

GE Healthcare

IG Option Installation Manual

OPERATING DOCUMENTATION



5161904

Rev 4

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IMPORTANT PRECAUTIONS

LANGUAGE

ПРЕДУПРЕЖДЕНИЕ (BG)	<ul style="list-style-type: none">• Това упътване за работа е налично само на английски език.• Ако доставчикът на услугата на клиента изиска друг език, задължение на клиента е да осигури превод.• Не използвайте оборудването, преди да сте се консултирали и разбрали упътването за работа.• Неспазването на това предупреждение може да доведе до нараняване на доставчика на услугата, оператора или пациент в резултат на токов удар или механична или друга опасност.
警告 (ZH-CN)	<ul style="list-style-type: none">• 本维修手册仅提供英文版本。• 如果维修服务提供商需要非英文版本，客户需自行提供翻译服务。• 未详细阅读和完全理解本维修手册之前，不得进行维修。• 忽略本警告可能对维修人员，操作员或患者造成触电、机械伤害或其他形式的伤害。
VÝSTRAHA (CS)	<ul style="list-style-type: none">• Tento provozní návod existuje pouze v anglickém jazyce.• V případě, že externí služba zákazníkům potřebuje návod v jiném jazyce, je zajištění překladu do odpovídajícího jazyka úkolem zákazníka.• Nesnažte se o údržbu tohoto zařízení, aniž byste si přečetli tento provozní návod a pochopili jeho obsah.• V případě nedodržování této výstrahy může dojít k poranění pracovníka prodejního servisu, obslužného personálu nebo pacientů vlivem elektrického proudu, respektive vlivem mechanických či jiných rizik.
ADVARSEL (DA)	<ul style="list-style-type: none">• Denne servicemanual findes kun på engelsk.• Hvis en kundes tekniker har brug for et andet sprog end engelsk, er det kundens ansvar at sørge for oversættelse.• Forsøg ikke at servicere udstyret medmindre denne servicemanual har været konsulteret og er forstået.• Manglende overholdelse af denne advarsel kan medføre skade på grund af elektrisk, mekanisk eller anden fare for teknikeren, operatøren eller patienten.
WAARSCHUWING (NL)	<ul style="list-style-type: none">• Deze onderhoudshandleiding is enkel in het Engels verkrijgbaar.• Als het onderhoudspersoneel een andere taal vereist, dan is de klant verantwoordelijk voor de vertaling ervan.• Probeer de apparatuur niet te onderhouden voordat deze onderhoudshandleiding werd geraadpleegd en begrepen is.• Indien deze waarschuwing niet wordt opgevolgd, zou het onderhoudspersoneel, de operator of een patiënt gewond kunnen raken als gevolg van een elektrische schok, mechanische of andere gevaren.

WARNING (EN)	<ul style="list-style-type: none">• This Service Manual is available in English only.• If a customer's service provider requires a language other than English, it is the customer's responsibility to provide translation services.• Do not attempt to service the equipment unless this service manual has been consulted and is understood.• Failure to heed this warning may result in injury to the service provider, operator, or patient, from electric shock or from mechanical or other hazards.
HOIATUS (ET)	<ul style="list-style-type: none">• Käesolev teenindusjuhend on saadaval ainult inglise keeles.• Kui klienditeeninduse osutaja nõuab juhendit inglise keelest erinevas keeles, vastutab klient tõlketeenuse osutamise eest.• Ärge üritage seadmeid teenindada enne eelnevalt käesoleva teenindusjuhendiga tutvumist ja sellest aru saamist.• Käesoleva hoiatuse eiramine võib põhjustada teenuseosutaja, operaatori või patsiendi vigastamist elektrilöögi, mehaanilise või muu ohu tagajärjel.
VAROITUS (FI)	<ul style="list-style-type: none">• Tämä huolto-ohje on saatavilla vain englanniksi.• Jos asiakkaan huoltohenkilöstö vaatii muuta kuin englanninkielistä materiaalia, tarvittavan käännöksen hankkiminen on asiakkaan vastuulla.• Älä yritä korjata laitteistoa ennen kuin olet varmasti lukenut ja ymmärtänyt tämän huolto-ohjeen.• Mikäli tätä varoitusta ei noudateta, seurauksena voi olla huoltohenkilöstön, laitteiston käyttäjän tai potilaan vahingoittuminen sähköiskun, mekaanisen vian tai muun vaaratilanteen vuoksi.
ATTENTION (FR)	<ul style="list-style-type: none">• Ce manuel de service n'est disponible qu'en anglais.• Si le technicien du client a besoin de ce manuel dans une autre langue que l'anglais, c'est au client qu'il incombe de le faire traduire.• Ne pas tenter d'intervenir sur les équipements tant que le manuel service n'a pas été consulté et compris• Le non-respect de cet avertissement peut entraîner chez le technicien, l'opérateur ou le patient des blessures dues à des dangers électriques, mécaniques ou autres.
WARNUNG (DE)	<ul style="list-style-type: none">• Diese Serviceanleitung existiert nur in Englischer Sprache.• Falls ein fremder Kundendienst eine andere Sprache benötigt, ist es aufgabe des Kunden für eine Entsprechende Übersetzung zu sorgen.• Versuchen Sie nicht diese Anlage zu warten, ohne diese Serviceanleitung gelesen und verstanden zu haben.• Wird diese Warnung nicht beachtet, so kann es zu Verletzungen des Kundendiensttechnikers, des Bedieners oder des Patienten durch Stromschläge, Mechanische oder Sonstige gefahren kommen.

<p>ΠΡΟΕΙΔΟΠΟΙΗΣΗ (EL)</p>	<ul style="list-style-type: none"> • Το παρόν εγχειρίδιο σέρβις διατίθεται στα αγγλικά μόνο. • Εάν το άτομο παροχής σέρβις ενός πελάτη απαιτεί το παρόν εγχειρίδιο σε γλώσσα εκτός των αγγλικών, αποτελεί ευθύνη του πελάτη να παρέχει υπηρεσίες μετάφρασης. • Μην επιχειρήσετε την εκτέλεση εργασιών σέρβις στον εξοπλισμό εκτός εάν έχετε συμβουλευτεί και έχετε κατανοήσει το παρόν εγχειρίδιο σέρβις. • Εάν δε λάβετε υπόψη την προειδοποίηση αυτή, ενδέχεται να προκληθεί τραυματισμός στο άτομο παροχής σέρβις, στο χειριστή ή στον ασθενή από ηλεκτροπληξία, μηχανικούς ή άλλους κινδύνους.
<p>FIGYELMEZTETÉS (HU)</p>	<ul style="list-style-type: none"> • Ezen karbantartási kézikönyv kizárólag angol nyelven érhető el. • Ha a vevő szolgáltatója angoltól eltérő nyelvre tart igényt, akkor a vevő felelőssége a fordítás elkészítése. • Ne próbálja elkezdni használni a berendezést, amíg a karbantartási kézikönyvben leírtakat nem értelmezték. • Ezen figyelmeztetés figyelmen kívül hagyása a szolgáltató, működtető vagy a beteg áramütés, mechanikai vagy egyéb veszélyhelyzet miatti sérülését eredményezheti.
<p>AÐVÖRUN (IS)</p>	<ul style="list-style-type: none"> • Þessi þjónustuhandbók er eingöngu fánleg á ensku. • Ef að þjónustuveitandi viðskiptamanns þarfnast annas tungumáls en ensku, er það skylda viðskiptamanns að skaffa tungumálapjónustu. • Reynið ekki að afgreiða tækið nema að þessi þjónustuhandbók hefur verið skoðuð og skilin. • Brot á sinna þessari aðvörun getur leitt til meiðsla á þjónustuveitanda, stjórnanda eða sjúklings frá raflosti, vélrænu eða öðrum áhættum.
<p>AVVERTENZA (IT)</p>	<ul style="list-style-type: none"> • Il presente manuale di manutenzione è disponibile soltanto in inglese. • Se un addetto alla manutenzione richiede il manuale in una lingua diversa, il cliente è tenuto a provvedere direttamente alla traduzione. • Si proceda alla manutenzione dell'apparecchiatura solo dopo aver consultato il presente manuale ed averne compreso il contenuto. • Il non rispetto della presente avvertenza potrebbe far compiere operazioni da cui derivino lesioni all'addetto, alla manutenzione, all'utilizzatore ed al paziente per folgorazione elettrica, per urti meccanici od altri rischi.
<p>警告 (JA)</p>	<ul style="list-style-type: none"> • このサービスマニュアルには英語版しかありません。 • サービスを担当される業者が英語以外の言語を要求される場合、翻訳作業はその業者の責任で行うものとさせていただきます。 • このサービスマニュアルを熟読し理解せずに、装置のサービスを行わないでください。 • この警告に従わない場合、サービスを担当される方、操作員あるいは患者さんが、感電や機械的又はその他の危険により負傷する可能性があります。
<p>경고 (KO)</p>	<ul style="list-style-type: none"> • 본 서비스 지침서는 영어로만 이용하실 수 있습니다. • 고객의 서비스 제공자가 영어 이외의 언어를 요구할 경우, 번역 서비스를 제공하는 것은 고객의 책임입니다. • 본 서비스 지침서를 참고했고 이해하지 않는 한은 해당 장비를 수리하려고 시도하지 마십시오. • 이 경고에 유의하지 않으면 전기 쇼크, 기계상의 혹은 다른 위험으로부터 서비스 제공자, 운영자 혹은 환자에게 위해를 가할 수 있습니다.

BRDINJUMS (LV)	<ul style="list-style-type: none">• Šī apkalpes rokasgrāmata ir pieejama tikai angļu valodā.• Ja klienta apkalpes sniedzējam nepieciešama informācija citā valodā, nevis angļu, klienta pienākums ir nodrošināt tulkošanu.• Neveiciet aprīkojuma apkalpi bez apkalpes rokasgrāmatas izlasīšanas un saprašanas.• Šī brīdinājuma neievērošana var radīt elektriskās strāvas trieciena, mehānisku vai citu risku izraisītu traumu apkalpes sniedzējam, operatoram vai pacientam.
ĮSPĖJIMAS (LT)	<ul style="list-style-type: none">• Šis eksploatavimo vadovas yra prieinamas tik anglų kalba.• Jei kliento paslaugų tiekėjas reikalauja vadovo kita kalba – ne anglų, numatyti vertimo paslaugas yra kliento atsakomybė.• Nemėginkite atlikti įrangos techninės priežiūros, nebent atsižvelgėte į šį eksploatavimo vadovą ir jį supratote.• Jei neatkreipsite dėmesio į šį perspėjimą, galimi sužalojimai dėl elektros šoko, mechaninių ar kitų pavojų paslaugų tiekėjui, operatoriui ar pacientui.
ADVARSEL (NO)	<ul style="list-style-type: none">• Denne servicehåndboken finnes bare på engelsk.• Hvis kundens serviceleverandør trenger et annet språk, er det kundens ansvar å sørge for oversettelse.• Ikke forsøk å reparere utstyret uten at denne servicehåndboken er lest og forstått.• Manglende hensyn til denne advarselen kan føre til at serviceleverandøren, operatøren eller pasienten skades på grunn av elektrisk støt, mekaniske eller andre farer.
OSTRZEŻENIE (PL)	<ul style="list-style-type: none">• Niniejszy podręcznik serwisowy dostępny jest jedynie w języku angielskim.• Jeśli dostawca usług klienta wymaga języka innego niż angielski, zapewnienie usługi tłumaczenia jest obowiązkiem klienta.• Nie próbować serwisować wyposażenia bez zapoznania się i zrozumienia niniejszego podręcznika serwisowego.• Niezastosowanie się do tego ostrzeżenia może spowodować urazy dostawcy usług, operatora lub pacjenta w wyniku porażenia elektrycznego, zagrożenia mechanicznego bądź innego.
ATENÇÃO (PT-BR)	<ul style="list-style-type: none">• Este manual de assistência técnica só se encontra disponível em inglês.• Se qualquer outro serviço de assistência técnica, que não a gems, solicitar estes manuais noutra idioma, é da responsabilidade do cliente fornecer os serviços de tradução.• Não tente reparar o equipamento sem ter consultado e compreendido este manual de assistência técnica.• O não cumprimento deste aviso pode por em perigo a segurança do técnico, operador ou paciente devido a choques elétricos, mecânicos ou outros.

ATENÇÃO (PT-PT)	<ul style="list-style-type: none">• Este manual de assistência técnica só se encontra disponível em inglês.• Se qualquer outro serviço de assistência técnica, que não a gems, solicitar estes manuais noutra idioma, é da responsabilidade do cliente fornecer os serviços de tradução.• Não tente reparar o equipamento sem ter consultado e compreendido este manual de assistência técnica.• O não cumprimento deste aviso pode colocar em perigo a segurança do técnico, do operador ou do paciente devido a choques eléctricos, mecânicos ou outros.
ATENȚIE (RO)	<ul style="list-style-type: none">• Acest manual de service este disponibil numai în limba engleză.• Dacă un furnizor de servicii pentru clienți necesită o altă limbă decât cea engleză, este de datoria clientului să furnizeze o traducere.• Nu încercați să reparați echipamentul decât ulterior consultării și înțelegerii acestui manual de service.• Ignorarea acestui avertisment ar putea duce la rănirea depanatorului, operatorului sau pacientului în urma pericolelor de electrocutare, mecanice sau de altă natură.
ОСТОРОЖНО! (RU)	<ul style="list-style-type: none">• Данное руководство по обслуживанию предлагается только на английском языке.• Если сервисному персоналу клиента необходимо руководство не на английском, а на каком-то другом языке, клиенту следует самостоятельно обеспечить перевод.• Перед обслуживанием оборудования обязательно обратитесь к данному руководству и поймите изложенные в нем сведения.• Несоблюдение требований данного предупреждения может привести к тому, что специалист по обслуживанию, оператор или пациент получат удар электрическим током, механическую травму или другое повреждение.
UPOZORENJE (SR)	<ul style="list-style-type: none">• Ovo servisno uputstvo je dostupno samo na engleskom jeziku.• Ako klijentov serviser zahteva neki drugi jezik, klijent je dužan da obezbedi prevodilacke usluge.• Ne pokušavajte da opravite uređaj ako niste pročitali i razumeli ovo servisno uputstvo.• Zanemarivanje ovog upozorenja može dovesti do povređivanja servisera, rukovaoca ili pacijenta usled strujnog udara ili mehanickih i drugih opasnosti.
UPOZORNENIE (SK)	<ul style="list-style-type: none">• Tento návod na obsluhu je k dispozícii len v angličtine.• Ak zákazníkovi poskytovateľ služieb vyžaduje iný jazyk ako angličtinu, poskytnutie prekladateľských služieb je zodpovednosťou zákazníka.• Nepokúšajte sa o obsluhu zariadenia skôr, ako si neprečítate návod na obsluhu a neporozumiete mu.• Zanedbanie tohto upozornenia môže vyústiť do zranenia poskytovateľa služieb, obsluhujúcej osoby alebo pacienta elektrickým prúdom, do mechanického alebo iného nebezpečenstva.

<p>ATENCION (ES)</p>	<ul style="list-style-type: none">• Este manual de servicio sólo existe en inglés.• Si el encargado de mantenimiento de un cliente necesita un idioma que no sea el inglés, el cliente deberá encargarse de la traducción del manual.• No se deberá dar servicio técnico al equipo, sin haber consultado y comprendido este manual de servicio.• La no observancia del presente aviso puede dar lugar a que el proveedor de servicios, el operador o el paciente sufran lesiones provocadas por causas eléctricas, mecánicas o de otra naturaleza.
<p>VARNING (SV)</p>	<ul style="list-style-type: none">• Den här servicehandboken finns bara tillgänglig på engelska.• Om en kunds servicetekniker har behov av ett annat språk än engelska ansvarar kunden för att tillhandahålla översättningstjänster.• Försök inte utföra service på utrustningen om du inte har läst och förstår den här servicehandboken.• Om du inte tar hänsyn till den här varningen kan det resultera i skador på serviceteknikern, operatören eller patienten till följd av elektriska stötar, mekaniska faror eller andra faror.
<p>DIKKAT (TR)</p>	<ul style="list-style-type: none">• Bu servis kilavuzunun sadece ingilizcesi mevcuttur.• Eğer müşteri teknisyeni bu kilavuzu ingilizce dışında bir başka lisandan talep ederse, bunu tercüme ettirmek müşteriye düşer.• Servis kilavuzunu okuyup anlamadan ekipmanlara müdahale etmeyiniz.• Bu uyarıya uyulmaması, elektrik, mekanik veya diğer tehlikelerden dolayı teknisyen, operatör veya hastanın yaralanmasına yol açabilir.

DAMAGE IN TRANSPORTATION

All packages should be closely examined at time of delivery. If damage is apparent, have notation "damage in shipment" written on all copies of the freight or express bill before delivery is accepted or "signed for" by a General Electric representative or a hospital receiving agent. Whether noted or concealed, damage MUST be reported to the carrier immediately upon discovery, or in any event, within 14 days after receipt, and the contents and containers held for inspection by the carrier. A transportation company will not pay a claim for damage if an inspection is not requested within this 14 day period.

To file a report:

- Call 1-800-548-3366 and use option 8.
- Fill out a report on <http://egems.med.ge.com/edq/home.jsp>
- Contact your local service coordinator for more information on this process.

Rev. June 13, 2006

CERTIFIED ELECTRICAL CONTRACTOR STATEMENT

All electrical Installations that are preliminary to positioning of the equipment at the site prepared for the equipment shall be performed by licensed electrical contractors. In addition, electrical feeds into the Power Distribution Unit shall be performed by licensed electrical contractors. Other connections between pieces of electrical equipment, calibrations and testing shall be performed by qualified GE Medical personnel. The products involved (and the accompanying electrical installations) are highly sophisticated, and special engineering competence is required. In performing all electrical work on these products, GE will use its own specially trained field engineers. All of GE's electrical work on these products will comply with the requirements of the applicable electrical codes.

The purchaser of GE equipment shall only utilize qualified personnel (i.e., GE's field engineers, personnel of third-party service companies with equivalent training, or licensed electricians) to perform electrical servicing on the equipment.

IMPORTANT...X-RAY PROTECTION

X-ray equipment if not properly used may cause injury. Accordingly, the instructions herein contained should be thoroughly read and understood by everyone who will use the equipment before you attempt to place this equipment in operation. The General Electric Company, Medical Systems Group, will be glad to assist and cooperate in placing this equipment in use.

Although this apparatus incorporates a high degree of protection against x-radiation other than the useful beam, no practical design of equipment can provide complete protection. Nor can any practical design compel the operator to take adequate precautions to prevent the possibility of any persons carelessly exposing themselves or others to radiation.

It is important that anyone having anything to do with x-radiation be properly trained and fully acquainted with the recommendations of the National Council on Radiation Protection and Measurements as published in NCRP Reports available from NCRP Publications, 7910 Woodmont Avenue, Room 1016, Bethesda, Maryland 20814, and of the International Commission on Radiation Protection, and take adequate steps to protect against injury.

The equipment is sold with the understanding that the General Electric Company, Medical Systems Group, its agents, and representatives have no responsibility for injury or damage which may result from improper use of the equipment.

Various protective materials and devices are available. It is urged that such materials or devices be used.

LITHIUM BATTERY CAUTIONARY STATEMENTS



CAUTION
Risk of
Explosion

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.



ATTENTION
Danger
d'Explosion

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

OMISSIONS & ERRORS

Customers, please contact your GE Sales or Service representatives.

GE personnel, please use the GEMS CQA Process to report all omissions, errors, and defects in this publication.

Revision History

Revision	Date	Reason for change
1	11/20/05	Initial release.
2	9/30/06	Add Jarrell IG Installation.
3	6/18/07	Updated Jarrell IG Option Kit Materiel List
4	2/03/09	Added IG installation flowchart (Chapter 1) and procedures on All-In-One Console (Chapter 3). Added 2 IG option installation procedure (Chapter 4)

Table of Contents

Chapter 1	
Introduction.....	15
Section 1.0	
Flowchart	16
1.1 Flowchart (For LCGOC/ 2IG Option for GOC4).....	16
1.2 Flowchart (For All-In-One Console).....	17
Section 2.0	
Material List	18
Chapter 2	
Installation Procedure (For LCGOC).....	19
Section 1.0 Overview	19
Section 2.0 Procedure.....	19
2.1 Power-Off (Shut Down) the Console	19
2.2 Install the IG Node.....	19
2.3 Reconfiguration.....	21
2.4 Verify DARC Node is Up.....	21
2.5 Verify IG Node	22
2.6 Start Applications.....	23
2.7 Retro Recon Test.....	23
Section 3.0 Finalization.....	23
Chapter 3	
Installation Procedure (For All-In-One Console)	25
Section 1.0 Overview	25
Section 2.0 Procedure.....	25
2.1 Power-Off (Shut Down) the Console	25
2.2 Install the IG Node.....	25
2.3 Reconfiguration.....	27
2.4 Verify IG Node	27
2.5 Start Applications.....	28
2.6 Retro Recon Test.....	28
Section 3.0 Finalization.....	28
Chapter 4	
Installation Procedure (For 2 IG Option for GOC4)	29
Section 1.0 Overview	29
Section 2.0 Procedure.....	29
2.1 Power-Off (Shut Down) the Console	29

2.2	Install the IG Node	29
2.3	Reconfiguration	32
2.4	Verify DARC Node is Up	33
2.5	Verify IG Node.....	33
2.6	Start Applications	34
2.7	Retro Recon Test	34
	Section 3.0 Finalization	34
Chapter 5		
Attaching Rating Plate		35

Chapter 1

Introduction

By installing this Option, Image Generator (IG) becomes available for LCGOC and All-In-One Console. By installing 2 IG Option, GOC4 Console will be upgrade from 1IG to 3 IGs. The image reconstruction speed will be increased. This manual describes the installation procedure.

IG Option: BrightSpeed and BrightSpeed Select with LCGOC and AIO Console.

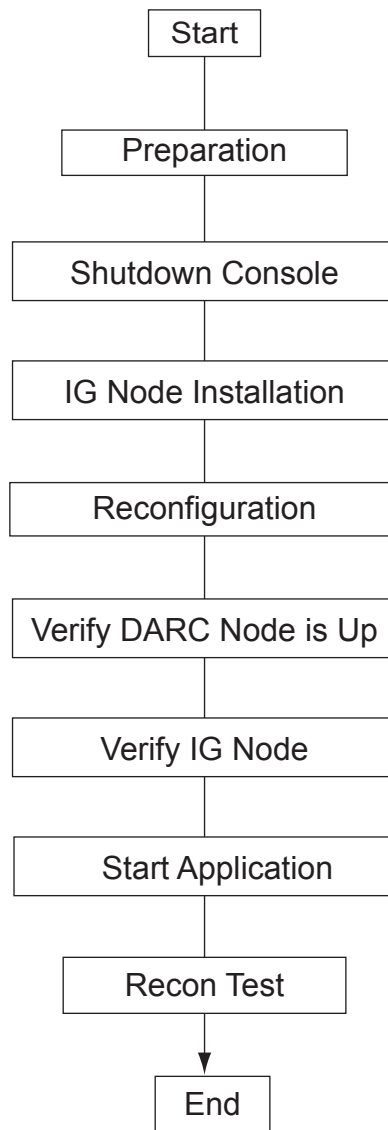
2 IG Option: LightSpeed RT16 and BrightSpeed with GOC4 Console (Consist of two IG option kit).

Section 1.0

Flowchart

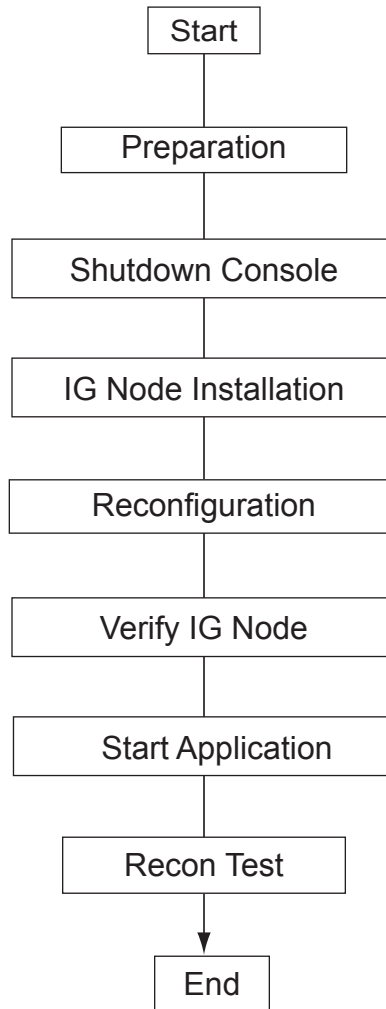
1.1 Flowchart (For LCGOC/ 2IG Option for GOC4)

Below Illustration shows main flow of the installation procedures of the option on LCGOC and GOC4.



1.2 Flowchart (For All-In-One Console)

Below illustration shows main flow of the installation procedures of the option on All-In-One console.



Section 2.0 Material List

Verify that the contents of this option kit are correct according to the Material List below.

IG Option Kit (5144667) - Westville

ITEM	PART NO.	DESCRIPTION	QTY.
1	2362872	IMAGE GENERATION COMPUTER - GRE (IG)	1
2	2374965-2	CABLE - ETHERNET CAT5E X 610MM LG	1
3	5161904	IG Option Installation Manual (This Manual)	1
4	5146271	Rating Plate of IG	1

IG Option Kit (5192881) - Jarrell Darc/All-In-One Console/GOC4

ITEM	PART NO.	DESCRIPTION	QTY.
1	5147443-2	IMAGE GENERATION COMPUTER - GRE (IG)	1
2	5127222-2	Shield Ethernet Cable	1
3	5161904	IG Option Installation Manual (This Manual)	1

Chapter 2

Installation Procedure (For LCGOC)

Section 1.0 Overview

This procedure describes the installation of the IG Node. After the IG Node has been installed, several tests are required:

- Communication from the DARC Node to the IG Node
- Testing of the RAC (Reconstruction Acceleration Card)

Section 2.0 Procedure



NOTICE Prevent permanent damage to the static-sensitive boards. Attach an anti-static wrist-strap to your wrist and to a bare metal grounding point.

2.1 Power-Off (Shut Down) the Console

- 1.) Select one of the following methods to Power OFF the Operator Console:
- 2.) If Applications are up, click on the [Shut Down] button and select [Shutdown].
- 3.) If Applications are down, open a Unix Shell at the Toolchest. Enter (type) the following commands, at the indicated prompts:

```
ctuser@hostname: su -  
Password: #bigguy  
root@hostname: halt
```
- 4.) Power OFF the console at the front panel switch when 'System Halted' message displays.

2.2 Install the IG Node

Note: Jarrell DARC and IG Nodes require software release 06MW29.x.

- 1.) Remove the front cover and rear cover of the console.
- 2.) Remove and retain the two (2) front mounting screws from the console chassis.
- 3.) Slide the IG Node into the Operator Console.
- 4.) Replace the two (2) front mounting screws on the front of the IG Node.
- 5.) Verify the power switch (located at the rear of the IG Node, if present) is in the ON position. (See [Figure 2-1, Rear of "Westville" IG](#))
- 6.) Connect the power cable to the rear of IG. The Power cable is already in the chassis.
- 7.) Connect the Ethernet cable between DARC Ethernet (IG1 (eth1)) and IG Ethernet (eth0). (See [Figure 2-1](#) to [Figure 2-4](#))



Figure 2-1 Rear of "Westville" IG



Figure 2-2 Rear of "Jarrell" IG



Figure 2-3 Rear of "Westville" DARC2

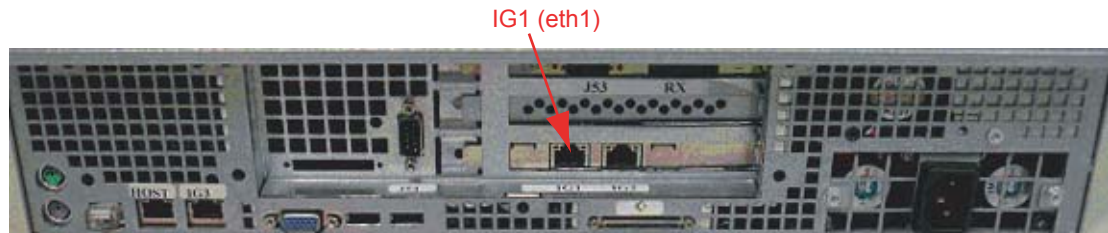


Figure 2-4 Rear of "Jarrell" DARC2

2.3 Reconfiguration

- 1.) Power on the console.
- 2.) When a pink window displays: "You have 5 seconds to cancel the application startup."
Click [Cancel].
- 3.) Open a Shell.
Type: `su -`
Password: `#bigguy`
Type: `reconfig`
- 4.) Click [Config].
- 5.) Select [Hardware]
- 6.) Select [1] for IG number.



- 7.) Click [Accept].
- 8.) Click [OK] to reboot.
- 9.) After approximately 4 minutes a pink pop up window appears with the message:
`CT Software Auto-Start Disabled.`
Click [OK].

2.4 Verify DARC Node is Up

The DARC Node must be up to check the IG Node. Perform `ping` and `rsh` commands on the DARC Node, as follows:

- 1.) Open a Unix Shell.
- 2.) `ctuser@hostname: ping darc`
Verify ping is successful.
Press `<Ctrl+C>` to stop ping process.
- 3.) `ctuser@hostname: rsh darc`
Verify `ctuser@darc` prompt is present.
- 4.) Exit from the DARC2 Node Remote Shell:
`ctuser@darc exit`

Note: This Unix Shell will be used again, so do not exit or close, at this time.

2.5 Verify IG Node

Note: In the case of an IG Node replacement, or troubleshooting with an IG Node swap, the affected IG node must be manually power-cycled (powered down and then up again), at the front panel. The manual power cycle is required for the IG Node to obtain an IP address and an IG#.

- 1.) Power OFF the IG Node at the front panel power switch.



Figure 2-5 Front Panel of "Westville" IG Node

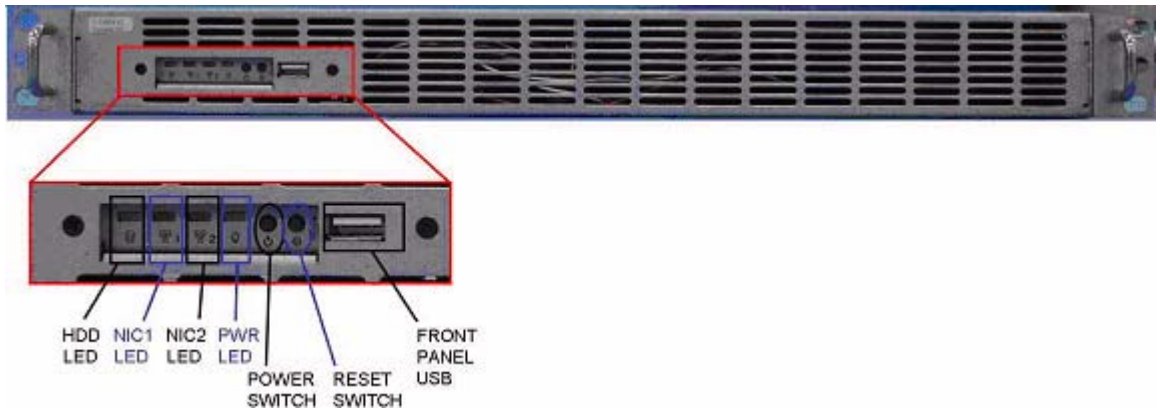


Figure 2-6 Front Panel of "Jarrell" IG Node

- 2.) Power ON the IG Node at the (top) front panel switch.
- 3.) Wait 2 to 4 minutes.
- 4.) In the open Unix shell (window), verify the IG Node:
 - a.) `ctuser@darc: rsh ig1`
 - b.) If `rsh` to `ig1` is successful, then type: `exit`, to get out of `ig` remote shell
 - c.) Type: `exit`, to get out of DARC Node remote shell.
 - d.) Type: `exit`, to close the Unix Shell.

2.6 Start Applications

- 1.) In the open Unix Shell, start Application Software:
`ctuser@hostname: st`
- 2.) A pink pop-up Attention Message appears:
`OC initializing. Please wait...`
- 3.) Select [OK] for other pink message boxes that appear throughout the reboot process.
- 4.) If any Recon Selftest Failures are encountered, review the error log.

2.7 Retro Recon Test

Reconstruct images to verify the IG functions well.

- 1.) Click on the [RETRO RECON] selection on the left Monitor.
- 2.) Select [RAT GOLD] series.
- 3.) Click [SELECT SERIES] .
- 4.) Click on [CONFIRM] .
- 5.) Verify the image(s) reconstruct and are displayed on the right Monitor.
- 6.) Click on [QUIT] .

Section 3.0 Finalization

- 1.) Take some scans (e.g., scout, axial & helical).
- 2.) Verify the image(s) reconstruct and are displayed.
- 3.) Install the front and rear Operator Console covers.

Chapter 3

Installation Procedure (For All-In-One Console)

Section 1.0 Overview

This procedure describes the installation of the IG Node. After the IG Node has been installed, several tests are required:

- Communication from the Host Computer to the IG Node
- Testing of the RAC (Reconstruction Acceleration Card)

Section 2.0 Procedure



NOTICE Prevent permanent damage to the static-sensitive boards. Attach an anti-static wrist-strap to your wrist and to a bare metal grounding point.

2.1 Power-Off (Shut Down) the Console

- 1.) Select one of the following methods to Power OFF the Operator Console:
- 2.) If Applications are up, click on the [Shut Down] button and select [Shutdown].
- 3.) If Applications are down, open a Unix Shell at the Toolchest. Enter (type) the following commands, at the indicated prompts:

```
ctuser@hostname: su -  
Password: #bigguy  
root@hostname: halt
```
- 4.) Power OFF the console at the front panel switch when 'System Halted' message displays.

2.2 Install the IG Node

Note: AIO and IG Nodes require software release 08BW20.x or later.

- 1.) Remove the front cover and rear cover of the console.
- 2.) Remove and retain the two (2) front mounting screws from the console chassis.
- 3.) Slide the IG Node into the Operator Console.
- 4.) Replace the two (2) front mounting screws on the front of the IG Node.
- 5.) Connect the power cable to the rear of IG. The Power cable is already in the chassis.
- 6.) Connect the Ethernet cable between AIO Ethernet (IG1 (eth0)) and IG Ethernet (eth0). (See [Figure 3-1](#) and [Figure 3-2](#))



Figure 3-1 Rear of "Jarrell/All-In-One" IG

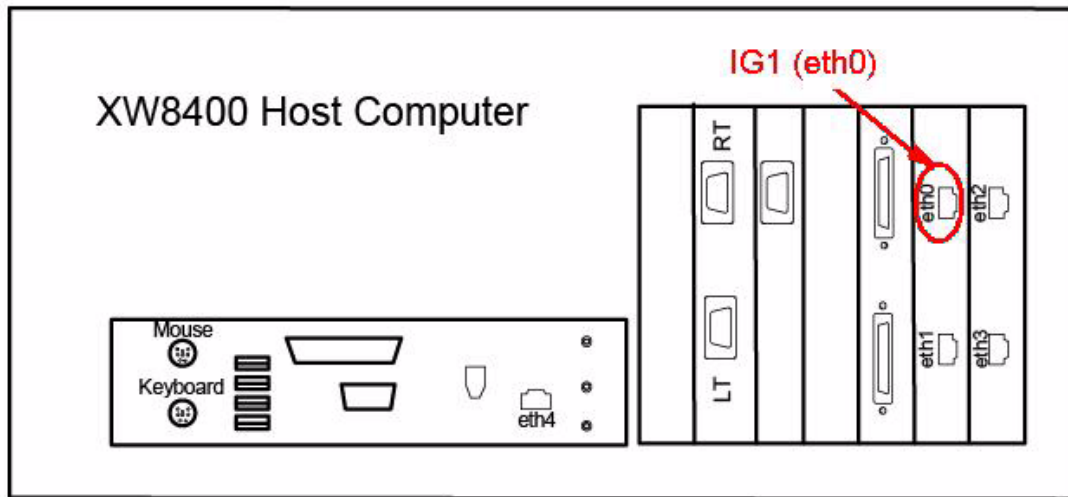


Figure 3-2 Rear of Host Computer in "AIO" Console

2.3 Reconfiguration

- 1.) Power on the console.
- 2.) When a pink window displays: "You have 5 seconds to cancel the application startup."
Click [Cancel].
- 3.) Open a Shell.
Type: `su -`
Password: `#bigguy`
Type: `reconfig`
- 4.) Click [Config].
- 5.) Select [Hardware]
- 6.) Select [1] for IG number.



- 7.) Click [Accept].
- 8.) Click [OK] to reboot.
- 9.) After approximately 4 minutes a pink pop up window appears with the message:
`CT Software Auto-Start Disabled.`
Click [OK].

2.4 Verify IG Node

Note: In the case of an IG Node replacement, or troubleshooting with an IG Node swap, the affected IG node must be manually power-cycled (powered down and then up again), at the front panel. The manual power cycle is required for the IG Node to obtain an IP address and an IG#.

- 1.) Power OFF the IG Node at the front panel power switch.

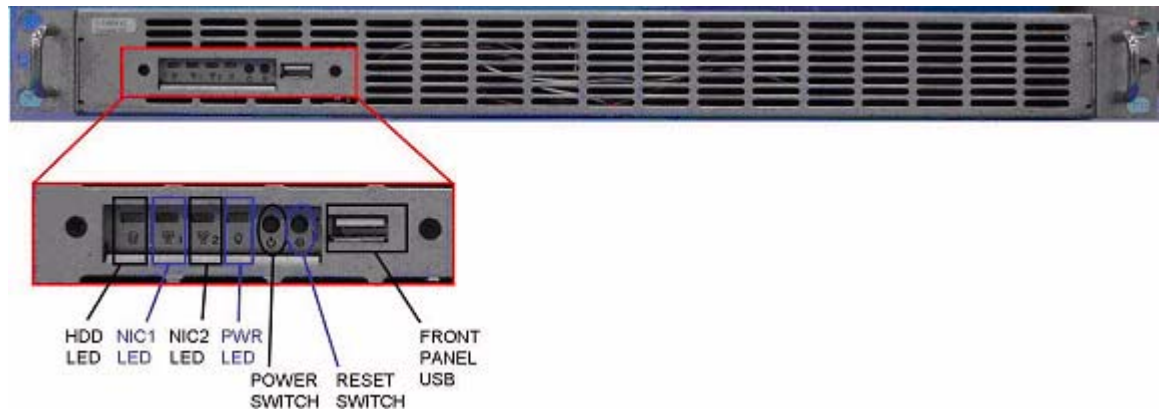


Figure 3-3 Front Panel of "Jarrell" IG Node

- 2.) Power ON the IG Node at the (top) front panel switch.
- 3.) Wait 2 to 4 minutes.
- 4.) In the open Unix shell (window), verify the IG Node:
 - e.) `ctuser@hostname: rsh ig1`
 - f.) If `rsh` to `ig1` is successful, then type: `exit`, to get out of `ig` remote shell
 - g.) Type: `exit`, to close the Unix Shell.

2.5 Start Applications

- 1.) In the open Unix Shell, start Application Software:
`ctuser@hostname: st`
- 2.) A pink pop-up Attention Message appears:
`OC initializing. Please wait...`
- 3.) Select [OK] for other pink message boxes that appear throughout the reboot process.
- 4.) If any Recon Selftest Failures are encountered, review the error log.

2.6 Retro Recon Test

Reconstruct images to verify the IG functions well.

- 1.) Click on the [RETRO RECON] selection on the left Monitor.
- 2.) Select [RAT GOLD] series.
- 3.) Click [SELECT SERIES] .
- 4.) Click on [CONFIRM] .
- 5.) Verify the image(s) reconstruct and are displayed on the right Monitor.
- 6.) Click on [QUIT] .

Section 3.0 Finalization

- 1.) Take some scans (e.g., scout, axial & helical).
- 2.) Verify the image(s) reconstruct and are displayed.
- 3.) Install the front and rear Operator Console covers.

Chapter 4

Installation Procedure (For 2 IG Option for GOC4)

Section 1.0 Overview

This procedure describes the installation of the 2 IG Option for GOC4 will use two IG option kits (5192881). After the IG Nodes have been installed, several tests are required:

- Communication from the Host Computer to the IG Node
- Testing of the RAC (Reconstruction Acceleration Card)

Section 2.0 Procedure



NOTICE Prevent permanent damage to the static-sensitive boards. Attach an anti-static wrist-strap to your wrist and to a bare metal grounding point.

2.1 Power-Off (Shut Down) the Console

- 1.) Select one of the following methods to Power OFF the Operator Console:
- 2.) If Applications are up, click on the [Shut Down] button and select [Shutdown].
- 3.) If Applications are down, open a Unix Shell at the Toolchest. Enter (type) the following commands, at the indicated prompts:

```
ctuser@hostname: su -  
Password: #bigguy  
root@hostname: halt
```
- 4.) Power OFF the console at the front panel switch when 'System Halted' message displays.

2.2 Install the IG Node

- 1.) Remove the front cover and rear cover of the console.
- 2.) Remove two faceplates covering the slots for Image Generator (IG) # 2 and # 3. Keep screws to secure the two IGs that shipped in the upgrade kit.
- 3.) Insert IG # 2 into the "IG # 2" slot, sliding it on the rails until flush with the GRE chassis.
- 4.) Secure IG # 2 using two screws from Step 2.
- 5.) Insert IG # 3 into the "IG # 3" slot, sliding it on the rails until flush with the GRE chassis.
- 6.) Secure IG # 3 using two screws from Step 2.



Figure 4-1 Slots for Adding IG Nodes

- 7.) Move to the rear of the console to continue the install of the Ethernet cables and power cords to the IGs.
- 8.) Connect the Ethernet cables for IG # 2 and IG # 3 to the DARC as shown [Figure 4-2](#) to [Figure 4-4](#). (IG # 2 ETH0 <-> DARC IG2, IG # 3 ETH0 <->DARC IG3)



Figure 4-2 Rear of "Jarrell" IG



Figure 4-3 Rear of "Westville" DARC2

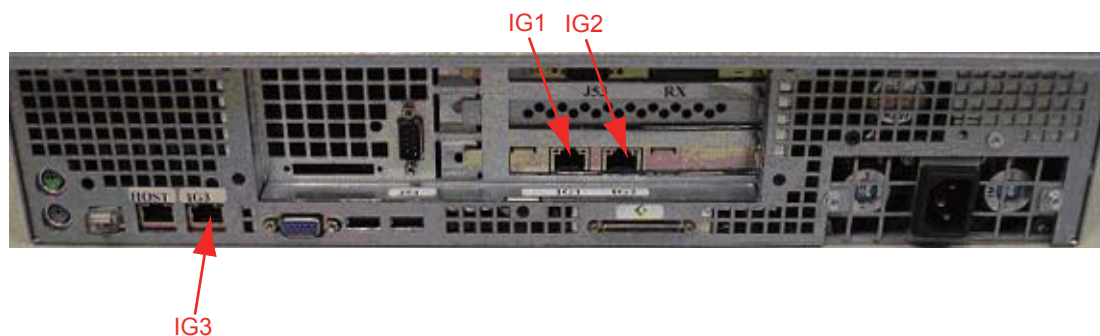
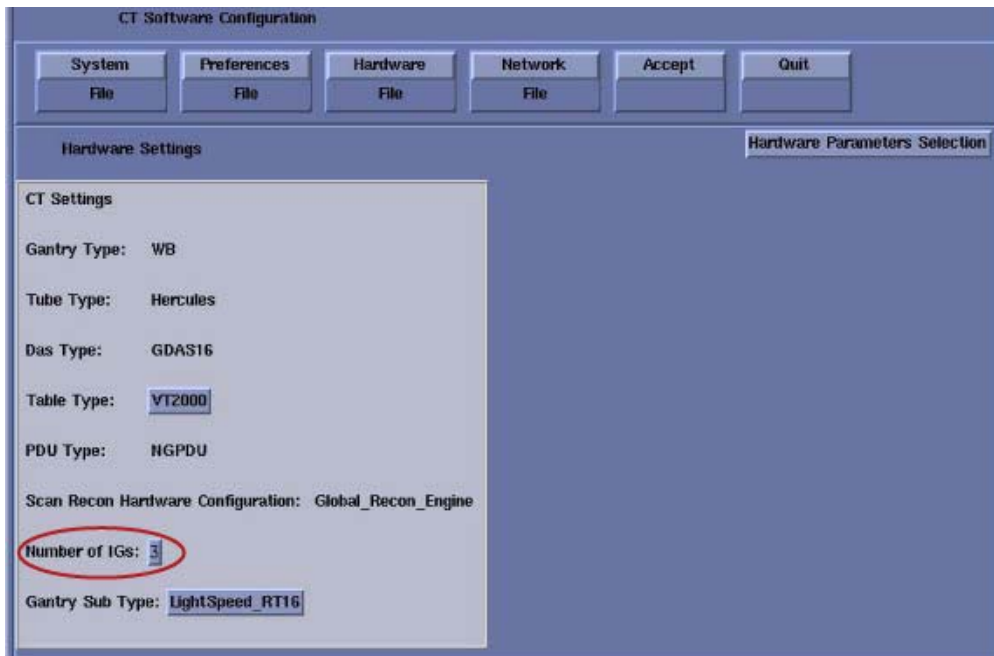


Figure 4-4 Rear of "Jarrell" DARC2

- 9.) Connect power cable (pre-wired in console chassis) to the added IG's a.c. input receptacle.

2.3 Reconfiguration

- 1.) Power on the console.
- 2.) When a pink window displays: "You have 5 seconds to cancel the application startup."
Click [Cancel].
- 3.) Open a Shell.
Type: `su -`
Password: `#bigguy`
Type: `reconfig`
- 4.) Click [Config].
- 5.) Select [Hardware]
- 6.) Select [3] for IG number.



- 7.) Click [Accept].
- 8.) Click [OK] to reboot.
- 9.) After approximately 4 minutes a pink pop up window appears with the message:
CT Software Auto-Start Disabled.
Click [OK].

2.4 Verify DARC Node is Up

The DARC Node must be up to check the IG Node. Perform `ping` and `rsh` commands on the DARC Node, as follows:

- 1.) Open a Unix Shell.
- 2.) `ctuser@hostname: ping darc`
Verify ping is successful.
Press `<Ctrl+C>` to stop ping process.
- 3.) `ctuser@hostname: rsh darc`
Verify `ctuser@darc` prompt is present.
- 4.) Exit from the DARC2 Node Remote Shell:
`ctuser@darc exit`

Note: This Unix Shell will be used again, so do not exit or close, at this time.

2.5 Verify IG Node

Note: In the case of an IG Node replacement, or troubleshooting with an IG Node swap, the affected IG node must be manually power-cycled (powered down and then up again), at the front panel. The manual power cycle is required for the IG Node to obtain an IP address and an IG#.

- 1.) Power OFF the IG Node at the front panel power switch.

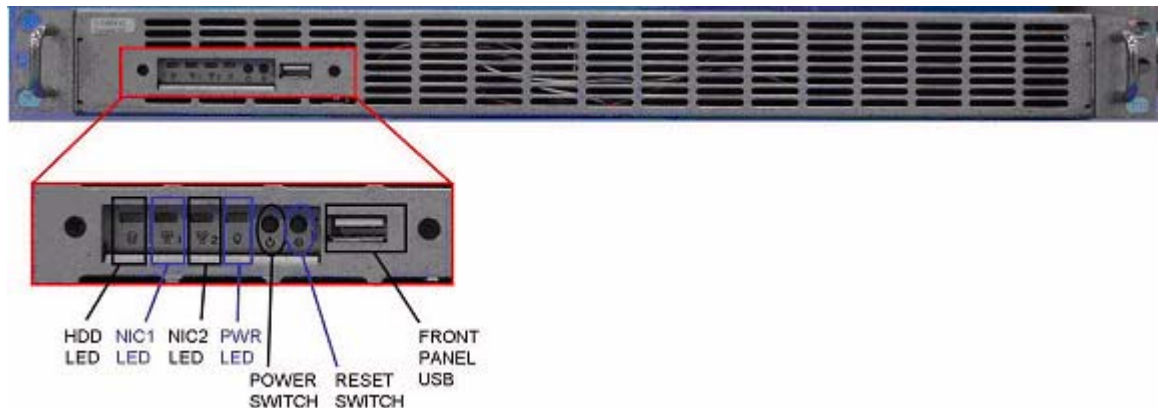


Figure 4-5 Front Panel of "Jarrell" IG Node

- 2.) Power ON the IG Node at the (top) front panel switch.
- 3.) Wait 2 to 4 minutes for the IG Node to boot up.
- 4.) In the Unix Shell, verify the `cat /usr/g/config/INFO` file for number of IGs (NUMIG) actively configured in the Operator Console.
- 5.) In the Unix Shell, verify the following IG Node(s) as applicable:

Note: For an Ethernet cabling connection issue, use the command `'ethtool -p eth#'` (where # represents the Ethernet address) as root on the DARC2 Node or IG Node to determine if the Ethernet cable is correctly connected from the DARC2 Node to the IG Node. The port will blink or flash when activated and `<Ctrl+C>` will stop the test. This command can be used on the Host, DARC2 Node and the IG Node(s).

Example for IG Node # 1 Ethernet cable:

```
[root@ig1] ethtool -p eth0 (<Ctrl+C> to stop the flashing Ethernet port LED)
```

```
{ctuser@hostname} rsh darc
{ctuser@darc} su -
password: #<password>
{root@darc} rsh ig1
{root@ig1} exit
{root@darc} rsh ig2
{root@ig2} exit
{root@darc} rsh ig3
{root@ig3} exit
{root@darc} exit
{ctuser@darc} exit
```

2.6 Start Applications

- 1.) In the open Unix Shell, start Application Software:
ctuser@hostname: **st**
- 2.) A pink pop-up Attention Message appears:
OC initializing. Please wait...
- 3.) Select [OK] for other pink message boxes that appear throughout the reboot process.
- 4.) If any Recon Selftest Failures are encountered, review the error log.

2.7 Retro Recon Test

Reconstruct images to verify the IG functions well.

- 1.) Click on the [RETRO RECON] selection on the left Monitor.
- 2.) Select [RAT GOLD] series.
- 3.) Click [SELECT SERIES] .
- 4.) Click on [CONFIRM] .
- 5.) Verify the image(s) reconstruct and are displayed on the right Monitor.
- 6.) Click on [QUIT] .

Section 3.0 Finalization

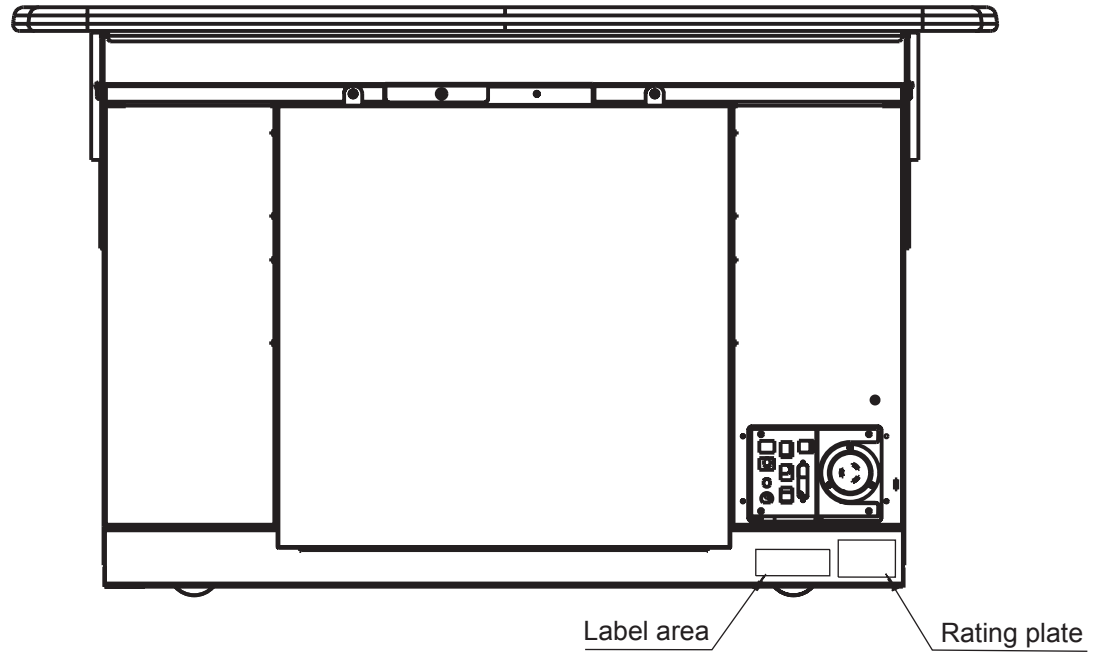
- 1.) Take some scans (e.g., scout, axial & helical).
- 2.) Verify the image(s) reconstruct and are displayed.
- 3.) Install the front and rear Operator Console covers.

Chapter 5

Attaching Rating Plate

Attach the provided rating plate to the following location (in the label area left to the rating plate of the OC).

OC Rear View



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