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## RT Freedom Service Introduction

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## 1 OBJECTIVE

This information has been provided to assist the GE Service Engineer and Service Operations groups with the market introduction of the RT Freedom systems.

## 2 INTRODUCTION

RT Freedom (registered as # 019792 in eNPI) develops a new product based on LightSpeed RT16/Xtra platform with new branding, new appearance. RT Freedom introduces new RT system with significant improvements to targeting accuracy and customer workflow. Three product names will be used for different marketing.

- Discovery CT590 RT (16 slice CT for Oncology)
- Optima CT580 RT (8 slice CT for Oncology)
- Optima CT580 W (Radiology CT for Bariatric and Interventional, etc.)

**Table 1 Program Schedule**

Milestone	Definition	Planned Date	Actual
M1	Design input/IDP	FW23'09	FW27'09
M2	Release components/parts	FW34'09	FW36'09
MS	Sales announcement	FW43'09	
MV – 16 slice	Verification	FW48'09	
M3 – 16 slice	Product validation -release	FW08'10	
MV – 8 slice	Verification	FW12'10	
M3 – 8 slice	Product validation -release	FW20'10	
M4	Unrestricted production	FW43'10	

**Figure 1 System Appearance**

True-In-One Console (Standard version)



True-In-One Console (ASIR version)



**Gantry and Table**



**3 PRODUCT FEATURES**

RT Freedom optimizes workflow with new feature Advantage 4D on Console.

RT Freedom improves image accuracy by introducing new algorithm ASIR (Adaptive Statistical Iterative Reconstruction).

RT Freedom deliveries product in new color, integrating new operator console and PDU.

**4 SYSTEM CONFIGURATION AND SPECIFICATION (PSI CODE)**

The following table shows RT Freedom configuration and system PSI codes. The RT Freedom systems will be manufactured in GEHW Beijing and WSO.

Table 2-1 System PSI codes and Specification

<b>Manufacture</b>	GEHW	WSO	GEHW	WSO	GEHW	WSO
<b>System Cat#</b>	B70382RT	TBD	B70402RT	TBD	B70392RT	TBD
<b>PSI Code</b>	TBD	TBD	TBD	TBD	TBD	TBD
<b>Product Name</b>	Discovery CT590 RT		Optima CT580 RT		Optima CT580 W	
<b>Tube Capacity</b>	100 kW		Standard: 53.2KW Option: 100KW		100 kW	
<b>Slice Thickness</b>	0.625mm, 1.25mm, 2.5mm, 3.75mm, 5mm, 7.5mm, 10mm		Standard: 1.25mm, 2.5mm, 3.75mm, 5mm, 7.5mm, 10mm Optional: 0.625mm		0.625mm, 1.25mm, 2.5mm, 3.75mm, 5mm, 7.5mm, 10mm	
<b>Rotation Speed</b>	0.5s, 0.6s, 0.7s 0.8s, 0.9s, 1.0s, 2.0s, 3.0s,		Standard: 0.8s, 0.9s, 1.0s, 2.0s, 3.0s,		0.5s, 0.6s, 0.7s 0.8s, 0.9s, 1.0s, 2.0s, 3.0s,	

	4.0s	4.0s Optional: 0.5s, 0.6s, 0.7s	4.0s
Slice	16	Standard: 8  Optional: 16	16
Helical Pitch	0.5625:1, 0.9375:1, 1.375:1, 1.75:1	0.625:1, 0.875:1, 1.35:1, 1.675:1	0.5625:1, 0.9375:1, 1.375:1, 1.75:1
ASIR Capability	Standard	N/A	Standard

Table 2-2 System Configurations

**Mandatory Items**

	<b>GEHW Cat#</b>	<b>WSO CAT#</b>
<b>GANTRY</b>	B70502RT	TBD
<b>PDU</b>	B71062CA	TBD
<b>SCIM</b>	B78292CA	TBD
<b>Ship Collector</b>	B70432RT	TBD
<b>Tech Pub/OS/Std SW Options Freedom</b>	B70442RT	TBD
<b>Freedom workspace (wide)</b>	B78452CA	TBD
<b>19" LCD Monitor</b>	B78282CA	TBD

**Mandatory Selectable Items**

		<b>GEHW Cat#</b>	<b>WSO CAT#</b>	<b>Discovery CT590 RT</b>	<b>Optima CT580 RT</b>	<b>Optima CT580 W</b>
<b>Table</b>	GT1700	B70532RT	TBD	Select	Select	Select
	High Capacity Table	B70522RT	TBD	Select	Select	Select
<b>Keyboard UIF</b>	Keyboard Labels	Various BCATs	TBD	Select	Select	Select
<b>Cable</b>	Long Cables	B71182CA	B7816PH	Select	Select	Select
	Short Cables	B71172CA	B7816PS	Select	Select	Select
<b>TIO Console</b>	Standard TIO Collector	B78902CA	TBD	NA	Std	Std
	ASIR TIO Collector	B78912CA	TBD	Std	NA	Opt
<b>Product Package</b>	Discovery CT590 RT package	B70452RT	TBD	Std	NA	NA
	Optima CT580 W package	B70462RT	TBD	NA	NA	Std
	Optima CT580 RT package	B70472RT	TBD	NA	Std	NA

**5 SERVICE DOCUMENTATION**

<b>Description</b>	<b>Part Number</b>	<b>Distribution</b>
Pre-Installation Manual	5366636-1EN	In Gen. CD
Installation Manual	5366637-1EN	Ship with system
Service Methods_Gen	5366638-2EN/8EN	Ship with system
Service Methods_Adv	5366639-2EN/8EN	CDL, Orderable from Coakley Tech

## 6 OPTION CAT# CONFIGURATION CHANGE

Please see below option list. New options (compared with RT16 Vision) are highlight in blue.

Table 2-2 Option List

Description	Pre-requisite	GEHW CAT	WSO CAT	Discover y CT590 RT	Optima CT580 RT	Optim a CT580 W
Wide View	NA			Std	Std	Std
AutomA / SmartmA				Std	Std	Std
SmartPrep				Std	Std	Std
Helical Tilt				Std	Std	Std
Large Image Series				Std	Std	Std
Direct 3D				Std	Std	Std
D-MPR (Covers VariViewer)				Std	Std	Std
Data Export				Std	Std	Std
Interchange (Copy Composer)				Std	Std	Std
pro option package(hi-power, 0.625slice, smart-speed)	NA	B70072RT	B7716RP	Std	NA	NA
Hi-power option	NA	B70102RT	TBD	NA	Opt	Opt
0.625mm Thickness Option	NA	B70082RT	B7716RS	NA	Opt	Std
Smart-speed	NA	B70112RT	TBD	NA	Opt	Std
Patient 16 Slice	NA	B70482RT	TBD	Std	Opt	Std
Rear Cable Cover	NA	NA	B7850TC	Opt	Opt	Opt
USB Bar Code Reader	NA	B71382CA	B7877BC	Opt	Opt	Opt
ConnectPro SW Only	NA	NA	B7500LN	Std	Opt	Opt
USB Trackball	NA	B75222CA	TBD	Opt	Opt	Opt
GPU Fluoro prerequisite		B78472CA	TBD	NA	Opt	NA
Adv 4D with IPC board	NA	B70322RT	B7716WF	Std	Opt	Opt
USB Modem	NA	TBD	TBD	Opt	Opt	Opt
Enhanced Recon	B78472CA(Hangwei) GPU Fluoro prerequisite	B78462CA	TBD	Std	Opt	Opt
Adv 4D on Console	NA	B70412RT	TBD	Std	Opt	Opt
Volume Viewer on OC	NA	NA	B7870JA	Opt	Opt	Opt
Advanced Vessel Analysis Xpress on OC	B7870JA Volume Viewer on OC for Global	NA	B7870JC	Opt	Opt	Opt
DentaScan on OC	NA	NA	B7540LS	Opt	Opt	Opt
AutoBone Xpress on OC	B7870JA Volume Viewer on OC for Global	NA	B7870JD	Opt	Opt	Opt
SmartScorePro	B70232RT (Hangwei) Gantry Accessory I/F HW option (AC outlet & IPC B'd)	NA	B7900WB	Opt	Opt	Opt
Perf 4 - Multi-Organ on the OC	NA	NA	B7870HM	Opt	Opt	Opt
Perf 4 - Neuro on the OC	NA	NA	B7870HN	Opt	Opt	Opt
SmartStep w/Boom (new Boom)	B70232RT (Hangwei) Gantry Accessory I/F HW option (AC outlet & IPC B'd)	NA	B7864SM	Opt	Opt	Opt
SmartStep w/o Boom	1) B7710LN Boom in a Room	NA	B7864SN	Opt	Opt	Opt

**FILE TITLE**

RT Freedom Service Introduction

GEHW-SN130902A

Description	Pre-requisite	GEHW CAT	WSO CAT	Discover y CT590 RT	Optima CT580 RT	Optim a CT580 W
	monitor for Global 2) B70232RT (Hangwei) Gantry Accessory I/F HW option (AC outlet & IPC B'd)					
<b>Boom in a Room monitor</b>	NA	NA	B7710LN	Opt	Opt	Opt
<b>Boom Upgrade Cable Kit for IB(B7710WM&amp;B7530RC)</b>	NA	NA	B7868ME	Opt	Opt	Opt
<b>UPS for Hpower Platform</b>	NA	NA	B7999ZA	Opt	Opt	Opt
<b>GT1700 Table Dolly</b>	NA	NA	B77472A D	Opt	Opt	Opt
<b>Dolly Collector</b>	NA	NA	B7850LD	Opt	Opt	Opt
<b>Small Room 14"-25" installation Dolly</b>	NA	NA	B7700SB	Opt	Opt	Opt
<b>Exam Split FX</b>	NA	NA	B7864KH	Std	Opt	Opt
<b>IVY 3150B EKG Monitor</b>	B70232RT (Hangwei) Gantry Accessory I/F HW option (AC outlet & IPC B'd)	NA	E8007RP	Opt	Opt	Opt
<b>IVY 3150B EKG Monitor</b>	B70232RT (Hangwei) Gantry Accessory I/F HW option (AC outlet & IPC B'd)	NA	E80711P (Europe only)	Opt	Opt	Opt
<b>IVY 3150B EKG Monitor</b>	B70232RT (Hangwei) Gantry Accessory I/F HW option (AC outlet & IPC B'd)	E8007RY (China only)	NA	Opt	Opt	Opt
<b>Advantage CTC Pro for OC</b>	NA	NA	B7864KL	Opt	Opt	Opt
<b>SmartView Fluoro SW for IB</b>	Existing Smartstep HW	NA	B7868FM	Opt	Opt	Opt
<b>SmartView Fluoro Pkg-with monitor</b>	B70232RT (Hangwei) Gantry Accessory I/F HW option (AC outlet & IPC B'd)	NA	B7868FL	Opt	Opt	Opt
<b>SmartView Fluoro Pkg-no monitor</b>	1) B7710LN Boom in a Room monitor for Global 2) B70232RT (Hangwei) Gantry Accessory I/F HW option (AC outlet & IPC B'd)	NA	B7868FP	Opt	Opt	Opt
<b>RTP COUCH GT1700/2000/PET</b>	NA	NA	E8505MJ	Opt	Opt	Opt
<b>Diacor Carbon Overlay VCT</b>	NA	NA	E6315JE	Opt	Opt	Opt
<b>Neuro 3D Filter</b>	Conflict with ASIR option	B75902CA	B7716WG	NA	Opt	Opt
<b>RPM hardware set</b>				Opt	NA	NA
<b>Anzai hardware set</b>				Opt	Opt	Opt
<b>Xtream Injector (Class 1 SW &amp; Cables)</b>	1) B70232RT (Hangwei) Gantry Accessory I/F HW option (AC outlet & IPC B'd) 2) E8004L Nemoto Injector or E8004LA Nemote Injector or E8004LB Nemote Injector	B77372CA	TBD	Opt	Opt	Opt

Description	Pre-requisite	GEHW CAT	WSO CAT	Discover y CT590 RT	Optima CT580 RT	Optim a CT580 W
<b>Enhanced Xtream Injector (Class 4 SW &amp; Cables)</b>	1) B70232RT (Hangwei) Gantry Accessory I/F HW option (AC outlet & IPC B'd) 2) E8004L Nemoto Injector or E8004LA Nemote Injector or E8004LB Nemote Injector	B77382CA	TBD	Opt	Opt	Opt
<b>Nemoto Injector</b>	NA	NA	E8004L E8004LA E8004LB	Opt	Opt	Opt
<b>Prospective Gating Pkg</b>	NA	B70262RT	B7716WK	Opt	Opt	Opt
<b>Prosp&amp;Retro Gating</b>	NA	B70272RT	B7716WL	Opt	Opt	Opt
<b>PG upgrd to Retro Gating</b>	B70262RT Prospective Gating Pkg	NA	B77001F D	Opt	Opt	Opt
<b>Gantry Accessory I/F HW option (AC outlet &amp; IPC B'd)</b>	NA	B70232RT	NA	Opt	Opt	Opt

## 7 HARDWARE DIFFERENCES

True-In-One Console will replace GOC4 Console.  
PDU-60 will replace PDU.

Accessory:

Anzai respiratory monitoring system will be added as a selectable to Varian RPM.

## 8 RECOMMENDED SPARE PART LIST

Part Number	Description
2373932-3	Front cover sub assembly
2373935-3	Rear cover sub assembly
2377217-3	Front tilt sensor assy
2377277-3	Rear tilt sensor assy
2218570-3	Fuse Kit Freedom RT

## 9 SOFTWARE DIFFERENCES

Software installation is much more simple than that on RT16.  
Load From Cold time is about 2 hour.

Below are the part numbers of RT Freedom software:

OS software Version: CTT 6.3.10

TBD

Application Software Version: 09BW35.X

TBD

## 10 SERVICE ACTION DIFFERENCES

### 10-1 INSTALLATION DIFFERENCE

Installation time is about same as RT16.

Main difference includes:

True-In-One Console installation and Freedom Workspace desktop installation.

New options installation: Anzai respiratory gating device, Advantage 4D on Console.

## 10-2 SERVICE TOOL

No new service tools introduced.

Class C/M software will be distributed via TAB 182.

Class C CDROM Part number: TBD

Class M CDROM Part number: TBD

## 11 PERIODIC MAINTENANCE

PM strategy for RT Freedom has had some changes compared with LightSpeed RT16 systems. The procedures will be more complete and similar like that of CT750 HD. 4 PM visits are required per year.

## 12 TRAINING READINESS

RT Freedom training will focus on the difference compared with LightSpeed RT16, so the training will be inherited from existed RT16 trainings.

First T-conf based ERT (Early Readiness Training) is planned in January 2009.

Official training course integration and detailed training strategy will be done by Training Center after ERT.

### Revision History

Revision	Date	Reason for change
0.1	Sep 15, 2009	Draft for review.
0.2	Sep 21, 2009	Added service manual part numbers. Draft for review.
1	Oct. 9, 2009	Update configuration list to specify configuration for each product. Initial release.