Link is a Link Layer of 0. This will always be the Link Layer value for an IP Link. Subscriber Unit A has a Link Layer of 1 as it is 1 'hop' from the IP Link. Subscriber Unit C is a Link Layer of 2 because it is 2 'hops' away from an IP Link. This logic continues down the chain.

Focusing on Subscriber Unit G, you will note it has a NetCon of 6 as it only has 1 forward route to the IP Link. This assumes that Subscriber Unit G cannot recognize or communicate with Subscriber Unit F. Subscriber Unit E has a NetCon level of 5 because it has two communication paths, one via Subscriber Unit C and another via Subscriber Unit D. The Link Layer of Subscriber Unit G is denoted as 4 as it requires 4 'hops' to reach the IP Link.

Subscriber units poll the mesh radio network to build Routing Tables. These Routing Tables establish the best possible route for transmissions and consists of up to 8 available routes.

When a Subscriber unit has a packet to transmit, it will reference its Routing Table and selects the route at the top of the list, this is position one (the best possible route). It then transmits the packet to that route and waits for a packet acknowledgment to be returned from that route. If it is not received, in 5 to 15 seconds, the transmission is repeated to the same route. It is repeated until it has been tried seven times. After seven attempts, the failed route is removed from the list. The list is then re-sorted and transmission continues with the new route in the number one position. This continues until the packet acknowledgment is received or the table is empty. This logic is the heart of the mesh radio network's self-healing properties.

When a Subscriber unit encounters a NetCon value of 6 or 7, it is reported to the supervising station during the Subscriber unit's daily Check-In. As described in the earlier table, a NetCon value of 7 could mean there are no available communication paths. If that is the case, then the affected Subscriber unit would have a missed Check-In, this too is reported to the supervising station.

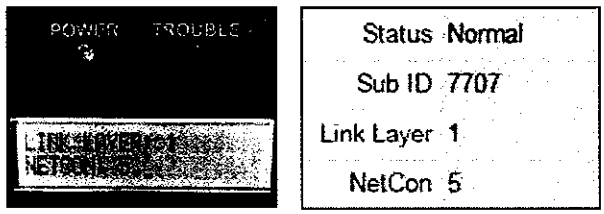
NetCon Testing

Due to the self-healing properties of the mesh radio network, it is difficult to reproduce NetCon failures within a network. This is acknowledged in NFPA 72 2016 A.26.6.5.2 which reads in part "...It is difficult to reliably test redundant paths on a mesh radio network without significant impact on the system and considerable efforts of time and personnel...".

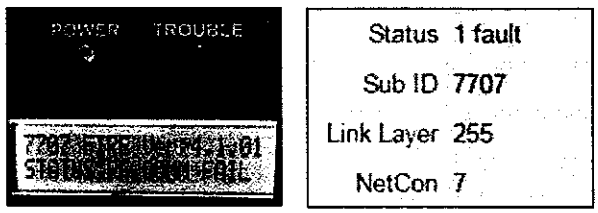
Testing NetCon failures can be conducted, however there is risk to the protected premises. In the extreme case where a failure is requested in order to validate system functionality, the Subscriber unit must be taken offline.

7707 Fire Subscriber Unit

To test a NetCon failure, begin by pressing the Menu button on the front of the unit. Press the button until you reach the screen that displays Link Layer and NetCon. Alternatively you can identify the NetCon by accessing the programming interface (see Installation and Operation Manual) and navigating to the Status section. Under normal conditions the unit will report as follows:

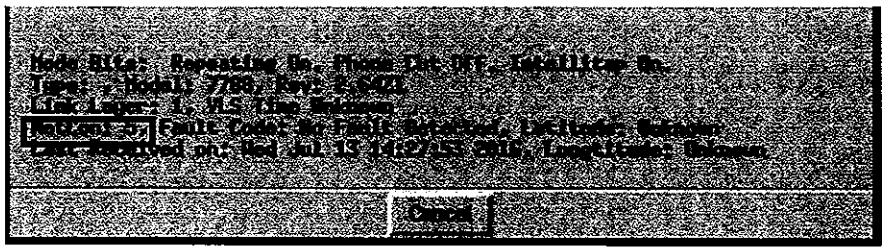


Once you have verified the NetCon value and the Routing Table, disconnect the 9 pin serial connection to the AES radio transceiver (this test is equivalent to the Subscriber unit being offline). Depending on the size of the Routing Table, it may take up to 10 minutes for all routes to be tried and discounted as not valid. After 10 minutes, press the Menu button on the front of the unit until you reach the screen that displays Link Layer and NetCon. A NetCon failure will report as follows:



7788F Fire Subscriber Unit

To test a NetCon failure, begin by connecting the AES Handheld Programmer to the Subscriber unit next, press and hold the Shift key and the F4 key (Shift+F4) or d on PC keyboard. This will provide a value for the current NetCon. Next, to display the Subscriber unit's current routing table press just F4 key (or Ctrl+T on PC keyboard). Once you have verified the NetCon value and the Routing Table, disconnect the 9 pin serial connection to the AES radio transceiver (this test is equivalent to the Subscriber unit being offline). Depending on the size of the Routing Table, it may take up to 10 minutes for all routes to be tried and discounted as not valid. After 10 minutes, press Shift+F4 and a NetCon of 7 will be displayed. Next press F4 and you will see a message indicated 'Not on Network', which means there are no available routes for communication. It is possible to remotely retrieve a Subscriber units NetCon value at the supervising station. Trained personnel will perform a "get status" on the Subscriber unit. They will be present with the following screen:



7706-ULF Integrated Fire Panel
Testing of NetCon failures can be accomplished by changing the units cipher code (see the Installation, Operation & Programming Manual) and allowing the unit to reset. After the unit has re-initialized (~3 to 5 minutes) the unit will annunciate and display "Trb-AES Comm AES PIC Trouble [1]". This identifies that the unit has lost RF communications (no viable transmission paths). By viewing the PIC status (see the Installation, Operation & Programming Manual) you can confirm the units NetCon value of 7. When testing is complete, be sure to reset the cipher code to its original value.

RF Communication Failures
NFPA 72 2016 10.14.1 requires annunciation at the protected premise within 200 seconds of an RF communications failure (trouble condition).

7707 Fire Subscriber Unit*
The annunciation of an RF communications failure can be facilitated by one of the following methods:

- **The onboard integrated annunciator. Or,**
- **If the FACP is equipped with AUX power, the power can be connected to an AES 7740 module. The AUX power common is then connected to the J4 output of the AES Subscriber unit. This will activate the 7740 annunciator. Or,**
- **Remote 7740 to J5 of the 7707.**

7788F Fire Subscriber Unit*
The annunciation of an RF communications failure can be facilitated by one of the following methods:

- **The J4 output of the AES Subscriber unit is connected to the point or zone on the FACP when a FACP equipped with an annunciator is enabled for local annunciation. Or,**
- **If the FACP is equipped with AUX power, the power can be connected to an AES 7740 module. The AUX power common is then connected to the J4 output of the AES Subscriber unit. This will activate the 7740 annunciator. Or,**
- **Using a 7762 module combined with a 7740 will offer local annunciation using power from the AES Subscriber unit. Or,**
- **Using a 7795 kit (7794 + 7762 + 7740) the AES Subscriber unit will offer primary communications with local annunciation.**

**The J4 output of the Subscriber unit should never be wired back into a reporting zone of the FACP, doing so will result in a 'looping' effect that may have a harmful impact upon the mesh network. See Technical Note #003.*

Testing of RF communication failures with local annunciation can be accomplished by disconnecting the 9 pin serial connection to the AES radio transceiver. This test is equivalent to the AES Subscriber unit being offline (there is no RF communication when the transceiver is disconnected), this is similar to pulling a phone line. There is no need to power down the Subscriber unit when performing this test, the transceiver is not in danger of being damaged as the 9 pin serial connector is the power source for the transceiver. Local annunciation will occur within 200 seconds if the RF communications is not restored.

7706-ULF Integrated Fire Monitoring System
The built in local annunciator will satisfy the requirement of NFPA 72 2016 10.14.1. Testing of RF communication failures with local annunciation can be accomplished by changing the unit's Cipher Code and allowing the unit to reset. For detailed instructions, please refer to the product Installation, Operation & Programming Manual. After the unit has re-initialized (~3 to 5 minutes), the unit will annunciate and display "Trb-AES Comm AES PIC Trouble [1]". This identifies that the unit has lost RF communications. When testing is complete, be sure to reset the Cipher Code to its original value.

Supervising station notification of RF communication failures occurs every 24 hours via a self-test function (NFPA 72 2016 Table A.26.6.1), this is similar to a phone line timer test. RF communications can be verified via automation reports detailing successful self-test completions (CID E602). Automation will provide notification when expected self-tests are missed (i.e., RF communication failures). The steps to reproduce a RF communications failure are similar to the steps mentioned above in the NetCon section and carry the same level of risk to the protected premise.

Battery Requirements

7707 Fire Subscriber Unit

The following table details AES battery recommendations for 7707 Fire Subscriber unit, along with the accompanying add-on accessory boards. The requirement of NFPA 72 2016 10.6.7.2.1 will be satisfied when using these recommendations and when the batteries are properly maintained and serviced.

System Configuration Description	Battery Size
7707, 7711 (8 zone input card)	10 Ah
7707, 7712 (8 zone input card - 4 ea. EOL and 4 ea. reverse polarity)	10 Ah
7707, 7794A (IntelliPro Fire Module), 7711 (8 zone input card)	12 Ah
7707, 7794A (IntelliPro Fire Module), 7712 (8 zone input card - 4 ea. EOL and 4 ea. reverse polarity)	12 Ah
7707, 7794A (IntelliPro Fire Module)	12Ah

The following are the current draw specifications per the related AES installation and operation manuals.

7707 – 175mA standby, 1.2A transmit
7707 – 200mA standby + charging backup battery
7707 – 1.2 A transmit (alarm) (typical transmission is 1/3 second length)
7794 – 200mA standby/transmit (alarm)

7788F Fire Subscriber unit

The following table details AES battery recommendations for fire Subscriber units, along with the accompanying add-on accessory boards. The requirement of NFPA 72 2016 10.6.7.2.1 will be satisfied when using these recommendations and when the batteries are properly maintained and serviced.

Description	Current	Battery Size Required
7788F	See 7788F Installation and Operation Manual	7.5 Ah
7788F + 7794	See 7788F & 7794 Installation and Operation Manuals	7.5 Ah
7788F + 7794 + 7762 + 7740	See 7788F, 7794 & 7762 Installation and Operation Manuals. For 7740 refer to Sec. 3.5 - Fig. 4A and Fig. 4B in this manual.	12 Ah
7788F + 7762 + 7740	See 7788F & 7762 Installation and Operation Manuals. For 7740 refer to Sec. 3.5 - Fig. 4A and Fig. 4B in this manual.	12 Ah

The following are the current draw specifications per the related AES installation and operation manuals.

7788F: 150mA standby, 1.2A transmit (alarm)
7794: 200mA standby/transmit (alarm)
7762: 30mA standby/trouble (alarm)
7740: 37mA standby, 65mA trouble (alarm)

7170 Remote IP Link Receiver

An IP Link requires a 12v 10Ah battery as a secondary power source to ensure 24 hour operation in the event of a primary power loss. The requirement of NFPA 72 2016 10.6.7.2.1 will be satisfied when using a battery of this size and when the battery is properly maintained and serviced. The IP Link has a current draw of 370mA standby and 900mA transmit (alarm).

7706-ULF Integrated Fire Monitoring System

Before selecting the battery, it is important to determine the minimum size batteries for standby and alarm times desired for each application. If the wrong batteries are installed in a specific application or incorrect current draw is used, the proper standby and minimum alarm time will not be present.

The battery circuit is rated for 8 to 18 AH batteries and will operate the panel alarm for at least 24 hours and 5 minutes. The cabinet will house up to two (2) 8 AH or two (2) 18 AH batteries.

Please use the worksheet on AES Corporation's official website to calculate the battery size and current draw required for each application: **http://aes-corp.com/wp-content/uploads/2015/10/7706-Battery-Calculator.xls**

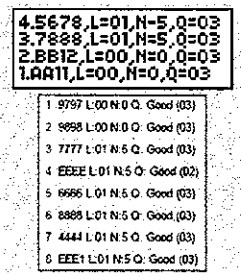
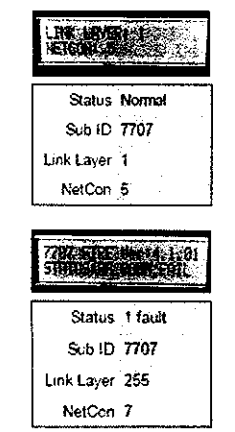
The following are the current draw specifications for the 7706-ULF per the related AES installation and operation manuals.

Mainboard (PFC-6006): 105mA standby, 160mA transmit (alarm)
Subscriber unit (7788F, 7764, & 7085UE5): 200mA standby/transmit (alarm)
LCD Remote RA-6075: 20mA standby, 25mA transmit (alarm)

NFPA 72 2016 Table A.26.6.1

Criteria	One-Way Private Radio Alarm Systems 26.6.5.2
FCC Approval when applicable	Yes
Conform to NFPA 70	Yes
Monitoring for integrity of the transmission and communications channel	Test signal from every transmitter once every 24 hours
Annunciate, at the supervising station, the degradation and restoration of transmission or communications channel	Only monitor the quality of signal received and indicate if the signal falls below minimum signal quality specified in Code
Redundant communication path where a portion of the transmission or communications channel cannot be monitored for integrity	Minimum of two independent RF paths must be simultaneously employed
Interval testing of the backup path(s)	No requirement, because the quality is continuously monitored
Annunciation of communications failure or the ability to communicate to the protected premise	Monitor the interconnection of the premise unit elements of transmitting equipment, and indicate a failure at the premise or transmit a trouble signal to the supervising station
Time to restore signal-receiving, processing, display, and recording equipment	Where duplicate equipment not provided, spare hardware required so a repair can be effected within 30 minutes
Loading capacities for system units and transmission and communications channels	512 buildings and premises on a system unit with no backup. Unlimited if you can switch to a backup in 30 seconds.
End-to-end communication time for an alarm	90% probability to receive an alarm in 90 seconds, 99% probability in 180 second, 99.999% probability in 450 seconds
Record and display rate of subsequent alarms at supervising station	When any number of subsequent alarms come in, record at a rate not slower than one every additional 10 seconds
Signal error detection and correction	Not addressed
Path sequence priority	Not addressed
Carrier diversity	Not addressed
Throughput probability	90% probability to receive an alarm in 90 seconds, 99% probability in 180 second, 99.999% probability in 450 seconds
Unique premises identifier	Yes
Unique flaws	None addressed
Signal priority	Chapter 1 fundamentals requires that alarm signals take priority over supervisory signals unless there is sufficient repetition of the alarm signal to prevent the loss of an alarm signal.
Sharing communications equipment on premises	Not addressed

Field Inspection Checklist

Test	Description	Applicable Product	NFPA 72 2016	Result (Pass/Fail)	Image/ Example	Test Instructions
Is the unit connected to a circuit that is dedicated to the fire alarm system only?	NFPA requires the primary power supply be under 'no other load'.	All	10.6.5.1.2			Visually inspect
Is the AC/DC transformer mounted within an approved enclosure?	Required for UL compliance when not connected to a UPS.	All				Visually inspect
Is the AC/DC transformer securely fastened with a screw?	Required for UL compliance when not connected to a UPS.	All				Visually inspect
Is the proper battery in place?	NFPA requirements for power supply capacity	All	10.6.7.2			Visually inspect, review battery calculations
If an external antenna is in use, is a lightning protector connected and run to ground?	NFPA requires external antennas be protected to minimize damage from static discharge and lightning.	All	26.6.2.3.2			Visually inspect
Does the Subscriber unit have a NetCon value of 5?	NFPA requires a minimum of 2 transmission paths.	7788F 7707	26.6.5.2.1(B)			7788F: Connect the AES handheld programmer and press Shift+F4 – this will provide a value for the current NetCon. 7707: Press the Menu button on the front of the unit until the Link Layer and NetCon screen is displayed. Verify the NetCon reading is a 5. This information may also be viewed via the graphical user interface.
Does the routing table contain at least 2 transmission paths?	NFPA requires a minimum of 2 transmission paths.	7788F 7707	26.6.5.2.1(B)			7788F: Connect the AES handheld programmer and press F4 - this will detail the Subscriber unit's current routing table. 7707: Press the Menu button on the front of the unit until the Routing Table is displayed. This information may also be viewed via the graphical user interface.
Successfully complete an antenna cut test (RF Failure)	NFPA requires reporting RF failure and antenna supervision.	7707	26.6.5.2.3(A) & (B)			To test an antenna cut, begin by pressing the Menu button on the front of the unit. Press the button until you reach the screen that displays Link Layer & NetCon. Alternatively you can identify the NetCon by accessing the programming interface (see Installation & Operation Manual) & navigating to the Status section. Once you have verified the NetCon value and the Routing Table, disconnect the 9 pin serial connection to the AES radio transceiver (this test is equivalent to the Subscriber unit being offline). Depending on the size of the Routing Table, it may take up to 10 minutes for all routes to be tried and discounted as not valid. After 10 minutes, press the Menu button on the front of the unit until you reach the screen that displays Link Layer & NetCon.

Test	Description	Applicable Product	NFPA 72 2016	Result (Pass/ Fail)	Image/Example	Test Instructions
Successfully complete an antenna cut test (RF Failure)	NFPA requires reporting RF failure and antenna supervision.	7788F	26.6.5.2.3(A) & (B)			To test an antenna cut, begin by disconnecting the 9 pin serial connection to the AES radio transceiver (this test is equivalent to the Subscriber unit being offline), connect the AES handheld programmer and press Shift+F4 – this will provide a value for the current NetCon. Next, press F4 – this will detail the Subscriber unit's current routing table. Depending on the size of the routing table it may take up to 10 minutes for all routes to be tried and discounted as not valid. After 10 minutes, press Shift+F4 and a NetCon of 7 will be displayed. Next press F4 and you will see a message indicated 'Not on Network', which means there are no available routes for communication.
Does the panel unit have a NetCon value of 5?	NFPA requires a minimum of 2 transmission paths.	7706-ULF	26.6.5.2.1(B)			Using the keypad, press 5 then enter. Enter the code of 1111 then enter. Press 8 then enter. Press 1 to view status where the NetCon value will be displayed.
Does the routing table contain at least 2 transmission paths?	NFPA requires a minimum of 2 transmission paths.	7706-ULF	26.6.5.2.1(B)			Using the keypad, press 5 then enter. Enter the code of 1111 then enter. Press 8 then enter. Press 2 to view the available routes. Use the arrow keys to scroll.
Successfully complete an antenna cut test (RF Failure)	NFPA requires reporting RF failure and antenna supervision.	7706-ULF	26.6.5.2.3(A) & (B)			To test an antenna cut, follow the steps detailed in the 7706-ULF Installation, Operation & Programming Manual for changing the Cipher Code and reviewing the Routing Table.
Reporting of Alarm, Supervisory, and Trouble signals.	NFPA requires reporting of Alarm, Supervisory, and Trouble signals.	All	10.8 to 10.11, 10.13 to 10.14, 10.17, 26.2.1.2, 26.2.1.3, 26.2.3, 26.2.4			Trip the related zones on the FACP, verify receipt of signals at the supervising station.
Reporting of AC failure.	NFPA requires reporting for the loss of AC power.	All	26.6.5.2.3(A)			Disconnect AC power from the Subscriber unit. Reporting will occur within 100 to 160 minutes per NFPA.

NFPA 72 2016 Code Conformance

Code Section	Requirement Satisfied
10.6 Power Supplies	Installers are responsible for adhering to this section of code to ensure the requirements are satisfied.
10.6.7.1 Secondary Power Operation	When properly sized batteries are installed, the performance of the system will not be affected when operating on secondary power.
10.6.7.2 Capacity	When installed in accordance to the AES installation manual, AES fire products conform to and satisfy the capacity requirements for secondary power supplies as specified in this code section.
10.6.9.1.1 Failure of either the primary or secondary power supply shall result in a trouble signal in accordance with Section 10.14.	Power supplies (primary and secondary) are supervised within the AES products.
10.8 Detection and Signaling of Conditions	AES fire products satisfy the applicable requirements of this section.
10.9 Responses	AES fire products satisfy the applicable requirements of this section.
10.10 Distinctive Signals	AES fire products satisfy the applicable requirements of this section.
10.11 Alarm Signals	AES fire products satisfy the applicable requirements of this section.
10.13 Supervisory Signals	AES fire products satisfy the applicable requirements of this section.
10.14 Trouble Signals	AES fire products satisfy the applicable requirements of this section.
10.17 Annunciation and Annunciation Zoning	AES fire products satisfy the applicable requirements of this section.
26.2.3 Alarm Signal Content	AES fire products satisfy the applicable requirements of this section.
26.2.4 Restoral Signals	AES fire products satisfy the applicable requirements of this section.
Table 26.6.1 Communications Methods for Supervising Stations	AES fire products satisfy the requirements associated with One-Way Private Radio Alarms Systems as detailed in the table.
26.6.2.3.1(1) & (2) Alarm system equipment and installations shall comply with the Federal Communications Commission (FCC) rules and regulations, as applicable, concerning the following: (1) Electromagnetic radiation and (2) Use of radio frequencies.	AES fire products comply with this section, radio equipment is certified with the FCC.
26.6.2.3.2 Equipment shall be installed in compliance with NFPA 70	Installers are responsible for adhering to this section of code to ensure the requirements are satisfied.
26.6.2.3.3 The external antennas of all radio transmitting and receiving equipment shall be protected in order to minimize the possibility of damage by static discharge or lightning.	Installers are responsible for adhering to this section of code to ensure the requirements are satisfied.
26.6.5.2 One-Way Private Radio Alarm Systems	AES fire products satisfy the requirements of this section.

About AES Corporation

AES Corporation is the leading manufacturer of code compliant wireless alarm communication products and solutions serving commercial security markets and government agencies worldwide. **AES-*IntelliNet*®** patented technology will never sunset, compared to obsoleting technologies such as cellular and traditional phone lines. AES private mesh radio networks are owner operated and controlled, providing infinite scalability and superior reliability with the fastest transmission speed available. Over a half million AES Smart Subscribers are installed worldwide. AES is the clear choice for life safety and security, protecting people and property for over 40 years. For more information, please visit **www.aes-corp.com**.

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11/15/17- Spoke to Donna - finding out what unit this is for. NP

11/20/17 Call con (Tracey) RFP CW