



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0294-10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: SOLiD Technologies

Manufacturer's Technical Representative: Chip Laughton

Mailing Address: 617 N. Mary Avenue, Sunnyvale, CA 94085-2907

Telephone: 408-639-0656 Email: chip.laughton@solid.com

Product Information

Product Name: Alliance, Express and Titan

Product Type: Distributed Antenna Systems

Product Model Number: See Attached Tested Product List

(List all unique product identification numbers and/or part numbers)

General Description: Rack and (Rigid and Isolated) Wall-mountable DAS (Distributed Antenna System) Components. Alliance

Multi-Carrier DAS,

Express Single-Carrier DAS and Titan High-powered (20W) DAS.

Mounting Description: Wall and Rack Mountable (see Attached Tested Product List). Certification is limited to mounting

Configurations as depicted in the Certified Product Table.

Applicant Information

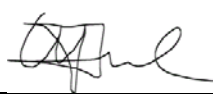
Applicant Company Name: TVP Engineering Ltd

Contact Person: Martin Turek

Mailing Address: 1656 W8th Avenue, Vancouver, BC CANADA V6T 1Z4

Telephone: 604-675-6728 Email: mturek@tvpengineering.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

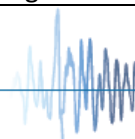
Signature of Applicant: 

Date: November 1, 2013

Title: President

Company Name: TVP Engineering Ltd.

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



osHPD



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

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

Company Name: Degenkolb Engineers

Name: Adrian Nacamuli California License Number: S4857

Mailing Address: 235 Montgomery St, San Francisco, CA 94104

Telephone: 415-392-6952 Email: anacamul@degenkolb.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): _____

Testing Laboratory

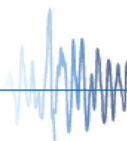
Company Name: ASET Labs

Contact Name: Peter Schmidt

Mailing Address: 1680 West Bakerview, Bellingham, WA 98226

Telephone: 360-392-2684 Email: ASETLab@alpha.com

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





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

Seismic Parameters

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

Design Basis of Equipment or Components (F_p/W_p) = 1.8

S_{DS} (Design spectral response acceleration at short period, g) = 2.45g

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

R_p (Equipment or component response modification factor) = 2.5

Ω_0 (System overstrength factor) = 2.5

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See Attached Test Summaries

Overall dimensions and weight (or range thereof) = See Attached Test Summaries

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

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

S_{DS} (Design spectral response acceleration at short period, g) = _____

S_{D1} (Design spectral response acceleration at 1 second period, g) = _____

R (Response modification coefficient) = _____

Ω_0 (System overstrength factor) = _____

C_d (Deflection amplification factor) = _____

I_p (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, 2010: Yes No

List of Attachments Supporting Special Seismic Certification

Test Report(s) Drawings Calculations Manufacturer's Catalog

Other(s) (Please Specify): Equipment and Subcomponent Summaries

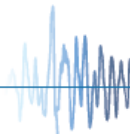
OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2019

Signature:  Date: 9/10/2014

Print Name: M. R. Karim Title: SHFR

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.45 z/h = 1.0

Condition of Approval (if applicable): _____



OSHPD Special Seismic Certification		Summary of Certified Components – Table 1			
Manufacturer: SOLiD Technologies		Product Line: Alliance		S _{DS} = 2.45g	z/h=1.0
Component Description: 19" Rack Mountable Distributed Antenna System (DAS) Components					
Component	Part Number	Weight [lbs]	Dimensions [LxWxH]	Mounting Options (see Table 5)	Testing Status [UUT No.]
Power Supply	RMP_480	7.5	7"x19"x1.75"	2-Post Rack 4-Post Rack	11 13
DAS Management System	DMS_1200	14	14.0"x16.8"x1.7"	2-Post Rack 4-Post Rack	11 13
Optical Distribution Unit Chassis (ODU)	ODU_C	12	17.7"x19"x1.75"	2-Post Rack 4-Post Rack	11 13
Base-Station Interface Unit Chassis (BIU)	BIU_C	49	17.7"x19"x8.75"	2-Post Rack 4-Post Rack	11 13
Optical Expansion Unit Chassis (OEU)	OEU_C	20.5	17.7"x19"x3.5"	2-Post Rack 4-Post Rack	11 13
Remote Optical Unit Chassis (ROU) – AC Powered	ROU_C_AC	78	10.16"x19"x20.8"	Wall 2-Post Rack 4-Post Rack	3 11 13
Remote Optical Unit Chassis (ROU) – DC Powered	ROU_C_DC	78	10.16"x19"x20.8"	Wall 2-Post Rack 4-Post Rack	Interpolated Interpolated Interpolated
Remote Optical Unit – Add-on cabinet (ROU Add-on)	ROU Add-on	24.25	10.16"x19"x6.96"	Wall 2-Post Rack 4-Post Rack	4 11 13

OSHPD Special Seismic Certification		Summary of Certified Subcomponents – Table 1.1			
Manufacturer: SOLiD Technologies		Product Line: Alliance		S _{DS} = 2.45g	z/h=1.0
Subcomponent Description: Cellular Cards and Communications Modules					
Subcomponent	Part Number	Weight [lbs]	Dimensions [LxWxH]	Mounting	Testing Status [UUT No.]
4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"	Internal to ODU	11, 13
1 Port Optical Module	ODU_OM_1	3.52	11.8"x5.6"x1.1"	Internal to ODU	Interpolated
1900MHz	MDBU_1900P	6.82	10.96"x1.57"x5.5"	Internal to BIU	11, 13
700MHz LTE FB MIMO	MDBU_700LTE_M	7.04	10.96"x1.57"x5.5"	Internal to BIU	11, 13
700MHz LTE FB SISO	MDBU_700LTE_S	6.82	10.96"x1.57"x5.5"	Internal to BIU	11, 13
800MHz & 900MHz	MDBU_800PS_900I_PA	6.82	10.96"x1.57"x5.5"	Internal to BIU	11, 13
850MHz & 700MHz LTE Upper C	MDBU_850C_700LTE	7.04	10.96"x1.57"x5.5"	Internal to BIU	Interpolated
850MHz & 700MHz PS	MDBU_850C_700PS	7.04	10.96"x1.57"x5.5"	Internal to BIU	11, 13
850MHz & 700MHz FB	MDBU_850C_700FB	7.04	10.96"x1.57"x5.5"	Internal to BIU	11, 13
2100MHz	MDBU_AWS	6.82	10.96"x1.57"x5.5"	Internal to BIU	11, 13
4 Port Optical Module	OEU_OM_4	3.52	11.8"x5.6"x1.1"	Internal to OEU	11, 13
1 Port Optical Module	OEU_OM_1	3.52	11.8"x5.6"x1.1"	Internal to OEU	Interpolated
150MHz VHF & 450MHz UHF Amplifier Module	RDU_150_450	5.72	5.5"x2.32"x14.88"	Internal to OEU	4
1900MHz & 2100/1700MHz AWS Amplifier Module	RDU_1900P_AWS	6.16	5.5"x2.32"x14.88"	Internal to ROU	3, 11
700MHz LTE FB MIMO Amplifier Module	RDU_700LTE_M	6.38	5.5"x2.32"x17.7"	Internal to ROU	Interpolated
700MHz LTE FB SISO Amplifier Module	RDU_700LTE_S	5.94	5.5"x2.32"x17.7"	Internal to ROU	Interpolated
800MHz Amplifier Module	RDU_800PS	5.94	5.5"x2.32"x17.7"	Internal to ROU	Interpolated
800MHz & 900MHz Amplifier Module	RDU_800PS_900I_PA	7.48	5.5"x2.32"x17.7"	Internal to ROU	3
850MHz Amplifier Module	RDU_850C	5.94	5.5"x2.32"x17.7"	Internal to ROU	Interpolated
850MHz & 700MHz Full Band Amplifier Module	RDU_850C_700FB	7.59	5.5"x2.32"x17.7"	Internal to ROU	Interpolated
850MHz & 700MHz LTE Upper Band Amplifier Module	RDU_850C_700LTE	7.59	5.5"x2.32"x17.7"	Internal to ROU	Interpolated
850MHz & 700MHz Public Safety Amplifier Module	RDU_850C_700PS	7.59	5.5"x2.32"x17.7"	Internal to ROU	3, 11
380MHz VHF & UHF Amplifier Module	RDU_E_VHF_UHF	7.59	5.5"x2.32"x17.7"	Internal to ROU	Interpolated

OSHPD Special Seismic Certification		Summary of Certified Components – Table 2			
Manufacturer: SOLiD Technologies		Product Line: Express		S _{DS} = 2.45g	z/h=1.0
Component Description: 19" Rack Mountable Distributed Antenna System (DAS) Components					
Component	Part Number	Weight [lbs]	Dimensions [LxWxH]	Mounting Options (see Table 5)	Testing Status [UUT No.]
Power Supply	SC_RMP_480	7.5	7"x19"x1.75"	2-Post Rack 4-Post Rack	Interpolated Interpolated
DAS Management System	DMS_600	14	14.0"x16.8"x1.7"	2-Post Rack 4-Post Rack	12 14
DAS Management System	DMS_700	14	14.0"x16.8"x1.7"	2-Post Rack 4-Post Rack	Interpolated Interpolated
Optical Distribution Unit Chassis (ODU)	SC_ODU_C	5.5	17.7"x19"x1.75"	2-Post Rack 4-Post Rack	12 14
Base-Station Interface Unit Chassis (BIU)	SC_BIU_C	57.65 (MIMO Configuration) 40.2 (SISO Configuration)	19"x8.75"x17.7"	2-Post Rack 4-Post Rack	12 14
Optical Expansion Unit Chassis (OEU)	SC_OEU_C	13.5	17.7"x19"x3.5"	2-Post Rack 4-Post Rack	12 14

OSHPD Special Seismic Certification		Summary of Certified Subcomponents – Table 2.1			
Manufacturer: SOLiD Technologies		Product Line: Express		S _{DS} = 2.45g	z/h=1.0
Subcomponent Description: Cellular Cards and Communications Modules					
Subcomponent	Part Number	Weight [lbs]	Dimensions [LxWxH]	Mounting	Testing Status [UUT No.]
4 Port Optical Module	SC_ODU_OM_4	3.9	11.8"x6.6"x1.3"	Internal to ODU	12, 14
700MHz LTE & 2100MHz Input Module	SC_MDBU_700LTE_2100	6.6	11.2"x2.2"x8"	Internal to BIU	12 14
850MHz & 1900MHz Input Module	SC_MDBU_850_1900	6.6	11.2"x2.2"x8"	Internal to BIU	12 14
700MHz PS & 800MHz Input Module	SC_MDBU_700_800	6.6	11.2"x2.2"x8"	Internal to BIU	12 14
800MHz & 900MHz Input Module	SC_MDBU_800_900	6.6	11.2"x2.2"x8"	Internal to BIU	12 14
1900MHz Input Module	SC_MDBU_1900	6.6	11.2"x2.2"x8"	Internal to BIU	12 14
MCDU Combiner Module	SC_MCDU	6.6	11.2"x1.9"x8"	Internal to BIU	Interpolated
4 Port Optical Module	SC_OEU_OM_4	3.9	11.8"x6.6"x1.3"	Internal to OEU	12, 14

OSHPD Special Seismic Certification		Summary of Certified Components – Table 3			
Manufacturer: SOLiD Technologies		Product Line: Express (MRU/ARU)		S _{DS} = 2.45g	z/h=1.0
Component Description: Main Remote Units and Add-on Remote Units – Wall and Rack Mountable					
Component	Part Number	Weight [lbs]	Dimensions [LxWxH]	Mounting Options (see Table 5)	Testing Status [UT No.]
850MHz & 1900MHz Main Remote Unit	MRU_AC_850_1900	15	7.9"x11.8"x4.5"	Wall 2-Post Rack 4-Post Rack	4 12 14
1900MHz Main Remote Unit	MRU_AC_1900/MRU_DC_1900	15	7.9"x11.8"x4.5"	Wall/2-Post/4-Post Rack	Interpolated
1900MHz Main Remote Unit – NEMA Enclosure	MRU_AC_1900_N/MRU_DC_1900_N	15	7.9"x11.8"x4.5"	Wall/2-Post/4-Post Rack	Interpolated
700MHz LTE & 2100MHz Main Remote Unit	MRU_AC_700_2100/MRU_DC_700_2100	15	7.9"x11.8"x4.5"	Wall/2-Post/4-Post Rack	Interpolated
700MHz LTE & 2100MHz Main Remote Unit – NEMA Enclosure	MRU_AC_700_2100N/MRU_DC_700_2100N	15	7.9"x11.8"x4.5"	Wall/2-Post/4-Post Rack	Interpolated
700MHz PS & 800MHz Main Remote Unit	MRU_AC_700_800/MRU_DC_700_800	15	7.9"x11.8"x4.5"	Wall/2-Post/4-Post Rack	Interpolated
700MHz PS & 800MHz Main Remote Unit – NEMA Enclosure	MRU_AC_700_800_N/MRU_DC_700_800_N	15	7.9"x11.8"x4.5"	Wall/2-Post/4-Post Rack	Interpolated
850MHz & 1900MHz Main Remote Unit	MRU_DC_850_1900	15	7.9"x11.8"x4.5"	Wall/2-Post/4-Post Rack	Interpolated
850MHz & 1900MHz Main Remote Unit – NEMA Enclosure	MRU_AC_850_1900_N/MRU_DC_850_1900_N	15	7.9"x11.8"x4.5"	Wall/2-Post/4-Post Rack	Interpolated
700MHz & 2100MHz Main Remote Unit	MRU_AC_2100_700/MRU_DC_2100_700	15	7.9"x11.8"x4.5"	Wall/2-Post/4-Post Rack	Interpolated
700MHz & 2100MHz Main Remote Unit – NEMA Enclosure	MRU_AC_2100_700_N/MRU_DC_2100_700_N	15	7.9"x11.8"x4.5"	Wall/2-Post/4-Post Rack	Interpolated
1900MHz & 2100MHz Main Remote Unit	MRU_AC_1900_2100/MRU_DC_1900_2100	15	7.9"x11.8"x4.5"	Wall/2-Post/4-Post Rack	Interpolated
1900MHz & 2100MHz Main Remote Unit – NEMA Enclosure	MRU_AC_1900_2100_N/MRU_DC_1900_2100_N	15	7.9"x11.8"x4.5"	Wall/2-Post/4-Post Rack	Interpolated
700MHz LTE & 2100 MHz Add-on Remote Unit	ARU_AC_700LTE_2100	15	7.9"x11.8"x4.5"	Wall 2-Post Rack 4-Post Rack	4 12 14
700MHz LTE & 2100 MHz Add-on Remote Unit	ARU_DC_700LTE_2100	15	7.9"x11.8"x4.5"	Wall/2-Post/4-Post Rack	Interpolated
700MHz LTE & 2100 MHz Add-on Remote Unit – NEMA Enclosure	ARU_AC_700LTE_2100_N/ ARU_DC_700LTE_2100_N	15	7.9"x11.8"x4.5"	Wall/2-Post/4-Post Rack	Interpolated
800MHz & 900MHz Add-on Remote Unit	ARU_AC_800_900/ARU_DC_800_900	15	7.9"x11.8"x4.5"	Wall/2-Post/4-Post Rack	Interpolated
800MHz & 900MHz Add-on Remote Unit – NEMA Enclosure	ARU_AC_800_900_N/ARU_DC_800_900_N	15	7.9"x11.8"x4.5"	Wall/2-Post/4-Post Rack	Interpolated
700MHz PS & 800MHz Add-on Remote Unit	ARU_AC_700_800/ARU_DC_700_800	15	7.9"x11.8"x4.5"	Wall/2-Post/4-Post Rack	Interpolated
700MHz PS & 800MHz Add-on Remote Unit – NEMA Enclosure	ARU_AC_700_800_N/ARU_DC_700_800_N	15	7.9"x11.8"x4.5"	Wall/2-Post/4-Post Rack	Interpolated
Horizontal Enclosure	SC_RM19	8	17.7"x19"x8.75"	2-Post Rack 4-Post Rack	12 14

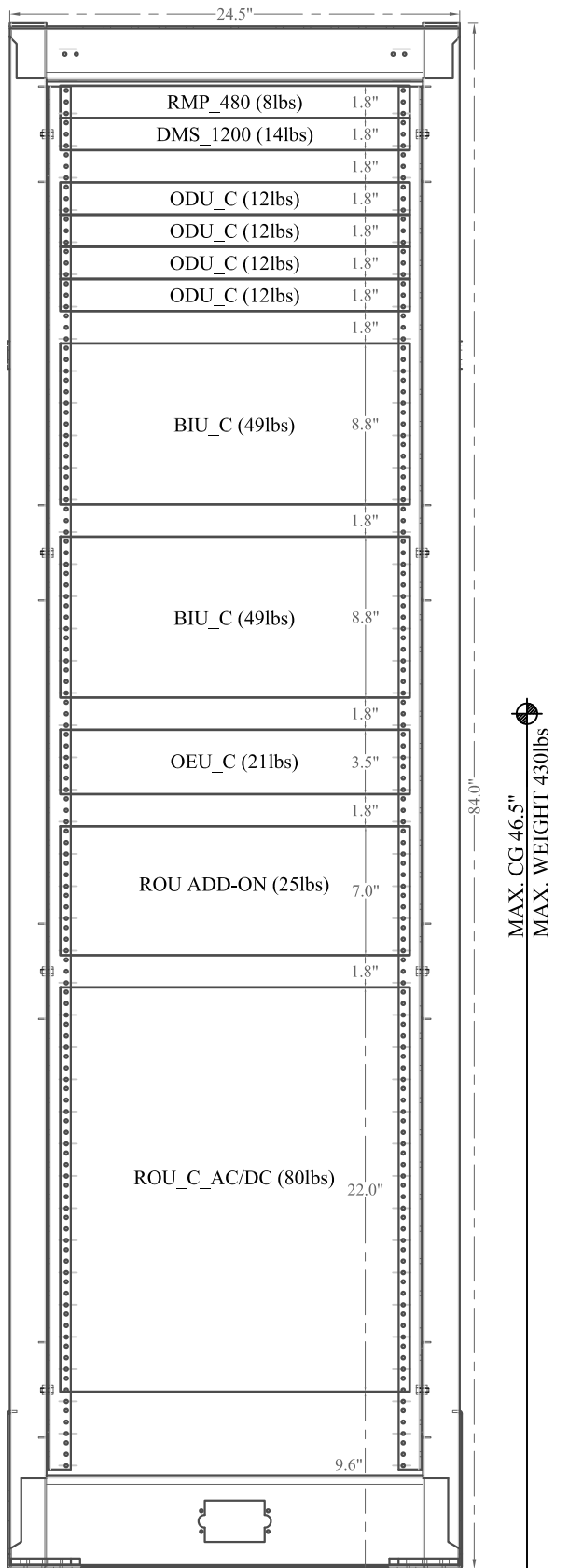
OSHPD Special Seismic Certification		Summary of Certified Components – Table 4			
Manufacturer: SOLiD Technologies		Product Line: Titan		$S_{DS} = 2.45g$	$z/h=1.0$
Component Description: Wall Mountable High-Powered Distributed Antenna (DAS) Systems					
Component	Part Number	Weight [lbs]	Dimensions [LxWxH]	Mounting Options (see Table 5)	Testing Status [UUT No.]
High-Powered Main Remote Unit (HMRU)	T_MRU (HMRU)	61.75	14Wx27.5Hx11D	Wall	7
High-Powered Add-on Remote Unit (HARU)	T_ARU (HARU)	59.5	14Wx27.5Hx11D	Wall	8

OSHPD Special Seismic Certification		Summary of Certified Subcomponents – Table 4.1			
Manufacturer: SOLiD Technologies		Product Line: Titan		$S_{DS} = 2.45g$	$z/h=1.0$
Subcomponent Description: Cellular Cards and Communications Modules					
Subcomponent	Part Number	Weight [lbs]	Dimensions [LxWxH]	Mounting	Testing Status [UUT No.]
1900PCS	T_RDU_1900	15.4	4.4"x6.4"x12.2"	Internal to HMRU	Interpolated
AWS	T_RDU_2100	13.2	4.4"x6.4"x12.2"	Internal to HMRU	Interpolated
700LTE	T_RDU_700LTE	15.4	4.7"x12.2"x6.4"	Internal to HMRU	Interpolated
700PS	T_RDU_700PS	15.4	5.2"x12.2"x6.4"	Internal to HMRU	Interpolated
800I/PS	T_RDU_800	14.3	5.1"x12.2"x6.4"	Internal to HMRU	7
850 Cellular	T_RDU_850	13.2	4.6"x12.2"x6.4"	Internal to HMRU	7
900IDEN	T_RDU_900	14.3	4.8"x12.2"x6.4"	Internal to HMRU	7
1900PCS	T_RDU_1900	15.4	4.4"x6.4"x12.2"	Internal to HARU	8
AWS	T_RDU_2100	13.2	4.4"x6.4"x12.2"	Internal to HARU	8
700LTE	T_RDU_700LTE	15.4	4.7"x12.2"x6.4"	Internal to HARU	Interpolated
700PS	T_RDU_700PS	15.4	5.2"x12.2"x6.4"	Internal to HARU	Interpolated
800I/PS	T_RDU_800	14.3	5.1"x12.2"x6.4"	Internal to HARU	Interpolated
850 Cellular	T_RDU_850	13.2	4.6"x12.2"x6.4"	Internal to HARU	Interpolated
900IDEN	T_RDU_900	14.3	4.8"x12.2"x6.4"	Internal to HARU	Interpolated

OSHPD Special Seismic Certification		Summary of Racks Included in OSP – Table 5		
Manufacturer: Cooper B-Line		$S_{DS} = 2.45g$		$z/h=1.0$
Component Description: 19" Racks Tested				
Rack	Model/ Description	Part Number	Dimensions	Weight [lb]
4-Post Rack	E2Z4 Vertical Cabinet Frame	E2Z4F0842424	24"x24"x83-1/4"	255
2-Post Rack	Two-Post Seismic Relay Rack	SB85219084	24-3/4" x 84"	130

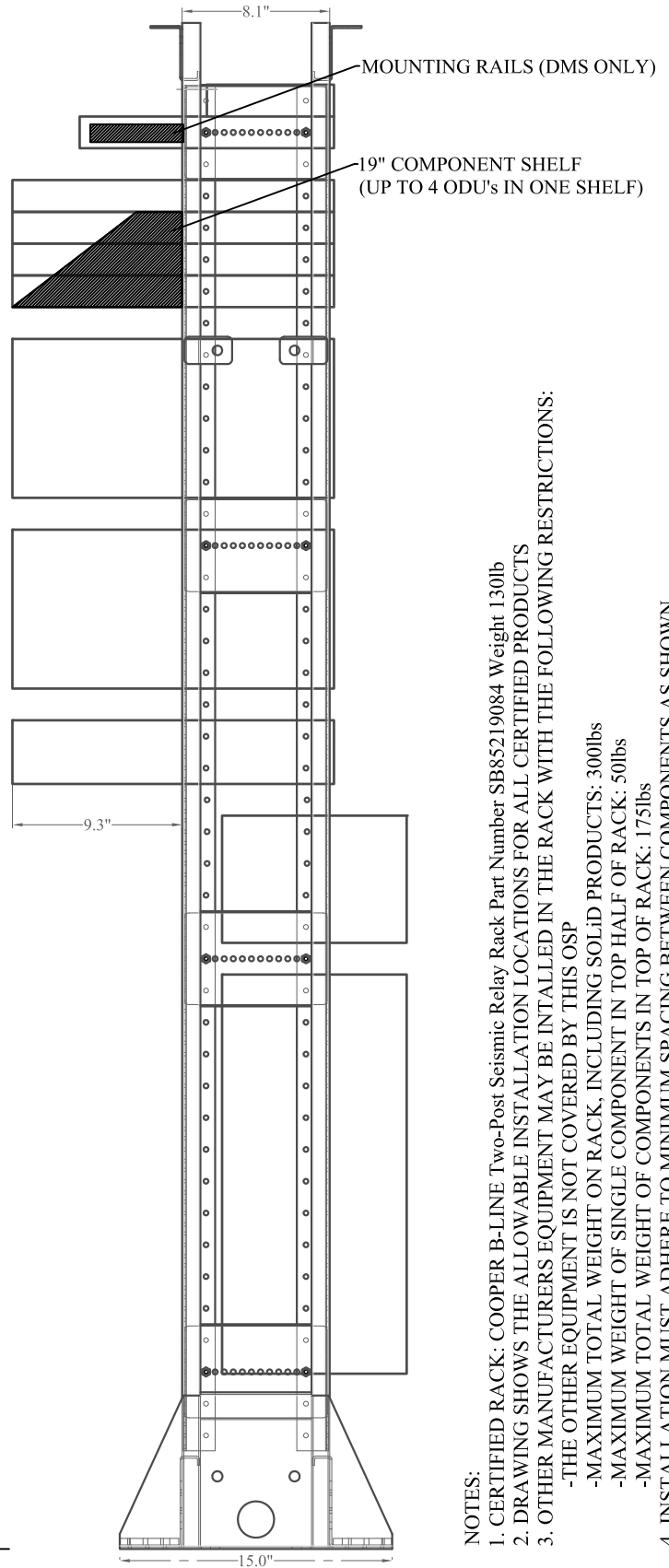
Note: The OSP applies to the racks listed in Table 5 only for use with the SOLiD components listed in Tables 1, 2 and 3, and only in the configurations as per attached drawings on Pages 8 to 11 of this application. Components must be installed according to those drawings and included notes.

ALLIANCE PRODUCT INSTALL LOCATIONS - 2-POST RACK



FRONT VIEW

MAX. CG 46.5"
MAX. WEIGHT 430lbs

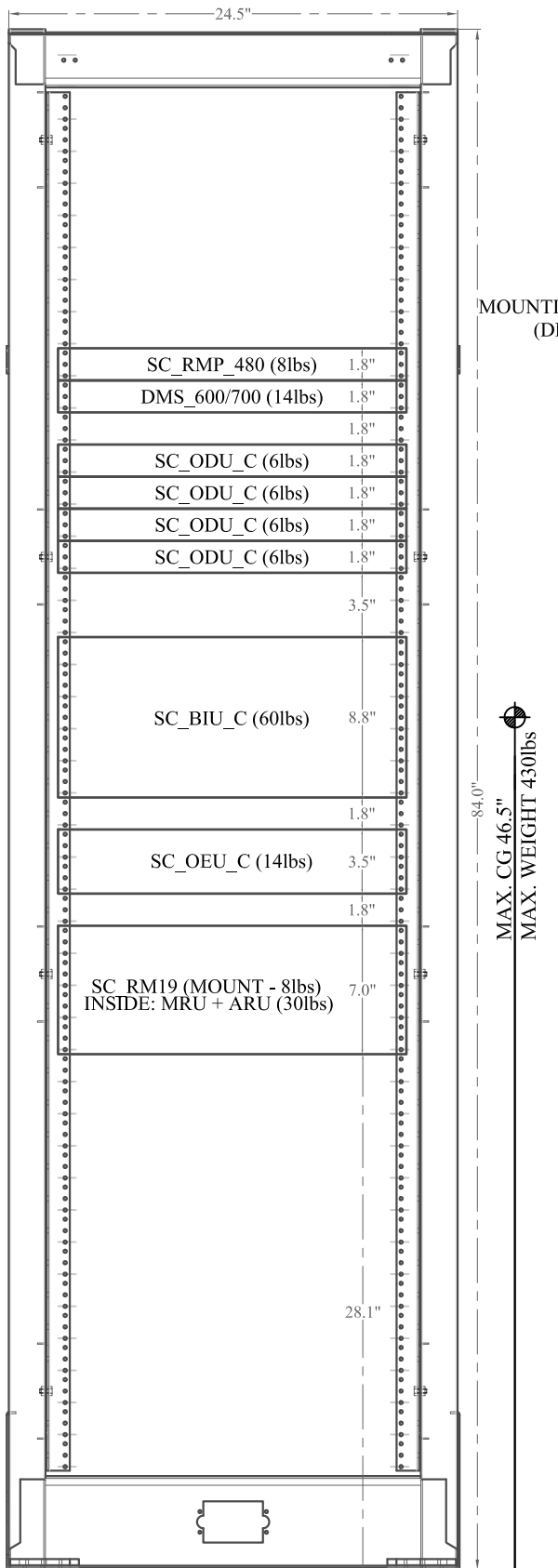


SIDE VIEW

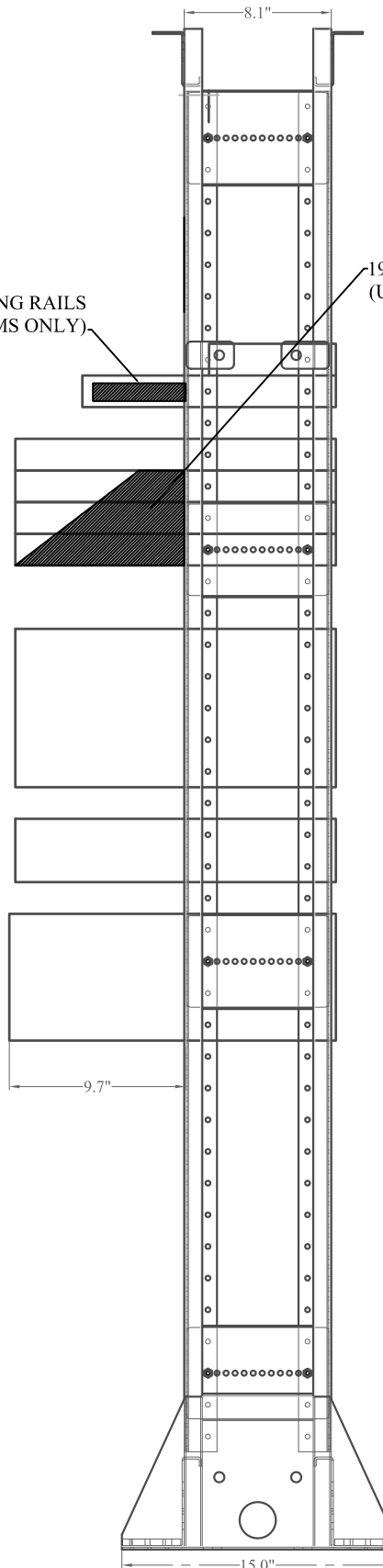
NOTES:

1. CERTIFIED RACK: COOPER B-LINE Two-Post Seismic Relay Rack Part Number SB85219084 Weight 130lb
2. DRAWING SHOWS THE ALLOWABLE INSTALLATION LOCATIONS FOR ALL CERTIFIED PRODUCTS
3. OTHER MANUFACTURERS 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: 300lbs
 - MAXIMUM WEIGHT OF SINGLE COMPONENT IN TOP HALF OF RACK: 50lbs
 - MAXIMUM TOTAL WEIGHT OF COMPONENTS IN TOP OF RACK: 175lbs
4. INSTALLATION MUST ADHERE TO MINIMUM SPACING BETWEEN COMPONENTS AS SHOWN
5. DMS COMPONENTS MUST BE INSTALLED USING RAILS
6. ODU COMPONENTS MUST BE INSTALLED USING SHELF; UP TO FOUR COMPONENTS CAN BE STACKED INTO ONE SHELF

EXPRESS PRODUCT INSTALL LOCATIONS - 2-POST RACK



FRONT VIEW

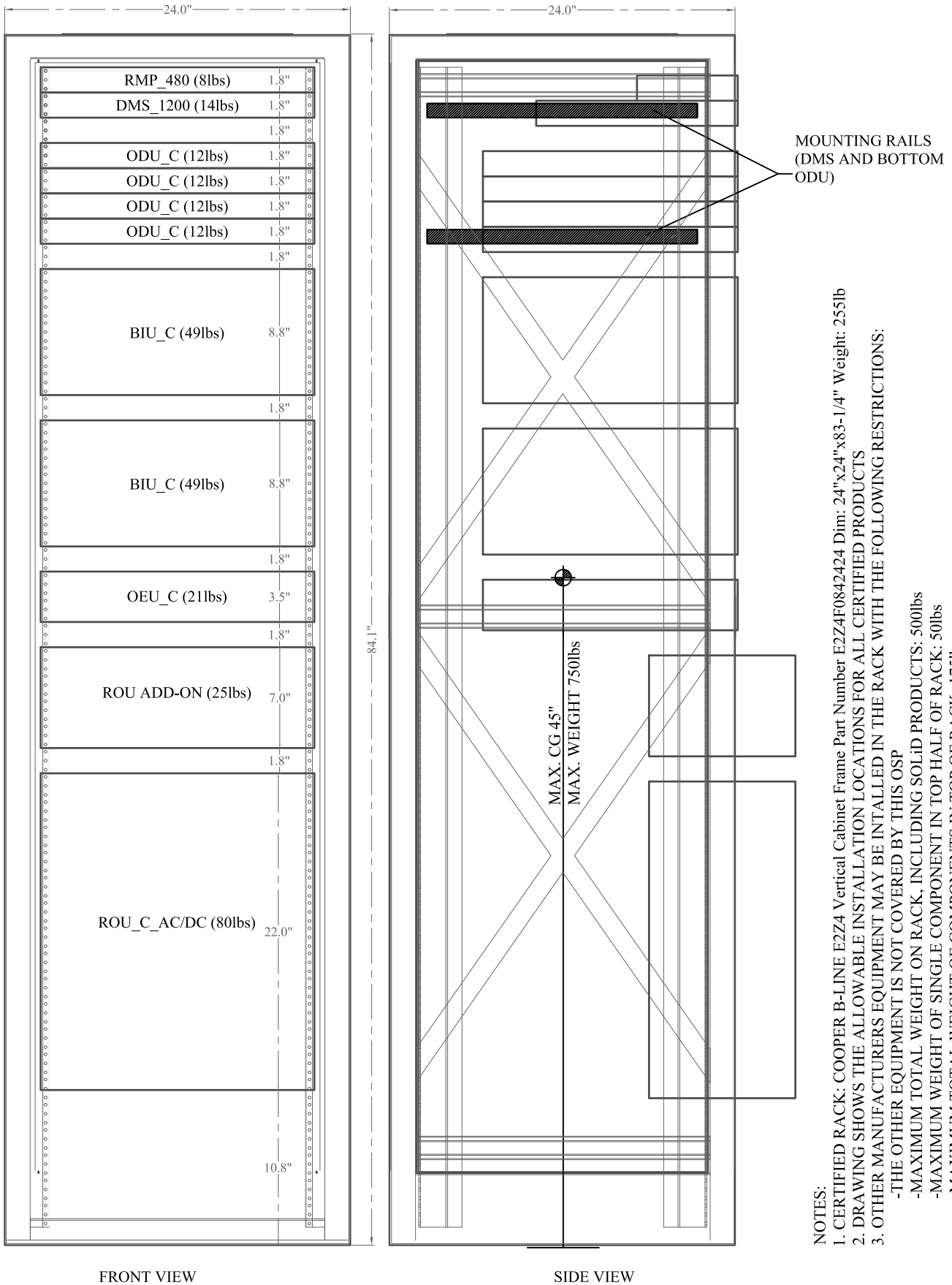


SIDE VIEW

NOTES:

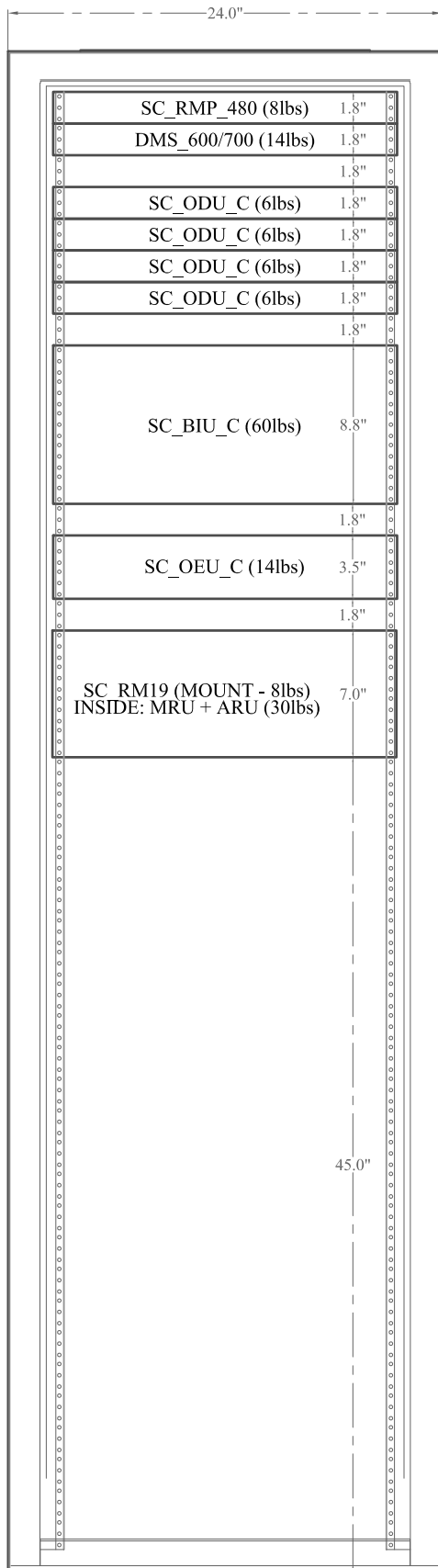
1. CERTIFIED RACK: COOPER B-LINE Two-Post Seismic Relay Rack Part Number SB85219084 Weight 130lb
2. DRAWING SHOWS THE ALLOWABLE INSTALLATION LOCATIONS FOR ALL CERTIFIED PRODUCTS
3. OTHER MANUFACTURERS EQUIPMENT MAY BE INSTALLED IN THE RACK WITH THE FOLLOWING RESTRICTIONS:
 - THE OTHER EQUIPMENT IS NOT COVERED BY THIS OSP
 - MAXIMUM TOTAL WEIGHT ON RACK, INCLUDING SOLID PRODUCTS: 300lbs
 - MAXIMUM WEIGHT OF SINGLE COMPONENT IN TOP HALF OF RACK: 50lbs
 - MAXIMUM TOTAL WEIGHT OF COMPONENTS IN TOP OF RACK: 175lbs
4. INSTALLATION MUST ADHERE TO MINIMUM SPACING BETWEEN COMPONENTS AS SHOWN
5. DMS COMPONENTS MUST BE INSTALLED USING RAILS
6. ODU COMPONENTS MUST BE INSTALLED USING SHELF; UP TO FOUR COMPONENTS CAN BE STACKED INTO ONE SHELF

ALLIANCE PRODUCT INSTALL LOCATIONS - 4-POST RACK

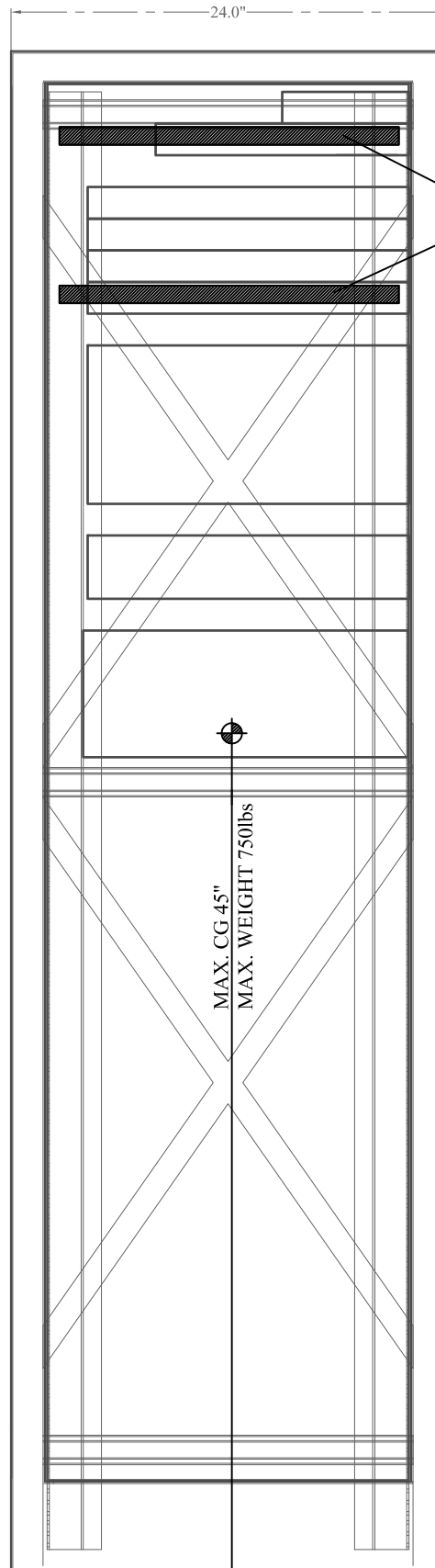


- NOTES:**
1. CERTIFIED RACK: COOPER B-LINE E2Z4 Vertical Cabinet Frame Part Number E2Z4F0842424 Dim: 24"x24"x83-1/4" Weight: 255lb
 2. DRAWING SHOWS THE ALLOWABLE INSTALLATION LOCATIONS FOR ALL CERTIFIED PRODUCTS
 3. OTHER MANUFACTURERS EQUIPMENT MAY BE INSTALLED IN THE RACK WITH THE FOLLOWING RESTRICTIONS:
 - THE OTHER EQUIPMENT IS NOT COVERED BY THIS OSP
 - MAXIMUM TOTAL WEIGHT ON RACK, INCLUDING SOLID PRODUCTS: 500lbs
 - MAXIMUM WEIGHT OF SINGLE COMPONENT IN TOP HALF OF RACK: 50lbs
 - MAXIMUM TOTAL WEIGHT OF COMPONENTS IN TOP OF RACK: 175lbs
 4. INSTALLATION MUST ADHERE TO MINIMUM SPACING BETWEEN COMPONENTS AS SHOWN
 5. DMS COMPONENTS MUST BE INSTALLED USING RAILS
 6. ODU COMPONENTS MUST BE INSTALLED USING SHELF; UP TO FOUR COMPONENTS CAN BE STACKED INTO ONE SHELF

EXPRESS PRODUCT INSTALL LOCATIONS - 4-POST RACK



FRONT VIEW



SIDE VIEW

MOUNTING RAILS
(DMS AND BOTTOM
ODU)

- NOTES:**
1. CERTIFIED RACK: COOPER B-LINE E24 Vertical Cabinet Frame Part Number E2Z4F0842424 Dim: 24"x24"x83-1/4" Weight: 255lb
 2. DRAWING SHOWS THE ALLOWABLE INSTALLATION LOCATIONS FOR ALL CERTIFIED PRODUCTS
 3. OTHER MANUFACTURERS 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: 500LBS
 - MAXIMUM WEIGHT OF SINGLE COMPONENT IN TOP HALF OF RACK: 50lbs
 - MAXIMUM TOTAL WEIGHT OF COMPONENTS IN TOP OF RACK: 175lbs
 4. INSTALLATION MUST ADHERE TO MINIMUM SPACING BETWEEN COMPONENTS AS SHOWN
 5. DMS COMPONENTS MUST BE INSTALLED USING RAILS
 6. ODU COMPONENTS MUST BE INSTALLED USING SHELF; UP TO FOUR COMPONENTS CAN BE STACKED INTO ONE SHELF

OSHPD Special Seismic Certification	UUT Test Summary
Manufacturer: SOLiD Technologies	Configuration 3 (UUT 3) – Rigid Wall

Summary

Product Line	Alliance
Test Mounting	Components rigidly bolted to Laboratory Wall Mount using four ½-13 Grade 8 socket head cap screws Laboratory wall mount was rigidly bolted to shaker slip plate
Product Content Summary	Cabinets/enclosures contained electronics/interchangeable communication modules during testing
Structural Test Summary	No structural damage to wall mount or component
Functional Test Summary	All components passed an in-laboratory check and a full functionality test performed at the Solid Testing Facility

Tested Components

UUT	Component	Part Number	Dimensions	Weight [lb]
3-1	Remote Optical Unit (ROU) Chassis	ROU_C	19"Wx20.8"Hx10.2"D	78.0

Tested ROU Subcomponents

UUT	Subcomponents	Part Number	Dimensions	Weight [lb]
3-1-1	850MHz & 700MHz Public Safety Amplifier Module	RDU_850C_700PS	5.5"x2.32"x17.7"	7.6
3-1-2	800MHz & 900MHz Amplifier Module	RDU_800PS_900I_PA	5.5"x2.32"x17.7"	7.5
3-1-3	1900MHz & 2100/1700MHz AWS Amplifier Module	RDU_1900P_AWS	5.5"x2.32"x14.88"	6.2

Seismic Test Parameters

Natural Frequencies (Hz)						A _{FLEX-H}	A _{RIG-H}	A _{FLEX-V}	A _{RIG-V}	S _{ds}	I _p	z/h
Front-Back	NA	Side-Side	NA	Vertical	NA	3.92g	2.94g	1.64g	0.66g	2.45g	1.5	1.0

UUT 3 on Rigid Wall Mount



OSHPD Special Seismic Certification	UUT Test Summary
Manufacturer: SOLiD Technologies	Configuration 3 (UUT 3) – Flexible Wall

Summary

Product Line	Alliance
Test Mounting	Components rigidly bolted to Laboratory Wall Mount using four ½-13 Grade 8 socket head cap screws Laboratory Wall Mount Mounted on Mason Industries BRA-type isolators (to create flexible wall type)
Product Content Summary	Cabinets/enclosures contained electronics/interchangeable communication modules during testing
Structural Test Summary	No structural damage to wall mount or component
Functional Test Summary	All components passed an in-laboratory check and a full functionality test performed at the Solid Testing Facility

Tested Components

UUT	Component	Part Number	Dimensions	Weight [lb]
3-1	Remote Optical Unit (ROU) Chassis	ROU_C	19"Wx20.8"Hx10.2"D	78.0

Tested ROU Subcomponents

UUT	Subcomponents	Part Number	Dimensions	Weight [lb]
3-1-1	850MHz & 700MHz Public Safety Amplifier Module	RDU_850C_700PS	5.5"x2.32"x17.7"	7.6
3-1-2	800MHz & 900MHz Amplifier Module	RDU_800PS_900I_PA	5.5"x2.32"x17.7"	7.5
3-1-3	1900MHz & 2100/1700MHz AWS Amplifier Module	RDU_1900P_AWS	5.5"x2.32"x14.88"	6.2

Seismic Test Parameters

Natural Frequencies (Hz)						A _{FLEX-H}	A _{RIG-H}	A _{FLEX-V}	A _{RIG-V}	Sds	Ip	z/h
Front-Back	NA	Side-Side	NA	Vertical	NA	3.92g	2.94g	1.64g	0.66g	2.45g	1.5	1.0

UUT on Flexible Wall Mount



OSHPD Special Seismic Certification	UUT Test Summary
Manufacturer: SOLiD Technologies	Configuration 4 (UUT 4) – Rigid Wall

Summary

Product Line	Alliance / Express
Test Mounting	Components rigidly bolted to Laboratory Wall Mount using four ½-13 Grade 8 socket head cap screws Laboratory wall mount was rigidly bolted to shaker slip plate
Product Content Summary	Cabinets/enclosures contained electronics/interchangeable communication modules during testing
Structural Test Summary	No structural damage to wall mount or component
Functional Test Summary	All components passed an in-laboratory check and a full functionality test performed at the Solid Testing Facility

Tested Components

UUT	Component	Part Number	Dimensions [LxWxH]	Weight
4-1	Remote Optical Unit – Add-on cabinet	ROU_Add-On	10.16" x 19" x 6.96"	24.3lb
4-2	850MHz & 1900MHz Main Remote Unit	MRU_DC_850_1900	7.9" x 11.8" x 4.5"	21lb
4-3	700MHz LTE & 2100 MHz Add-on Remote Unit	ARU_DC_700LTE_2100	7.9" x 11.8" x 4.5"	21lb

Tested ROU Add-on Subcomponents

UUT	Subcomponents	Part Numbers	Dimensions [LxWxH]	Weight
4-1-1	380MHz VHF & UHF Amplifier Module	RDU_E_VHF_UHF	5.5" x 2.32" x 17.7"	7.59lb

Seismic Test Parameters

Natural Frequencies (Hz)						A _{FLEX-H}	A _{RIG-H}	A _{FLEX-V}	A _{RIG-V}	S _{ds}	I _p	z/h
Front-Back	NA	Side-Side	NA	Vertical	NA	3.92g	2.94g	1.64g	0.66g	2.45g	1.5	1.0

UUT 4 on Rigid Wall Mount



OSHPD Special Seismic Certification	UUT Test Summary
Manufacturer: SOLiD Technologies	Configuration 4 (UUT 4) – Flexible Wall

Summary

Product Line	Alliance (A) /Express (E)
Test Mounting	Components rigidly bolted to Laboratory Wall Mount using four ½-13 Grade 8 socket head cap screws Laboratory Wall Mount Mounted on Mason Industries BRA-type isolators (to create flexible wall type)
Product Content Summary	Cabinets/enclosures contained electronics/interchangeable communication modules during testing
Structural Test Summary	No structural damage to wall mount or component
Functional Test Summary	All components passed an in-laboratory check and a full functionality test performed at the Solid Testing Facility

Tested Components

UUT	Component	Part Number	Dimensions [LxWxH]	Weight
4-1	Remote Optical Unit – Add-on cabinet	ROU_Add-On	10.16"x19"x6.96"	24.3lb
4-2	850MHz & 1900MHz Main Remote Unit	MRU_DC_850_1900	7.9"x11.8"x4.5"	21lb
4-3	700MHz LTE & 2100 MHz Add-on Remote Unit	ARU_DC_700LTE_2100	7.9"x11.8"x4.5"	21lb

Tested ROU Add-on Subcomponents

UUT	Subcomponents	Part Numbers	Dimensions [LxWxH]	Weight
4-1-1	380MHz VHF & UHF Amplifier Module	RDU_E_VHF_UHF	5.5"x2.32"x17.7"	7.59lb

Seismic Test Parameters

Natural Frequencies (Hz)						A _{FLEX-H}	A _{RIG-H}	A _{FLEX-V}	A _{RIG-V}	Sds	I _p	z/h
Front-Back	NA	Side-Side	NA	Vertical	NA	3.92g	2.94g	1.64g	0.66g	2.45g	1.5	1.0

UUT on Flexible Wall Mount



OSHPD Special Seismic Certification	UUT Test Summary
Manufacturer: SOLiD Technologies	Configuration 7 (UUT 7) – Rigid Wall

Summary

Product Line	Titan
Test Mounting	Components rigidly bolted to Laboratory Wall Mount using four ½-13 Grade 8 socket head cap screws Laboratory wall mount was rigidly bolted to shaker slip plate
Product Content Summary	Cabinets/enclosures contained electronics/interchangeable communication modules during testing
Structural Test Summary	No structural damage to wall mount or component
Functional Test Summary	All components passed an in-laboratory check and a full functionality test performed at the Solid Testing Facility

Tested Components

UUT	Component	Part Number	Dimensions [LxWxH]	Weight
7-1	High-Powered Main Remote Unit (HMRU)	T_MRU (HMRU)	27.5"x14.5"x10.5"	112lb

Tested HMRU Subcomponents

UUT	Subcomponents	Part Number	Dimensions [LxWxH]	Weight
7-1-1	800I/PS	T_RDU_800	5.1"x12.2"x6.4"	14.3
7-1-2	850 Cellular	T_RDU_850	4.6"x12.2"x6.4"	13.2
7-1-3	900IDEN	T_RDU_900	4.8"x12.2"x6.4"	14.3

Seismic Test Parameters

Natural Frequencies (Hz)						A _{FLEX-H}	A _{RIG-H}	A _{FLEX-V}	A _{RIG-V}	S _{ds}	I _p	z/h
Front-Back	NA	Side-Side	NA	Vertical	NA	3.92g	2.94g	1.64g	0.66g	2.45g	1.5	1.0

UUT 7 on Rigid Wall Mount



OSHPD Special Seismic Certification	UUT Test Summary
Manufacturer: SOLiD Technologies	Configuration 7 (UUT 7) – Flexible Wall

Summary

Product Line	Titan
Test Mounting	Components rigidly bolted to Laboratory Wall Mount using four ½-13 Grade 8 socket head cap screws Laboratory Wall Mount Mounted on Mason Industries BRA-type isolators (to create flexible wall type)
Product Content Summary	Cabinets/enclosures contained electronics/interchangeable communication modules during testing
Structural Test Summary	No structural damage to wall mount or component
Functional Test Summary	All components passed an in-laboratory check and a full functionality test performed at the Solid Testing Facility

Tested Components

UUT	Component	Part Number	Dimensions [LxWxH]	Weight
7-1	High-Powered Main Remote Unit (HMRU)	T_MRU (HMRU)	27.5"x14.5"x10.5"	112lb

Tested HMRU Subcomponents

UUT	Subcomponents	Part Number	Dimensions [LxWxH]	Weight
7-1-1	800I/PS	T_RDU_800	5.1"x12.2"x6.4"	14.3
7-1-2	850 Cellular	T_RDU_850	4.6"x12.2"x6.4"	13.2
7-1-3	900IDEN	T_RDU_900	4.8"x12.2"x6.4"	14.3

Seismic Test Parameters

Natural Frequencies (Hz)						A _{FLEX-H}	A _{RIG-H}	A _{FLEX-V}	A _{RIG-V}	S _{ds}	I _p	z/h
Front-Back	NA	Side-Side	NA	Vertical	NA	3.92g	2.94g	1.64g	0.66g	2.45g	1.5	1.0

UUT 7 on Flexible Wall Mount



OSHPD Special Seismic Certification	UUT Test Summary
Manufacturer: SOLiD Technologies	Configuration 8 (UUT 8) – Rigid Wall

Summary

Product Line	Titan
Test Mounting	Components rigidly bolted to Laboratory Wall Mount using four ½-13 Grade 8 socket head cap screws Laboratory wall mount was rigidly bolted to shaker slip plate
Product Content Summary	Cabinets/enclosures contained electronics/interchangeable communication modules during testing
Structural Test Summary	No structural damage to wall mount or component
Functional Test Summary	All components passed an in-laboratory check and a full functionality test performed at the Solid Testing Facility

Tested Components

UUT	Component	Part Number	Dimensions [LxWxH]	Weight [lb]
8-1	High-Powered Add-on Remote Unit (HARU)	T_ARU (HARU)	27.5"x14.5"x10.5"	59.5

Tested HARU Subcomponents

UUT	Subcomponent	Part Number	Dimensions [LxWxH]	Weight [lb]
8-1-1	1900PCS	T_RDU_1900	4.4"x6.4"x12.2"	15.4
8-1-2	AWS	T_RDU_2100	4.4"x6.4"x12.2"	13.2

Seismic Test Parameters

Natural Frequencies (Hz)						A _{FLEX-H}	A _{RIG-H}	A _{FLEX-V}	A _{RIG-V}	Sds	Ip	z/h
Front-Back	NA	Side-Side	NA	Vertical	NA	3.92g	2.94g	1.64g	0.66g	2.45g	1.5	1.0

UUT 8 on Flexible Wall Mount



OSHPD Special Seismic Certification	UUT Test Summary
Manufacturer: SOLiD Technologies	Configuration 8 (UUT 8) – Flexible Wall

Summary

Product Line	Titan
Test Mounting	Components rigidly bolted to Laboratory Wall Mount using four ½-13 Grade 8 socket head cap screws Laboratory Wall Mount Mounted on Mason Industries BRA-type isolators (to create flexible wall type)
Product Content Summary	Cabinets/enclosures contained electronics/interchangeable communication modules during testing
Structural Test Summary	No structural damage to wall mount or component
Functional Test Summary	All components passed an in-laboratory check and a full functionality test performed at the Solid Testing Facility

Tested Components

UUT	Component	Part Number	Dimensions [LxWxH]	Weight [lb]
8-1	High-Powered Add-on Remote Unit (HARU)	T_ARU (HARU)	27.5"x14.5"x10.5"	59.5

Tested HARU Subcomponents

UUT	Subcomponent	Part Number	Dimensions [LxWxH]	Weight [lb]
8-1-1	1900PCS	T_RDU_1900	4.4"x6.4"x12.2"	15.4
8-1-2	AWS	T_RDU_2100	4.4"x6.4"x12.2"	13.2

Seismic Test Parameters

Natural Frequencies (Hz)						A _{FLEX-H}	A _{RIG-H}	A _{FLEX-V}	A _{RIG-V}	Sds	Ip	z/h
Front-Back	NA	Side-Side	NA	Vertical	NA	3.92g	2.94g	1.64g	0.66g	2.45g	1.5	1.0

UUT 8 on Flexible Wall Mount



OSHPD Special Seismic Certification	UUT Test Summary
Manufacturer: SOLiD Technologies	Configuration 11 (UUT 11)

Summary

Product Line	Alliance
Test Mounting	All components mounted in Cooper B-line Two-Post Seismic Relay Rack (SB85219084) Rack rigidly bolted to shaker slip plate using four ½-13 Grade 8 socket head cap screws
Product Content Summary	Cabinets/enclosures contained electronics/interchangeable communication modules during testing
Structural Test Summary	No structural damage to rack or components
Functional Test Summary	All components passed an in-laboratory check and a full functionality test performed at the Solid Testing Facility

Tested Components

UUT	Component	Part Number	Weight [lb]	Dimensions
11-1	Power Supply	RMP_480	7.5	7"x19"x1.75"
11-2	DAS Management System	DMS_1200	14	14.0"x16.8"x1.7"
11-3	Base-Station Interface Unit Chassis	BIU_C	49	17.7"x19"x8.75"
11-4	Base-Station Interface Unit Chassis	BIU_C	49	17.7"x19"x8.75"
11-5	Optical Distribution Unit Chassis	ODU_C	12	17.7"x19"x1.75"
11-6	Optical Distribution Unit Chassis	ODU_C	12	17.7"x19"x1.75"
11-7	Optical Distribution Unit Chassis	ODU_C	12	17.7"x19"x1.75"
11-8	Optical Distribution Unit Chassis	ODU_C	12	17.7"x19"x1.75"
11-9	Optical Expansion Unit	OEU_C	20.5	17.7"x19"x3.5"
11-10	Remote Optical Unit – Add-on cabinet	ROU Add-on	24.25	10.16"x19"x6.96"
11-11	Remote Optical Unit Chassis – AC Powered	ROU_C_AC	78	10.16"x19"x20.8"

Tested BIU Subcomponents

UUT	Subcomponents	Part Number	Weight [lb]	Dimensions
11-3-1	850MHz & 700MHz PS	MDBU_850C_700PS	7.04	10.96"x1.57"x5.5"
11-3-2	850MHz & 700MHz FB	MDBU_850C_700FB	7.04	10.96"x1.57"x5.5"
11-3-3	700MHz LTE FB MIMO	MDBU_700LTE_M	7.04	10.96"x1.57"x5.5"
11-3-4	700MHz LTE FB SISO	MDBU_700LTE_S	6.82	10.96"x1.57"x5.5"
11-4-1	800MHz & 900MHz	MDBU_800PS_900I_PA	6.82	10.96"x1.57"x5.5"
11-4-2	1900MHz	MDBU_1900P	6.82	10.96"x1.57"x5.5"
11-4-3	2100MHz	MDBU_AWS	6.82	10.96"x1.57"x5.5"
11-4-4	Dummy Weight		6.9	

Tested ODU Subcomponents

UUT	Subcomponents	Part Number	Weight [lb]	Dimensions
11-5-1	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
11-5-2	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
11-6-1	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
11-6-2	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
11-7-1	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
11-7-2	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
11-8-1	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
11-8-2	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"

Tested OEU Subcomponents

UUT	Subcomponents	Part Number	Weight [lb]	Dimensions
11-9-1	4 Port Optical Module	OEU_OM_4	3.52	11.8"x5.6"x1.1"
11-9-2	4 Port Optical Module	OEU_OM_4	3.52	11.8"x5.6"x1.1"

Tested ROU Subcomponents

UUT	Subcomponents	Part Number	Weight [lb]	Dimensions
11-10-1	380MHz VHF & UHF Amplifier Module	RDU VHF UHF	7.59	5.5"x2.32"x17.7"
11-11-1	850MHz & 700MHz Public Safety Amplifier Module	RDU_850C_700PS	7.59	5.5"x2.32"x17.7"
11-11-2	800MHz & 900MHz Amplifier Module	RDU_800PS_900I_PA	7.48	5.5"x2.32"x17.7"
11-11-3	1900MHz & 2100/1700MHz AWS Amplifier Module	RDU_1900P_AWS	6.16	5.5"x2.32"x14.88"

Seismic Test Parameters

Natural Frequencies (Hz)						A _{FLEX-H}	A _{RIG-H}	A _{FLEX-V}	A _{FLEX-V}	Sds	I _p	z/h
Front-Back	5.3	Side-Side	8.9	Vertical	14.4	3.92g	2.94g	1.64g	0.66g	2.45g	1.5	1.0



UUT 11, 2-Post Rack with Alliance Components

OSHPD Special Seismic Certification	UUT Test Summary
Manufacturer: SOLiD Technologies	Configuration 12 (UUT 12)

Summary

Product Line	Express
Test Mounting	All components mounted in Cooper B-line Two-Post Seismic Relay Rack (SB85219084) Rack rigidly bolted to shaker slip plate using four ½-13 Grade 8 socket head cap screws
Product Content Summary	Cabinets/enclosures contained electronics/interchangeable communication modules during testing
Structural Test Summary	No structural damage to rack or components
Functional Test Summary	All components passed an in-laboratory check and a full functionality test performed at the Solid Testing Facility

Tested Components

UUT	Component	Part Number	Weight [lb]	Dimensions
12-1	Power Supply	RMP_480	7.5lb	7"x19"x1.75"
12-2	DAS Management System	DMS_600	14	14.0"x16.8"x1.7"
12-3	Optical Distribution Unit Chassis	SC_ODU_C	5.5	17.7"x19"x1.75"
12-4	Optical Distribution Unit Chassis	ODU_C	12	17.7"x19"x1.75"
12-5	Optical Distribution Unit Chassis	ODU_C	12	17.7"x19"x1.75"
12-6	Optical Distribution Unit Chassis	ODU_C	12	17.7"x19"x1.75"
12-7	Base-Station Interface Unit Chassis	SC_BIU_C	57.65	19"x8.75"x17.7"
12-8	Optical Expansion Unit Chassis	SC_OEU_C	13.5	17.7"x19"x3.5"
12-9	Horizontal Enclosure	SC_RM19	8	17.7"x19"x8.75"
12-10	1900MHz Main Remote Unit	MRU_AC_1900_N	15	7.9"x11.8"x4.5"
12-11	700MHz LTE & 2100MHz Main Remote Unit	MRU_AC_700_2100	15	7.9"x11.8"x4.5"

Tested ODU Subcomponents

UUT	Subcomponents	Part Number	Weight [lb]	Dimensions
12-3-1	4 Port Optical Module	SC_ODU_OM_4	3.9	11.8"x6.6"x1.3"
12-3-2	4 Port Optical Module	SC_ODU_OM_4	3.9	11.8"x6.6"x1.3"
12-4-1	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
12-4-2	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
12-5-1	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
12-5-2	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
12-6-1	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
12-6-2	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"

Tested BIU Subcomponents

UUT	Subcomponents	Part Number	Weight [lb]	Dimensions
12-7-1	700MHz LTE & 2100MHz Input Module	SC_MDBU_700LTE_2100	6.6	11.2"x2.2"x8"
12-7-2	850MHz & 1900MHz Input Module	SC_MDBU_850_1900	6.6	11.2"x2.2"x8"
12-7-3	800MHz & 900MHz Input Module	SC_MDBU_800_900	6.6	11.2"x2.2"x8"
12-7-4	1900MHz Input Module	SC_MDBU_1900	6.6	11.2"x2.2"x8"

Tested OEU Subcomponents

UUT	Subcomponents	Part Number	Weight [lb]	Dimensions
12-8-1	4 Port Optical Module	SC_OEU_OM_4	3.9	11.8"x6.6"x1.3"
12-8-2	4 Port Optical Module	SC_OEU_OM_4	3.9	11.8"x6.6"x1.3"

Seismic Test Parameters

Natural Frequencies (Hz)						A _{FLEX-H}	A _{RIG-H}	A _{FLEX-V}	A _{RIG-V}	Sds	Ip	z/h
Front-Back	8.1	Side-Side	11.5	Vertical	15.5	3.92g	2.94g	1.64g	0.66g	2.45g	1.5	1.0



Configuration 12, 2-Post Rack

OSHPD Special Seismic Certification	UUT Test Summary
Manufacturer: SOLiD Technologies	Configuration 13 (UUT 13)

Summary

Product Line	Express
Test Mounting	All components mounted in Cooper B-line E2Z4 Vertical Cabinet Frame (E2Z4F0842424) Rack rigidly bolted to shaker slip plate using four ½-13 Grade 8 socket head cap screws
Product Content Summary	Cabinets/enclosures contained electronics/interchangeable communication modules during testing
Structural Test Summary	No structural damage to rack or components
Functional Test Summary	All components passed an in-laboratory check and a full functionality test performed at the Solid Testing Facility

Tested Components

UUT	Component	Part Number	Weight [lb]	Dimensions
13-1	Power Supply	RMP_480	7.5	7"x19"x1.75"
13-2	DAS Management System	DMS_1200	14	14.0"x16.8"x1.7"
13-3	Base-Station Interface Unit Chassis	BIU_C	49	17.7"x19"x8.75"
13-4	Base-Station Interface Unit Chassis	BIU_C	49	17.7"x19"x8.75"
13-5	Optical Distribution Unit Chassis	ODU_C	12	17.7"x19"x1.75"
13-6	Optical Distribution Unit Chassis	ODU_C	12	17.7"x19"x1.75"
13-7	Optical Distribution Unit Chassis	ODU_C	12	17.7"x19"x1.75"
13-8	Optical Distribution Unit Chassis	ODU_C	12	17.7"x19"x1.75"
13-9	Optical Expansion Unit	OEU_C	20.5	17.7"x19"x3.5"
13-10	Remote Optical Unit – Add-on cabinet	ROU Add-on	24.25	10.16"x19"x6.96"
13-11	Remote Optical Unit Chassis – AC Powered	ROU_C_AC	78	10.16"x19"x20.8"

Tested BIU Subcomponents

UUT	Subcomponents	Part Number	Weight [lb]	Dimensions
13-3-1	850MHz & 700MHz PS	MDBU_850C_700PS	7.04	10.96"x1.57"x5.5"
13-3-2	850MHz & 700MHz FB	MDBU_850C_700FB	7.04	10.96"x1.57"x5.5"
13-3-3	700MHz LTE FB MIMO	MDBU_700LTE_M	7.04	10.96"x1.57"x5.5"
13-3-4	700MHz LTE FB SISO	MDBU_700LTE_S	6.82	10.96"x1.57"x5.5"
13-4-1	800MHz & 900MHz	MDBU_800PS_900I_PA	6.82	10.96"x1.57"x5.5"
13-4-2	1900MHz	MDBU_1900P	6.82	10.96"x1.57"x5.5"
13-4-3	2100MHz	MDBU_AWS	6.82	10.96"x1.57"x5.5"
13-4-4	Dummy Weight		6.9	

Tested ODU Subcomponents

UUT	Subcomponents	Part Number	Weight [lb]	Dimensions
13-5-1	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
13-5-2	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
13-6-1	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
13-6-2	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
13-7-1	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
13-7-2	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
13-8-1	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
13-8-2	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"

Tested OEU Subcomponents

UUT	Subcomponents	Part Number	Weight [lb]	Dimensions
13-9-1	4 Port Optical Module	OEU_OM_4	3.52	11.8"x5.6"x1.1"
13-9-2	4 Port Optical Module	OEU_OM_4	3.52	11.8"x5.6"x1.1"

Tested ROU Subcomponents

UUT	Subcomponents	Part Number	Weight [lb]	Dimensions
13-10-1	380MHz VHF & UHF Amplifier Module	RDU VHF UHF	7.59	5.5"x2.32"x17.7"
13-11-1	850MHz & 700MHz Public Safety Amplifier Module	RDU_850C_700PS	7.59	5.5"x2.32"x17.7"
13-11-2	800MHz & 900MHz Amplifier Module	RDU_800PS_900I_PA	7.48	5.5"x2.32"x17.7"
13-11-3	1900MHz & 2100/1700MHz AWS Amplifier Module	RDU_1900P_AWS	6.16	5.5"x2.32"x14.88"

Seismic Test Parameters

Natural Frequencies (Hz)					A _{FLEX-H}	A _{RIG-H}	A _{FLEX-V}	A _{RIG-V}	Sds	I _p	z/h	
Front-Back	7.0	Side-Side	7.2	Vertical	17.5	3.92g	2.94g	1.64g	0.66g	2.45g	1.5	1.0



Configuration 13, 4-Post Rack

OSHPD Special Seismic Certification	UUT Test Summary
Manufacturer: SOLiD Technologies	Configuration 14 (UUT 14)

Summary

Product Line	Alliance
Test Mounting	All components mounted in Cooper B-line E2Z4 Vertical Cabinet Frame (E2Z4F0842424) Rack rigidly bolted to shaker slip plate using four ½-13 Grade 8 socket head cap screws
Product Content Summary	Cabinets/enclosures contained electronics/interchangeable communication modules during testing
Structural Test Summary	No structural damage to rack or components
Functional Test Summary	All components passed an in-laboratory check and a full functionality test performed at the Solid Testing Facility

Tested Components

UUT	Component	Part Number	Weight [lb]	Dimensions
14-1	Power Supply	RMP_480	7.5lb	7"x19"x1.75"
14-2	DAS Management System	DMS_600	14	14.0"x16.8"x1.7"
14-3	Optical Distribution Unit Chassis	SC_ODU_C	5.5	17.7"x19"x1.75"
14-4	Optical Distribution Unit Chassis	ODU_C	12	17.7"x19"x1.75"
14-5	Optical Distribution Unit Chassis	ODU_C	12	17.7"x19"x1.75"
14-6	Optical Distribution Unit Chassis	ODU_C	12	17.7"x19"x1.75"
14-7	Base-Station Interface Unit Chassis	SC_BIU_C	57.65	19"x8.75"x17.7"
14-8	Optical Expansion Unit Chassis	SC_OEU_C	13.5	17.7"x19"x3.5"
14-9	Horizontal Enclosure	SC_RM19	8	17.7"x19"x8.75"
14-10	1900MHz Main Remote Unit	MRU_AC_1900_N	15	7.9"x11.8"x4.5"
14-11	700MHz LTE & 2100MHz Main Remote Unit	MRU_AC_700_2100	15	7.9"x11.8"x4.5"
14-12	Dummy Weight		162	
14-13	Dummy Weight		162	

Tested ODU Subcomponents

UUT	Subcomponents	Part Number	Weight [lb]	Dimensions
14-3-1	4 Port Optical Module	SC_ODU_OM_4	3.9	11.8"x6.6"x1.3"
14-3-2	4 Port Optical Module	SC_ODU_OM_4	3.9	11.8"x6.6"x1.3"
14-4-1	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
14-4-2	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
14-5-1	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
14-5-2	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
14-6-1	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"
14-6-2	4 Port Optical Module	ODU_OM_4	3.52	11.8"x5.6"x1.1"

Tested BIU Subcomponents

UUT	Subcomponents	Part Number	Weight [lb]	Dimensions
14-7-1	700MHz LTE & 2100MHz Input Module	SC_MDBU_700LTE_2100	6.6	11.2"x2.2"x8"
14-7-2	850MHz & 1900MHz Input Module	SC_MDBU_850_1900	6.6	11.2"x2.2"x8"
14-7-3	800MHz & 900MHz Input Module	SC_MDBU_800_900	6.6	11.2"x2.2"x8"
14-7-4	1900MHz Input Module	SC_MDBU_1900	6.6	11.2"x2.2"x8"

Tested OEU Subcomponents

UUT	Subcomponents	Part Number	Weight [lb]	Dimensions
14-8-1	4 Port Optical Module	SC_OEU_OM_4	3.9	11.8"x6.6"x1.3"
14-8-2	4 Port Optical Module	SC_OEU_OM_4	3.9	11.8"x6.6"x1.3"

Seismic Test Parameters

Natural Frequencies (Hz)						A _{FLEX-H}	A _{RIG-H}	A _{FLEX-V}	A _{RIG-V}	Sds	Ip	z/h
Front-Back	8.1	Side-Side	8.4	Vertical	16.8	3.92g	2.94g	1.64g	0.66g	2.45g	1.5	1.0



Configuration 14, 4-Post Rack