



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY

APPLICATION #: OSP – 0510 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Siemens Healthcare GmbH, Diagnostic Imaging, Computed Tomography

Manufacturer's Technical Representative: Ottmar Förstel

Mailing Address: Siemensstr. 3, 91301 Forchheim, Germany

Telephone: +49 9191 – 18 8761 Email: ottmar.foerstel@siemens.com

Product Information

Product Name: SOMATOM Definition Flash, AS, and AS Open CT Systems

Product Type: Computed Tomography (CT) medical imaging system

Product Model Number: See Attachment

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

General Description: Multiple component system for producing Computed Tomography (CT) medical images for a wide variety of medical diagnostic results. Patient weight shall not exceed 308 lbs.

Mounting Description: Rigid floor mounted.

Applicant Information

Applicant Company Name: W.E. Gundy & Associates, Inc.

Contact Person: Travis Soppe, SE

Mailing Address: 250 Bobwhite Ct, Suite 100, Boise, ID 83706

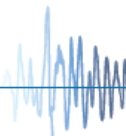
Telephone: (208) 342-5898 Ext. 115 Email: tsoppe@wegai.com

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:  Date: 2-22-2017

Title: Vice President Company Name: W.E. Gundy & Associates, 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: W.E. Gundy & Associates, Inc.

Name: Travis Soppe, SE California License Number: S6115

Mailing Address: 205 Bobwhite Ct, Suite 100, Boise, ID 83706

Telephone: (208) 342-5898 Ext. 115 Email: tsoppe@wegai.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): _____

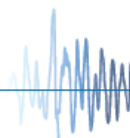
Testing Laboratory

Company Name: IABG mbH

Contact Name: Dr. Steffen Roedling

Mailing Address: Einsteinstrasse 20, Ottobrunn, Germany D-85521

Telephone: +49 (0) 89 / 6088-2052 Email: roedling@iabg.de





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Seismic Parameters

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

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

S_{DS} (Design spectral response acceleration at short period, g) = 2.0 for z/h = 1.0 and 2.5 for z/h = 0

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

R_p (Equipment or component response modification factor) = See attachment

Ω_0 (System overstrength factor) = See attachment

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0 at $S_{DS} = 2.0g$ and 0 at $S_{DS} = 2.5g$

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 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, 2015: Yes No

List of Attachments Supporting Special Seismic Certification

Test Report(s) Drawings Calculations Manufacturer's Catalog

Other(s) (Please Specify): Certified System Matrix, UUT Summary Sheets, Subcomponent Certification Letter

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

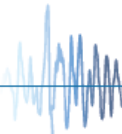
Signature:  Date: April 7, 2017

Print Name: Timothy J. Piland Title: SSE

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

Condition of Approval (if applicable): Patient weight shall not exceed 308 lbs.

Approval is limited to units identical to tested units.



**SIEMENS HEALTHCARE GmbH
SPECIAL SEISMIC CERTIFICATION
CERTIFIED SYSTEM AND COMPONENTS**



Manufacturer: Siemens Healthcare GmbH

System: SOMATOM Definition Flash, AS, and AS Open

System Component	Siemens Part Number	Dimensions (in)			Weight (lb)	Mounting	UUT
		Width	Length	Height			
SOMATOM Definition Flash	10430610	91.1	47.4	78.0	5614	floor	UUT-1
SOMATOM Definition AS	8098555	92.9	36.7	78.0	4554	floor	UUT-2
SOMATOM Definition AS Open	8098555	92.9	36.7	78.0	4554	floor	UUT-3
PHS 4 - Patient Table	8097144	95.7-158.7	29.5	18.9-36.2	933 ²⁾	floor	UUT-4
MPT 2 - Patient Table	8097102	95.7-174.4	29.5	21.6-36.2	1311 ²⁾	floor	UUT-5
Image Control System Celsius M720	10864203	24.4	9.8	19.7	34	floor	UUT-2B ³⁾
Image Reconstruction System IRSmx 4d	10890634	30.3	10.1	20.0	58	floor	UUT-4B ³⁾
Image Reconstruction System IRSmx4c	10890635	30.3	10.1	20.0	53	floor	UUT-5B ³⁾

¹⁾ All components are manufactured by Siemens Healthcare GmbH unless noted. The part numbers listed uniquely identify the type of component, manufacturer, and material of construction for each sub-component within the tested units.

²⁾ Patient table weight does not include 308lb simulated patient weight included during seismic test.

³⁾ B designation on UUT's indicates that the tests were performed separately from the first series of testing and some of the UUT numbers were the same for different tested components.

SEISMIC CERTIFICATION LIMITS

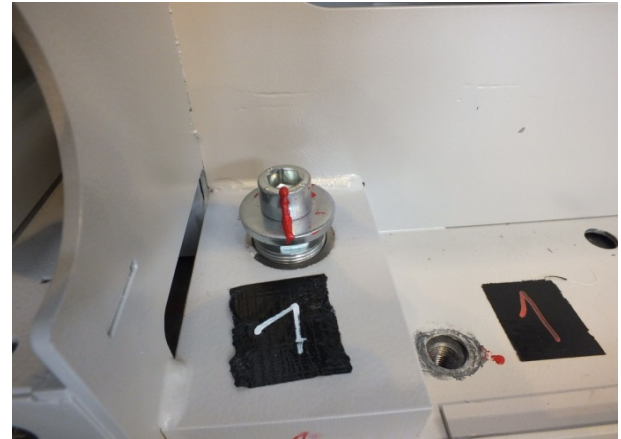
System Component	Code	S _{DS} (g)	z / h	I _p	a _p	R _p	Ω ₀	F _p / W _p
SOMATOM Definition Flash	CBC 2016 ASCE7-10	2.0	1.0	1.50	2.5	6.0	1.5	1.50
		2.5	0					1.13
SOMATOM Definition AS		2.0	1.0	1.50	1.0	1.5	1.5	2.40
		2.5	0					1.13
SOMATOM Definition AS Open		2.0	1.0	1.50	1.0	1.5	1.5	2.40
		2.5	0					1.13
PHS 4 - Patient Table		2.0	1.0	1.50	1.0	1.5	1.5	2.40
		2.5	0					1.13
MPT 2 - Patient Table		2.0	1.0	1.50	1.0	1.5	1.5	2.40
		2.5	0					1.13
Image Control System Celsius M720	2.0	1.0	1.50	1.0	2.5	2.0	1.44	
	2.5	0					1.13	
Image Reconstruction System IRSmx4d	2.0	1.0	1.50	1.0	2.5	2.0	1.44	
	2.5	0					1.13	
Image Reconstruction System IRSmx4c	2.0	1.0	1.50	1.0	2.5	2.0	1.44	
	2.5	0					1.13	

UUT-1

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with 4 - M16 bolts



Manufacturer: Siemens Healthcare GmbH

Component: SOMATOM Definition Flash

Model / Serial Number: 10430610 / 2210

UUT Function: Continuous rotating detector for high-resolution data acquisition

UUT Description: Component of SOMATOM Definition Flash CT System

Test Location: IABG mbH, Germany

Test Date: August 2016

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
5,614	91.1"	47.4"	78.0"	13.1	24.2	>33

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-2

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with 4 - M16 bolts



Manufacturer: Siemens Healthcare GmbH

Component: SOMATOM Definition AS

Model / Serial Number: 8098555 / 6015

UUT Function: Continuous rotating detector for high-resolution data acquisition

UUT Description: Component of SOMATOM Definition AS CT System

Test Location: IABG mbH, Germany

Test Date: August 2016

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
4,554	92.9"	36.7"	78.0"	12.3	15.6	>33

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-3

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with 4 - M16 bolts



Manufacturer: Siemens Healthcare GmbH

Component: SOMATOM Definition AS Open

Model / Serial Number: 8098555 / 6016

UUT Function: Continuous rotating detector for high-resolution data acquisition

UUT Description: Component of SOMATOM Definition AS Open CT System

Test Location: IABG mbH, Germany

Test Date: August 2016

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
4,554	92.9"	36.7"	78.0"	12.0	15.1	>33

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

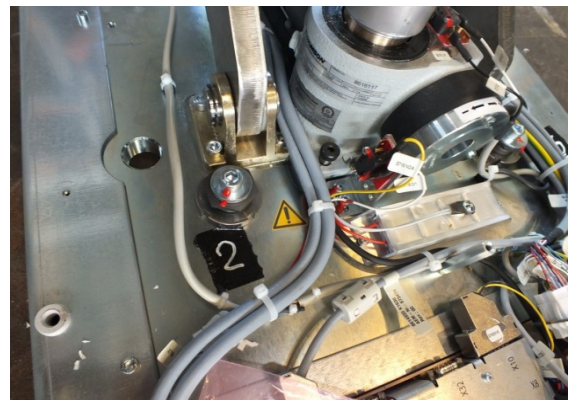
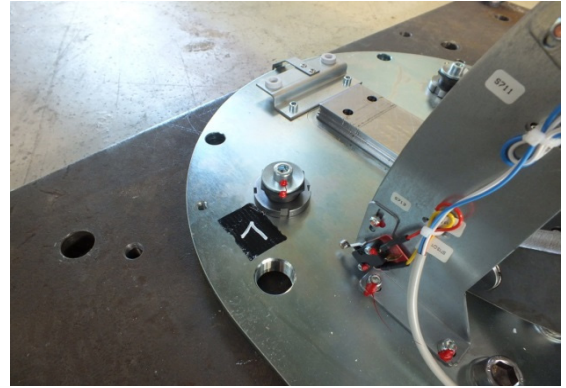
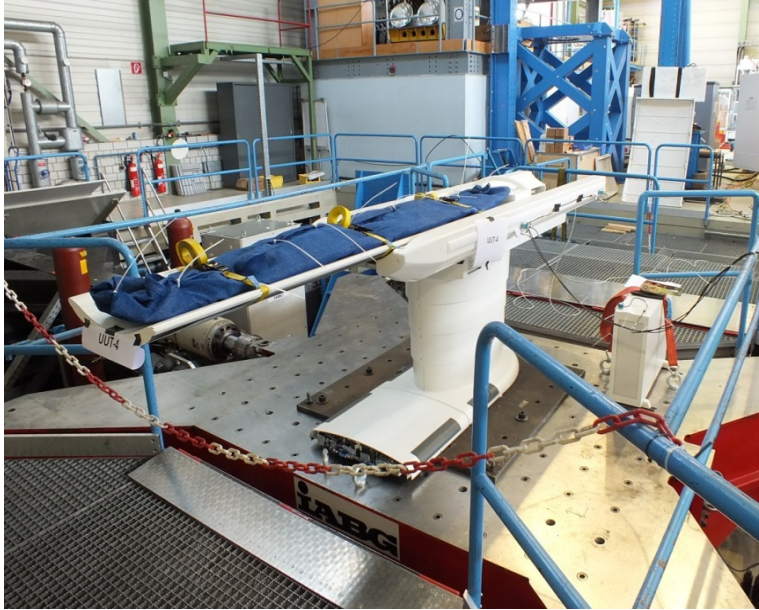
Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-4

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with 4 - M10 bolts



Manufacturer: Siemens Healthcare GmbH

Component: PHS 4 - Patient Table

Model / Serial Number: 8097144 / 4481

UUT Function: Motorized table which moves a patient thru the circular opening in the CT system

UUT Description: Component of SOMATOM Definition Flash, AS, and AS Open CT Systems

Test Location: IABG mbH, Germany

Test Date: August 2016

UUT PROPERTIES

Weight (lb) with Patient	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,241	95.7" - 158.7"	29.5"	18.9" - 36.2"	3.3	13.2	12.2

The patient table moves vertically and horizontally to accommodate different patients and procedures. The system was tested in the tallest configuration (36.2") with a normal operating horizontal extension of 39.4" (total width = 135.1") and a total simulated patient weight of 308lbs.

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

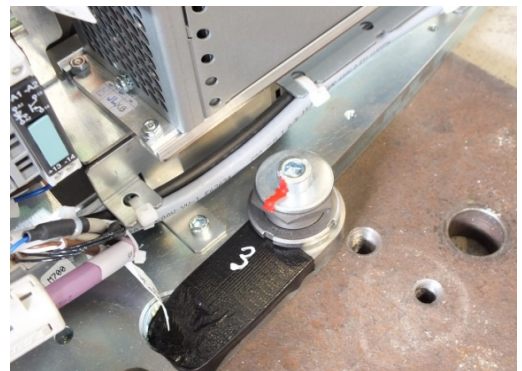
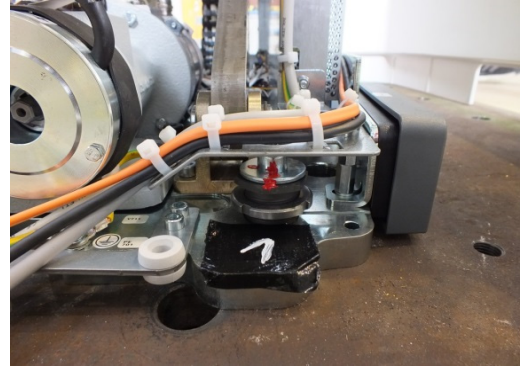
Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-5

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with 4 - M10 bolts



Manufacturer: Siemens Healthcare GmbH

Component: MPT 2 - Patient Table

Model / Serial Number: 8097102 / 2197

UUT Function: Motorized table which moves a patient thru the circular opening in the CT system

UUT Description: Component of SOMATOM Definition Flash, AS, and AS Open CT Systems

Test Location: IABG mbH, Germany

Test Date: August 2016

UUT PROPERTIES

Weight (lb) with Patient	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,619	95.7" - 174.4"	29.5"	21.6" - 36.2"	4.7	22.6	14.6

The patient table moves vertically and horizontally to accommodate different patients and procedures. The system was tested in the tallest configuration (36.2") with the normal operating horizontal extension of 39.4" (total width = 135.1") and a total simulated patient weight of 308lbs.

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

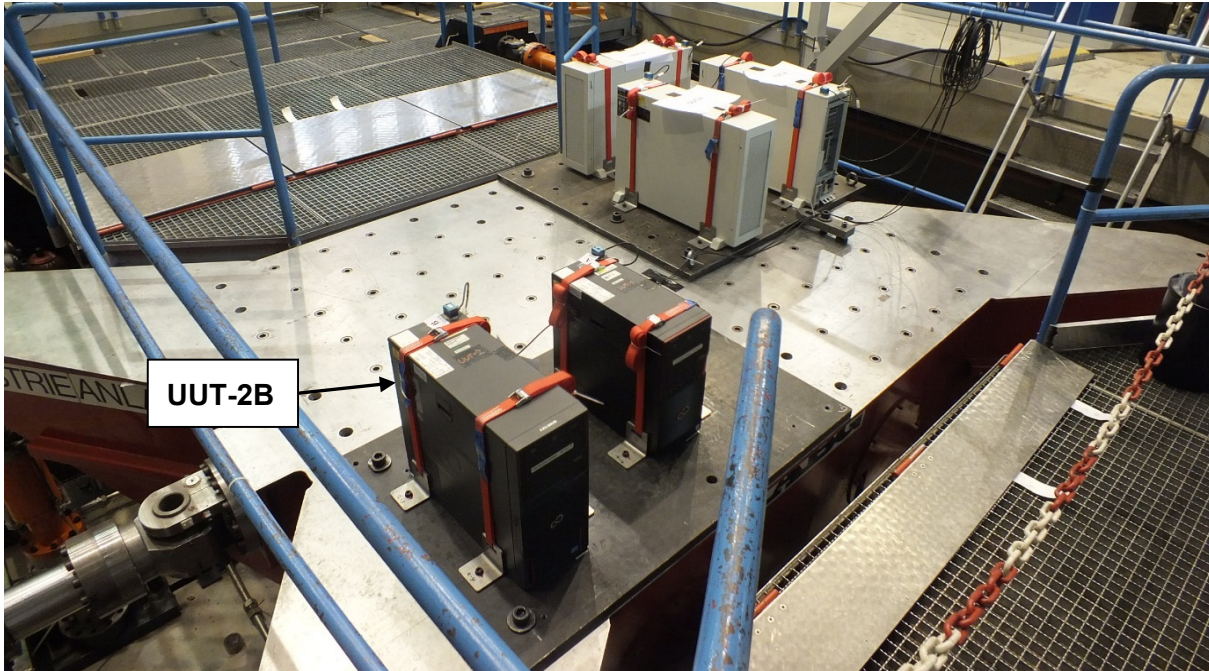
Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-2B

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid Floor mounting using Siemens provided seismic restraint kit SN:10432402. Seismic restraint kit includes two 1" wide hand tightened cam buckle straps (560lb WLL) looped thru angle brackets positioned on each side of the unit. The four angle brackets are attached to the table with individual M10 bolts.



Manufacturer: Siemens Healthcare GmbH

Component: Celsius M720 Image Control System | **Model / Serial Number:** 10864203 / 3439

UUT Function: Computer for data acquisition, image reconstruction, and processing

UUT Description: Component of SOMATOM Definition Flash, AS, and AS Open CT Systems

Test Location: IABG mbH, Germany

Test Date: January 2017

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
34	24.4"	9.8"	19.7"	>33	20.3	>33

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

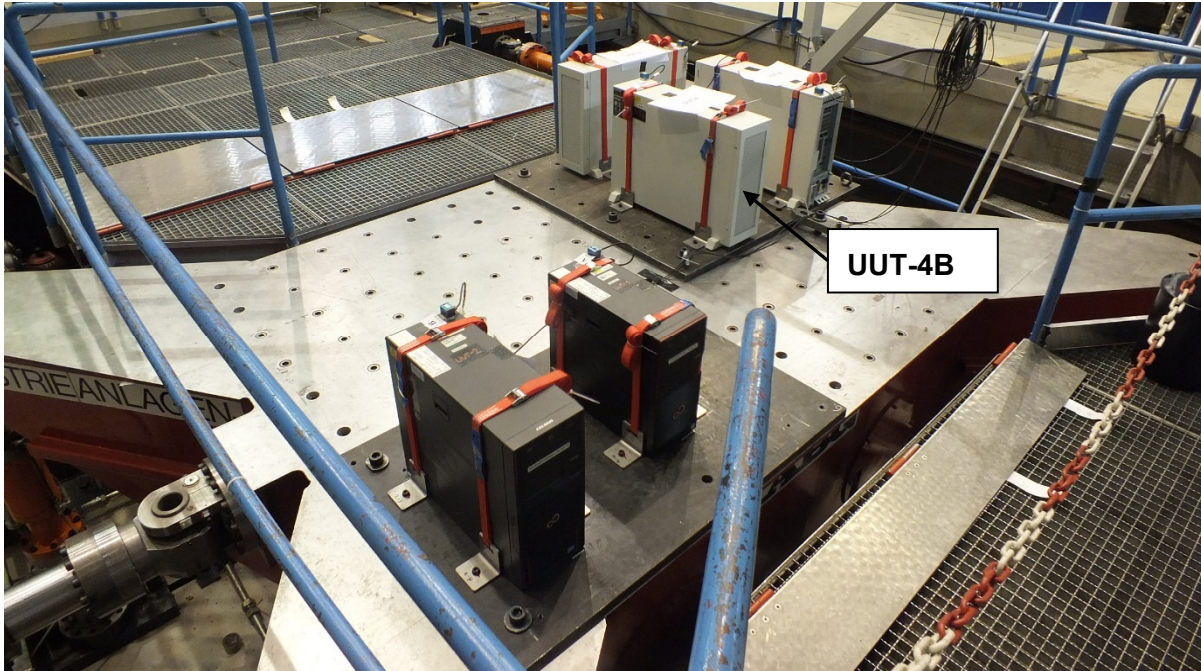
Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-4B

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid Floor mounting using Siemens provided seismic restraint kit SN:10432402. Siesmic restraint kit includes two 1" wide hand tightened cam buckle straps (560lb WLL) looped thru angle brackets positioned on each side of the unit. The four angle brackets are attached to the table with individual M10 bolts.



Manufacturer: Siemens Healthcare GmbH

Component: IRSmx4b Image Reconstruction System **Model / Serial Number:** 10890634 / LBHN8B0493

UUT Function: Computer for data acquisition, image reconstruction, and processing

UUT Description: Component of SOMATOM Definition Flash, AS, and AS Open CT Systems

Test Location: IABG mbH, Germany

Test Date: January 2017

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
58	30.3"	10.1"	20.0"	>33	23.6	>33

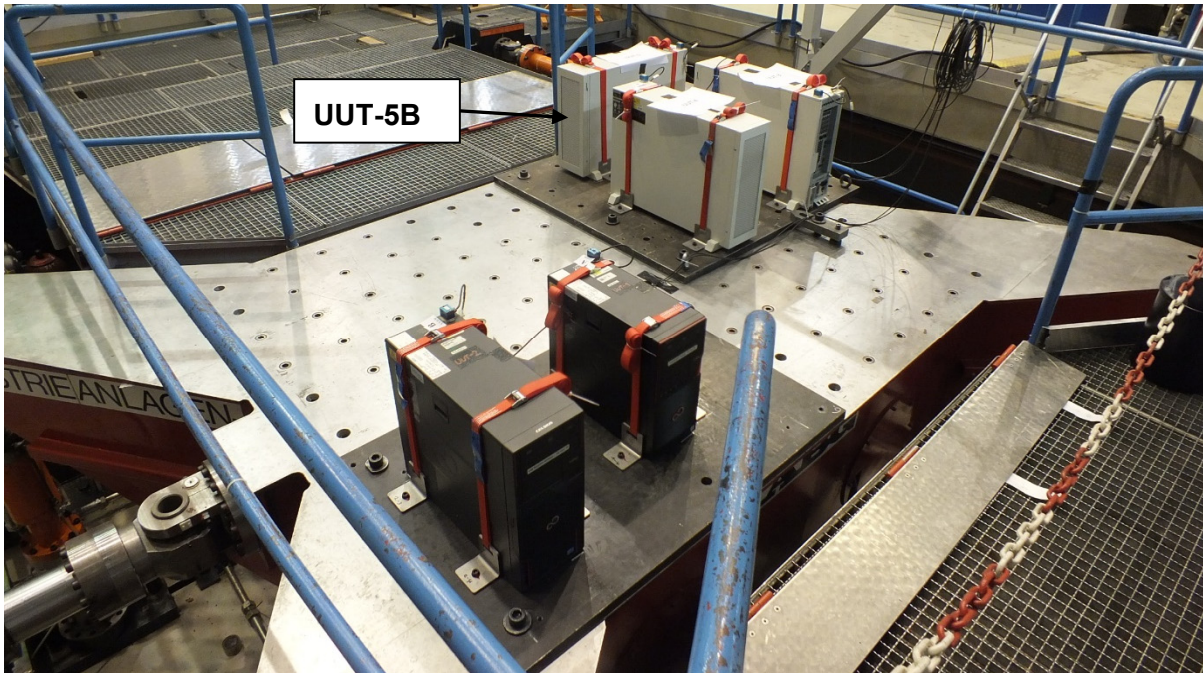
SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

Note: The unit was full of contents during testing and remained fuctional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-5B**UNIT UNDER TEST (UUT)
SUMMARY SHEET**

Mounting Details: Rigid Floor mounting using Siemens provided seismic restraint kit SN:10432402. Siesmic restraint kit includes two 1" wide hand tightened cam buckle straps (560lb WLL) looped thru angle brackets positioned on each side of the unit. The four angle brackets are attached to the table with individual M10 bolts.

**Manufacturer:** Siemens Healthcare GmbH**Component:** IRSmx4c Image Reconstruction System **Model / Serial Number:** 10890635 / LBHD8C0689**UUT Function:** Computer for data acquisition, image reconstruction, and processing**UUT Description:** Component of SOMATOM Definition Flash, AS, and AS Open CT Systems**Test Location:** IABG mbH, Germany**Test Date:** January 2017**UUT PROPERTIES**

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
53	30.3"	10.1"	20.0"	29.5	>33	>33

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S_{DS} (g)	z/h	I_p	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

Note: The unit was full of contents during testing and remained fuctional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.