



**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION  
FACILITIES DEVELOPMENT DIVISION**

**APPLICATION FOR HCAI SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)**

OFFICE USE ONLY

**APPLICATION #: OSP-0728**

**HCAI Special Seismic Certification Preapproval (OSP)**

Type:  New  Renewal

**Manufacturer Information**

Manufacturer: JMA Wireless

Manufacturer's Technical Representative: Nader Famili

Mailing Address: 1206 Clark Springs Drive, Keller, TX 76248

Telephone: (817) 727-9946

Email: nfamili@jmawireless.com

**Product Information**

Product Name: Internal Communication Servers and Routers

Product Type: Wireless Communication Systems

Product Model Number: Wireless Distributed Antenna Systems

General Description: DAS systems for indoor extension of cellular networks.

Mounting Description: Rigid, Floor/Wall Mounted

Tested Seismic Enhancements: None

**Applicant Information**

Applicant Company Name: Manwill Engineering LLC

Contact Person: Derek Manwill

Mailing Address: PO Box 1194, Bend, OR 97709

Telephone: (541) 241-2102

Email: derek@manwillse.com

Title: President





**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION  
FACILITIES DEVELOPMENT DIVISION**

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

Company Name: MANWILL ENGINEERING LLC

Name: Derek Manwill California License Number: S6266

Mailing Address: PO Box 1194, Bend, OR 97709

Telephone: (541) 241-2102 Email: derek@manwillse.com

**Certification Method**

GR-63-Core       ICC-ES AC156       IEEE 344       IEEE 693       NEBS 3

Other (Please Specify): \_\_\_\_\_

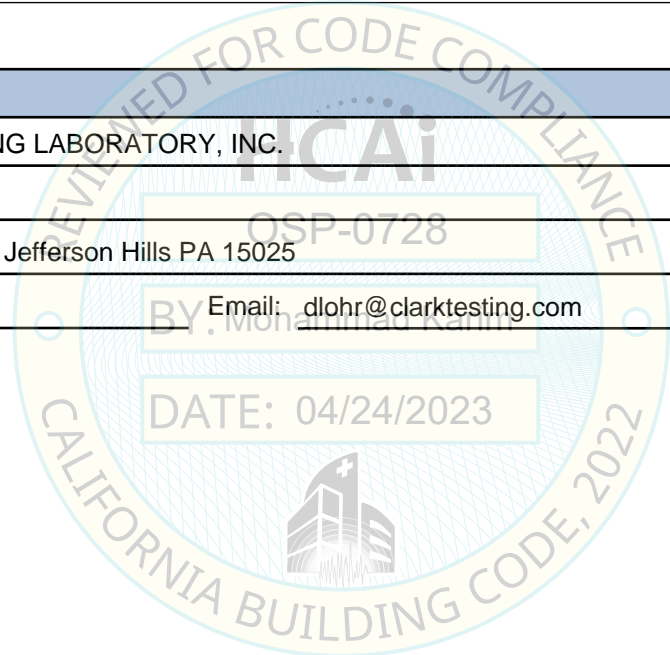
**Testing Laboratory**

Company Name: CLARK TESTING LABORATORY, INC.

Contact Person: Davon Lohr

Mailing Address: 1801 Route 51, Jefferson Hills PA 15025

Telephone: (412) 387-1001 Email: dlohr@clarktesting.com





**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION  
FACILITIES DEVELOPMENT DIVISION**

**Seismic Parameters**

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 1.44

SDS (Design spectral response acceleration at short period, g) = 2.0

$a_p$  (Amplification factor) = 1.0

$R_p$  (Response modification factor) = 2.5

$\Omega_0$  (System overstrength factor) = 2.0

$I_p$  (Importance factor) = 1.5

$z/h$  (Height ratio factor) = 1

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

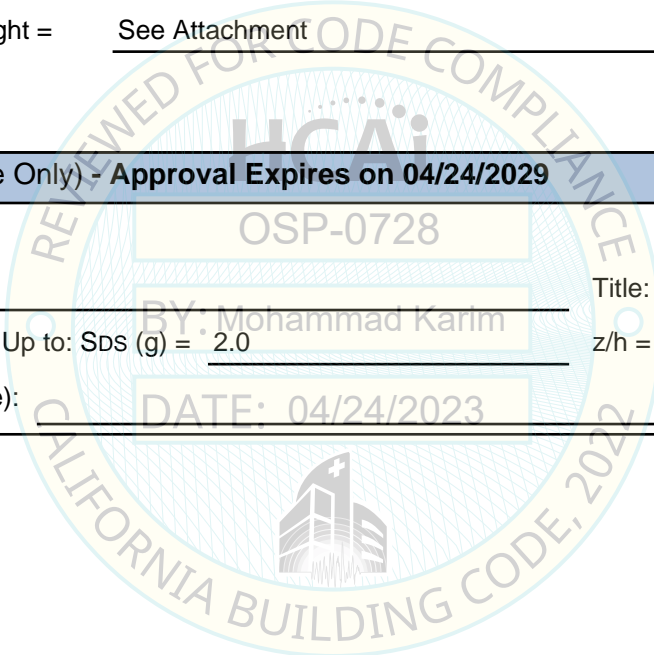
**HCAI Approval (For Office Use Only) - Approval Expires on 04/24/2029**

Date: 4/24/2023

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = 2.0 z/h = 1

Condition of Approval (if applicable): DATE: 04/24/2023



## ATTACHMENT 1: CERTIFIED COMPONENTS

## SPECIAL SEISMIC CERTIFICATION

### TABLE 1 - REMOTE UNITS

DOCUMENT NO.: 21045CR1.0

MANUFACTURER: JMA WIRELESS						
PRODUCT FAMILY: WIRELESS DISTRIBUTED ANTENNA SYSTEMS						
MODEL NUMBER	DIMENSIONS (in)			MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS
	DEPTH	WIDTH	HEIGHT			
<b>Ultra-High &amp; Very High Power Remote Unit</b>						
T19AWEWWAT	10.8	7.3	41.7	77	RU 2-band PCS1900, AWS3	EXTRAP
T19AWEVVAT	10.8	7.3	41.7	79	RU 2-band PCS1900, AWS3	EXTRAP
T19AWEVVDVT	10.8	7.3	41.7	79	RU 2-band PCS1900, AWS3	EXTRAP
T2323WVAT	10.8	7.3	41.7	79	RU Single-band MIMO WCS2300	EXTRAP
T2323WVAM14T	10.8	7.3	41.7	79	RU Single-band MIMO WCS2300	EXTRAP
T2325WVA59T	10.8	7.3	41.7	79	RU 2-band WCS2300, 2500 TDD	EXTRAP
T2325WVAT	10.8	7.3	41.7	79	RU 2-band WCS2300, 2500 TDD	EXTRAP
T2325WVVDVT	10.8	7.3	41.7	79	RU 2-band WCS2300, 2500 TDD	EXTRAP
T2325WXA59T	10.8	7.3	41.7	79	SDRU HP 10W-20W, bands 2300	EXTRAP
T2325WXAT	10.8	7.3	41.7	79	SDRU HP 10W-20W, bands 2300	EXTRAP
T2325WXDT	10.8	7.3	41.7	79	SDRU HP 10W-20W, bands 2300	EXTRAP
T2325WXD59T	10.8	7.3	41.7	79	SDRU HP 10W-20W, bands 2300	EXTRAP
T2325WXA59TH	10.8	7.3	41.7	79	SDRU HP 10W-20W, bands 2300	EXTRAP
T2525WVAT	10.8	7.3	41.7	79	RU Single-band MIMO 2500 TDD	EXTRAP
T2525WVAM14T	10.8	7.3	41.7	79	RU Single-band MIMO 2500 TDD	EXTRAP
T19AWE19AWEWWAT	10.8	7.3	41.7	88	RU 2-band PCS1900, AWS3	EXTRAP
T19AWE19AWEVVDVT	10.8	7.3	41.7	88	RU 2-band PCS1900, AWS3	EXTRAP
T19AWE2325BWAT	10.8	7.3	41.7	88	RU High bands PCS1900, AWS3	EXTRAP
T19AWE2325BVDT	10.8	7.3	41.7	88	RU High bands PCS1900, AWS3	EXTRAP
T19HAWX2325BVDT	10.8	7.3	41.7	88	RU High bands PCS1900, AWS3	EXTRAP
T19HAWX2325BXAT	10.8	7.3	41.7	88	SDRU HP 10W-20W	EXTRAP
T19HAWX2325BXDT	10.8	7.3	41.7	88	SDRU HP 10W-20W, bands 1900H	EXTRAP
T67E8AEVVAT	10.8	7.3	41.7	88	RU Low bands 600-SMR700/Firstnet	UUT 3
T67E8AEVVDVT	10.8	7.3	41.7	88	RU Low bands 600-SMR700/Firstnet	INTERP
T67E8AEVVA59T	10.8	7.3	41.7	88	RU Low bands 600-SMR700/Firstnet	INTERP
T67E8AEVVD59T	10.8	7.3	41.7	88	RU Low bands 600-SMR700/Firstnet	INTERP
T67E8AEVXAT	10.8	7.3	41.7	88	SDRU HP 10W-20W	INTERP
T67E8AEVXDT	10.8	7.3	41.7	88	SDRU HP 10W-20W	INTERP
T67E8AEVXA59T	10.8	7.3	41.7	88	SDRU HP 10W-20W	INTERP
T67E8AEVXD59T	10.8	7.3	41.7	88	SDRU HP 10W-20W	INTERP
T67E8SC8AWWAT	10.8	7.3	41.7	88	RU Low bands 600-SMR700/Firstnet	INTERP
T67E8SC8AWVDT	10.8	7.3	41.7	88	RU Low bands 600-SMR700/Firstnet	INTERP
T67E8SC8AWVA59T	10.8	7.3	41.7	88	RU Low bands 600-SMR700/Firstnet	INTERP
T67E8SC8AWVD59T	10.8	7.3	41.7	88	RU Low bands 600-SMR700/Firstnet	INTERP
T7E8AE19HAWXBVAT	10.8	7.3	41.7	88	RU 6-Band SMR700/Firstnet, 20W	INTERP
T7E8AE19HAWXBVDT	10.8	7.3	41.7	88	RU 6-Band SMR700/Firstnet, 20W	INTERP
T7E8AE19HAWXBVATH	10.8	7.3	41.7	88	RU 6-Band SMR700/Firstnet, 20W	INTERP
T7E8SC8A19AWEBWAT	10.8	7.3	41.7	88	RU 6-band SMR700/Firstnet	INTERP
T7E8SC8A19AWEVVDVT	10.8	7.3	41.7	88	RU 6-band SMR700/Firstnet	INTERP
T7E8SC8A19AWFWVAT	10.8	7.3	41.7	88	RU 6-Band SMR700/Firstnet, 20W	INTERP
T7E8SC8A19AWFWVDT	10.8	7.3	41.7	88	RU 6-Band SMR700/Firstnet, 20W	INTERP
T7E8SC8A19AWFWXAT	10.8	7.3	41.7	88	SDRU HP 10W-20W	INTERP

**NOTES:** Table continues on the next page. Additional notes, information, and seismic parameters are shown at the end of the table.

## ATTACHMENT 1: CERTIFIED COMPONENTS

## SPECIAL SEISMIC CERTIFICATION

### TABLE 1 - REMOTE UNITS (continued)

DOCUMENT NO.: 21045CR1.0

MANUFACTURER: JMA WIRELESS						
PRODUCT FAMILY: WIRELESS DISTRIBUTED ANTENNA SYSTEMS						
MODEL NUMBER	DIMENSIONS (in)			MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS
	DEPTH	WIDTH	HEIGHT			
<b>Ultra-High &amp; Very High Power Remote Unit (continued)</b>						
T7E8SC8A19AWFWXDT	10.8	7.3	41.7	88	SDRU HP 10W-20W	INTERP
T7E19HAWX25WVAT	10.8	7.3	41.7	88	RU 5-band SMR700/Firstnet	INTERP
T7E19HAWX25WVDT	10.8	7.3	41.7	88	RU 5-band SMR700/Firstnet	INTERP
T19HAWX2325BVAT	10.8	7.3	41.7	92	RU High bands PCS1900, AWS3	<b>UUT 2</b>
<b>Medium Power 33dBm Remote Unit</b>						
XR19AX25WM2/ACY	4.0	13.8	13.9	29	RU Tri-Band 1900+	EXTRAP
XR19AX25WM2/ACY B	4.0	13.8	13.9	29	RU Tri-Band 1900+	EXTRAP
XR19AX25WM2/48Y	4.0	13.8	13.9	29	RU Tri-Band 1900+	EXTRAP
XR19AX25WM2/48Y B	4.0	13.8	13.9	29	RU Tri-Band 1900+	EXTRAP
XR19AX35WM2/ACY	4.0	13.8	13.9	29	RU Tri-Band 1900+	EXTRAP
XR19AX35WM2/ACY B	4.0	13.8	13.9	29	RU Tri-Band 1900+	EXTRAP
XR19AX35WM2/48Y	4.0	13.8	13.9	29	RU Tri-Band 1900+	EXTRAP
XR19AX35WM2/48Y B	4.0	13.8	13.9	29	RU Tri-Band 1900+	EXTRAP
XR25WH2/ACY-C	4.0	13.8	13.9	29	RU single band 2500 TDD	EXTRAP
XR25WH2/48Y-C	4.0	13.8	13.9	29	RU single band 2500 TDD	EXTRAP
XR35WH2/ACY	4.0	13.8	13.9	29	RU CBRS Radio high bands	EXTRAP
XR35WH2/48Y	4.0	13.8	13.9	29	RU CBRS Radio high bands	EXTRAP
XRAF2335WM2/ACY	4.0	13.8	13.9	29	RU Tri-Band AWS-3 full	EXTRAP
XRAF2335WM2/ACY B	4.0	13.8	13.9	29	RU Tri-Band AWS-3 full	EXTRAP
XRAF2335WM2/48Y	4.0	13.8	13.9	29	RU Tri-Band AWS-3 full	EXTRAP
XRAF2335WM2/48Y B	4.0	13.8	13.9	29	RU Tri-Band AWS-3 full	EXTRAP
TRU2325WE/AC-WT	4.0	13.8	14.3	29	RU 2-band WCS2300, 2500 TDD	EXTRAP
TRU2325WE/48-WT	4.0	13.8	14.3	29	RU 2-band WCS2300, 2500 TDD	EXTRAP
TRU2325WE/AC-M14T	4.0	13.8	14.3	29	RU 2-band WCS2300, 2500 TDD	EXTRAP
TRU2525WM/AC-WT	4.0	13.8	14.3	29	RU single band MIMO 2500 TDD	EXTRAP
TRU2525WM/48-WT	4.0	13.8	14.3	29	RU single band MIMO 2500 TDD	EXTRAP
TRU2525WM/AC-M14T	4.0	13.8	14.3	29	RU single band MIMO 2500 TDD	EXTRAP
TRU2525WM/48-M14T	4.0	13.8	14.3	29	RU single band MIMO 2500 TDD	EXTRAP
TRU35T35TWM/AC-WT	4.0	13.8	14.3	29	RU single band MIMO C-BAND	EXTRAP
TRU66WM/AC-WT	4.0	13.8	14.3	29	RU Single-band MIMO LTE600	EXTRAP
TRU67E8AEWM/AC-WT	4.0	13.8	14.9	29	RU Low bands 600-SMR700/Firstnet	EXTRAP
TRU67E8AEWM/48-WT	4.0	13.8	14.9	29	RU Low bands 600-SMR700/Firstnet	EXTRAP
TRU67E8AEWM/AC-14T	4.0	13.8	14.9	28	RU Low bands 600-SMR700/Firstnet	<b>UUT 5</b>
TRU67E8AEWM/48-14T	4.0	13.8	14.9	29	RU Low bands 600-SMR700/Firstnet	INTERP
TRU67E8AEWX/AC-WT	4.0	13.8	14.9	29	SDRU 1.25W-2W, 600-SMR700	INTERP
TRU67E8AEWX/48-WT	4.0	13.8	14.9	29	SDRU 1.25W-2W, 600-SMR700	INTERP
TRU67E8AEWX/AC-14T	4.0	13.8	14.9	29	SDRU 1.25W-2W, 600-SMR700	INTERP
TRU67E8AEWX/48-14T	4.0	13.8	14.9	29	SDRU 1.25W-2W, 600-SMR700	INTERP
TRU7FL8P9PWE/AC-WT	4.0	13.8	14.9	29	RU Tri-Band PS700FULL+LTE	INTERP
TRU7FL8P9PWE/48-WT	4.0	13.8	14.9	29	RU Tri-Band PS700FULL+LTE	INTERP
TRU7FL8P9PWM/AC-WT	4.0	13.8	14.9	29	RU Tri-Band PS700FULL+LTE	INTERP
TRU7FL8P9PWM/48-WT	4.0	13.8	14.9	29	RU Tri-Band PS700FULL+LTE	INTERP

**NOTES:** Table continues on the next page. Additional notes, information, and seismic parameters are shown at the end of the table.

## ATTACHMENT 1: CERTIFIED COMPONENTS

## SPECIAL SEISMIC CERTIFICATION

### TABLE 1 - REMOTE UNITS (continued)

DOCUMENT NO.: 21045CR1.0

MANUFACTURER: JMA WIRELESS							
PRODUCT FAMILY: WIRELESS DISTRIBUTED ANTENNA SYSTEMS							
MODEL NUMBER	DIMENSIONS (in)			MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS	
	DEPTH	WIDTH	HEIGHT				
<b>Medium Power 33dBm Remote Unit (continued)</b>							
TRU7FL8PWE/AC-WT	4.0	13.8	14.9	29	RU Dual Band PS700FULL+LTE	INTERP	
TRU7FL8PWE/48-WT	4.0	13.8	14.9	29	RU Dual Band PS700FULL+LTE	INTERP	
TRU7FL8PWM/AC-WT	4.0	13.8	14.9	29	RU Dual Band PS700FULL+LTE	INTERP	
TRU7FL8PWM/48-WT	4.0	13.8	14.9	29	RU Dual Band PS700FULL+LTE	INTERP	
TRU7FLWE/AC-WT	4.0	13.8	14.9	29	RU Single Band PS700FULL+LTE	INTERP	
TRU7FLWE/48-WT	4.0	13.8	14.9	29	RU Single Band PS700FULL+LTE	INTERP	
TRU8PWE/AC-WT	4.0	13.8	14.9	29	RU Single Band 800 Public Safety	INTERP	
TRU8PWE/48-WT	4.0	13.8	14.9	29	RU Single Band 800 Public Safety	INTERP	
TRU9PPWE/AC-WT	4.0	13.8	14.9	29	RU Single Band 900PS+Paging	INTERP	
TRM19HAWX2325DT	5.7	16.3	16.6	35	RU High bands PCS1900H	INTERP	
TRM7E8AE19HAWX23AT	5.7	16.3	16.6	35	RU 7 bands LTE700E, 800-850Plus	INTERP	
TRM7E8AE19HAWX23DT	5.7	16.3	16.6	35	RU 7 bands LTE700E, 800-850Plus	INTERP	
TRM7E8AE19HAWXAT	5.7	16.3	16.6	35	RU Six Band LTE700E, 800-850Plus	INTERP	
TRM7E8AE19HAWXDT	5.7	16.3	16.6	35	RU Six Band LTE700E, 800-850Plus	INTERP	
TRX19HAWX2325AT	5.7	16.3	16.6	35	SDRU 1.25W-2W, PCS1900H	INTERP	
TRX19HAWX2325DT	5.7	16.3	16.6	35	SDRU 1.25W-2W, PCS1900H	INTERP	
TRX7E8AE19HAWX23AT	5.7	16.3	16.6	35	SDRU 1.25W-2W, SMR700/Firstnet	INTERP	
TRX7E8AE19HAWX23DT	5.7	16.3	16.6	35	SDRU 1.25W-2W, SMR700/Firstnet	INTERP	
TRM19HAWX2325AT	5.7	16.3	16.6	38	RU High bands PCS1900H	<b>UUT 4</b>	
<b>MOUNTING:</b> Rigid wall mounted.				<b>SEISMIC LEVELS:</b>	S <sub>DS</sub> = 2.0g for z/h = 1		I <sub>p</sub> = 1.5
<b>NOTES:</b>							
<b>Product Construction/Options/Subcomponents:</b> Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.							

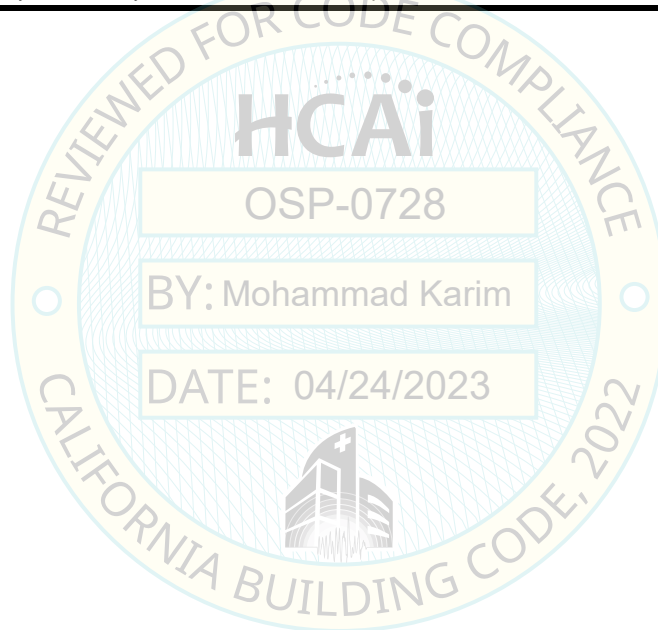
**ATTACHMENT 1: CERTIFIED COMPONENTS**

**SPECIAL SEISMIC CERTIFICATION**

**TABLE 2 - RACK**

DOCUMENT NO.: 21045CR1.0

<b>MANUFACTURER: JMA WIRELESS</b>						
<b>PRODUCT FAMILY: WIRELESS DISTRIBUTED ANTENNA SYSTEMS</b>						
MODEL NUMBER	DIMENSIONS (in)			MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS
	DEPTH	WIDTH	HEIGHT			
<b>Server Rack for Mounting Equipment</b>						
Chatsworth Rack Z4-22N-1000-C00	41.0	31.5	82.5	796	Wt. incl. rack, vert C.G.=48.2in	<b>UUT 1</b>
<b>MOUNTING:</b> Rigid floor mounted Chatsworth Z4-22N-1000-C00 rack. Use identical rack with a C.G. less than the listed C.G. above.				<b>SEISMIC LEVELS:</b>	$S_{DS} = 2.0g$ for $z/h = 1$	$I_p = 1.5$
<b>NOTES:</b>						
<b>Product Construction:</b> Carbon steel rack. Frame only, doors/panels/accessories of the rack are not certified.						
<b>Options/Subcomponents:</b> Rack may contain any combination of subcomponents listed in Table 3.						



## ATTACHMENT 1: CERTIFIED SUBCOMPONENTS

## SPECIAL SEISMIC CERTIFICATION

### TABLE 3 - RACK SUBCOMPONENTS

DOCUMENT NO.: 21045CR1.0

MANUFACTURER: JMA WIRELESS						
PRODUCT FAMILY: WIRELESS DISTRIBUTED ANTENNA SYSTEMS						
MODEL NUMBER	DIMENSIONS (in)			MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS
	DEPTH	WIDTH	HEIGHT			
<b>Subcomponent: Subracks</b>						
SUB-PSUN-MU/48	14.8	19.0	1.8	14	DC PSU Modules for Master Unit	EXTRAP
SUB-PSUN-MU	14.8	19.0	1.8	14	AC PSU Modules for Master Unit	UUT 1
SUB-RPSU2-MU/AC	16.6	19.0	3.5	30	AC Remote PSU Modules & DC Dist	INTERP
SUB-RPSU2-MU/48	16.6	19.0	3.5	30	DC Remote PSU Modules & DC Dist	INTERP
SUB-RPSU-MU/AC	16.6	19.0	3.5	30	AC Remote PSU Modules & DC Dist	INTERP
SUB-RPSU-MU/48	16.6	19.0	3.5	30	DC Remote PSU Modules & DC Dist	INTERP
SUB-HPOI	10.6	19.0	5.3	46	Passive modules	INTERP
SUB-TRX-PSU5N	10.6	19.0	5.3	46	Optical Modules	UUT 1
<b>Subcomponent: Master Unit Modules</b>						
TCM3-4				<1	Teko Capacity Manager 3x4	EXTRAP
TSW4				<1	Configurable RF SWITCH 1:4	EXTRAP
TSC2W-U				<1	2 Ways Combiner/Splitter	EXTRAP
TSC2W-X				<1	2 Ways Combiner/Splitter	EXTRAP
TSC4W-U				<1	4 Ways Combiner/Splitter	UUT 1
TSC4W-X				<1	4 Ways Combiner/Splitter	INTERP
TRI-LO19HAWX				<1	Triplexer Low, Extended PCS	INTERP
TRI-2325TR				<1	Triplexer 2300WCS, 2500 TDD	UUT 1
TESA-UW2-L				1.3	Esaplexer SMR700 extended	UUT 1
TDIP-LOHI/2325-D-R				1.3	Diplexer LTE600, SMR700	INTERP
TDIP-LOHI23/25-D-R				1.3	Diplexer LTE600, SMR700	INTERP
TDIP-LO/HI2325-D-R				1.3	Diplexer LTE600, LTE700	INTERP
TMBC-67E8AE				1.3	Master Band Combiner LTE600	INTERP
TMBC-35WTR				1.3	Master Band combiner 35TDD (7TE)	INTERP
TMBC-LO1925TR				1.3	Master Band Combiner LO1925TR	INTERP
TMBC-19HAWX2325TR				1.3	Master Band Combiner Ext. PCS	INTERP
TSYNC				1.3	TDD Synchronizer & Ref. Mod. (7TE)	UUT 1
TSYNC-N				1.3	TDD Synch. & Ref. Mod. (7TE)	INTERP
TEPTA-UW-LH/2325				1.8	Eptaplexer for cascade 7-band sol.	INTERP
TEPTA-UW-LH23/25				1.8	Eptaplexer for cascade 7-band sol.	INTERP
TRI-SC4W-7S8AHI				1.8	Triplexer SMR700/AMPS/High bands	INTERP
TRI-SC4W-8S9SHI				1.8	Triplexer SMR800, SMR900	INTERP
TRI-SC4W-LO19HAWX				1.8	Triplexer Low, Extended PCS	UUT 1
<b>Subcomponent: CPRI Point of Interface US</b>						
TCPRIPOI-6-M				4.6	LTE600, 4 x SFP+, Dual	EXTRAP
TCPRIPOI-7SL-M				4.6	SMR700 Low, 4 x SFP+, Dual	EXTRAP
TCPRIPOI-7SH-M				4.6	SMR700 High, 4 x SFP+, Dual	EXTRAP
TCPRIPOI-8AE-M				4.6	SMR800+AMPS, 4 x SFP+, Dual	UUT 1
TCPRIPOI-AWE-M				4.6	AWS Extended band, 4xSFP+, Dual	INTERP
TCPRIPOI-23-M				4.6	WCS2300, 4 x SFP+, Dual	INTERP
TCPRIPOI-25L-M				4.6	2500 TDD LBS, 4 x SFP+, Dual	INTERP
TCPRIPOI-25M-M				4.6	2500 TDD MBS, 4 x SFP+, Dual	INTERP
TCPRIPOI-25U-M				4.6	2500 TDD UBS, 4 x SFP+, Dual	INTERP

**NOTES:** Table continues on the next page. Additional notes, information, and seismic parameters are shown at the end of the table.



## ATTACHMENT 1: CERTIFIED SUBCOMPONENTS

## SPECIAL SEISMIC CERTIFICATION

### TABLE 3 - RACK SUBCOMPONENTS (continued)

DOCUMENT NO.: 21045CR1.0

MANUFACTURER: JMA WIRELESS						
PRODUCT FAMILY: WIRELESS DISTRIBUTED ANTENNA SYSTEMS						
MODEL NUMBER	DIMENSIONS (in)			MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS
	DEPTH	WIDTH	HEIGHT			
<b>Subcomponent: CPRI Point of Interface US (continued)</b>						
TCPRIPOI-AWF-M				4.6	AWF	INTERP
TCPRIPOI-AWS4-M				4.6	AWS4	INTERP
TCPRIPOI-19-M				4.6	PCS1900, 4 x SFP+, Dual	UUT 1
<b>Subcomponent: Low Power Point of Interface - Simplex</b>						
TDPX-7SH-M				2.2	Teko 7SH (B13), MIMO, 7TE	EXTRAP
TDPX-8A-M				2.2	Teko 8A (B5), MIMO, 7TE	EXTRAP
TDPX-19-M				2.2	Teko 19 (B25), MIMO, 7TE	UUT 1
TDPX-AWF-M				2.2	Teko AWF (B66), MIMO, 7TE	INTERP
TLPPOI-LB-MSE				2.9	Low Band, MIMO, Simplex	INTERP
TLPPOI-VB-MSE				2.9	Very high Band, MIMO, Simplex	INTERP
TLPPOI-HB-MSE				2.9	High Band, MIMO, Simplex	UUT 1
<b>Subcomponent: Active Point of Interface (up to 33 dBm)</b>						
TAPOI-6-F-4				2.9	LTE600 band- Flexi, 4.3-10	EXTRAP
TAPOI-SMR700L-F-4				2.9	LTE 700 Low band- Flexi, 4.3-10	EXTRAP
TAPOI-SMR700H-F-4				2.9	LTE 700 High band- Flexi, 4.3-10	EXTRAP
TAPOI-7FL-F-4				2.9	Public Safety 700 LTE	EXTRAP
TAPOI-SMR800-F-4				2.9	SMR800 band- Flexi, 4.3-10	EXTRAP
TAPOI-AMPS-F-4				2.9	AMPS band- Flexi, 4.3-10	UUT 1
TAPOI-SMR900-F-4				2.9	SMR900 band- Flexi, 4.3-10	INTERP
TAPOI-9PP-F-4				2.9	Public Safety 900PS+Paging	INTERP
TAPOI-PCS-F-4				2.9	PCS band- Flexi, 4.3-10	INTERP
TAPOI-AWF-F-4				2.9	AWS-3 band, Flexi, 4.3-10	INTERP
TAPOI-AWS4-F-4				2.9	AWS-4 band- Flexi, 4.3-10	INTERP
TAPOI-7FC-F-4				2.9	Public Safety 700 MHz Canada	INTERP
TAPOI-WCS-F-4				2.9	WCS band- Flexi, 4.3-10	UUT 1
<b>Subcomponent: Active High Power Point of Interface (33-49 dBm)</b>						
TDTPOI-6-D				7.9	600MHz, Dual	EXTRAP
TDTPOI-7SL-D				7.9	SMR700 Low, Dual	UUT 1
TDTPOI-7SH-D				7.9	SMR700 High, Dual	INTERP
TDTPOI-7FL-D				7.9	Public Safety 700 LTE, Dual	INTERP
TDTPOI-8S-D				7.9	800 SMR Band, Dual, DIN	INTERP
TDTPOI-8A-D				7.9	AMPS850, Dual	INTERP
TDTPOI-19-D				7.9	PCS1900, Dual	INTERP
TDTPOI-AWF-D				7.9	AWS-3 band, Dual	INTERP
TDTPOI-AWS4-D				7.9	AWS-4 band, Dual	INTERP
TDTPOI-23-D				7.9	WCS2300 band, Dual	INTERP
TDTPOI-25-D-LL				7.9	2500 TDD, Dual, Low Loss	INTERP
TDTPOI-35T-D-LL				7.9	35-TDD, C Band TDD,	INTERP
TDTPOI-25-D				7.9	2500 TDD, Dual	UUT 1
<b>Subcomponent: Master Unit Power Supply &amp; Supervision Modules</b>						
TEA-I16				<1	External Alarm module w/ 16 inputs	EXTRAP
TPSU/AC				2.0	AC	EXTRAP
<b>NOTES:</b> Table continues on the next page. Additional notes, information, and seismic parameters are shown at the end of the table.						

## ATTACHMENT 1: CERTIFIED SUBCOMPONENTS

## SPECIAL SEISMIC CERTIFICATION

### TABLE 3 - RACK SUBCOMPONENTS (continued)

DOCUMENT NO.: 21045CR1.0

MANUFACTURER: JMA WIRELESS						
PRODUCT FAMILY: WIRELESS DISTRIBUTED ANTENNA SYSTEMS						
MODEL NUMBER	DIMENSIONS (in)			MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS
	DEPTH	WIDTH	HEIGHT			
<b>Subcomponent: Master Unit Power Supply &amp; Supervision Modules (continued)</b>						
TPSU/48				2.0	48VDC	EXTRAP
TSPV-EBB				2.2	Supervision module Evo, Backup	UUT 1
TPSU/48-30-1K				4.4	48VDC 1KW	INTERP
TPSU/AC-30-1K				4.4	AC 1KW	UUT 1
<b>Subcomponent: Master Unit Optical Modules</b>						
TTRUPTPMW-S				3.3	Master, 617-2700MHz, WDM	EXTRAP
TTRUPTPMN23-S				3.3	Master, 617-2700MHz	EXTRAP
TTRUPTPMN27-S				3.3	Master, 617-2700MHz	EXTRAP
TTRUPTPMN31-S				3.3	Master, 617-2700MHz	EXTRAP
TTRUPTPMN35-S				3.3	Master, 617-2700MHz	EXTRAP
TTRUPTPMN39-S				3.3	Master, 617-2700MHz	EXTRAP
TTRUPTPSW-S				3.3	Secondary, 617-2700MHz, WDM	EXTRAP
TTRUPTPSW-S-1				3.3	Secondary, 617-2700MHz, WDM	EXTRAP
TTRUPTPSN25-S				3.3	Secondary, 617-2700	EXTRAP
TTRUPTPSN29-S				3.3	Secondary, 617-2700	EXTRAP
TTRUPTPSN33-S				3.3	Secondary, 617-2700	EXTRAP
TTRUPTPSN37-S				3.3	Secondary, 617-2700	EXTRAP
TTRUPTPSN41-S				3.3	Secondary, 617-2700MHz	EXTRAP
TTRUPTPSN25-S-1				3.3	Secondary, 617-2700MHz	EXTRAP
TTRUPTPSN29-S-1				3.3	Secondary, 617-2700MHz	EXTRAP
TTRUPTPSN33-S-1				3.3	Secondary, 617-2700MHz	EXTRAP
TTRUPTPSN37-S-1				3.3	Secondary, 617-2700MHz	EXTRAP
TTRUPTPSN41-S-1				3.3	Secondary, 617-2700MHz	EXTRAP
TTRU1W-S-M				3.5	Optical Tx/Rx, 1 Tx, 1 Rx, WDM	EXTRAP
TTRU2W-S-M				3.5	Optical Tx/Rx, 1 Tx, 2 Rx, WDM	EXTRAP
TTRU4W-S-M				3.5	Optical Tx/Rx, 1 Tx, 4 Rx, WDM	UUT 1
TTRX24W-S-M				3.5	OTRx MU 3.3-4.2GHZ 2TX 4RX	INTERP
TTRU2W-S-M-C2				3.5	Optical Tx/Rx, 1 Tx, 2 Rx, WDM	UUT 1
<b>MOUNTING:</b> Mounted within unit.				<b>SEISMIC LEVELS:</b>	$S_{DS} = 2.0g$ for $z/h = 1$	$I_p = 1.5$
<b>NOTES: Construction/Options:</b> Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.						

## ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

## SPECIAL SEISMIC CERTIFICATION

### UUT 1

DOCUMENT NO.: 21045CR1.0

<b>MANUFACTURER:</b>	JMA WIRELESS
<b>MODEL NUMBER:</b>	Z4-22N-1000-C00
<b>UNIT FUNCTION:</b>	Wireless Distributed Antenna System
<b>SERIAL NUMBER:</b>	N/A

DIMENSIONS (in)			WEIGHT (lb)	RES. FREQ. (Hz)		
DEPTH	WIDTH	HEIGHT		F-B	S-S	V
41.0	31.5	82.5	796	8.8	9.3	>33

**CODE & CRITERIA:** 2022 CBC, ICC-ES AC156

**TEST LABORATORY:** CLARK TESTING LABORATORY, INC.

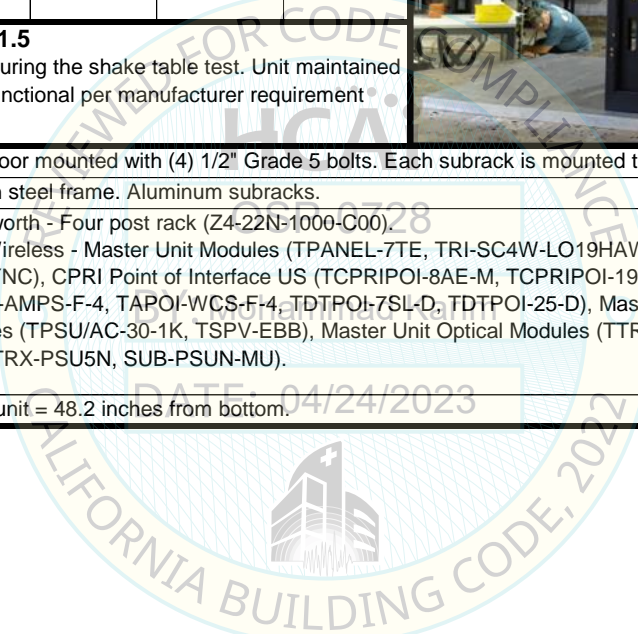
**REPORT:** JID 21-01451 Rev.0 (dated 9/23/21), tested on 8/25/2021

S <sub>DS</sub> (g)	z/h	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)
2.0	1	3.20	2.40	1.34	0.54

**IMPORTANCE FACTOR, I<sub>p</sub> = 1.5**  
 Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.



<b>MOUNTING:</b>	Rigid floor mounted with (4) 1/2" Grade 5 bolts. Each subrack is mounted to the rack with (4) M6 bolts.
<b>CONSTRUCTION:</b>	Carbon steel frame. Aluminum subracks.
<b>SUBCOMPONENTS:</b>	Chatsworth - Four post rack (Z4-22N-1000-C00). JMA Wireless - Master Unit Modules (TPANEL-7TE, TRI-SC4W-LO19HAWX, TRI-2325TR, TESA-UW2-L, TSC4W-U, TSYNC), CPRI Point of Interface US (TCPRIPOI-8AE-M, TCPRIPOI-19-M, TLPPOI-HB-MSE, TDPX-19-M, TAPOI-AMPS-F-4, TAPOI-WCS-F-4, TDTPOI-7SL-D, TDTPOI-25-D), Master Unit Power Supply & Supervision Modules (TPSU/AC-30-1K, TSPV-EBB), Master Unit Optical Modules (TTRU4W-S-M, TTRU2W-S-M-C2), Subracks (SUB-TRX-PSU5N, SUB-PSUN-MU).
<b>TESTING NOTES:</b>	CG of unit = 48.2 inches from bottom.



## ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

## SPECIAL SEISMIC CERTIFICATION

### UUT 1- RACK CONFIGURATION

DOCUMENT NO.: 21045CR1.0

CG of unit = 48.2 inches from bottom. Total height = 82.5in.

RU	Back of Rack	Front of Rack	
43		SUB-PSUN-MU	14lb, 79in
42	36lb, 77.3in	SUB-TRX-PSU5N	
41			
40		SUB-TRX-PSU5N (Dummy Weight)	46lb, 73.8in
39			
38	18lb, 70.3in	SUB-TRX-PSU5N	
37			
36		SUB-TRX-PSU5N	16lb, 66.8in
35			
34			
33			
32		SUB-TRX-PSU5N	12lb, 59.8in
31			
30	46lb, 56.3in	SUB-TRX-PSU5N (Dummy Weight)	
29			
28		SUB-TRX-PSU5N (Dummy Weight)	46lb, 52.8in
27			
26	46lb, 49.3in	SUB-TRX-PSU5N (Dummy Weight)	
25			
24		SUB-TRX-PSU5N (Empty)	6lb, 45.8in
23			
22			
21			
20	58lb, 38.8in	Power Supply (Dummy Weight)	
19			
18			
17		Power Supply (Dummy Weight)	60lb, 33.5in
16			
15			
14			
13			
12			
11			
10			
9			
8			
7			
6			
5			
4			
1-3			



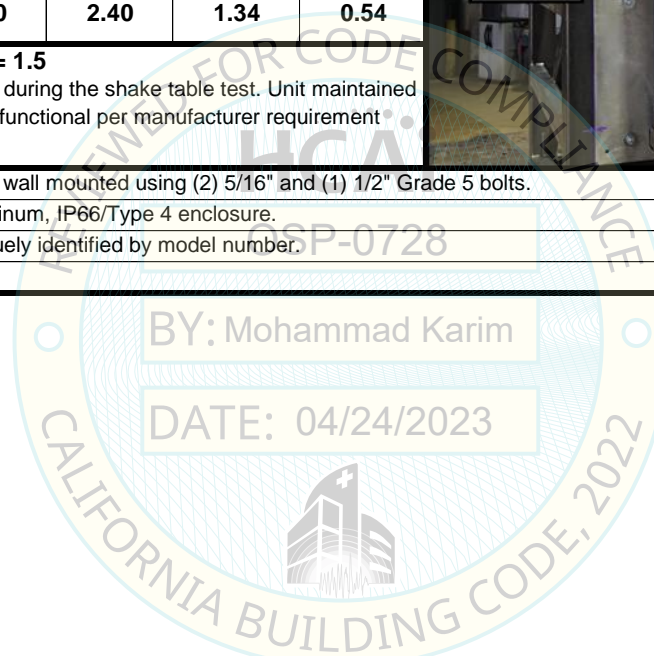
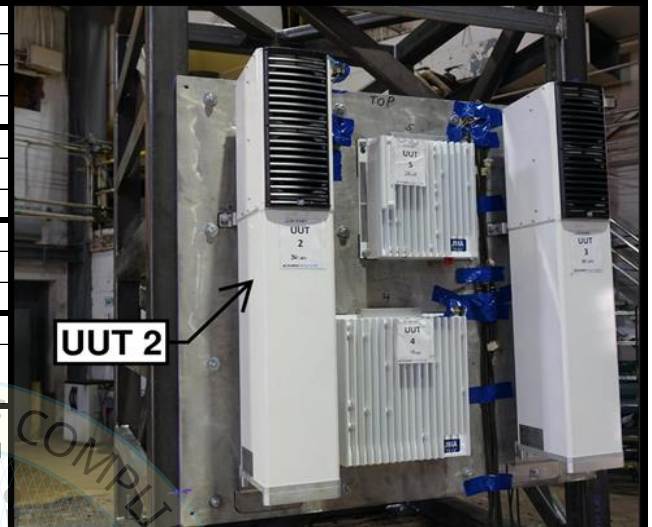
## ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

## SPECIAL SEISMIC CERTIFICATION

### UUT 2

DOCUMENT NO.: 21045CR1.0

<b>MANUFACTURER:</b>		JMA WIRELESS			
<b>MODEL NUMBER:</b>		T19HAWX2325BVAT			
<b>UNIT FUNCTION:</b>		Wireless Distributed Antenna System			
<b>SERIAL NUMBER:</b>		N/A			
<b>DIMENSIONS (in)</b>			<b>WEIGHT</b>	<b>RES. FREQ. (Hz)</b>	
<b>DEPTH</b>	<b>WIDTH</b>	<b>HEIGHT</b>	<b>(lb)</b>	<b>F-B</b>	<b>S-S</b>
10.8	7.3	41.7	92	N/A	N/A
<b>CODE &amp; CRITERIA:</b>		2022 CBC, ICC-ES AC156			
<b>TEST LABORATORY:</b>		CLARK TESTING LABORATORY, INC.			
<b>REPORT:</b>		JID 21-01451 Rev.0 (dated 9/23/21), tested on 8/24/2021			
<b>S<sub>DS</sub> (g)</b>	<b>z/h</b>	<b>A<sub>FLX-H</sub> (g)</b>	<b>A<sub>RIG-H</sub> (g)</b>	<b>A<sub>FLX-V</sub> (g)</b>	<b>A<sub>RIG-V</sub> (g)</b>
2.0	1	3.20	2.40	1.34	0.54
<b>IMPORTANCE FACTOR, I<sub>p</sub> = 1.5</b>					
Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.					
<b>MOUNTING:</b>		Rigid wall mounted using (2) 5/16" and (1) 1/2" Grade 5 bolts.			
<b>CONSTRUCTION:</b>		Aluminum, IP66/Type 4 enclosure.			
<b>SUBCOMPONENTS:</b>		Uniquely identified by model number.			
<b>TESTING NOTES:</b>		N/A			



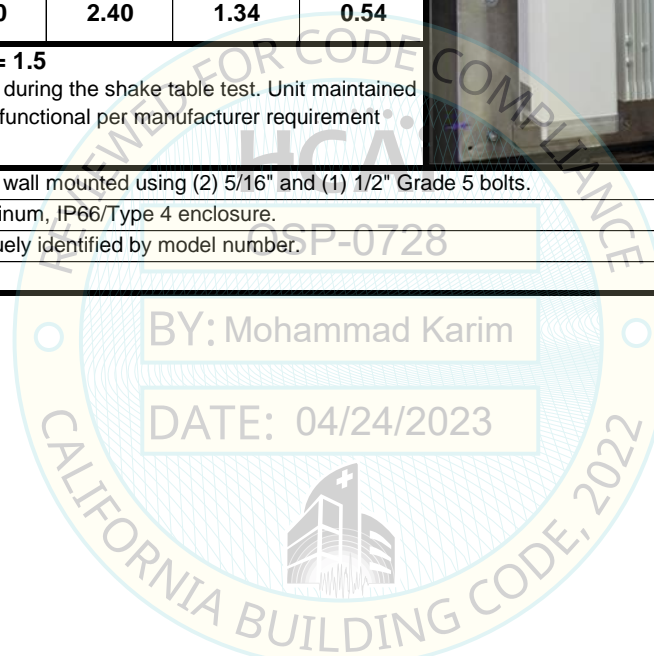
## ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

## SPECIAL SEISMIC CERTIFICATION

### UUT 3

DOCUMENT NO.: 21045CR1.0

<b>MANUFACTURER:</b>		JMA WIRELESS				
<b>MODEL NUMBER:</b>		T67E8AEWVAT				
<b>UNIT FUNCTION:</b>		Wireless Distributed Antenna System				
<b>SERIAL NUMBER:</b>		N/A				
<b>DIMENSIONS (in)</b>			<b>WEIGHT (lb)</b>	<b>RES. FREQ. (Hz)</b>		
<b>DEPTH</b>	<b>WIDTH</b>	<b>HEIGHT</b>		<b>F-B</b>	<b>S-S</b>	<b>V</b>
10.8	7.3	41.7	88	N/A	N/A	N/A
<b>CODE &amp; CRITERIA:</b>		2022 CBC, ICC-ES AC156				
<b>TEST LABORATORY:</b>		CLARK TESTING LABORATORY, INC.				
<b>REPORT:</b>		JID 21-01451 Rev.0 (dated 9/23/21), tested on 8/24/2021				
<b>S<sub>DS</sub> (g)</b>	<b>z/h</b>	<b>A<sub>FLX-H</sub> (g)</b>	<b>A<sub>RIG-H</sub> (g)</b>	<b>A<sub>FLX-V</sub> (g)</b>	<b>A<sub>RIG-V</sub> (g)</b>	
2.0	1	3.20	2.40	1.34	0.54	
<b>IMPORTANCE FACTOR, I<sub>p</sub> = 1.5</b>						
Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.						
<b>MOUNTING:</b>		Rigid wall mounted using (2) 5/16" and (1) 1/2" Grade 5 bolts.				
<b>CONSTRUCTION:</b>		Aluminum, IP66/Type 4 enclosure.				
<b>SUBCOMPONENTS:</b>		Uniquely identified by model number.				
<b>TESTING NOTES:</b>		N/A				



BY: Mohammad Karim

DATE: 04/24/2023

## ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

## SPECIAL SEISMIC CERTIFICATION

### UUT 4

DOCUMENT NO.: 21045CR1.0

<b>MANUFACTURER:</b>	JMA WIRELESS
<b>MODEL NUMBER:</b>	TRM19HAWX2325AT
<b>UNIT FUNCTION:</b>	Wireless Distributed Antenna System
<b>SERIAL NUMBER:</b>	N/A

DIMENSIONS (in)			WEIGHT (lb)	RES. FREQ. (Hz)		
DEPTH	WIDTH	HEIGHT		F-B	S-S	V
5.7	16.3	16.6	38	N/A	N/A	N/A

**CODE & CRITERIA:** 2022 CBC, ICC-ES AC156

**TEST LABORATORY:** CLARK TESTING LABORATORY, INC.

**REPORT:** JID 21-01451 Rev.0 (dated 9/23/21), tested on 8/24/2021

S <sub>DS</sub> (g)	z/h	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)
2.0	1	3.20	2.40	1.34	0.54

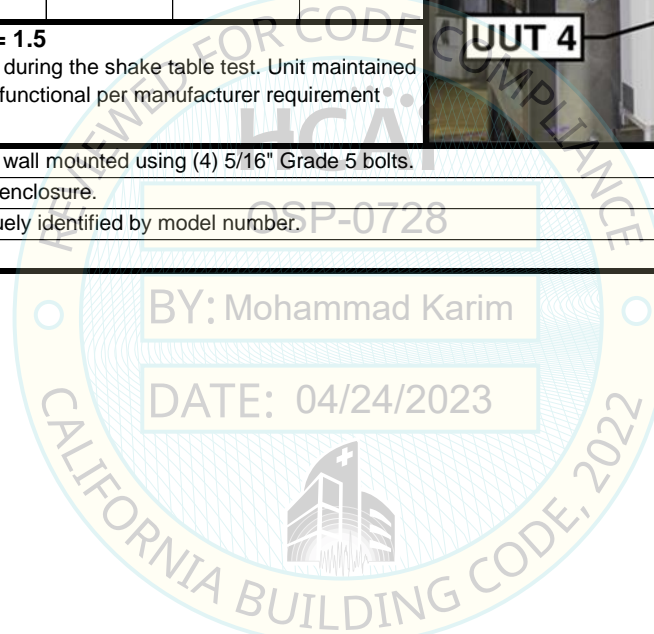
**IMPORTANCE FACTOR, I<sub>p</sub> = 1.5**  
 Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

**MOUNTING:** Rigid wall mounted using (4) 5/16" Grade 5 bolts.

**CONSTRUCTION:** IP32 enclosure.

**SUBCOMPONENTS:** Uniquely identified by model number.

**TESTING NOTES:** N/A



BY: Mohammad Karim

DATE: 04/24/2023

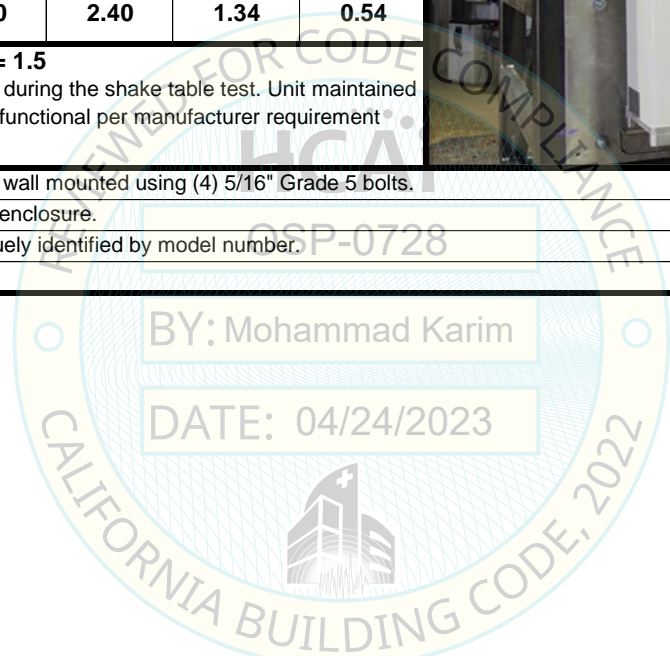
## ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

## SPECIAL SEISMIC CERTIFICATION

### UUT 5

DOCUMENT NO.: 21045CR1.0

<b>MANUFACTURER:</b>		JMA WIRELESS			
<b>MODEL NUMBER:</b>		TRU67E8AEWM/AC-14T			
<b>UNIT FUNCTION:</b>		Wireless Distributed Antenna System			
<b>SERIAL NUMBER:</b>		N/A			
<b>DIMENSIONS (in)</b>			<b>WEIGHT</b>	<b>RES. FREQ. (Hz)</b>	
<b>DEPTH</b>	<b>WIDTH</b>	<b>HEIGHT</b>	<b>(lb)</b>	<b>F-B</b>	<b>S-S</b>
4.0	13.8	14.9	28	N/A	N/A
<b>CODE &amp; CRITERIA:</b>		2022 CBC, ICC-ES AC156			
<b>TEST LABORATORY:</b>		CLARK TESTING LABORATORY, INC.			
<b>REPORT:</b>		JID 21-01451 Rev.0 (dated 9/23/21), tested on 8/24/2021			
<b>S<sub>DS</sub> (g)</b>	<b>z/h</b>	<b>A<sub>FLX-H</sub> (g)</b>	<b>A<sub>RIG-H</sub> (g)</b>	<b>A<sub>FLX-V</sub> (g)</b>	<b>A<sub>RIG-V</sub> (g)</b>
2.0	1	3.20	2.40	1.34	0.54
<b>IMPORTANCE FACTOR, I<sub>p</sub> = 1.5</b>					
Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.					
<b>MOUNTING:</b>		Rigid wall mounted using (4) 5/16" Grade 5 bolts.			
<b>CONSTRUCTION:</b>		IP32 enclosure.			
<b>SUBCOMPONENTS:</b>		Uniquely identified by model number.			
<b>TESTING NOTES:</b>		N/A			



BY: Mohammad Karim

DATE: 04/24/2023