



**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT**

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

OFFICE USE ONLY

APPLICATION #: OSP-0827

HCAI Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: GE Healthcare

Manufacturer's Technical Representative: Tom Farnow

Mailing Address: 3000 N. Grandview Blvd, Waukesha, WI 531881696

Telephone: (888) 406-1101

Email: Tom.Farnow@gehcseismic.com

Product Information

Product Name: Revolution RT

Product Model Number(s): See Attachment 1

Product Category: CT Systems

Product Sub-Category: NA

General Description: Multiple-component medical diagnostic imaging system. Special Seismic Certification is limited to system components identified in Attachment 1 for functions related to Computed Tomography (CT) diagnostic imaging services.

Mounting Description: Base Mounted Rigid -

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: EASE LLC

Contact Person: Jonathan Roberson

Mailing Address: 5877 Pine Ave. Suite 210, Chino Hills, CA 91709

Telephone: (909) 606-7622

Email: jon@easeco.com

Title: Principal Structural Engineer





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

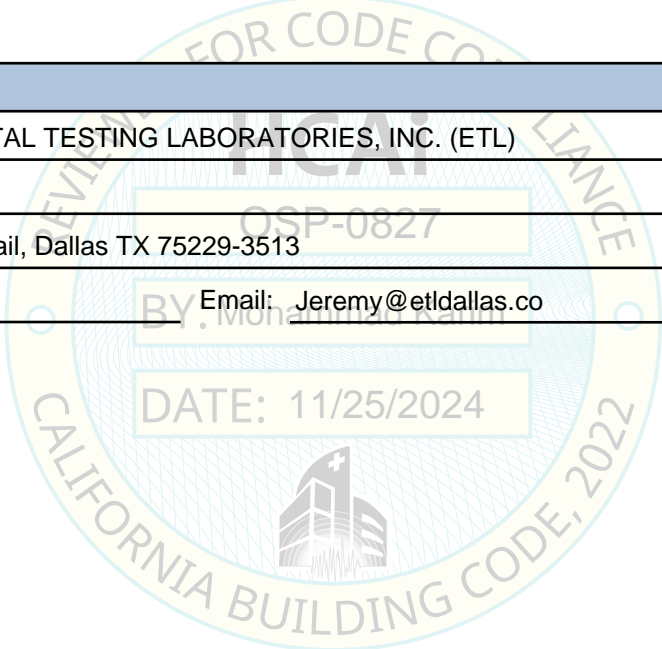
Company Name: EASE LLC
Name: Jonathan Roberson California License Number: S4197
Mailing Address: 5877 Pine Ave., Suite 210, Chino Hills, CA 91709
Telephone: (951) 295-1892 Email: jon@EASECo.com

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.co





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = See Attachment 1.

SDS (Design spectral response acceleration at short period, g) = 2.0 at z/h = 1; 2.5 at z/h = 0

a_p (Amplification factor) = See Attachment 1.

R_p (Response modification factor) = See Attachment 1.

Ω_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 1

Overall dimensions and weight = See Attachment 1

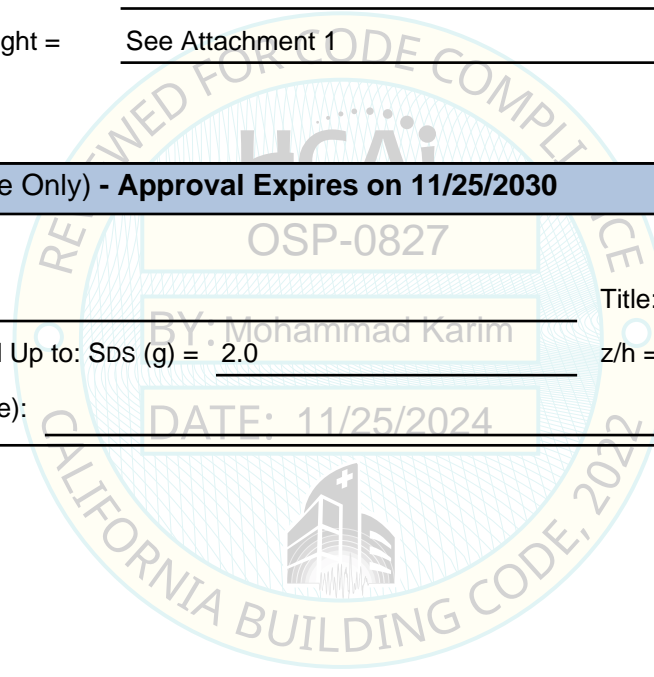
HCAI Approval (For Office Use Only) - Approval Expires on 11/25/2030

Date: 11/25/2024

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: 11/25/2024




ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS


ATTACHMENT PAGE | 1 OF 1

TABLE 1:


Manufacturer		GE HEALTHCARE							S _{DS} = 2.0 at z/h = 1 S _{DS} = 2.5 at z/h = 0			
System		Revolution RT										
COMPONENT	MODEL NUMBER	APPROX. DIMENSIONS (IN.)			APPROX. WT. (LB.)	MOUNT	BASIS ^[1]	F _p /W _p	a _p	R _p	Ω ₀	
		W	D	H								
GANTRIES ^[2]												
Revolution RT	5953469	94.1	40.3	77.2	4114	Floor	UUT-2413-1	2.40	1	1 ½	2	
Revolution RT	5953469-2	94.1	40.3	77.2	4114	Floor	SAME	2.40	1	1 ½	2	
PATIENT TABLES ^[2]												
GT1700V	5122080-11	25.6	93.3	19.2 / 41.2	1059 ^[3]	Floor	UUT-1126-2	2.40	1	1 ½	2	
GT1700 N9 ED3	5122080-6	25.6	93.3	19.2 / 41.2	1047	Floor	INT	2.40	1	1 ½	2	
GT2000 N9	5121647-3	25.6	114.5	19.2 / 41.3	1146 ^[3]	Floor	UUT-1408-4	2.40	1	1 ½	2	
High Capacity Patient Table	5272966-3	26	115.6 / 210.9	20.6 / 41.7	1136.5 ^[3]	Floor	UUT-1313-1	2.40	1	1 ½	2	
High Capacity Patient Table	5272966-4	26	115.6 / 210.9	20.6 / 41.7	1136.5	Floor	SAME	2.40	1	1 ½	2	
CONSOLES												
Open Console w/ Z8G4	5946404-15	15.8	26.4	22.7	142	Floor	UUT-1914-2	1.50	2 ½	6	2	
Open Console w/ Z8G4	5941604-17	15.8	26.4	22.7	142	Floor	SAME	1.50	2 ½	6	2	
Open Console w/ Z8G4	5941604-27	15.8	26.4	22.7	142	Floor	SAME	1.50	2 ½	6	2	
POWER DISTRIBUTION (PDU)												
NGPDU-61	2326492-61	27.6	21.7	41.8	818	Floor	UUT-1313-2	1.44	1	2 ½	2	
NGPDU-60	2326492-60	27.6	21.7	41.8	818	Floor	SAME	1.44	1	2 ½	2	
Mount	FLOOR (RIGID BASE) MOUNT: free-standing, base-mounted configuration with the component rigidly attached to a supporting structure and no lateral support above the base.											
Notes	<p>1. BASIS:</p> <ul style="list-style-type: none"> UUT#: Indicates that a test specimen matching these characteristics was tested as part of this testing program. INT (Interpolate or extrapolate): indicates a model that was not specifically tested, and by which seismic qualification was established through evaluation of testing of other, similar models in the product line. SAME: Model is physically, mechanically & electrically the same as test specimen. Differences are limited to color, software, GE manufacturing location and/or labeling. <p>2. Gantry & Patient Tables requires use of Seismic Anchor Kit for Revolution RT Gantry & Table (Commercial Catalog B82382DA).</p> <p>3. Patient Table weight does not include patient load present during testing. See attachment 2 for patient weight used in test.</p> <p>4. <i>Gray italic formatting indicates unit is not a component of system and used as basis for seismic qualification only.</i></p>											


ATTACHMENT 2: TEST SPECIMEN SUMMARY


UUT-1126-2 GT1700V Table						
MANUFACTURER: GE Hangwei Medical Systems Co., LTD						
IDENTIFICATION: Model No.: 5122080-11						
DESCRIPTION: System component of the Optima CT660 System and other GE CT Systems 350 lb. simulated patient load.						
MOUNTING: Rigid Base (Floor) mounted using (4) – 5/8" dia. hex head bolts to interface plate.						
DIMENSIONS (in.)				LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Weight (lb.)	Transverse-Axis	Longitudinal-Axis	Vertical-Axis
25.6	93.3	34.9	1059	3.9	15.2	14.2
ICC-ES AC156 SHAKE TABLE TEST PARAMETERS						
S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)
2.0	1.0	1.5	3.20	2.40	1.74	0.70
2.6	0.0					
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						


UUT-1313-1 High Capacity Table						
MANUFACTURER: GE Hangwei Medical Systems CO., LTD						
IDENTIFICATION: Model No.: 5272966-3 S/N: 320342HM9						
DESCRIPTION: System component of the Optima CT 580 and other GE CT Systems 650lb simulated patient load.						
MOUNTING: FLOOR MOUNTED (Rigid Base) w/ (4) – 5/8" dia. Bolts						
DIMENSIONS [in]				LOWEST RESONANT FREQUENCY [Hz]		
Width	Depth	Height	Weight [lb]	X-Axis	Y-Axis	Z-Axis
26	165	37.75	1136.5	3.4	>50	5.3
ICC-ES AC156 SHAKE TABLE TEST PARAMETERS						
S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)
2.0	1.0	1.5	3.20	2.40	1.74	0.70
2.6	0.0					
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						

ATTACHMENT 2: TEST SPECIMEN SUMMARY

UUT-1313-2 NGPDU-61						
MANUFACTURER: GE Hangwei Medical Systems CO., LTD						
IDENTIFICATION: Model No.: 2326492-61 S/N: 322132HM2						
DESCRIPTION: System component of the Optima CT580 and other GE CT Systems						
MOUNTING: Rigid Base (Floor) mounted using: (2) – 3/8" dia. ASTM A574 Socket Head Cap Screws w/ washer through GE mounting brackets to floor plate. GE mounting assembly including: (2) – Seismic Bracket, System Cabinet (P/N 2354563-2) Each bracket mounted to cabinet w/: (2) – M10-1.5 X25mm Class 12.9 Socket Head Cap Screw, Black Oxide (Torque= 38.4 N-m) (2) – M10 Lock Washer (P/N 2203-M10-07) (2) – M10 Flat Washer (P/N 2000-M10-03)						
DIMENSIONS (in.)				LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Weight (lb.)	X-Axis	Y-Axis	Z-Axis
27.6	21.7	41.8	818	15.7	19.9	45
ICC-ES AC156 SHAKE TABLE TEST PARAMETERS						
S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)
2.0 2.6	1.0 0.0	1.5	3.20	2.40	1.74	0.70
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						

UUT-1408-4 GT2000 N9 Patient Table						
MANUFACTURER: GE Hangwei Medical Systems CO. LTD.						
IDENTIFICATION: Model No.: 5121647-3						
DESCRIPTION: System Component of the LightSpeed VCT and other GE CT Systems GT2000 N9 Patient Table 550 lb. simulated patient load. Seismic Kit						
MOUNTING: Floor: (4) – 5/8" dia GR 8 hex head bolts (torqued to 60 lb-ft) w/ GEHC supplied patient table foot assembly.						
DIMENSIONS (in.)				LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Weight (lb.)	Transverse-Axis	Longitudinal-Axis	Vertical-Axis
25.6	114.5	35.5	1146	2.7	7.1	5.7
ICC-ES AC156 SHAKE TABLE TEST PARAMETERS						
S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)
2.0 2.5	1.0 0.0	1.5	3.2	2.4	1.68	0.68
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						

UUT 1914-2 Open Console w/ Z8G4						
Manufacturer: GE Hangwei Medical Systems Co., LTD.						
Identification: Model No.: 5946404-15 Serial No.: 000000HM1						
Description: Component of the Revolution Maxima / Revolution Ace CT and other GE CT Systems - HP Z8G4 Computer - Open style console - Configuration controlled verification unit that is equivalent to standard production.						
Mounting: Rigid Base (Floor) mounted using: GE Console Anchor Kit 5812703-2 (3) – 3/8" dia. SAE J429 Grade 8 bolts to test fixture. NOTE: Console Anchor Kit 5812703-2 is included standard w/ console.						
DIMENSIONS (in.)				LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Weight (lb.)	X-Axis	Y-Axis	Z-Axis
15.8	26.4	22.7	141.5 w/ brackets	14.6	30.1	26.2
ICC-ES AC156 SHAKE TABLE TEST PARAMETERS						
S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)
2.0 2.5	1 0	1.5	3.2	2.4	1.68	0.68
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						

UUT-2413-1 Revolution RT Gantry						
MANUFACTURER: GE Hangwei Medical Systems Co., LTD.						
IDENTIFICATION: Model No.: 5953469 Serial No.: CBGAG2400001HM						
DESCRIPTION: System component of the Revolution RT CT System.						
MOUNTING: FLOOR MOUNTED (Rigid Base) w/ (4) – 5/8" dia. SAE J429 Grade 5 bolts using GE Healthcare Seismic Anchor Kit for Revolution RT Gantry & Table (Commercial Catalog B82382DA)						
DIMENSIONS (in.)				LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Weight (lb.)	Front (X)-Axis	Side (Y)-Axis	Z-Axis
94.1	40.3	77.2	4,001 measured 4,114 reported	6.5	8.5	22.2
ICC-ES AC156 SHAKE TABLE TEST PARAMETERS						
S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)
2.0 2.5	1 0	1.5	3.2	2.4	1.68	0.68
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						