



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY
APPLICATION #: OSP - 0550 - 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: [X] New [] Renewal

Manufacturer Information

Manufacturer: CommScope

Manufacturer's Technical Representative: Van Hanson

Mailing Address: 140 Vista Centre Dr., Forest, VA USA 24551

Telephone: 434.386.5230 Email: Van.Hanson@commscope.com

Product Information

Product Name: ION-E

Product Type: Internal Communication Servers and Routers

Product Model Number: Various (See Attachment)
(List all unique product identification numbers and/or part numbers)

General Description: Unified Wireless Infrastructure Equipment. Seismic enhancements made to the test units
and modifications required to address the anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Rack Floor Mounted, Flush Wall Mounted, Ceiling Mounted (See Attachment)

Applicant Information

Applicant Company Name: SEESTudio, Inc.

Contact Person: Dan Junker, SE

Mailing Address: 1281 9th Ave. San Diego, CA 92101, Suite 1101

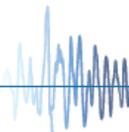
Telephone: 619.606.5058 Email: djunker@seestudioinc.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in
accordance with the California Administrative Code, 2016.

Signature of Applicant: [Handwritten Signature] Date: 02-09-18

Title: Principal Engineer Company Name: SEESTudio, Inc.

Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION**

California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: SEESstudio, Inc.

Name: Dan Junker, SE California License Number: S6178

Mailing Address: 1281 9th Ave. san Diego, CA 92101, Suite 1101

Telephone: 619.606.5058 Email: djunker@seestudioinc.com

Supports and Attachments Preapproval

- Supports and attachments are preapproved under OPM- _____
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
- Supports and attachments are not preapproved

Certification Method

- Testing in accordance with: ICC-ES AC156
- Other (Please Specify): _____

BY: Timothy J. Piland

DATE: 07/03/2018

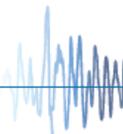
Testing Laboratory

Company Name: Environmental Testing Laboratory, Inc.

Contact Name: Brady Richard, President

Mailing Address: 11034 Indian Trail, Dallas, TX 75229

Telephone: 972-247-9657 Email: info@etldallas.com





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Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: [X] Yes [] No

Design Basis of Equipment or Components (Fp/Wp) = 1.44

Sds (Design spectral response acceleration at short period, g) = 2.00

ap (In-structure equipment or component amplification factor) = 1.0

Rp (Equipment or component response modification factor) = 2.5

Omega_0 (System overstrength factor) = 2

Ip (Importance factor) = 1.5

z/h (Height factor ratio) = 1

Equipment or Component Natural Frequencies (Hz) = See Attachment

Overall dimensions and weight (or range thereof) = See Attachment

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: [] Yes [X] No

Design Basis of Equipment or Components (V/W) =

Sds (Design spectral response acceleration at short period, g) =

Sd1 (Design spectral response acceleration at 1 second period, g) =

R (Response modification coefficient) =

Omega_0 (System overstrength factor) =

Cd (Deflection amplification factor) =

Ip (Importance factor) = 1.5

Height to Center of Gravity above base =

Equipment or Component Natural Frequencies (Hz) =

Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2015: [] Yes [X] No

List of Attachments Supporting Special Seismic Certification

[X] Test Report(s) [] Drawings [] Calculations [X] Manufacturer's Catalog

[X] Other(s) (Please Specify): SEES Certified Component Summary

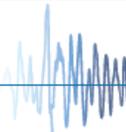
OSHPD Approval (For Office Use Only) - Approval Expires on December 31, 2022

Signature: [Signature] Date: July 3, 2018

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : Sds (g) = 2.00 z/h = 1

Condition of Approval (if applicable):



SPECIAL SEISMIC CERTIFICATION

CERTIFIED SUB-COMPONENTS
TABLE 2
MANUFACTURER: CommScope

MODEL LINE: ION-E

TABLE DESCRIPTION: Unified Wireless Infrastructure Equipment, **Sub-Components**
CONSTRUCTION SUMMARY:

Construction is specific to individual models listed below. Certified component construction shall be identical to construction of UUT's.

CERTIFICATION PARAMETERS:
Building Code: CBC 2016

Component Importance Factor: $I_p = 1.5$
 $S_{DS} = 2.0g$ at $z/h = 1.0$
OPTIONS SUMMARY:
MOUNTING SUMMARY:

 Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested. *Sub-components only certified for use in mounting condition of associated UUT.*
NOTES:

Sub-Component	Model	Model Number	Description	UUT
Optical Card, 10G, 4 SFP+ Slots	OPT	7642123-00		2,3
Copper Card, 10G, 4 Port	CAT	7633228-01		2,3
User Interface Card	SUI	7642125-00		2,3
Donor Card, 4 RF Ports, Duplex	RFD	7633229-00		2,3
UAP, 10G, Expansion Port	UAP	7642133-01		2,3
1G Card, 8 Aux Ports	AUT	7642132-00		2,3
ION-E, Outer Slot Blank Panel	BP-UNV	7688866-00		2,3
ION-E, AUT Blank Panel	BP-AUT	7688867-00		2,3
ION-E, SUI Blank Panel	BP-SUI	7688868-00		2,3
ION-E, 12 VDC Rectifier Module, AC	PSU-12V-AC	7663610-00		1
ION-E, 57 VDC Rectifier Module, AC	PSU-57V-AC	7663468-00		1
PSU Blank Panel	PSU	7694140		1
ION-E, E-POI RF Module, 4.3-10 Connectors	E-POI-RFM	7659180-01		4
ION-E, E-POI RF Module	E-POI-RFM	7761433-00		4
ION-E CDD, CPRI Digital Donor	CDD	7721916-00		2,3
ION-E UAP, External Antenna	UAP-X	7724746-00		6,8
ION-E, E-POI Interface Controller card	E-POI-IFC	7676260-01		4
Ion-E, E-POI Blank Module	E-POI Shelf	7673474-00		4
Ion-E, E-POI Blank Module	E-POI Shelf	7673474-01		4
Ion-E Fan tray	ION-E Shelf	7635468		2,3
ION-E WCS Air Filter	ION-E Shelf	7700691		2,3
UAP UL2043 Heat Shield	UAP/UAP-X	7725850-00		7,8

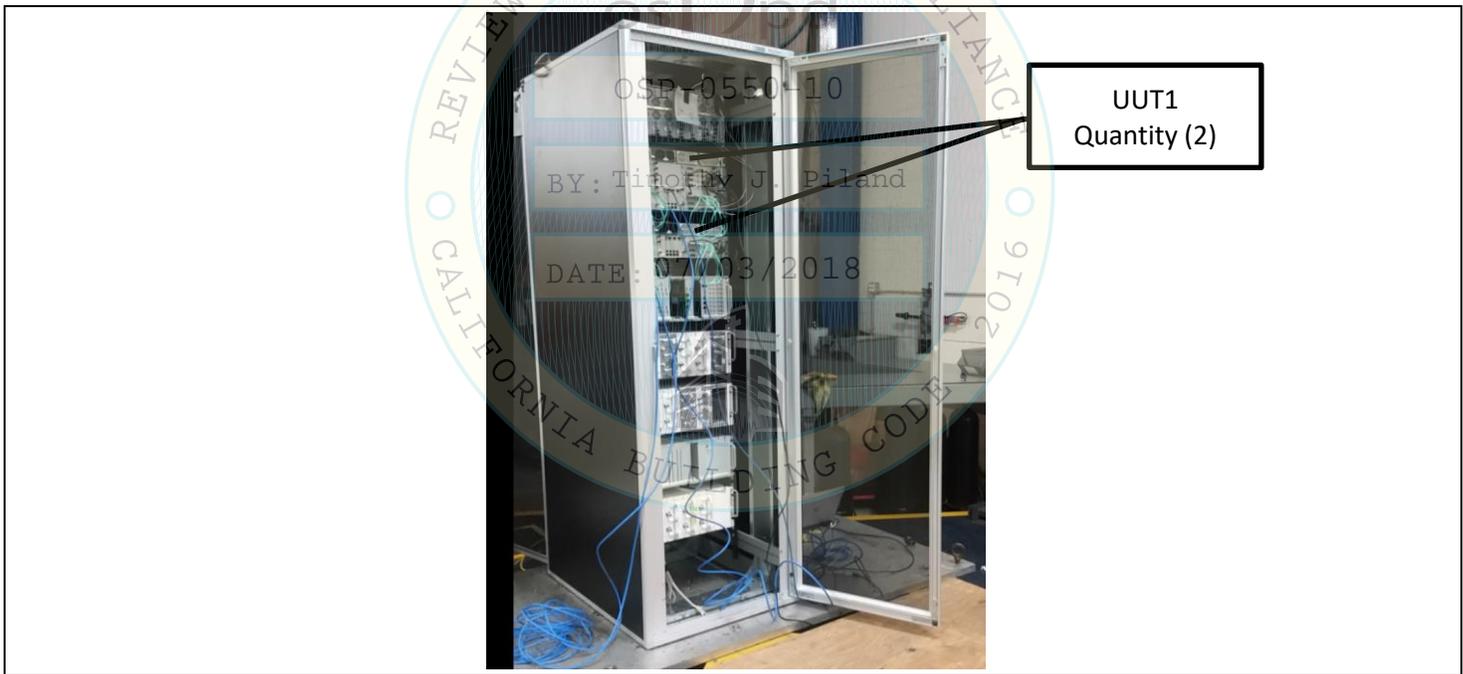
SPECIAL SEISMIC CERTIFICATION

UNIT UNDER TEST (UUT) DESCRIPTION

 UUT **1**

MANUFACTURER: CommScope
MODEL LINE: ION-E
MODEL NUMBER: PSU-SR-AC, 7693531-00

CONSTRUCTION SUMMARY:	TEST PARAMETERS:
Specific to part number.	Building Code: CBC 2016
OPTIONS SUMMARY:	Component Importance Factor: $I_p = 1.5$
ION-E, 12 VDC Rectifier Module, AC; ION-E, 57 VDC Rectifier Module, AC; PSU Blank Panel;	Test Criteria: AC-156
MOUNTING SUMMARY:	NOTES:
Rack Mounted in Chatsworth Products 11972-742 rack. Component attached to rack with NavePoint Adjustable Rack Mount Server Shelf Rails 1U model 400479234 with (4) #12-24 grade 5 pan head screws. Rack attached to shake table with (4) ½" diameter grade 5 bolts.	Contents were included in testing per operating conditions.

UUT IMAGE

UUT PROPERTIES

Dimensions (in)			Weight (lb)	Min. First Natural Frequency (Hz)		
Height	Width	Depth		F-B	S-S	Vert
1.8	19.0	19.5	25.5	5.2	7.0	23.9

UNIT MAINTAINED STRUCTURAL INTEGRITY AND REMAINED OPERATIONAL

PER MANUFACTURER REQUIREMENT WHEN SUBJECTED TO THE FOLLOWING TEST PARAMETERS

S_{Ds} (g)	z/h	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.0	1.0	3.20	2.40	1.33	0.53

SPECIAL SEISMIC CERTIFICATION

UNIT UNDER TEST (UUT) DESCRIPTION

UUT **2**

MANUFACTURER: CommScope
MODEL LINE: ION-E
MODEL NUMBER: WCS2, 7635443-00

CONSTRUCTION SUMMARY:

Specific to part number.

OPTIONS SUMMARY:

Optical Card, 10G, 4 SFP+ Slots; Copper Card, 10G, 4 Port; User Interface Card; Donor Card, 4 RF Ports, Duplex; UAP, 10G, Expansion Port; 1G Card, 8 Aux Ports; ION-E, Outer Slot Blank Panel; ION-E, AUT Blank Panel; ION-E, SUI Blank Panel; ION-E CDD, CPRI Digital Donor; Ion-E Fan tray; ION-E WCS Air Filter;

TEST PARAMETERS:

Building Code: CBC 2016
Component Importance Factor: $I_p = 1.5$
Test Criteria: AC-156

MOUNTING SUMMARY:

Rack Mounted in Chatsworth Products 11972-742 rack. Component attached to rack with NavePoint Adjustable Rack Mount Server Shelf Rails 1U model 400479234 with (4) #12-24 grade 5 pan head screws. Rack attached to shake table with (4) 1/2" diameter grade 5 bolts.

NOTES:

Contents were included in testing per operating conditions.

UUT IMAGE



UUT PROPERTIES

Dimensions (in)			Weight (lb)	First Natural Frequency (Hz)		
Height	Width	Depth		F-B	S-S	Vert
3.5	19.0	17.7	25.1	5.2	7.0	38.5

UNIT MAINTAINED STRUCTURAL INTEGRITY AND REMAINED OPERATIONAL

PER MANUFACTURER REQUIREMENT WHEN SUBJECTED TO THE FOLLOWING TEST PARAMETERS

S_{Ds} (g)	z/h	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.0	1.0	3.20	2.40	1.33	0.53

SPECIAL SEISMIC CERTIFICATION

UNIT UNDER TEST (UUT) DESCRIPTION

UUT **3**

MANUFACTURER: CommScope
MODEL LINE: ION-E
MODEL NUMBER: WCS4, 7635442-00

CONSTRUCTION SUMMARY:

Specific to part number.

OPTIONS SUMMARY:

Optical Card, 10G, 4 SFP+ Slots; Copper Card, 10G, 4 Port; User Interface Card; Donor Card, 4 RF Ports, Duplex; UAP, 10G, Expansion Port; 1G Card, 8 Aux Ports; ION-E, Outer Slot Blank Panel; ION-E, AUT Blank Panel; ION-E, SUI Blank Panel; ION-E CDD, CPRI Digital Donor; Ion-E Fan tray; ION-E WCS Air Filter;

MOUNTING SUMMARY:

Rack Mounted in Chatsworth Products 11972-742 rack. Component attached to rack with NavePoint Adjustable Rack Mount Server Shelf Rails 1U model 400479234 with (4) #12-24 grade 5 pan head screws. Rack attached to shake table with (4) ½" diameter grade 5 bolts.

TEST PARAMETERS:

Building Code: CBC 2016
Component Importance Factor: $I_p = 1.5$
Test Criteria: AC-156

NOTES:

Contents were included in testing per operating conditions.

UUT IMAGE



UUT PROPERTIES

Dimensions (in)			Weight (lb)	First Natural Frequency (Hz)		
Height	Width	Depth		F-B	S-S	Vert
7.0	19.0	17.7	39.7	5.2	7.0	23.9

UNIT MAINTAINED STRUCTURAL INTEGRITY AND REMAINED OPERATIONAL

PER MANUFACTURER REQUIREMENT WHEN SUBJECTED TO THE FOLLOWING TEST PARAMETERS

S_{Ds} (g)	z/h	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.0	1.0	3.20	2.40	1.33	0.53

SPECIAL SEISMIC CERTIFICATION

UNIT UNDER TEST (UUT) DESCRIPTION

 UUT **4**

MANUFACTURER: CommScope
MODEL LINE: ION-E
MODEL NUMBER: e-POI, 7676311-01

CONSTRUCTION SUMMARY:

Specific to part number.

OPTIONS SUMMARY:

ION-E, E-POI RF Module, 4.3-10 Connectors; ION-E, E-POI RF Module; ION-E, E-POI Interface Controller card; ION-E, E-POI Blank Module; ION-E, E-POI Blank Module;

MOUNTING SUMMARY:

Rack Mounted in Chatsworth Products 11972-742 rack. Component attached to rack with NavePoint Adjustable Rack Mount Server Shelf Rails 1U model 400479234 with (4) #12-24 grade 5 pan head screws. Rack attached to shake table with (4) ½" diameter grade 5 bolts.

TEST PARAMETERS:

Building Code: CBC 2016
Component Importance Factor: $I_p = 1.5$
Test Criteria: AC-156

NOTES:

Contents were included in testing per operating conditions.

UUT IMAGE

UUT PROPERTIES

Dimensions (in)			Weight (lb)	First Natural Frequency (Hz)		
Height	Width	Depth		F-B	S-S	Vert
7.0	19.0	15.5	118.1	5.2	7.0	38.5

UNIT MAINTAINED STRUCTURAL INTEGRITY AND REMAINED OPERATIONAL

PER MANUFACTURER REQUIREMENT WHEN SUBJECTED TO THE FOLLOWING TEST PARAMETERS

S_{Ds} (g)	z/h	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.0	1.0	3.20	2.40	1.33	0.53

SPECIAL SEISMIC CERTIFICATION

UNIT UNDER TEST (UUT) DESCRIPTION

 UUT **5,7**

MANUFACTURER: CommScope
MODEL LINE: ION-E
MODEL NUMBER: UAP, 7642133-01

CONSTRUCTION SUMMARY:

Specific to part number.

OPTIONS SUMMARY:
TEST PARAMETERS:

Building Code: CBC 2016
Component Importance Factor: $I_p = 1.5$
Test Criteria: AC-156

MOUNTING SUMMARY:

Wall Mounted, Ceiling Mounted (See below). Wall mounted with UAP Wall Mounting Kit 7683181-00. Ceiling mounted with UAP Ceiling Mounting Kit 7683182-00 to ceiling tile with (4) vertical wire hangers at each ceiling tile frame corner and (4) diagonal stay braces from each frame corner to structure at 45deg.

NOTES:

Contents were included in testing per operating conditions.

UUT IMAGE

UUT PROPERTIES

Dimensions (in)			Weight (lb)	First Natural Frequency (Hz)		
Height	Width	Depth		F-B	S-S	Vert
12.6	12.6	4.1	9.3 (Wall) 11.8 (Ceiling)	N/A	N/A	N/A

UNIT MAINTAINED STRUCTURAL INTEGRITY AND REMAINED OPERATIONAL

PER MANUFACTURER REQUIREMENT WHEN SUBJECTED TO THE FOLLOWING TEST PARAMETERS

S_{Ds} (g)	z/h	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.0	1.0	3.20	2.40	1.33	0.53

SPECIAL SEISMIC CERTIFICATION

UNIT UNDER TEST (UUT) DESCRIPTION

 UUT **6,8**

MANUFACTURER: CommScope
MODEL LINE: ION-E
MODEL NUMBER: UAP-X, 7724746-00

CONSTRUCTION SUMMARY:	TEST PARAMETERS:
Specific to part number.	Building Code: CBC 2016
OPTIONS SUMMARY:	Component Importance Factor: $I_p = 1.5$
ION-E UAP, External Antenna;	Test Criteria: AC-156
MOUNTING SUMMARY:	NOTES:
Wall Mounted, Ceiling Mounted (See below). Wall mounted with UAP Wall Mounting Kit 7683181-00. Ceiling mounted with UAP Ceiling Mounting Kit 7683182-00 to ceiling tile with (4) vertical wire hangers at each ceiling tile frame corner and (4) diagonal stay braces from each frame corner to structure at 45deg.	Contents were included in testing per operating conditions.

UUT IMAGE



UUT PROPERTIES

Dimensions (in)			Weight (lb)	First Natural Frequency (Hz)		
Height	Width	Depth		F-B	S-S	Vert
12.6	12.6	4.1	9.3 (Wall) 11.8 (Ceiling)	N/A	N/A	N/A

UNIT MAINTAINED STRUCTURAL INTEGRITY AND REMAINED OPERATIONAL

PER MANUFACTURER REQUIREMENT WHEN SUBJECTED TO THE FOLLOWING TEST PARAMETERS

S_{Ds} (g)	z/h	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.0	1.0	3.20	2.40	1.33	0.53

SPECIAL SEISMIC CERTIFICATION

RACK ASSEMBLY

MANUFACTURER: CommScope

MODEL LINE: ION-E

LOCATION OF RACK MOUNTED COMPONENTS

NOTES:

- TESTED RACK: CHATSWORTH VERTICAL CABINET FRAME, PART NUMBER 11972-972 DIM: 27.32"x39.62"x84.13". CABINET INCLUDES ALL DOORS AND ACCESSORY PANELS.
- TOTAL WEIGHT OF CABINET, CABLING, HARDWARE AND SHELVING = 411.5 LBS
- DRAWING SHOWS THE ALLOWABLE INSTALLATION LOCATIONS FOR ALL CERTIFIED PRODUCTS
- OTHER MANUFACTURER'S EQUIPMENT MAY BE INSTALLED IN THE RACK WITH THE FOLLOWING RESTRICTIONS:
 - THE OTHER EQUIPMENT IS NOT COVERED BY THIS OSP
 - MAXIMUM TOTAL WEIGHT ON RACK, INCLUDING SOLID PRODUCTS: 503 LBS
 - OVERALL CG HEIGHT AND WEIGHT MUST BE LESS THAN OR EQUAL TO THAT SHOWN BELOW
- INSTALLATION MUST ADHERE TO MINIMUM SPACING BETWEEN COMPONENTS AS SHOWN.
- ALL CERTIFIED COMPONENTS MUST BE INSTALLED USING SHELF; UP TO ONE COMPONENT CAN BE STACKED TO ONE SHELF.

