



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

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

OFFICE USE ONLY

**APPLICATION #: OSP-0737**

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

Type:  New  Renewal

**Manufacturer Information**

Manufacturer: Toshiba International Corporation

Manufacturer's Technical Representative: Michael Alexander

Mailing Address: 13131 West Little York Road, Houston, TX 77041

Telephone: (800) 231-1412

Email: michael.alexander@toshiba.com

**Product Information**

Product Name: UPS and Batteries

Product Type: Batteries

Product Model Number: SCiB ESS & 4400 AUX

General Description: Uninterruptible Power Supply battery and support cabinets.

Mounting Description: Rigid, Wall and Floor Mounted

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

**Applicant Information**

Applicant Company Name: Manwill Engineering LLC

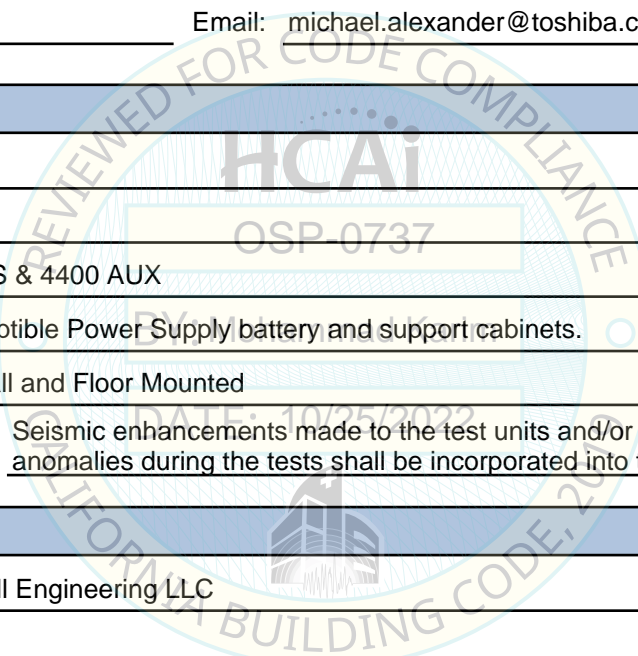
Contact Person: Derek Manwill

Mailing Address: PO Box 1194, Bend, OR 97709

Telephone: (541) 241-2102

Email: derek@manwillse.com

Title: President





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

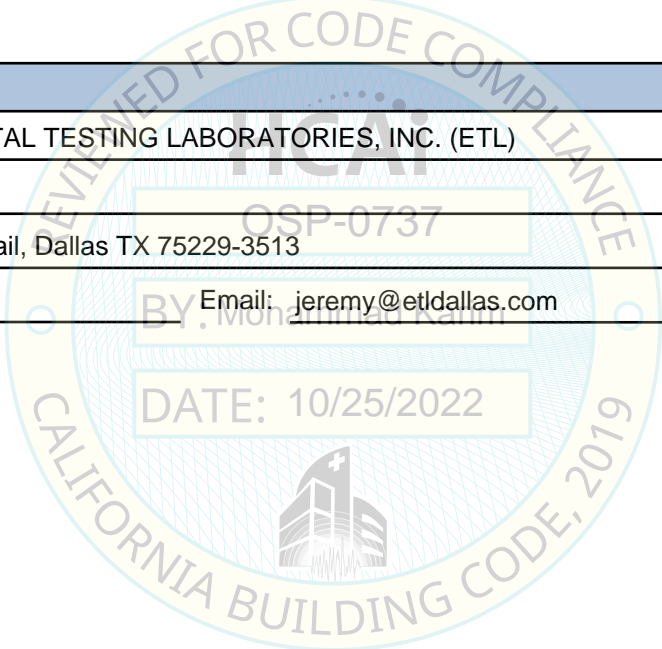
Company Name: MANWILL ENGINEERING LLC  
Name: Derek Manwill California License Number: S6266  
Mailing Address: PO Box 1194, Bend, OR 97709  
Telephone: (541) 241-2102 Email: derek@manwillse.com

**Certification Method**

GR-63-Core     ICC-ES AC156     IEEE 344     IEEE 693     NEBS 3  
 Other (Please Specify): \_\_\_\_\_

**Testing Laboratory**

Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)  
Contact Person: Jeremy Lange  
Mailing Address: 11034 Indian Trail, Dallas TX 75229-3513  
Telephone: (972) 247-9657 Email: jeremy@etldallas.com





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**Seismic Parameters**

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 0.80 (SDS=1.06, z/h=1), 0.77 (SDS=1.70, z/h=0)

SDS (Design spectral response acceleration at short period, g) = 1.06 (z/h=1), 1.70 (z/h=0)

$a_p$  (Amplification factor) = 2.5

$R_p$  (Response modification factor) = 6.0

$\Omega_0$  (System overstrength factor) = 2.0

$I_p$  (Importance factor) = 1.5

z/h (Height ratio factor) = 1 and 0

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

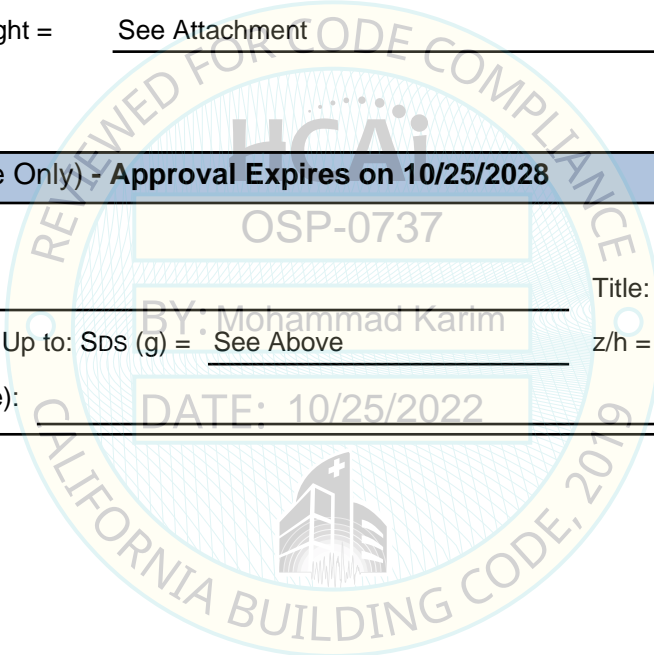
**HCAI Approval (For Office Use Only) - Approval Expires on 10/25/2028**

Date: 10/25/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = See Above z/h = See Above

Condition of Approval (if applicable): DATE: 10/25/2022



## ATTACHMENT 1: CERTIFIED COMPONENTS

## SPECIAL SEISMIC CERTIFICATION

### TABLE 1 - FLOOR & WALL MOUNTED

DOCUMENT NO.: 20043CR2.1

<b>MANUFACTURER:</b> TOSHIBA INTERNATIONAL CORPORATION						
<b>PRODUCT FAMILY:</b> SCiB ESS & 4400 AUX						
MODEL NUMBER	DIMENSIONS (in)			MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS
	DEPTH	WIDTH	HEIGHT			
<b>SCiB Energy Storage System (ESS)</b>						
DCS0011K060TS91FHDSX	37.5	11.9	64.8	611	288V SCiB ESS, no terminal	EXTRAP
DCS0011K060TS91FHDS	37.5	11.9	64.8	613	288V SCiB ESS	UUT 3a
G9B00SCiBTA2PH	32.8	34.1	80.6	2007	480V SCiB ESS	UUT 4a
<b>4400 Auxiliary Cabinets</b>						
440S200MFXA-S	37.2	11.9	64.8	232	20kVA w/ MBS	EXTRAP
440S250MFXA1-S	37.2	11.9	64.8	240	25kVA w/ MBS, no MOXA	EXTRAP
440S250MFXA-S	37.2	11.9	64.8	241	25kVA w/ MBS	UUT 1a
440S300MFXA-S	37.2	11.9	64.8	232	30kVA w/ MBS	INTERP
440A300MFPX-S	37.4	20.1	65.1	383	30kVA w/ MBS/PDP	UUT 13
440A800MFS3CPXXX-S	37.2	32.1	73.6	517	80kVA w/ MBS/PDP/SubFeed	UUT 12
<b>MOUNTING:</b>	Rigid floor and wall mounted.			<b>SEISMIC LEVELS:</b>	$S_{DS} = 1.06g$ for $z/h = 1$ $S_{DS} = 1.70g$ for $z/h = 0$	$I_p = 1.5$
<b>NOTES:</b>	<p><b>Product Construction:</b> Painted carbon steel enclosure and framing.</p> <p><b>Options/Subcomponents:</b> Model number uniquely identifies selected options and subcomponents. No variations are allowed.</p> <p><b>Note 1:</b> SCiB ESS can be a standalone single module or a group of modules physically connected together.</p> <p><b>Note 2:</b> Seismic enhancements made to the test unit must be incorporated into the production units.</p>					

DATE: 10/25/2022



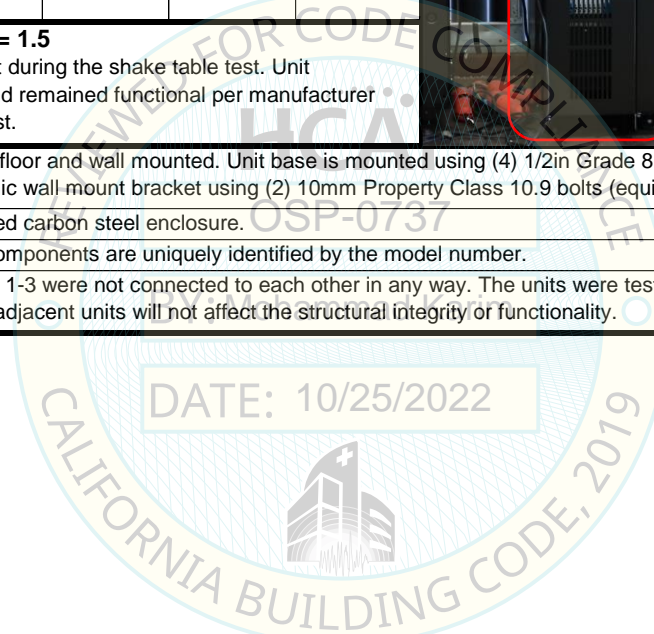
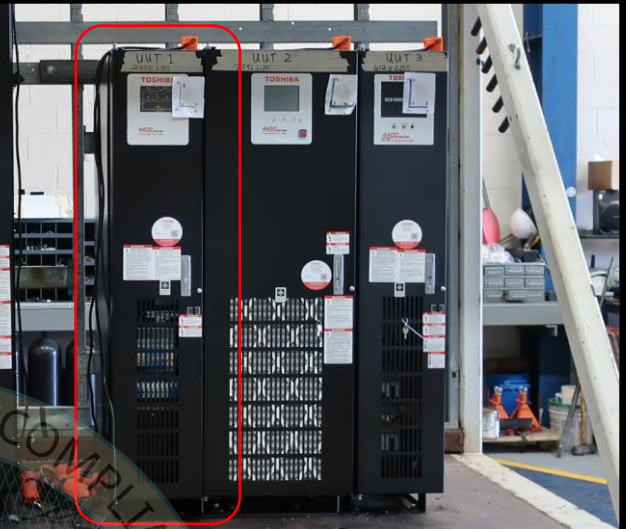
## ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

## SPECIAL SEISMIC CERTIFICATION

### UUT 1a

DOCUMENT NO.: 20043CR2.1

<b>MANUFACTURER:</b>		TOSHIBA INTERNATIONAL CORPORATION				
<b>MODEL NUMBER:</b>		440S250MFXA-S				
<b>UNIT FUNCTION:</b>		Maintenance Bypass (MBS)				
<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>
37.5	11.9	64.8	241	N/A	N/A	N/A
<b>CODE &amp; CRITERIA:</b>		2022 CBC		ICC-ES AC156		
<b>TEST LABORATORY:</b>		ENVIRONMENTAL TESTING LABORATORY				
<b>REPORT &amp; DATE:</b>		20093TR1.0		November 4, 2020		
<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>	
1.06	1	1.70	1.27	1.14	0.46	
1.70	0					
<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 floor and wall mounted. Unit base is mounted using (4) 1/2in Grade 8 bolts. Unit top is mounted with the seismic wall mount bracket using (2) 10mm Property Class 10.9 bolts (equivalent to 3/8in Grade 8 bolts).				
<b>CONSTRUCTION:</b>		Painted carbon steel enclosure.				
<b>SUBCOMPONENTS:</b>		Subcomponents are uniquely identified by the model number.				
<b>TESTING NOTES:</b>		UUTs 1-3 were not connected to each other in any way. The units were tested next to each other to ensure impact from adjacent units will not affect the structural integrity or functionality.				



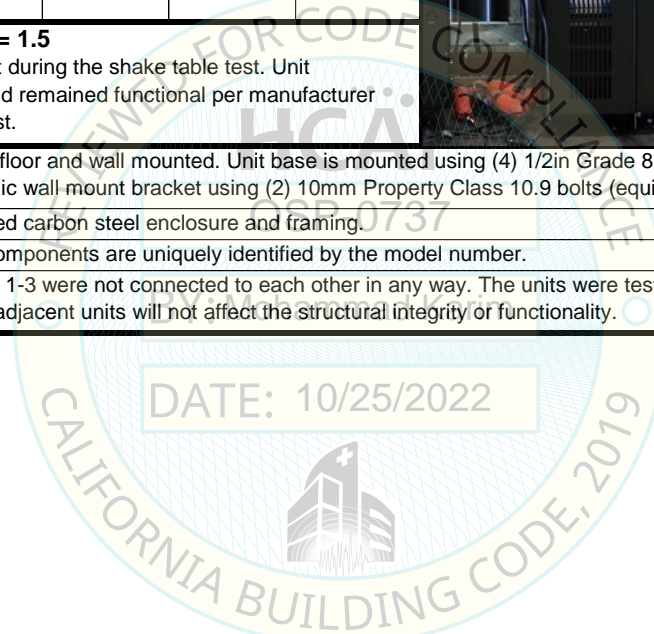
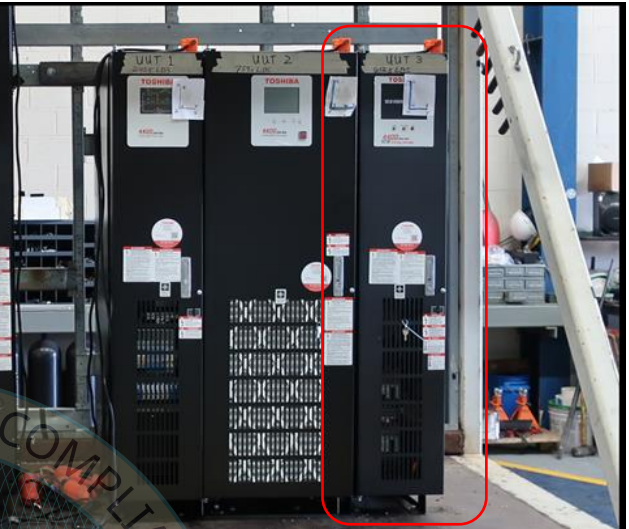
## ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

## SPECIAL SEISMIC CERTIFICATION

### UUT 3a

DOCUMENT NO.: 20043CR2.1

<b>MANUFACTURER:</b>		TOSHIBA INTERNATIONAL CORPORATION				
<b>MODEL NUMBER:</b>		DCS0011K060TS91FHDS				
<b>UNIT FUNCTION:</b>		SCiB Energy Storage System (ESS)				
<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>
37.5	11.9	64.8	613	N/A	N/A	N/A
<b>CODE &amp; CRITERIA:</b>		2022 CBC		ICC-ES AC156		
<b>TEST LABORATORY:</b>		ENVIRONMENTAL TESTING LABORATORY				
<b>REPORT &amp; DATE:</b>		20093TR1.0		November 4, 2020		
<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>	
1.06	1	1.70	1.27	1.14	0.46	
1.70	0					
<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 floor and wall mounted. Unit base is mounted using (4) 1/2in Grade 8 bolts. Unit top is mounted with the seismic wall mount bracket using (2) 10mm Property Class 10.9 bolts (equivalent to 3/8in Grade 8 bolts).				
<b>CONSTRUCTION:</b>		Painted carbon steel enclosure and framing.				
<b>SUBCOMPONENTS:</b>		Subcomponents are uniquely identified by the model number.				
<b>TESTING NOTES:</b>		UUTs 1-3 were not connected to each other in any way. The units were tested next to each other to ensure impact from adjacent units will not affect the structural integrity or functionality.				



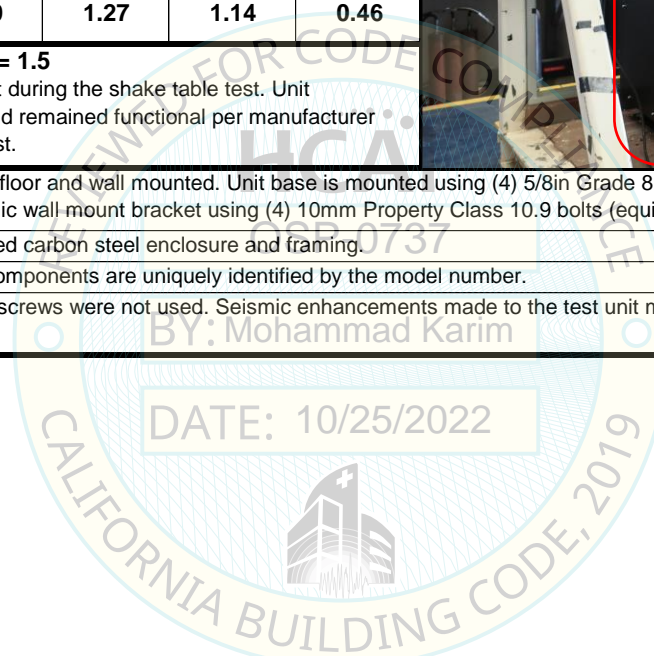
## ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

## SPECIAL SEISMIC CERTIFICATION

### UUT 4a

DOCUMENT NO.: 20043CR2.1

<b>MANUFACTURER:</b>		TOSHIBA INTERNATIONAL CORPORATION				
<b>MODEL NUMBER:</b>		G9B00SCIBTSA2PH				
<b>UNIT FUNCTION:</b>		SCiB Energy Storage System (ESS)				
<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>
32.8	34.1	80.6	2,007	N/A	N/A	N/A
<b>CODE &amp; CRITERIA:</b>		2022 CBC		ICC-ES AC156		
<b>TEST LABORATORY:</b>		ENVIRONMENTAL TESTING LABORATORY				
<b>REPORT &amp; DATE:</b>		20043TR1.1		November 4, 2020		
<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>	
1.06	1	1.70	1.27	1.14	0.46	
1.70	0					
<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 floor and wall mounted. Unit base is mounted using (4) 5/8in Grade 8 bolts. Unit top is mounted with the seismic wall mount bracket using (4) 10mm Property Class 10.9 bolts (equivalent to 3/8in Grade 8 bolts).				
<b>CONSTRUCTION:</b>		Painted carbon steel enclosure and framing.				
<b>SUBCOMPONENTS:</b>		Subcomponents are uniquely identified by the model number.				
<b>TESTING NOTES:</b>		Door screws were not used. Seismic enhancements made to the test unit must be incorporated into the production units.				



## ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

## SPECIAL SEISMIC CERTIFICATION

### UUT 12

DOCUMENT NO.: 20043CR2.1

<b>MANUFACTURER:</b>		TOSHIBA INTERNATIONAL CORPORATION				
<b>MODEL NUMBER:</b>		440A800MFS3CPXXX-S				
<b>UNIT FUNCTION:</b>		AUXILIARY CABINET				
<b>SERIAL NUMBER:</b>		15032502SU				
DIMENSIONS (in)			WEIGHT (lb)	RES. FREQ. (Hz)		
DEPTH	WIDTH	HEIGHT		F-B	S-S	V
37.2	32.1	73.6	517	N/A	N/A	N/A
<b>CODE &amp; CRITERIA:</b>		2022 CBC		ICC-ES AC156		
<b>TEST LABORATORY:</b>		ENVIRONMENTAL TESTING LABORATORY				
<b>REPORT &amp; DATE:</b>		SQ37-1502-01, Rev. 3		April 3, 2015		
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	1.68	0.68	
2.5	0					
<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 floor and wall mounted. Unit base is mounted using (4) 1/2in Grade 8 bolts. Unit top is mounted with the seismic wall mount bracket using (4) 3/8in ASTM A574 socket head bolts.				
<b>CONSTRUCTION:</b>		Painted carbon steel enclosure and framing.				
<b>SUBCOMPONENTS:</b>		Subcomponents are uniquely identified by the model number.				



### UUT 13

<b>MANUFACTURER:</b>		TOSHIBA INTERNATIONAL CORPORATION				
<b>MODEL NUMBER:</b>		440A300MFPX-S				
<b>UNIT FUNCTION:</b>		AUXILIARY CABINET				
<b>SERIAL NUMBER:</b>		15032503SU				
DIMENSIONS (in)			WEIGHT (lb)	RES. FREQ. (Hz)		
DEPTH	WIDTH	HEIGHT		F-B	S-S	V
37.4	20.1	65.1	383	N/A	N/A	N/A
<b>CODE &amp; CRITERIA:</b>		2022 CBC		ICC-ES AC156		
<b>TEST LABORATORY:</b>		ENVIRONMENTAL TESTING LABORATORY				
<b>REPORT &amp; DATE:</b>		SQ37-1502-01, Rev. 3		April 3, 2015		
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	1.68	0.68	
2.5	0					
<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 floor and wall mounted. Unit base is mounted using (4) 1/2in Grade 8 bolts. Unit top is mounted with the seismic wall mount bracket using (2) 3/8in ASTM A574 socket head bolts.				
<b>CONSTRUCTION:</b>		Painted carbon steel enclosure and framing.				
<b>SUBCOMPONENTS:</b>		Subcomponents are uniquely identified by the model number.				

