Remote Control Kit with Assisted Video Monitoring System Service Manual

5863844-1EN, Revision 3

5863844-1EN
Revision 3
US English

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, Healthcare Technologies, 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, Healthcare Technologies, 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.

Language Policy

DOC0371395 - Global Language Procedure

ПРЕДУПРЕЖДЕНИЕ (BG)	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 пациента в резултат на токов удар, механична или друга опасност.
警告 (ZH-CN)	本维修手册仅提供英文版本。 • 如果客户的维修服务人员需要非英文版本，则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服务人员、操作人员或患者造成电击、机械伤害或其他形式的伤 害。
警告 (ZH-HK)	本服務手冊僅提供英文版本。 • 倘若客戶的服務供應商需要英文以外之服務手冊，客戶有責任提供翻譯服務。 • 除非已參閱本服務手冊及明白其內容，否則切勿嘗試維修設備。 • 不遵從本警告或會令服務供應商、網絡供應商或病人受到觸電、機械性或其他的危險。
警告 (ZH-TW)	本維修手冊僅有英文版。 • 若客戶的維修廠商需要英文版以外的語言，應由客戶自行提供翻譯服務。 • 請勿試圖維修本設備，除非 您已查閱並瞭解本維修手冊。 • 若未留意本警告，可能導致維修廠商、操作員或病患因觸電、機械或其他危險而受傷。

UPOZORENJE (HR)	Ovaj servisni priručnik dostupan je na engleskom jeziku. • Ako davatelj usluge klijenta treba neki drugi jezik, klijent je dužan osigurati prijevod. • Ne pokušavajte servisirati opremu ako niste u potpunosti pročitali i razumjeli ovaj servisni priručnik. • Zanemarite li ovo upozorenje, može doći do ozljede davatelja usluge, operatera ili pacijenta uslijed strujnog udara, mehaničkih ili drugih rizika.
VÝSTRAHA (CS)	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)	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 uden at læse og forstå denne servicemanual. • Manglende overholdelse af denne advarsel kan medføre skade på grund af elektrisk stød, mekanisk eller anden fare for teknikeren, operatøren eller patienten.
WAAR-SCHUWING (NL)	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 alvorens 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)	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, mechanical or other hazards.
HOIATUS (ET)	See 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)	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)	Ce manuel d'installation et de maintenance est disponible uniquement en anglais. • Si le technicien d'un client a besoin de ce manuel dans une langue autre que l'anglais, il incombe au client de le faire traduire. • Ne pas tenter d'intervenir sur les équipements tant que ce manuel d'installation et de maintenance 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)	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.
ΠΡΟΕΙΔΟΠΟΙΗΣΗ (EL)	Τοπαρόν 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. • Μηνεπιχειρήσετε την εκτέλεση εργασιών σέρβις στον εξοπλισμό εκτός εάν έχετε συμβουλευτεί και έχετε κατανοήσει το παρόν εγχειρίδιο σέρβις. • Εάν δεν λάβετε υπόψη την προειδοποίηση αυτή, ενδέχεται να προκληθεί τραυματισμός στο άτομο παροχής σέρβις, στο χειριστή ή στον ασθενή από ηλεκτροπληξία, μηχανικούς ή άλλους κινδύνους.
FIGYELMEZTETÉS (HU)	Ezen karbantartási kézikönyv kizárólag angol nyelven érhető el. • Ha a vevő szolgáltatója angoltól eltérő nyelvre tart igényt, akkor a vevő felelőssége a fordítás elkészíttetése. • Ne próbálja elkezdeni 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.
AÐVÖRUN (IS)	Þessi þjónustuhandbók er aðeins fáanleg á ensku. • Ef að þjónustuveitandi viðskiptamanns þarfnast annas tungumáls en ensku, er það skylda viðskiptamanns að skaffa tungumálaþjónustu. • 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.
AVVERTENZA (IT)	Il presente manuale di manutenzione è disponibile soltanto in lingua inglese. • Se un addetto alla manutenzione richiede il manuale in una lingua diversa, il cliente è tenuto a provvedere direttamente alla traduzione. • Procedere alla manutenzione dell'apparecchiatura solo dopo aver consultato il presente manuale ed averne compreso il contenuto. • Il mancato rispetto della presente avvertenza potrebbe causare lesioni all'addetto alla manutenzione, all'operatore o ai pazienti provocate da scosse elettriche, urti meccanici o altri rischi.
警告 (JA)	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。

경고 (KO)	본 서비스 매뉴얼은 영어로만 이용하실 수 있습니다. • 고객의 서비스 제공자가 영어 이외의 언어를 요구할 경우, 번역 서비스를 제공하는 것은 고객의 책임입니다. • 본 서비스 매뉴얼을 참조하여 숙지하지 않은 이상 해당 장비를 수리하려고 시도하지 마십시오. • 본 경고 사항에 유의하지 않으면 전기 쇼크, 기계적 위험, 또는 기타 위험으로 인해 서비스 제공자, 사용자 또는 환자에게 부상을 입힐 수 있습니다.
BRĪDINĀJUMS (LV)	Šī apkopes rokasgrāmata ir pieejama tikai angļu valodā. • Ja klienta apkopes sniedzējam nepieciešama informācija citā valodā, klienta pienākums ir nodrošināt tulkojumu. • Neveiciet aprīkojuma apkopi bez apkopes rokasgrāmatas izlasīšanas un saprašanas. • Šī brīdinājuma neievērošanas rezultātā var rasties elektriskās strāvas trieciena, mehānisku vai citu faktoru izraisītu traumu risks apkopes sniedzējam, operatoram vai pacientam.
ĮSPĖJIMAS (LT)	Šis eksploatavimo vadovas yra tik anglų kalba. • Jei kliento paslaugų tiekėjas reikalauja vadovo kita kalba – ne anglų, suteikti vertimo paslaugas privalo klientas. • Nemėginkite atlikti įrangos techninės priežiūros, jei neperskaitėte ar nesupratote šio eksploatavimo vadovo. • Jei nepaisysite šio įspėjimo, galimi paslaugų tiekėjo, operatoriaus ar paciento sužalojimai dėl elektros šoko, mechaninių ar kitų pavojų.
ADVARSEL (NO)	Denne servicehåndboken finnes bare på engelsk. • Hvis kundens serviceleverandør har bruk for 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)	Niniejszy podręcznik serwisowy dostępny jest jedynie w języku angielskim. • Jeśli serwisant klienta wymaga języka innego niż angielski, zapewnienie usługi tłumaczenia jest obowiązkiem klienta. • Nie próbować serwisować urządzenia bez zapoznania się z niniejszym podręcznikiem serwisowym i zrozumienia go. • Niezastosowanie się do tego ostrzeżenia może doprowadzić do obrażeń serwisanta, operatora lub pacjenta w wyniku porażenia prądem elektrycznym, zagrożenia mechanicznego bądź innego.
ATENÇÃO (PT-BR)	Este manual de assistência técnica encontra-se disponível unicamente em inglês. • Se outro serviço de assistência técnica solicitar a tradução deste manual, caberá ao cliente fornecer os serviços de tradução. • Não tente reparar o equipamento sem ter consultado e compreendido este manual de assistência técnica. • A não observância deste aviso pode ocasionar ferimentos no técnico, operador ou paciente decorrentes de choques elétricos, mecânicos ou outros.
ATENÇÃO (PT-PT)	Este manual de assistência técnica só se encontra disponível em inglês. • Se qualquer outro serviço de assistência técnica solicitar este manual noutro 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)	Acest manual de service este disponibil doar 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 şi 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)	Данное руководство по техническому обслуживанию представлено 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 техническим обслуживанием оборудования обязательно обратитесь к данному руководству и поймите изложенные в нем сведения. • Несоблюдение требований данного предупреждения может привести к тому, что специалист по техобслуживанию, оператор или пациент получит удар электрическим током, механическую травму или другое повреждение.
UPOZORENJE (SR)	Ovo servisno uputstvo je dostupno samo na engleskom jeziku. • Ako klijentov serviser zahteva neki drugi jezik, klijent je dužan da obezbedi prevodilačke 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 mehaničkih i drugih opasnosti.
UPOZORNE-NIE (SK)	Tento návod na obsluhu je k dispozícii len v angličtine. • Ak zákazníkov poskytovateľ služieb vyžaduje iný jazyk ako angličtinu, poskytnutie prekladateľských služieb je zodpovednosťou zákazníka. • Nepokúšajte sa o obsluhu zariadenia, kým si neprečítate návod na obluhu a neporozumiete mu. • Zanedbanie tohto upozornenia môže spôsobiť zranenie poskytovateľa služieb, obsluhujúcej osoby alebo pacienta elektrickým prúdom, mechanické alebo iné ohrozenie.
ATENCIÓN (ES)	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.
VARNING (SV)	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.
OPOZORILO (SL)	Ta servisni priročnik je na voljo samo v angleškem jeziku. • Če ponudnik storitve stranke potrebuje priročnik v drugem jeziku, mora stranka zagotoviti prevod. • Ne poskušajte servisirati opreme, če tega priročnika niste v celoti prebrali in razumeli. • Če tega opozorila ne upoštevate, se lahko zaradi električnega udara, mehanskih ali drugih nevarnosti poškoduje ponudnik storitev, operater ali bolnik.

DİKKAT (TR)	Bu servis kılavuzunun sadece ingilizcesi mevcuttur. • Eğer müşteri teknisyeni bu kılavuzu ingilizce dışında bir başka lisandan talep ederse, bunu tercüme ettirmek müşteriye düşer. • Servis kılavuzunu okuyup anlamadan ekipmanlara müdahale etmeyiniz. • Bu uyarıya uyulmaması, elektrik, mekanik veya diğer tehlikelerden dolayı teknisyen, operatör veya hastanın yaralanmasına yol açabilir.
ЗАСТЕРЕЖЕННЯ (UK)	Даний посібник з експлуатації доступний тільки англійською мовою. • Якщо постачальник послуг клієнта спілкується іноземною мовою, тоді клієнт зобов'язаний забезпечити переклад. • Заборонено проводити огляд обладнання без попереднього звертання до даного посібника з експлуатації і розуміння інформації, поданої у ньому. • Недотримання цього застереження може завдати шкоди здоров'ю постачальника послуг, оператора або пацієнта через ураження електричним струмом, механічну травму або інше ушкодження.

Revision History

Table 1 Publish History 5863844-1EN

Revision	Date	Reason	Name
3	14-May-2022	Add Note "Please use the keyboard and the mouse of CT system." in Section 3 RCK with AVIMOS Installation Update AVIMOS installation and set up, step 2	Li Jiang
2	14-Apr-2021	Re-organization of the manual for better work flow Added **Remote Control Panel Option Installation** section Added **Appendix** section	G. Gabrysiak
	09-Aug-2021	Update AVIMOS Camera Installation tool	Wan Zhiheng
	30-Aug-2021	Add HP600 G6 Computer information	Wu Wendong
1	05-Dec-2020	Initial release	-

Contents

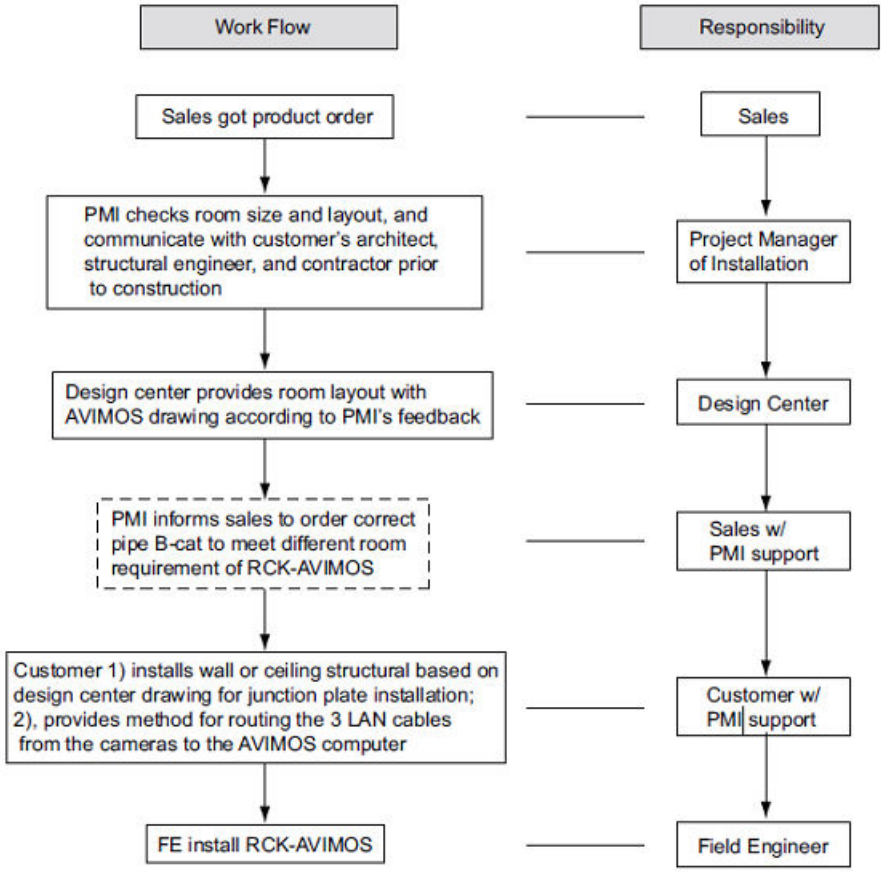
1 Overview

1.1 Introduction

Overview

The instruction is to guide persons who are authorized by GE Healthcare to install the Remote Control Panel (RCP) and the Assisted Video Monitoring System.

Figure 1-1 Flowchart and responsibility



Introduction

RCK-AVIMOS is the abbreviation of Remote Control Kit with Assisted Video Monitoring System, includes the Remote Control Panel hardware / Remote Control Panel software and the Assisted Video Monitoring system.

Remote control panel hardware / Remote control panel software

The RCP extends the CT scanner in-room control panel function to the operator desktop. With this solution, hospital technologists can achieve table up/down control (if available), cradle in/out control, landmark setting, gantry tilt control (if available), one button loading (if available) and one button uploading patient without entering into the scan room.

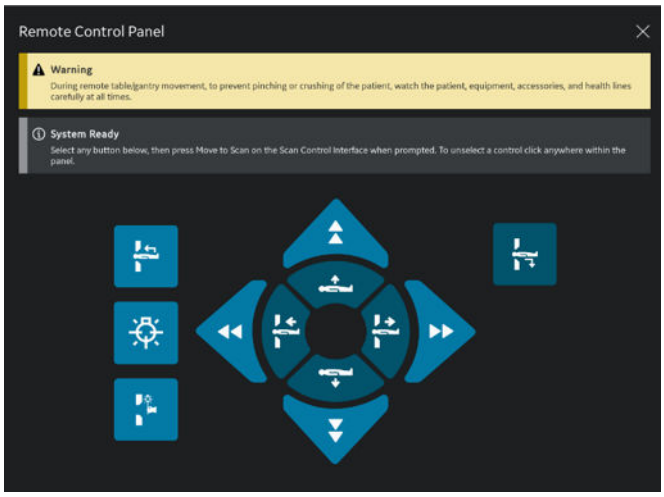
There are four (4) types of the RCP option:

- no up/down, no tilt

- with up/down, no tilt

- with up/down, with tilt

- RCP software install on console (only for Revolution CT)

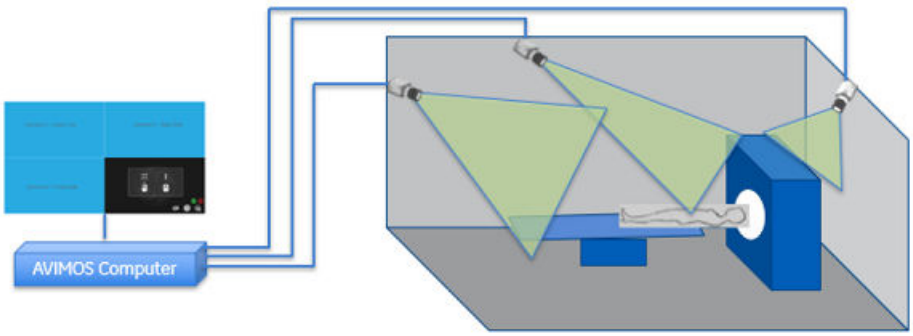


Assisted video monitoring system (AVIMOS)

AVIMOS is a monitoring system, includes three (3) cameras, one host computer and one monitor.

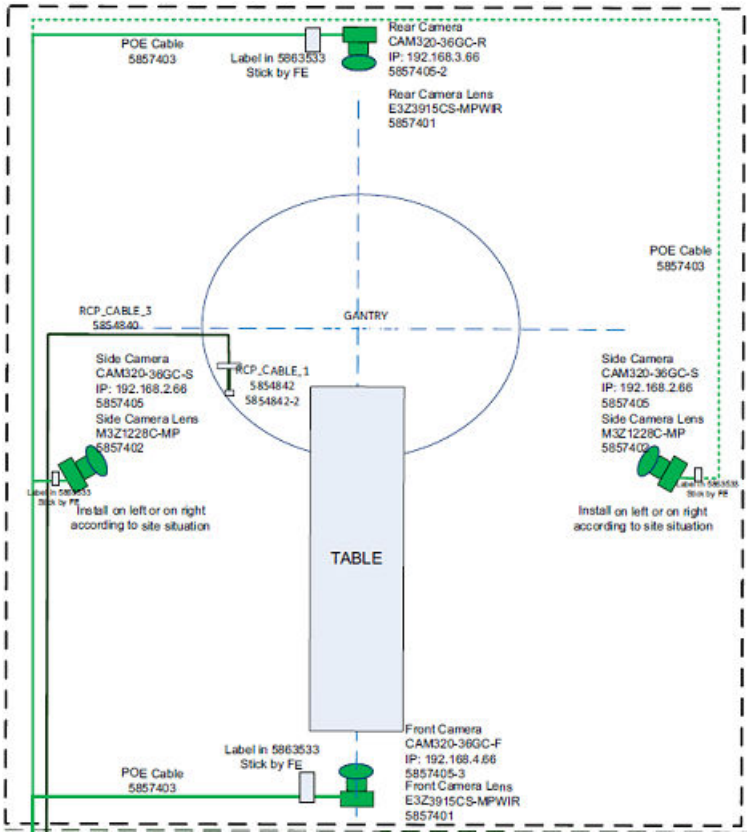
- One camera installed at side to monitor the laser line
- One camera installed at front to monitor the table/patient movement
- One camera installed at rear to monitor the table/patient movement
- One Host PC to collect data and provide user interface
- One monitor for display

Figure 1-2 AVIMOS



RCK-AVIMOS schematics diagram

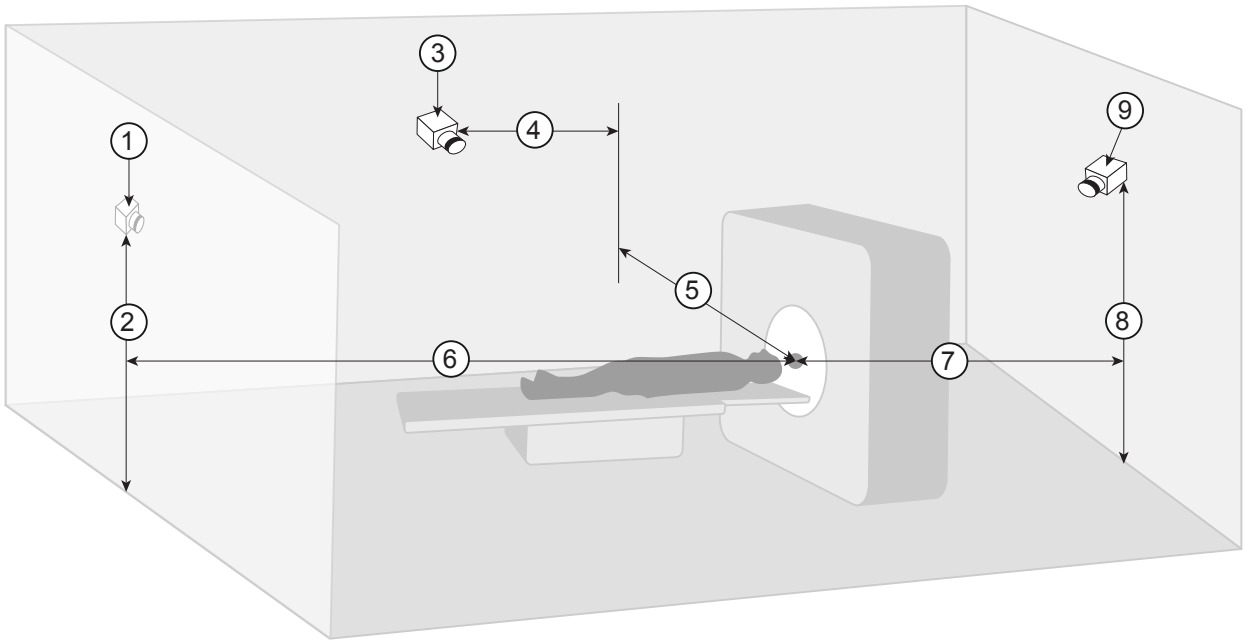
Figure 1-3 Schematics diagram



Scan room with AVIMOS layout

AVIMOS requires proper camera location and alignment to present quality video for doctor/technologist to view the patient. It is also used to monitor table movement and alignment of the gantry's internal/external laser lines. Each camera covers a particular area and the sharpness and clarity for each video image is required.

Figure 1-4 Scan room layout

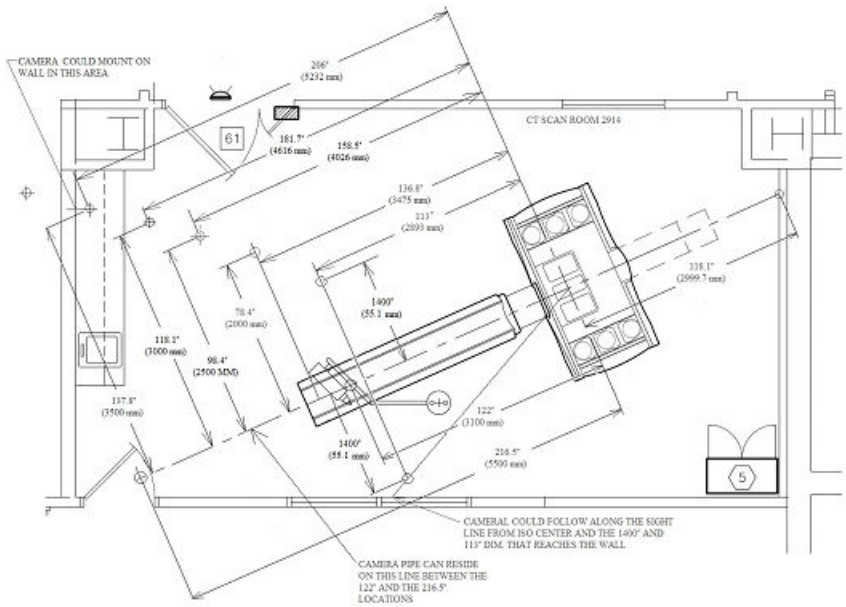


Item	Description
1	Front camera
2	Y-axis distance from ground to front camera bracket base center (2400 to 3000 mm)
3	Side camera, Y-axis distance from ISO center to side camera bracket base center (2400 to 3000 mm)
4	Z-axis distance from ISO center to side camera bracket base center
5	X-axis distance from ISO center to side camera bracket base center (will be calculated during install based system location within the room). (1400 to 4500 mm)
6	Z-axis distance from ISO center to front camera bracket base center (3100 to 5500 mm)
7	Z-axis distance from ISO center to rear camera bracket base center (2000 to 5500 mm)
8	Y-axis distance from ground to rear camera bracket base center (2000 to 3000 mm)
9	Rear camera

NOTE

All dimensions (hc1, hc2, hc3, Sc2, Sc3) need to be within the range shown in above figure, only Sc1 is calculated by the camera calculation tool.

Figure 1-5 Example for camera position



Ceiling requirements for cameras

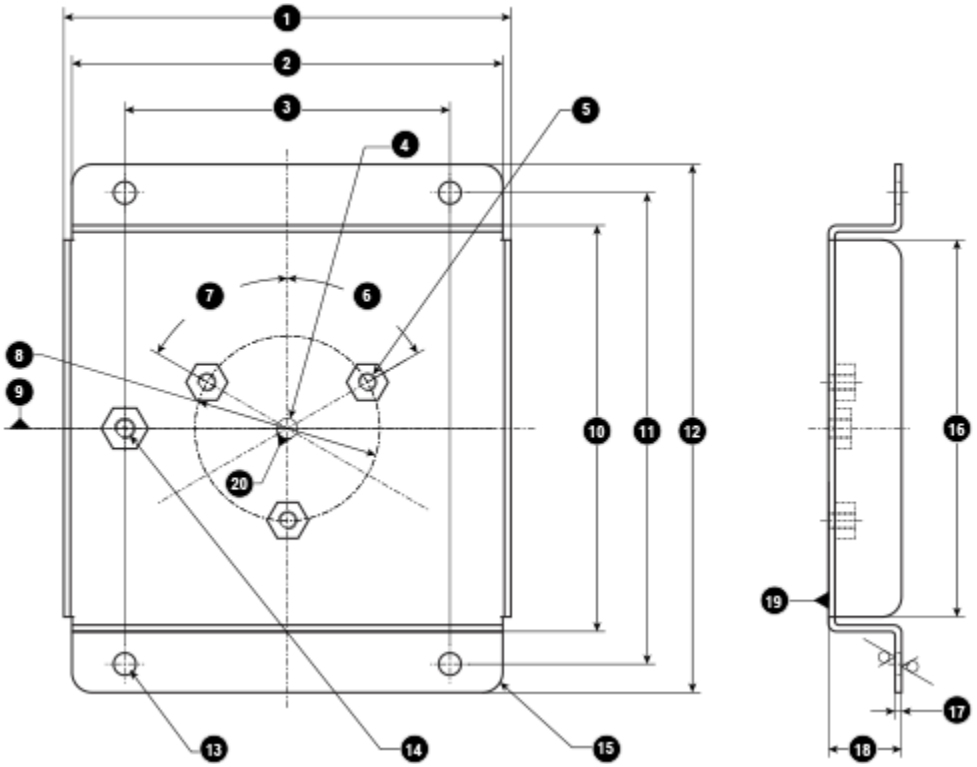
GE will provide two (2) junction plate options depending on mounting configurations (standard - PN 5863746 and pipe - PN 5863748). If the junction plates supplied by GE can not meet the requests of the building structure, the customer's architect can design and install the equivalent junction plate with sufficient strength to hold the camera.

Important

The customer's architect is responsible for installing of junction plates. The system manufacturer will **NOT** inspect and test that the fixing methods between the junction plate and the building structure meet the loading capacity specified (recommend a 4x safety factor).

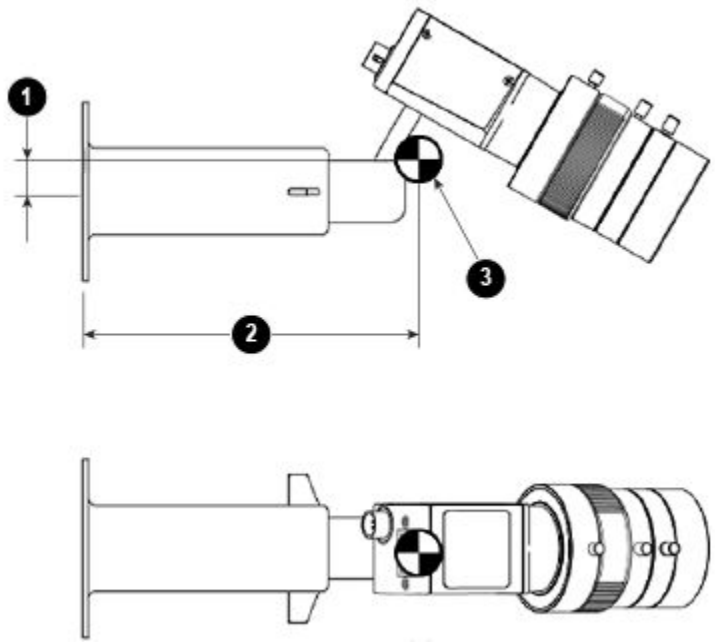
Standard junction plate

Figure 1-6 Standard junction plate (supplied by GE)



Item	Dimension mm
1	110
2	106
3	80
4	∅ 5
5	3 x M4 welding nut
6	60°
7	60°
8	∅ 45.5
9	C
10	100
11	116
12	130
13	4 x ∅ 5.5
14	M5 welding nut
15	8 x R 5
16	92.8
17	1.6
18	18
19	A

Figure 1-7 Center of gravity



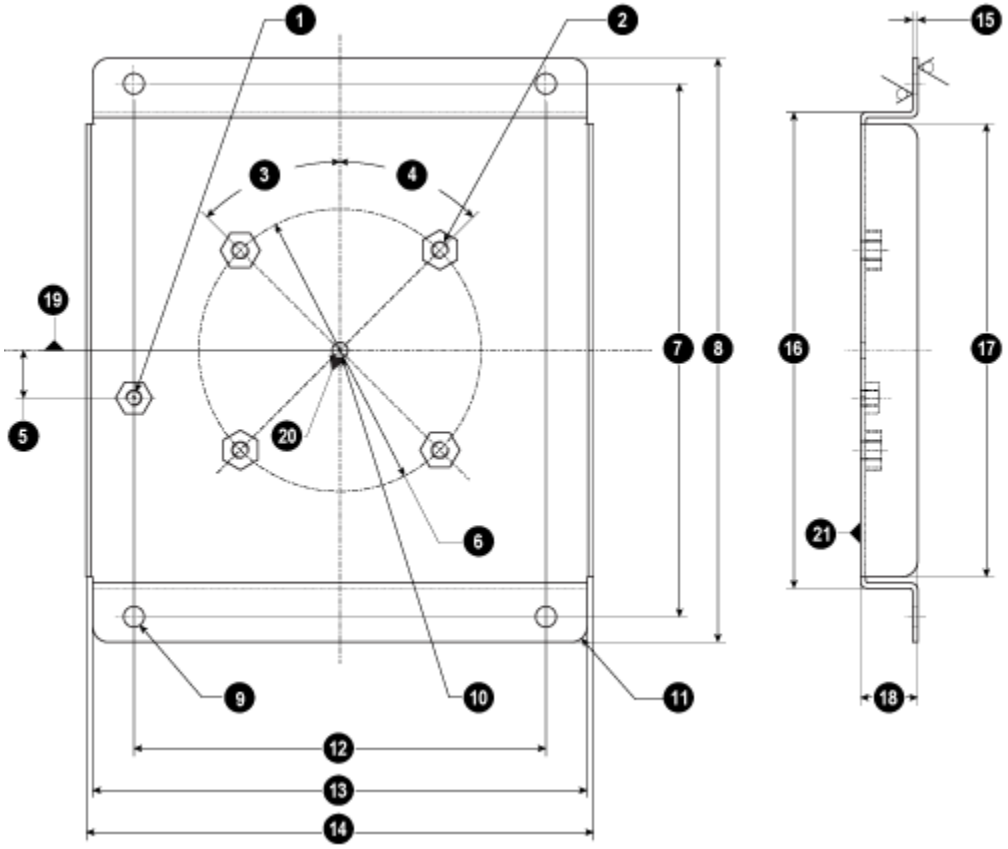
Item	Dimension mm
1	11.7
2	109.5
3	CG

If a structural contractor designed an equivalent plate, the thickness should be 15 mm or more, three (3) M4 mounting holes are required to anchor the camera bracket to the junction plate and one (1) M5 hole is used to anchor the safety chain. Please consider the loading capacity of the junction plate, the total weight of the camera and bracket provided by GE is 0.335kg (0.74 lbs).

For the detailed instructions for the hole size, see Figure 1-6 Standard junction plate (supplied by GE) on page 15 and Figure 1-7 Center of gravity on page 16.

Junction plate for pipe

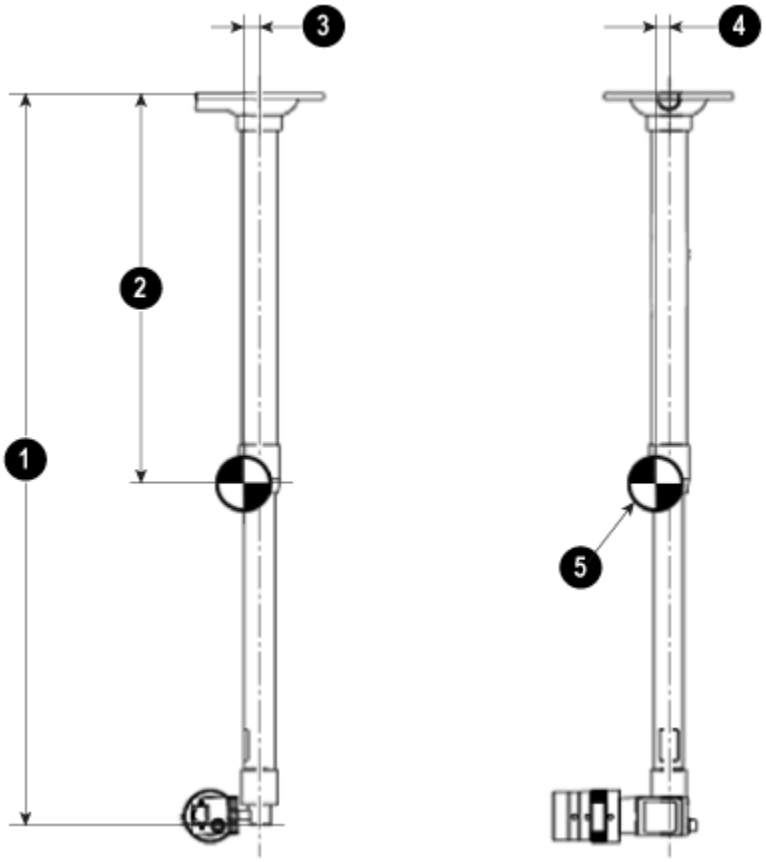
Figure 1-8 Junction plate for pipe (supplied by GE)



Item	Dimension mm
1	M5 welding nut
2	4 x M6 welding nut
3	45°
4	45°
5	15
6	∅ 89
7	168
8	184
9	4 x ∅ 6.5
10	∅ 28
11	8 x R 5
12	130
13	156
14	160
15	1.6
16	150
17	142.8

Item	Dimension mm
18	18
19	C
20	B
21	A

Figure 1-9 Center of gravity for pipe



Item	Dimension mm
1	600
2	307.4
3	11.9
4	11.2
5	CG

If a structural contractor designed an equivalent plate, the thickness should be 15 mm or more, four (4) M6 mounting holes are required to anchor the pipe bracket to the junction plate and one (1) M5 hole is used to anchor the safety chain. Please consider the loading capacity of the junction plate, the total weight of the camera and extendable pipe provided by GE is 0.665kg (1.47 lbs).

For the detailed instructions for the hole size, see Figure 1-8 Junction plate for pipe (supplied by GE) on page 17 and Figure 1-9 Center of gravity for pipe on page 18.

Cable requirements

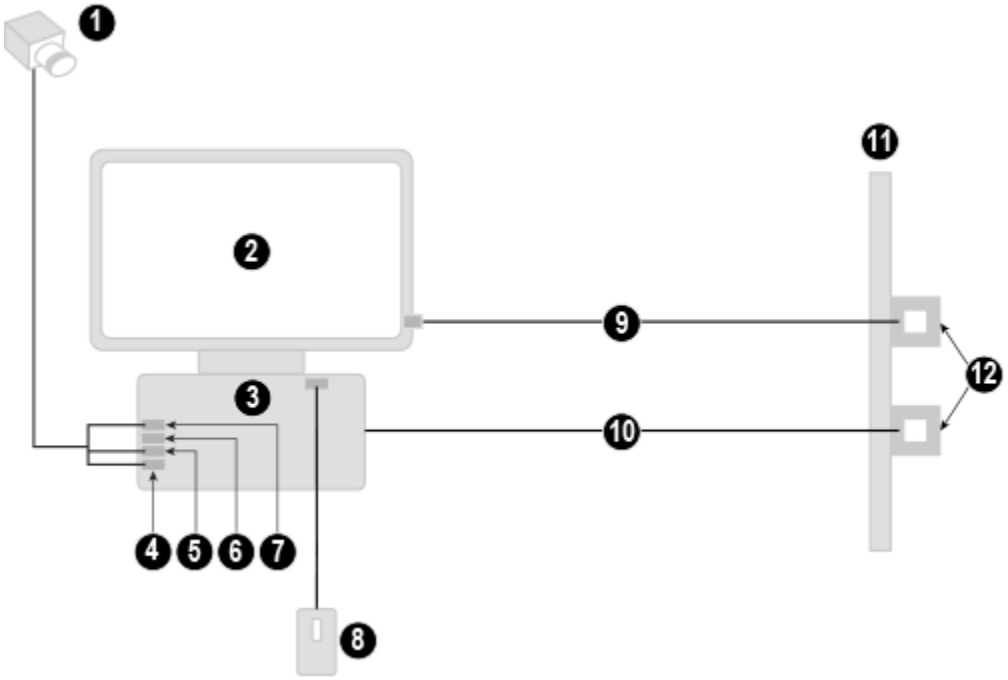
LAN cable requirement

RCK-AVIMOS has three (3) LAN cables, which need to be routed from the system control console desk room to the scan room, so the customer should complete cable-conduit installation on ceiling in advance. (See Figure 1-3 Schematics diagram on page 12)

Power cable requirement

AVIMOS power cord should meet global all countries/regions, there are 14 selectable power cord kits for different countries. (Refer to the Material lists on page 61)

Figure 1-10 Power cord connections



Item	Description
1	Camera (total of three (3) cameras)
2	Monitor (21.5 in)
3	HP600 computer
4	ETH-4
5	ETH-3
6	NC
7	ETH-1
8	Mouse
9	Power cord*
10	Power cord*
11	Wall
12	Power outlets
*Based on country different AVIMOS power cord BCAT kits are available.	

Table 1-1 HP600 computer voltage requirement

Element	Range
Mains input volts/amperes/frequency	100-240Vac, ~/2.3A, 50-60Hz

Table 1-2 LCD monitor voltage requirement

Element	Range
Mains input volts/amperes/frequency	100-240Vac, 0.75-0.40A (1.3A for Mexico), 50-60Hz

2 Remote Control Panel Option Installation

2.1 RCP Option Installation

Prerequisites

Table 2-1 Personnel requirements

Required persons	Preliminary requirements	Procedure	Finalization
1	N/A	1 hour	1 hour

Table 2-2 Tools and test equipment

Item	Quantity	Effectivity	Part number	Manufacturer
Standard FE toolkit	1	-	-	-

Table 2-3 Safety

⚠ DANGER

ELECTROCUTION (STORED ENERGY) HAZARD

Risk of Severe Personal Injury or Death

Wear proper electrical PPE. Perform proper electrical Lockout-Tagout (LOTO). Wait five minutes after applying electrical LOTO before using a meter to measure voltage or service the equipment.

⚠ CAUTION

FALL HAZARD

Failure to follow proper methods for working at heights may cause serious personal injury.

Use of a harness or personal fall arrest is recommended at all times when using a portable ladder.

NOTICE

PPE REQUIRED

Follow ALL required safety and PPE procedures customary for your organization when working on this product.

Table 2-4 Required conditions

Condition	Reference	Effectivity
Only trained service personnel should service the GE Scanner.	-	-

Overview

The following section is for the installation of the Remote Control Panel (RCP). There are multiple hardware versions based on the system it will be installed on but has a common installation. There is also a software version that is only for Revolution CT, ES and Apex systems. This option **requires** a GE field engineer (FE) to activate.

Remote Control Panel (RCP) hardware install

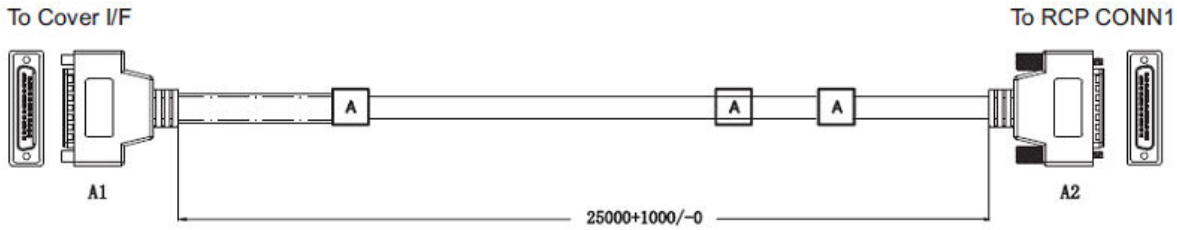
Procedure

1. Remove the gantry side covers.
2. The system may have a Liquid Bearing tube. Refer to the Equipment Service - LB Tube Management procedure to check the tube type and to properly shutdown the rotor.
3. Turn OFF the HVDC, 120VAC and axial drive power switches. Refer to the LOTO - Electrical - System Power Off procedure.
4. Put the remote control panel on the operating desk, select the local language warning label (5849692, total 32 languages) and paste it to the RCP.

Figure 2-1 Attach warning label

5. Connect the RCP interface cable (5854840, A2) to the RCP and route it from the operator room to the scan room.

Figure 2-2 RCP interface cable



6. Disconnect cable connectors between gantry front cover and TGP J8/J14.
7. Connect the RCP cable harness (PN 5854842/5854842-2) between gantry front cover (A2 and A5) and TGP J8/J14 (A1 and A4) according to cable markers.
8. Connect the RCP interface cable (PN 5854840, A1) to the RCP cable harness (A3).

Figure 2-3 RCP cable harness (PN 5854842)

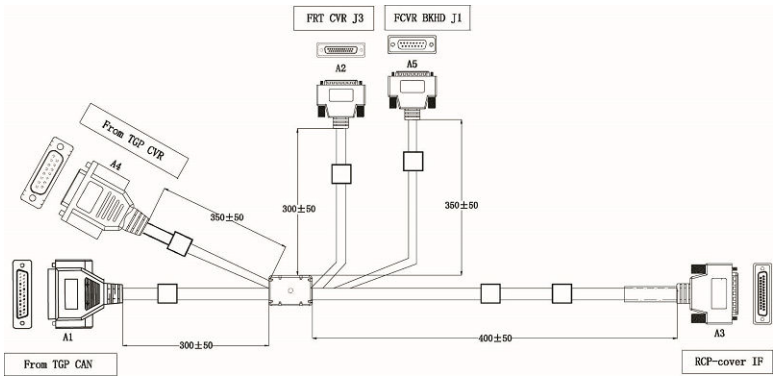


Figure 2-4 RCP cable harness (PN 5854842-2)

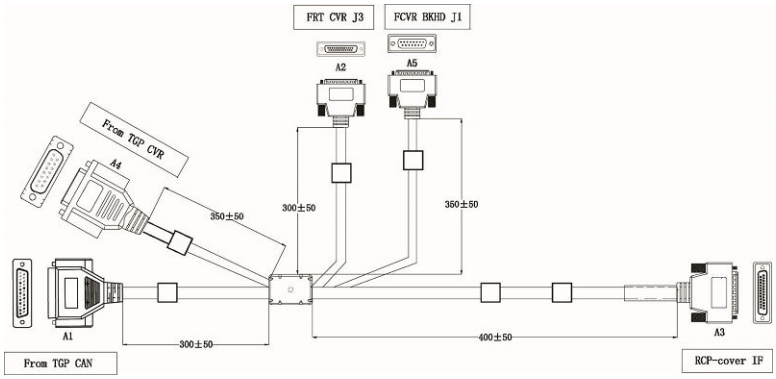
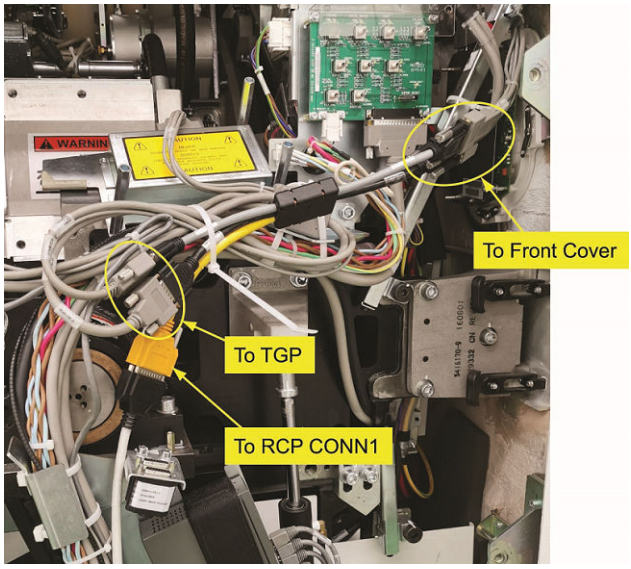


Figure 2-5 RCP cable harness connection example



9. Paste the RCP cable warning label (5855858, only English) to the blank spaces on both sides of the gantry, and ensure that service engineer can see them once the gantry left/right side covers are removed.

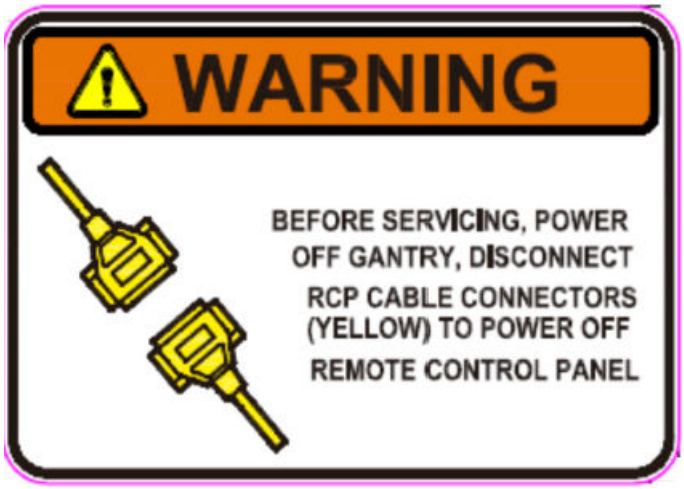
NOTE

IB product: The RCP cable warning labels should be pasted by FE during installation.

NOTE

Forward product with RCK-AVIMOS: The RCP cable warning labels will be pasted before the system is shipped from MFG.

Figure 2-6 RCP cable warning label



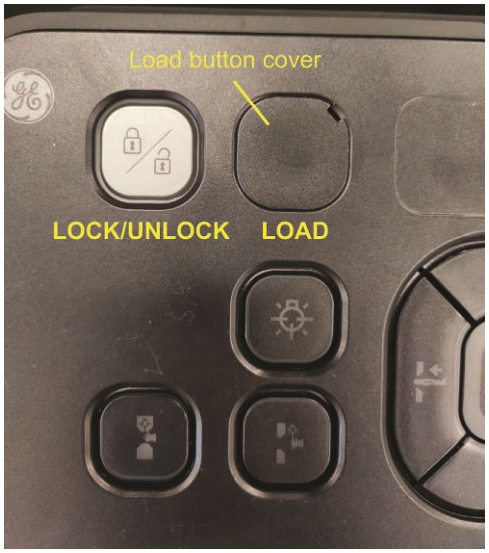
10. Refer to the service manual to remove the relevant covers, route cables, and use tie-wraps to fix them.
11. Restore the gantry to its original configuration.

RCP functional check

Procedure

1. Re-power the system. The RCP shelf-check starts.
2. After system reset successfully, all LED back lights of the RCP are OFF except **LOCK/UNLOCK** and **E-Reset** buttons.
3. Press **LOCK/UNLOCK** button to unlock the RCP, then check the LED back light on **LOAD** button.

Figure 2-7 Lock/unlock and load buttons



4. **LOAD** function.

   If the LED back light of **LOAD** button is ON, the current system supports LOAD function and the FE needs to remove the load button cover.

   If the LED back light of **LOAD** button is Off, the current system does not support LOAD function.

   NOTE

   For SVCT IB systems, if current system does not support **LOAD** function, means that there is not a upgrade software package, so the RCP Service Tool (DOC2481495) must be run. To run the tool, perform following steps.

   a. Download the RCP SVCT Configuration Tool from GE Box.
   b. After downloaded, unzip this file.
   c. Copy **"RCP_SVCT_serviceTool"** to the USB device with FAT32 format.
   d. Insert USB device to console front USB port.
   e. Open a shell, input:

      ```
      mountUSB <Enter>
      ls /USB <Enter>
      ```

   f. **"RCP_SVCT_serviceTool"** should be appeared in the shell.

g. Execute **"./RCP_SVCT_serviceTool"**, the below message should be appeared in shell:

```
RCP_SVCT_serviceTool Run successful...
```

h. Execute the command:

```
unmountUSB <Enter>
```

i. Use the service Desktop, select **System Resets** and then perform a **Scan** reset.

Remote Control Panel (RCP) software install (only for Revolution CT)

About this task

Overview

This procedure provides instructions on how to properly setup the Remote Control Panel (RCP) user interface (UI) for the Revolution CT console to remotely position patients from the scan room.

To enable the UI	See Enabling the user interface on page 26
To disable the UI	See Disabling the user interface on page 27
To view the Audit Log Viewer	See Audit Log Viewer on page 28
To navigate the RCP UI	See Remote Control Panel tab on page 29

The RCP UI supports:

- Load and unload (patients)
- External Landmark
- Laser alignment lights
- Table motion: (in, out, up and down) at slow or fast speeds

The video surveillance system allows for real time monitoring of patients by:

- Three (3) cameras to view patient from the front, rear and side angles
- High definition to clearly view gantry laser lines
- Desktop monitor with an easy to use interface to switch views and add a privacy screen option.

Enabling the user interface

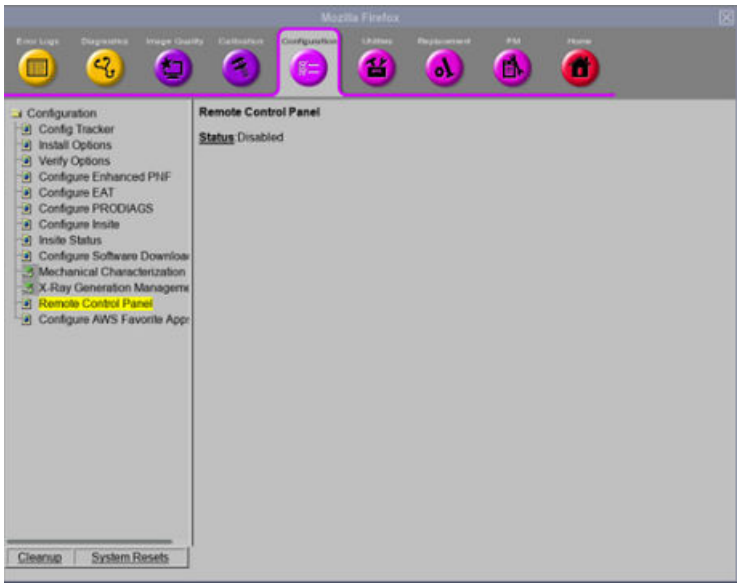
About this task

NOTE

Enabling the RCP interface **requires** a GE field engineer (FE).

Procedure

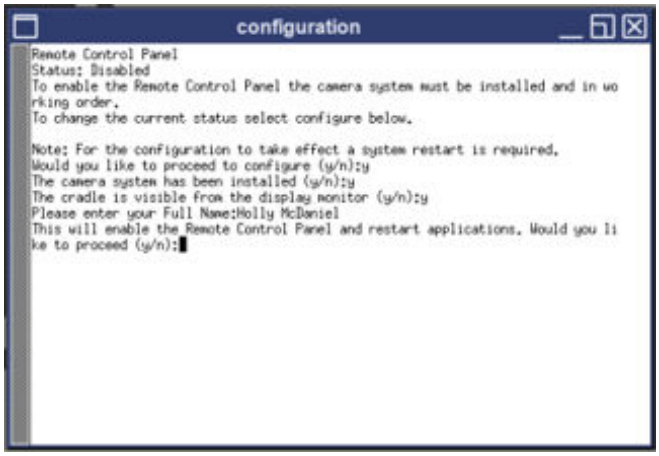
1. Insert Class M SSA key and check security.
2. From the CSD *Configuration* tab, select **Remote Control Panel**.



Result

A Unix shell automatically opens.

3. Follow the prompts on screen and enter the necessary data to enable.



Important

DO NOT enable the UI control until the camera installation and alignment is complete and establishing that the gantry and table is visible on the monitor.

4. Once enabled, the application restart is complete. Reboot the whole SW. For additional information, refer to the *Remote Control Panel tab* section of the 5863844-1EN manual.

Disabling the user interface

About this task

NOTE

Disabling the RCP interface **requires** a GE field engineer (FE).

Procedure

1. Insert Class M SSA key and check security.
2. From the CSD *Configuration* tab, select **Remote Control Panel**.

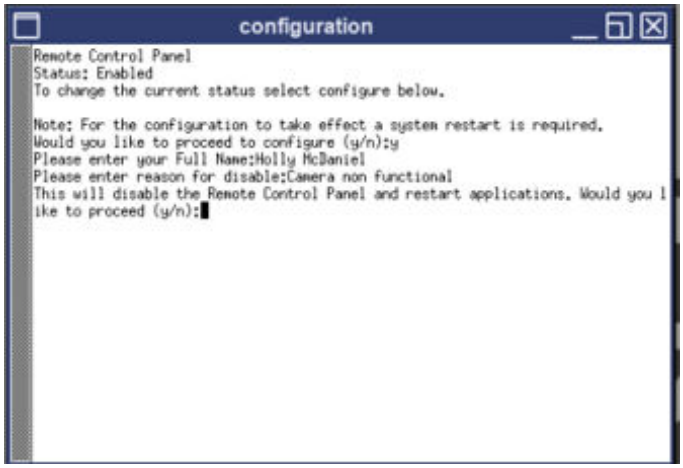
Result

A Unix shell automatically opens.

3. **NOTE**

   The system will restart the applications automatically, however, there may be a time delay while the applications initialize. If 10 or more minutes elapses, open a Unix shell, login and then type, `st -` to start the applications.

   Follow the prompts on screen and enter the necessary data to disable.



Audit Log Viewer

About this task

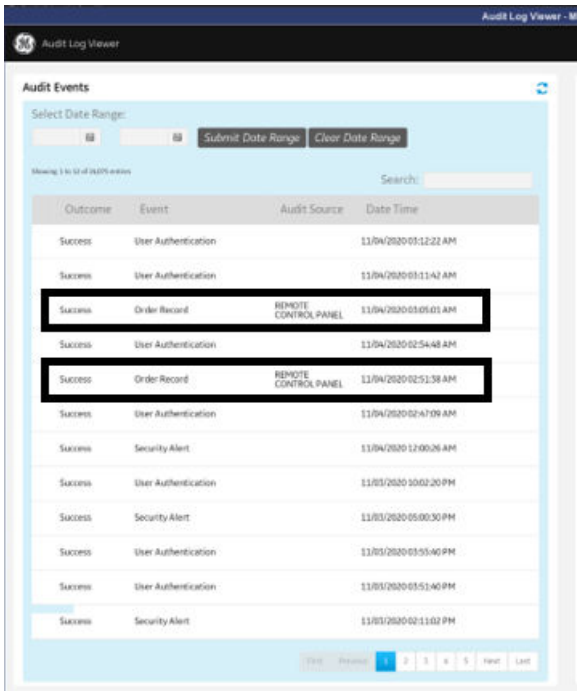
The Audit Log Viewer is used to check who has enabled or disabled the option, summary reports, event details, and so on.

Important

An EA3 Administration account is required to use the Audit Log Viewer. Refer to the Initial Setup of EA3 Administrator Account using EA3 Administration – Local Users Tab section to create an account.

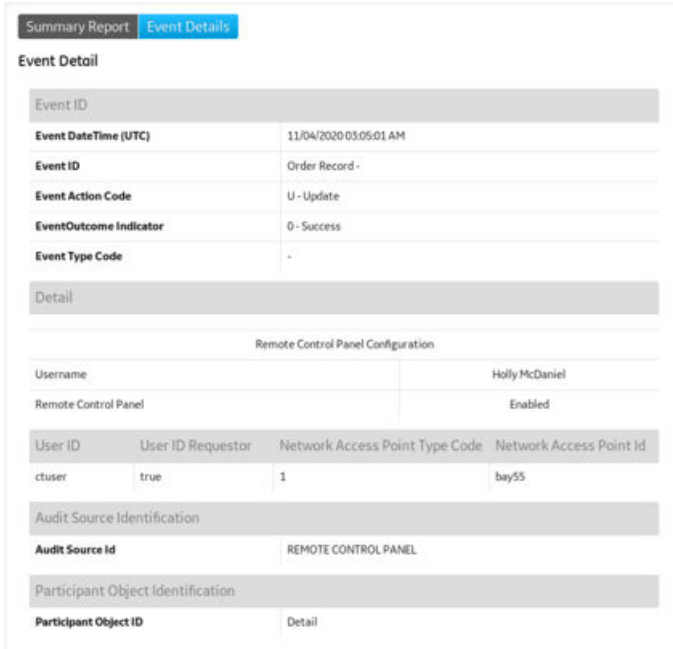
Procedure

1. From **Mode** > **Access Controls**, select **Audit Log Viewer**.



2. To view the details of an event, double-click the event.

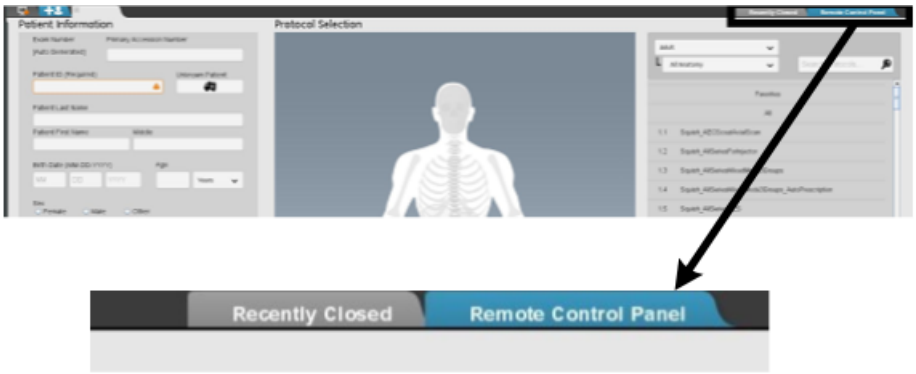
Figure 2-8 Event details



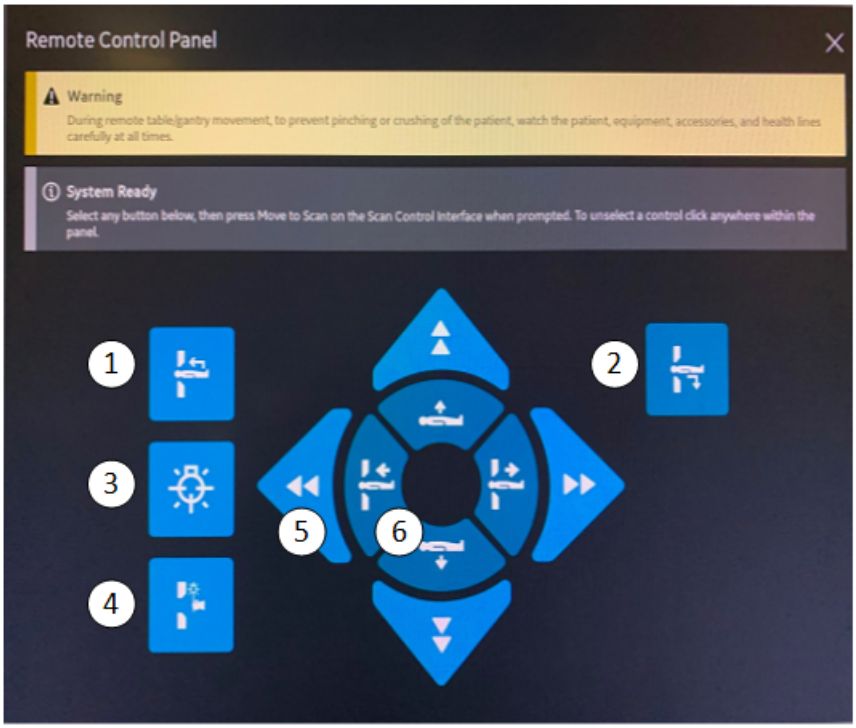
Remote Control Panel tab

Procedure

1. When the RCP is enabled, the main UI window displays with Patient Information, Protocol Selection and the Remote Control Panel tab (the upper right corner of the window).
2. Select the **Remote Control Panel** tab.



3. The *Remote Control Panel* window displays to load or unload a patient, set the landmark, laser alignment lights, and so on.



Item	Description
1	Load (patient)
2	Unload (patient)
3	Laser alignment lights
4	External Landmark
5	Fast speed to move patient
6	Slow speed to move patient

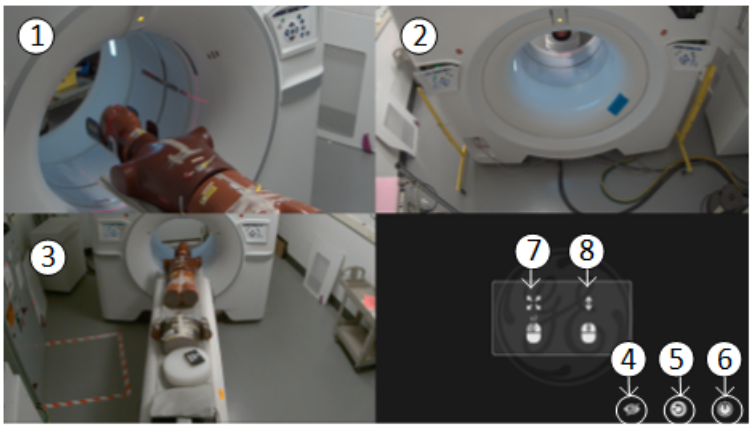
NOTE

A `Warning` and `System Ready` messages display at the top of the window, indicating the system is active.

4. If Gantry Control is selected, a `Process Cannot Be Completed At This Time` message displays. Click **Reload** to enable the Remote Control Panel again.

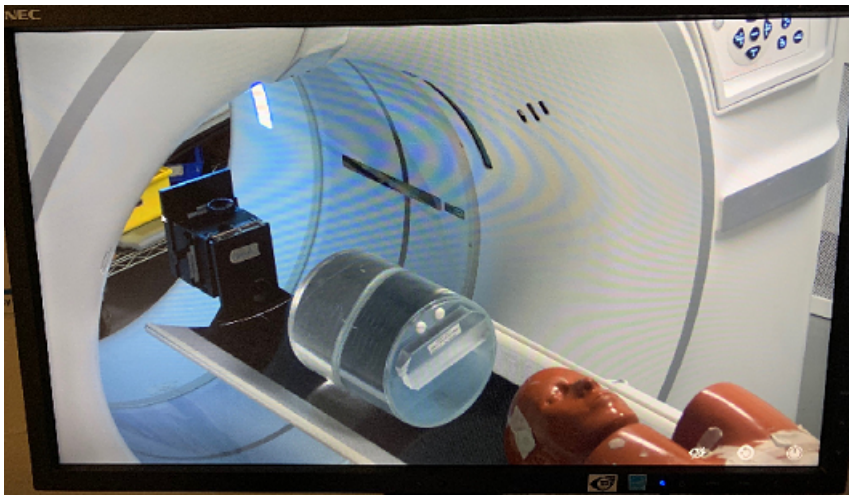
5. The RCP UI camera displays the three (3) different camera views on the desktop monitor.

Figure 2-9 Remote camera display on monitor



Item	Description
1	Side camera view
2	Rear camera view
3	Front camera view
4	Privacy screen button
5	Restart button
6	Shutdown button
7	Mouse control: Double-click on a camera view to enlarge it to full screen.
8	Mouse control: Scroll to navigate between the different camera views.

Figure 2-10 Double-clicking a camera view to full screen



3 Remote Control Kit with AVIMOS Installation

3.1 RCK with AVIMOS Installation

Prerequisites

Table 3-1 Personnel requirements

Junction plate position definition *3 cameras	Installation + cable routing + PC *3 cameras	Alignment *3 cameras
PMI and DC	FE/Mechanical installer	FE
2 labor hours	3 labor hours	3 labor hours

Table 3-2 Tools and test equipment

Item	Quantity	Effectivity	Part number	Manufacturer
Calibration plate	1	-	5809258 or equivalent	-
Line laser	1	-	5820779	-
Laser measure	1	-	5823264	-
Flexible ruler	1	-	-	-

Table 3-3 Consumables

Item	Quantity	Effectivity	Part number	Manufacturer
Alcohol	As required	-	-	-

Table 3-4 Required conditions

Condition	Reference	Effectivity
Only trained service personnel should service the GE Scanner.	-	-

Table 3-5 Safety

⚠ CAUTION

FALL HAZARD

Failure to follow proper methods for working at heights may cause serious personal injury.

Use of a harness or personal fall arrest is recommended at all times when using a portable ladder.

NOTICE

PPE REQUIRED

Follow ALL required safety and PPE procedures customary for your organization when working on this product.

Installation of camera brackets

Junction plate for standard bracket

About this task

Important

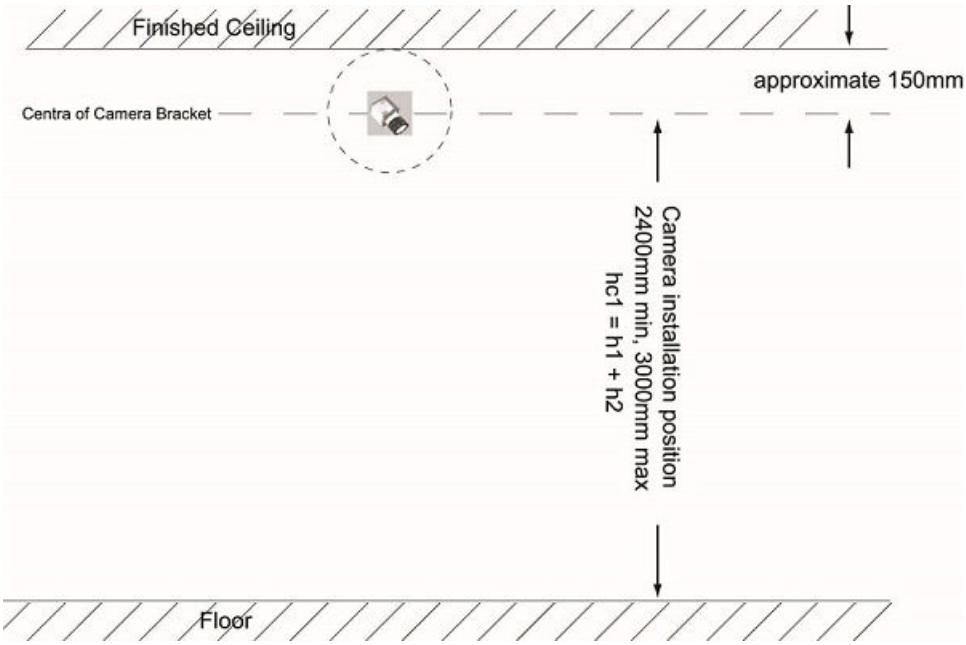
The installation of the junction plates is the customer's responsibility and **must** be installed by the customer in advance prior to the FE installing the cameras.

Procedure

1. Before installing the camera brackets, confirm the center hole of the junction plates installed are in the correct location. This can be verified by the room layout drawing or to measure these locations, refer to the *RCK Appendix*, Cameras position confirmation on page 63 section for instructions.

   NOTE

   The position of the mounting plate should be within +/- 10 mm of indicated location. There is an approximate 150 mm (6 inch) radius of clearance required to allow for the mounting of the camera bracket and camera.

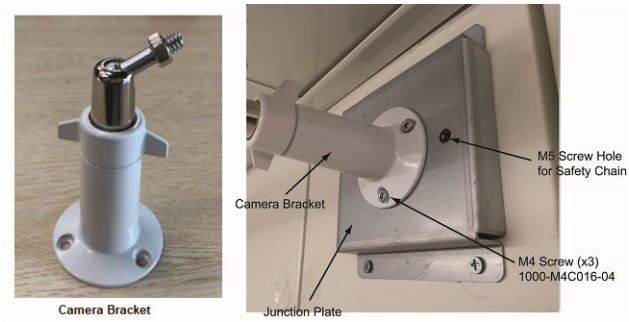


2. Install three (3) camera brackets (PN 5857165) to the three (3) junction plates respectively by using M4 screws (1000-M4C016-04), per torque specification.

Table 3-6 Torque values

N-m	lb-ft	lb-in	kg-cm
2.3	1.7	20	23

Figure 3-1 Camera brackets



3. Use one (1) service tool weight (PN 5866885 from AVIMOS kit) and hang for at least 1 minute to test the capacity load of the camera brackets as shown.

Figure 3-2 Capacity load for camera bracket

Junction plate for pipe

About this task

Important

The installation of the junction plates is the customer's responsibility and **must** be installed by the customer in advance prior to the FE installing the cameras.

The extendable pipe **must** be purchased in advance after PMI checked room size and layout. There are two (2) extendable pipe options for selection, one is for ceiling mount 40 to 60cm, the other is for ceiling mount 85 to 150cm.

Figure 3-3 Extendable pipe

Procedure

1. Before installing the extendable pipe, confirm the center hole of the junction plates installed are in the correct location. This can be verified by the room layout drawing or to measure these locations, refer to the *RCK Appendix*, Cameras position confirmation on page 63 section for instructions.

   NOTE

   The position of the mounting plate should be within +/- 10 mm of indicated location. There is an approximate 150 mm (6 inch) radius of clearance required to allow for the mounting of the camera bracket and camera.

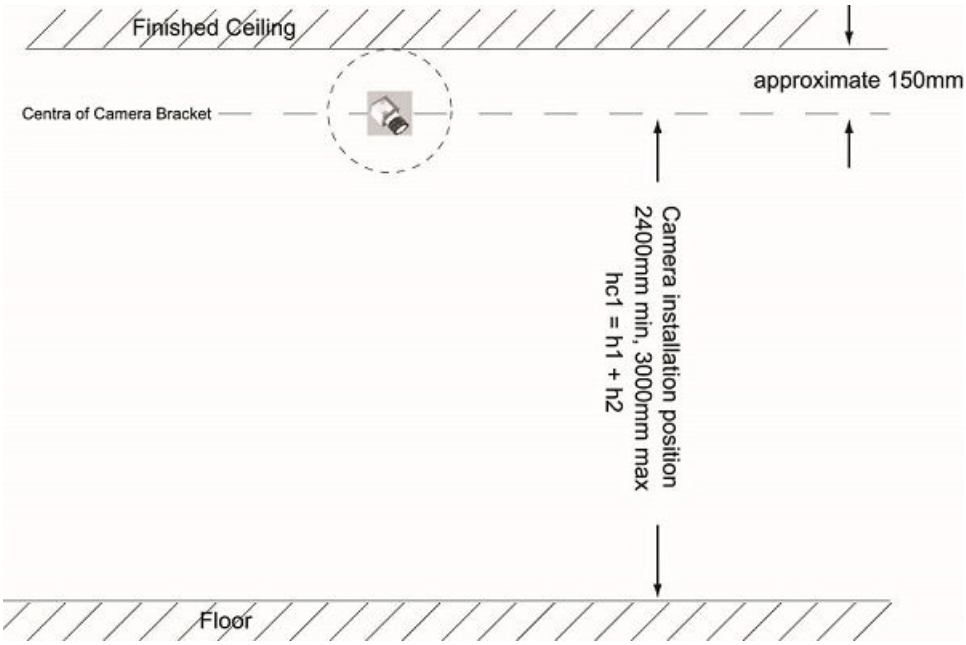
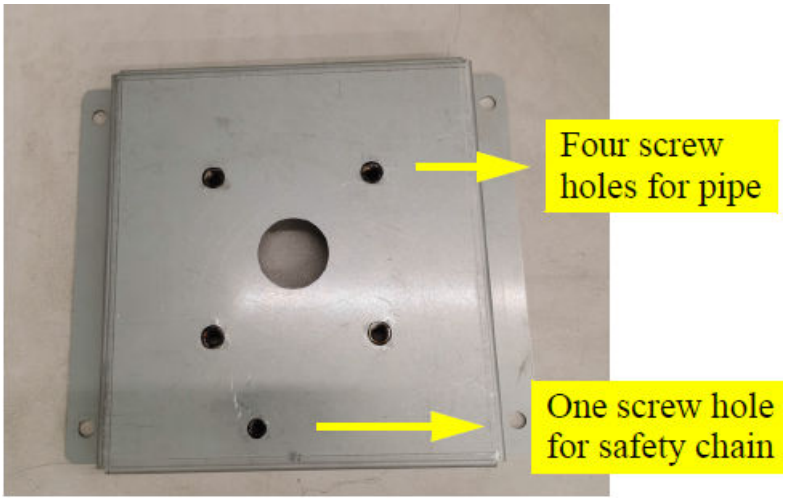


Figure 3-4 Pipe junction plate



2. Install the extendable pipe to the junction plate by using four (4) M6 screws (1000-M6C020-04) and washers (2000-M6-03), per torque specification.

Table 3-7 Torque values

N-m	lb-ft	lb-in	kg-cm
7.9	6.0	70	80

Figure 3-5 Extendable pipe installation

3. Use two (2) service tool weights (PN 5866885, from RCK-AVIMOS kit) and hang for at least 1 minute to test the capacity load of the extendable pipe as shown.

Figure 3-6 Capacity load for extendable pipe

Camera installation

Procedure

1. Assemble camera and lens, including the safety chain as shown below.

Table 3-8 Camera and lens

Camera and Lens	Description	Camera Lens PN#	Description
5857405	Side camera	5857402	Side camera lens
5857405-2	Rear camera	5857401	Front and rear camera lens
5857405-3	Front camera	5857401	Front and rear camera lens

Figure 3-7 Camera types

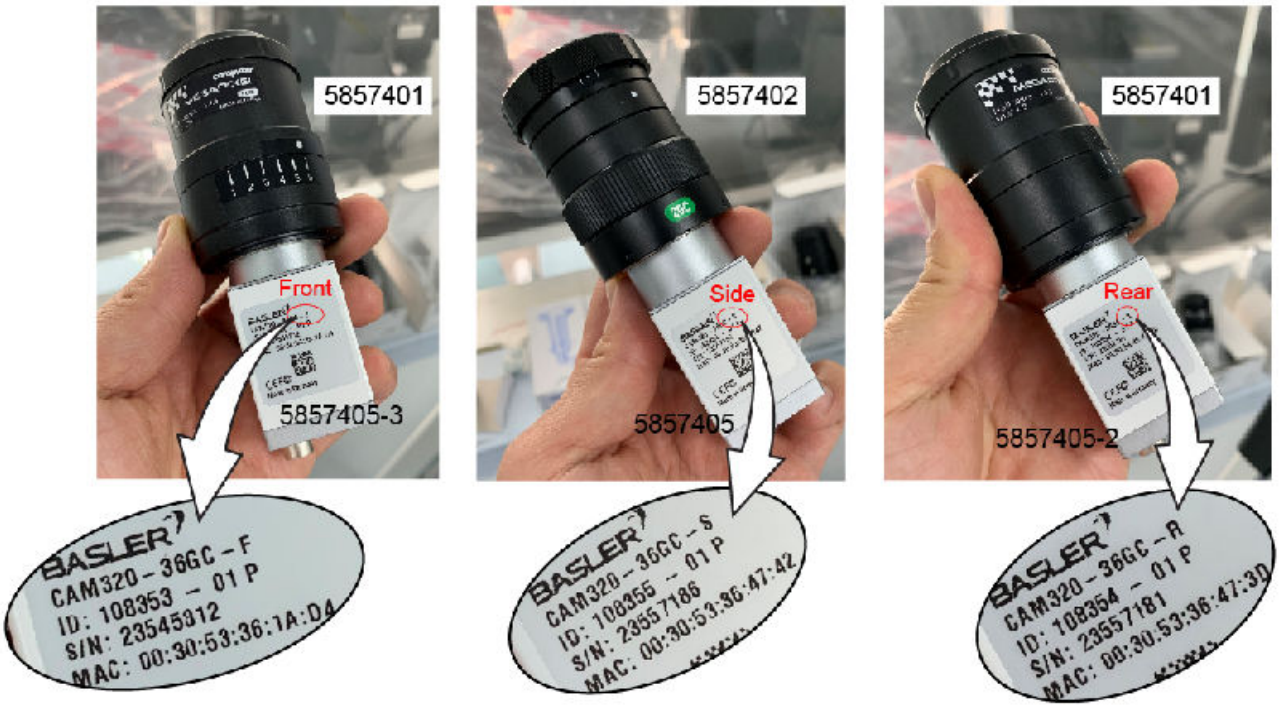


Figure 3-8 Mounting camera lens and safety chain

2. Install cameras to the corresponding bracket according to camera labels.

3. Install safety chains between cameras and junction plate. Fix one end on the junction plate using M5 screw (1000-M5C016-04) and torque to specification.

Table 3-9 Torque values

N-m	lb-ft	lb-in	kg-cm
4.6	3.4	41	47

Figure 3-9 Example of safety chain for standard bracket

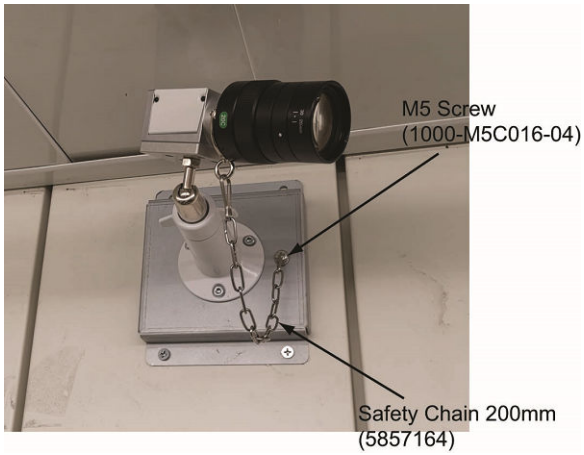


Figure 3-10 Example of safety chain for pipe bracket

NOTE

The safety chain goes through the center of the pipe before being secured to the mounting plate.

Camera cable connections

Procedure

1. Route three (3) camera LAN cables from the scan room to the corresponding camera locations and connect them to the cameras.

   NOTE

   Do not connect these LAN cables to the AVIMOS computer.

   Table 3-10 Camera LAN cables

PN#	Description	A1 Label	A2 Label
5863794	LAN cable for AVIMOS front camera	Front camera	ETH-1
5863794-2	LAN cable for AVIMOS rear camera	Rear camera	ETH-3
5863794-3	LAN cable for AVIMOS side camera	Side camera	ETH-4

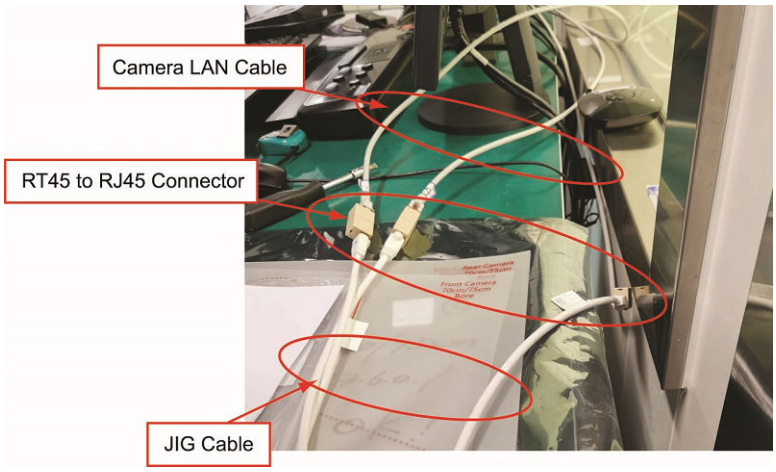
2. Move the AVIMOS computer and the LCD monitor to the scan room for AVIMOS setting up.

   NOTE

   This is a temporary setup of the computer and monitor to aid in the aligning of the cameras. Confirm temporary power can be supplied.

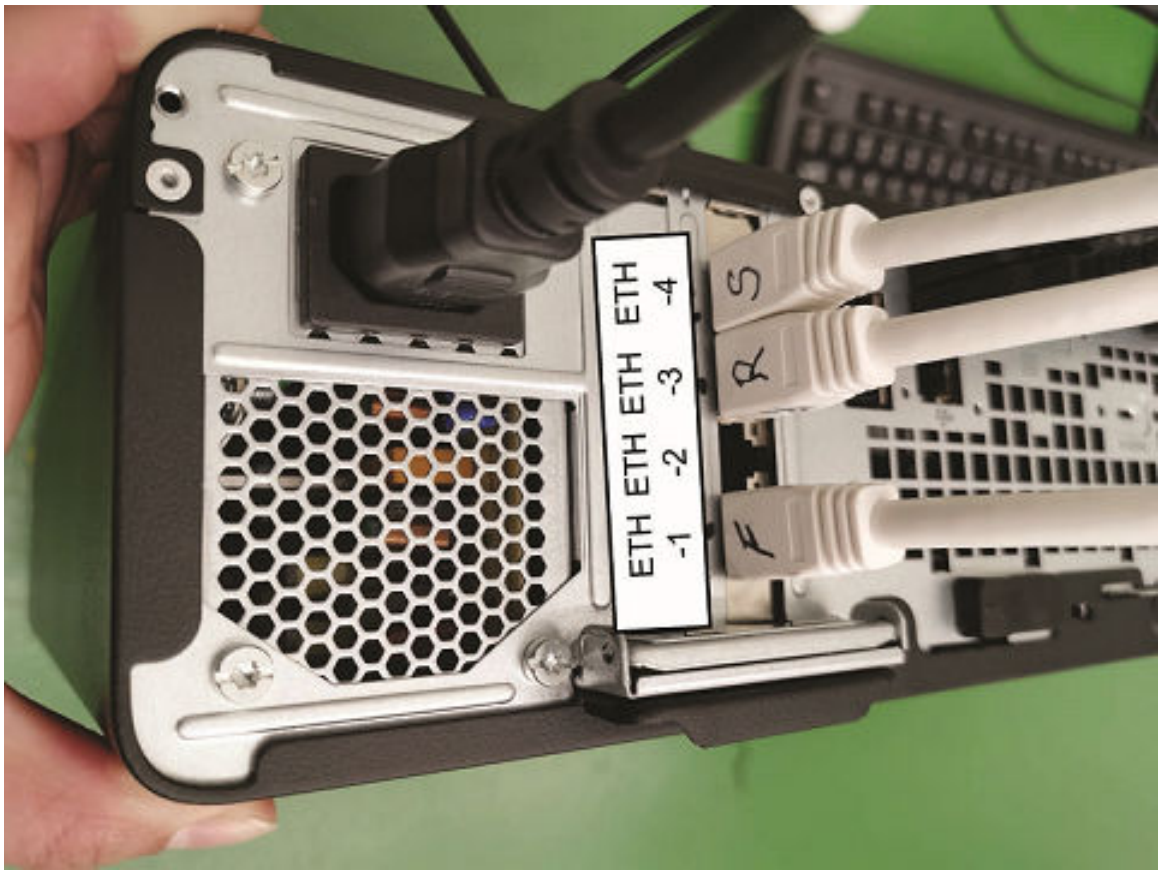
3. Connect the three (3) JIG cables (5788613-28) to three (3) camera LAN cables respectively by using three connectors (RT45 to RJ45).

   Figure 3-11 JIG cable connections



4. Connect three (3) JIG cables to the AVIMOS computer. (See Table 3-10 Camera LAN cables on page 42.)

Figure 3-12 Connect JIG cables to computer



5. Connect video cable (DP) and power cable to the LCD monitor.
6. Connect video cables (DP) and power cable to the AVIMOS computer.
7. Connect the mouse and the keyboard to the AVIMOS computer.

NOTE

Please use the mouse and the keyboard of CT system.

4 AVIMOS Installation

4.1 AVIMOS Installation and Set Up

Prerequisites

Table 4-1 Personnel requirements

Required persons	Preliminary requirements	Procedure	Finalization
1	RCK with AVIMOS installed	2 hours	N/A

Table 4-2 Required conditions

Condition
Only trained service personnel should service the GE Scanner.
This section of the procedure **must** be executed after the table has been anchored to the floor to prevent table from tipping.

Table 4-3 Safety

⚠ CAUTION

FALL HAZARD

Failure to follow proper methods for working at heights may cause serious personal injury.

Use of a harness or personal fall arrest is recommended at all times when using a portable ladder.

NOTICE

PPE REQUIRED

Follow ALL required safety and PPE procedures customary for your organization when working on this product.

NOTE

Properly store the eye chart and the semi-transparent film as they are used during the replacement and alignment process.

AVIMOS installation and set up

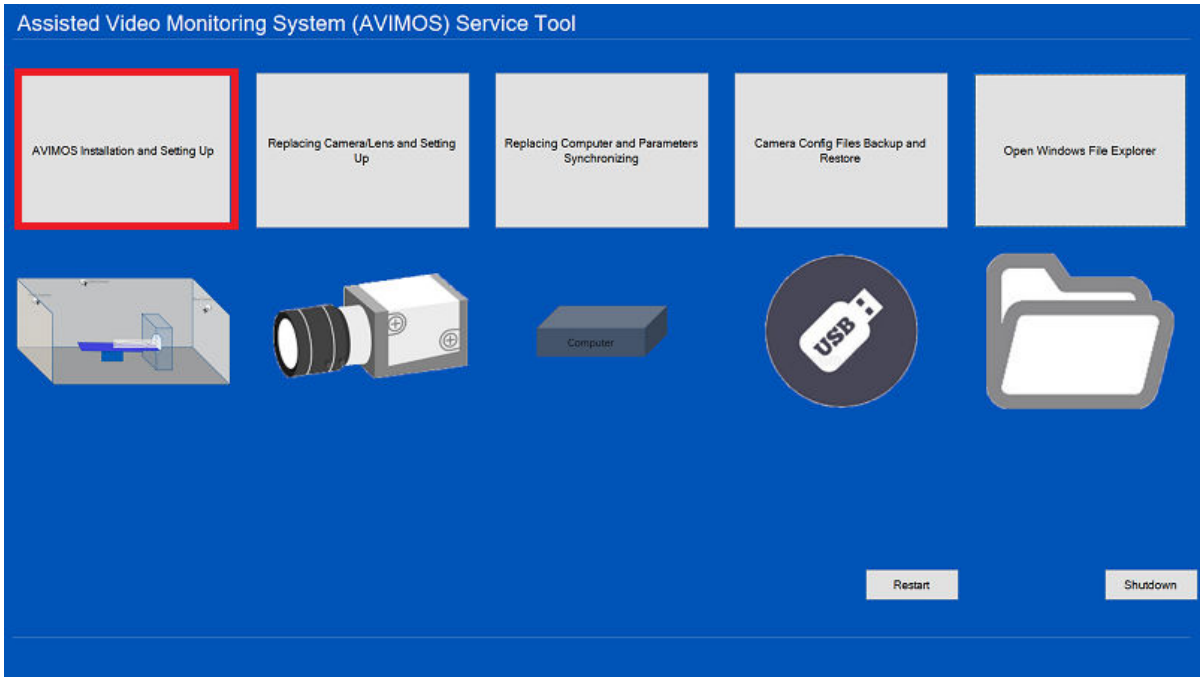
Prerequisites

NOTICE

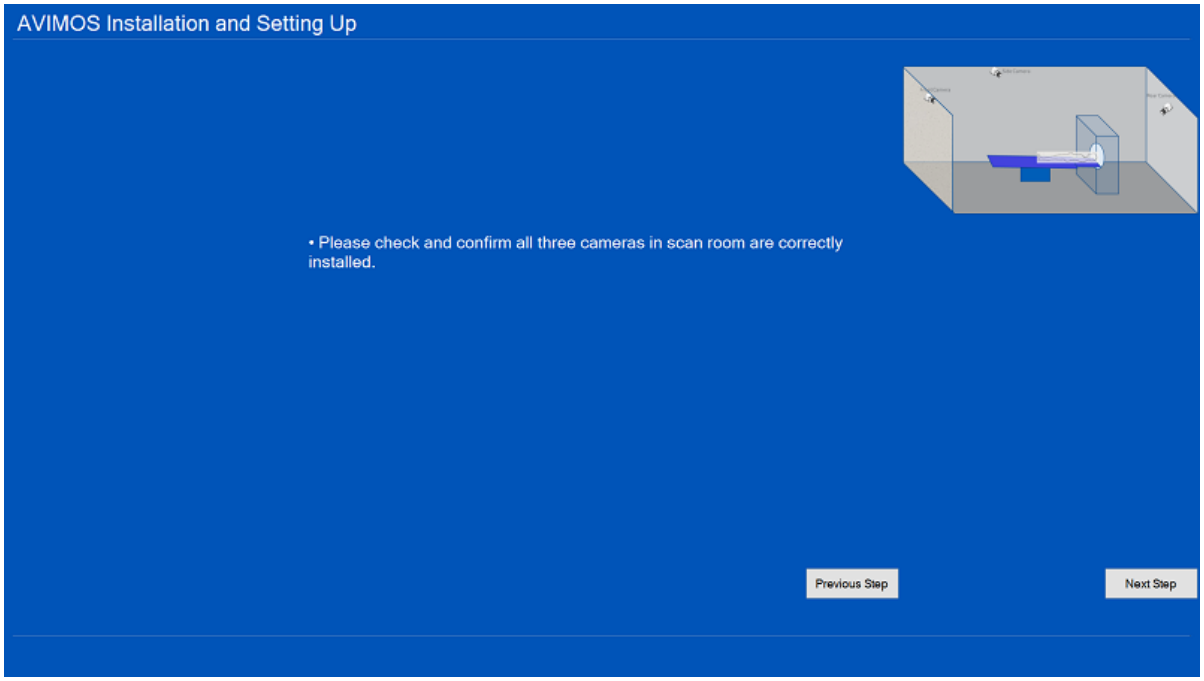
The table **must** be anchored to the floor before proceeding to execute these instructions!

Procedure

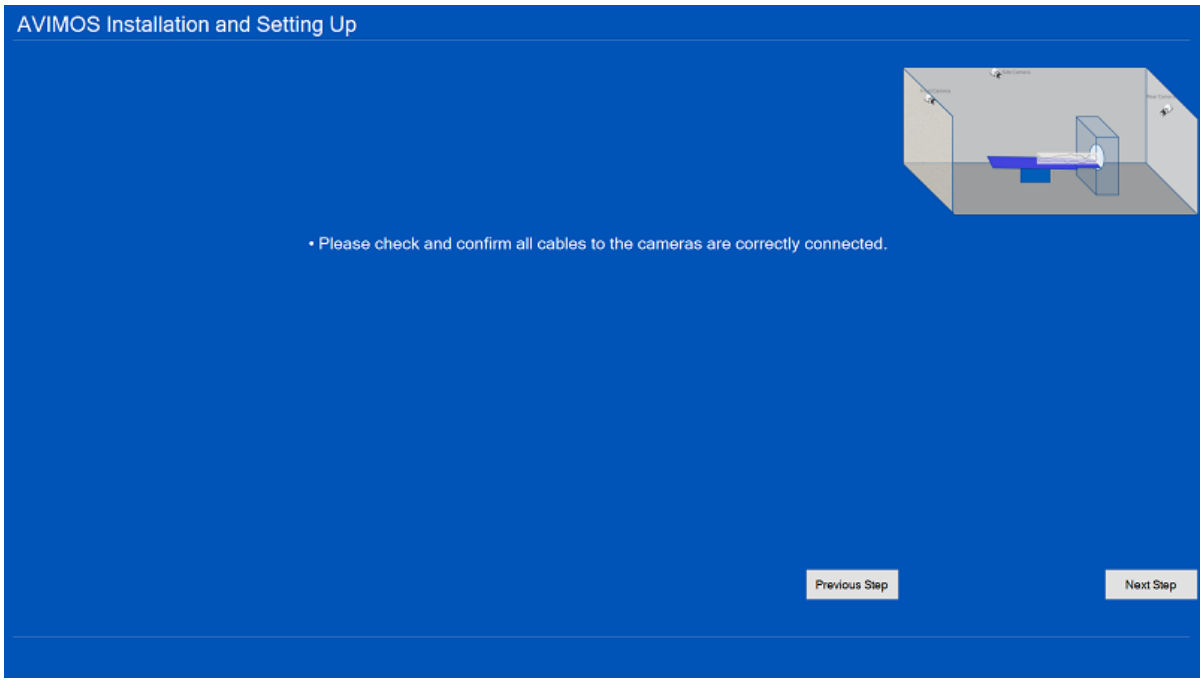
1. Power ON the AVIMOS computer power. When the monitor light comes on and GE logo displays, press **Ctrl+G+E** simultaneously within 5 seconds.
2. Enter User Name and Password (root user and its password) to access the AVIMOS service tool.



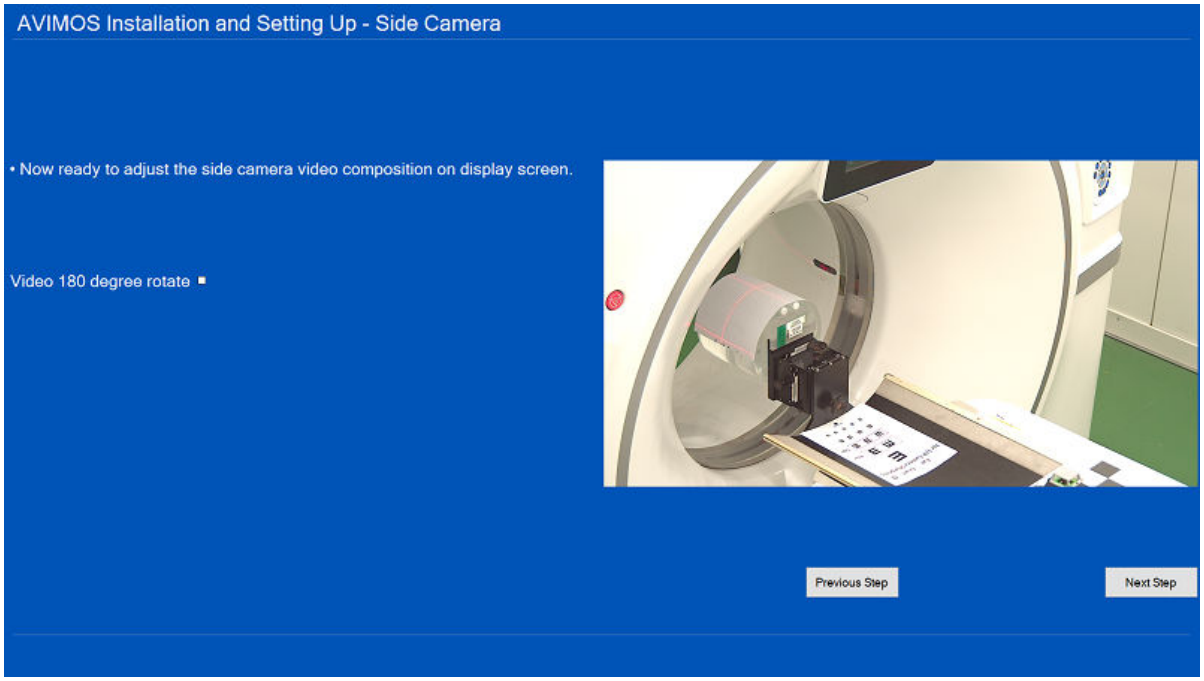
3. Select **AVIMOS Installation and Setting Up**, if three cameras are correctly installed in scan room, click **Next Step**.



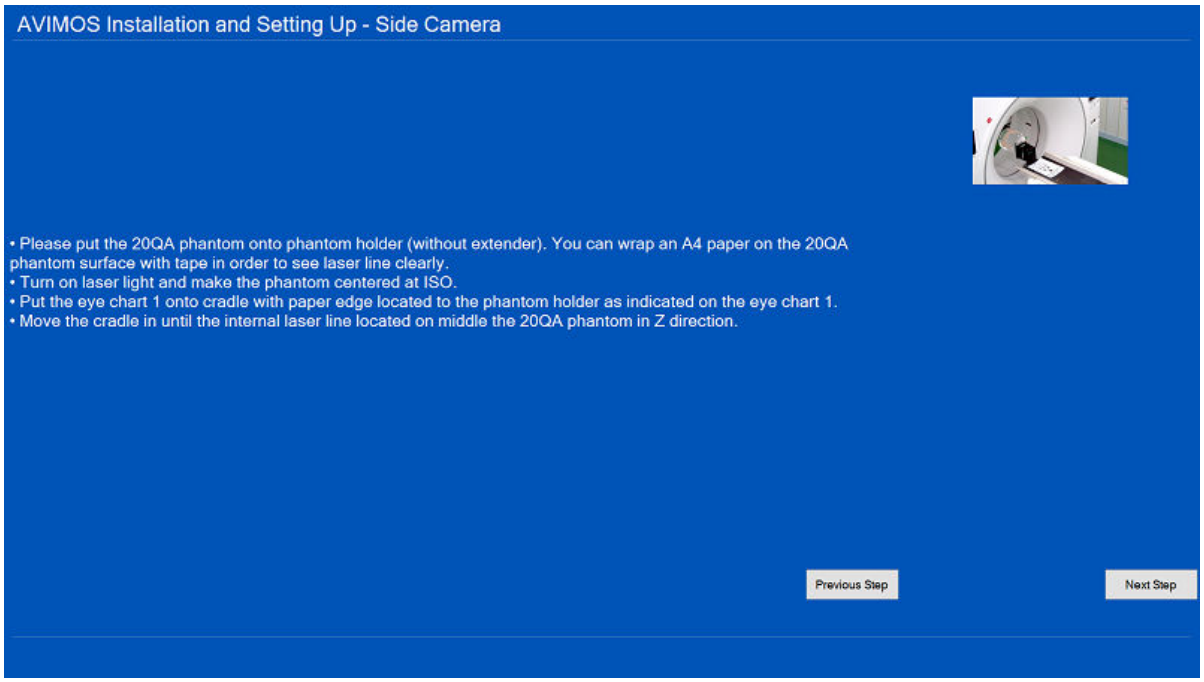
4. If all cables are correctly connected, click **Next Step**.



5. To adjust the side camera, click **Next Step**.



6. When the side camera adjustment procedures display on the monitor, follow them to adjust the side camera. Click **Next Step**.

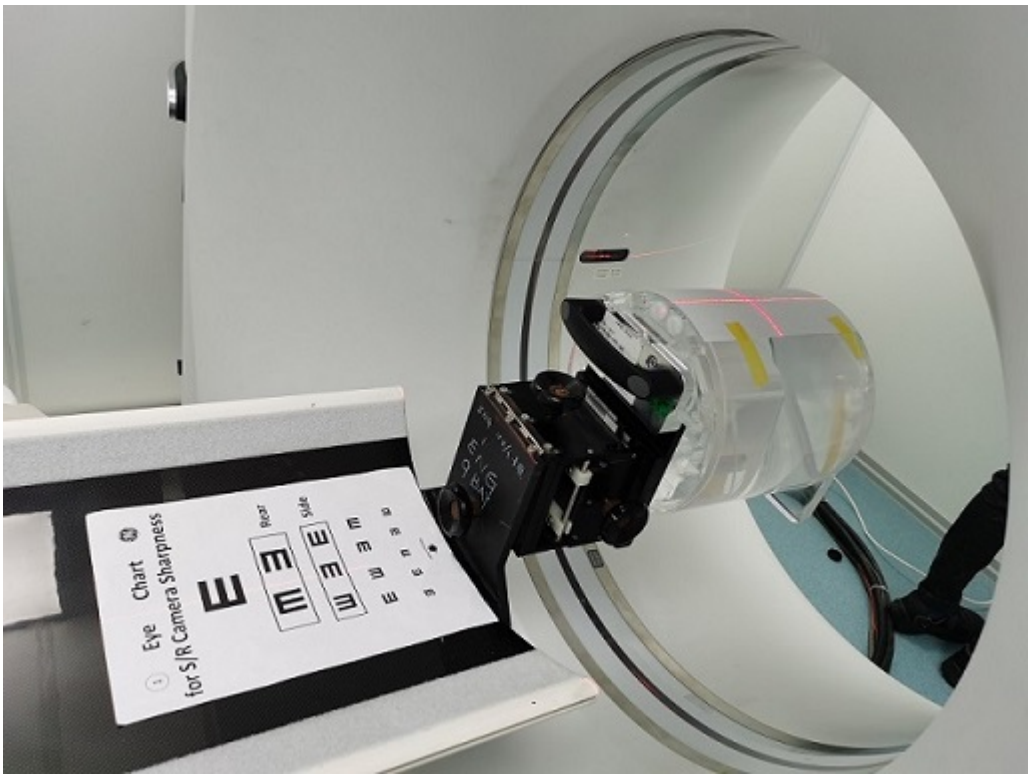


   a. Put the 20QA phantom onto phantom holder (without extender). You can wrap paper on the 20QA phantom surface with tape in order to see laser line clearly.

   b. Turn on laser lights and move the phantom to ISO center.

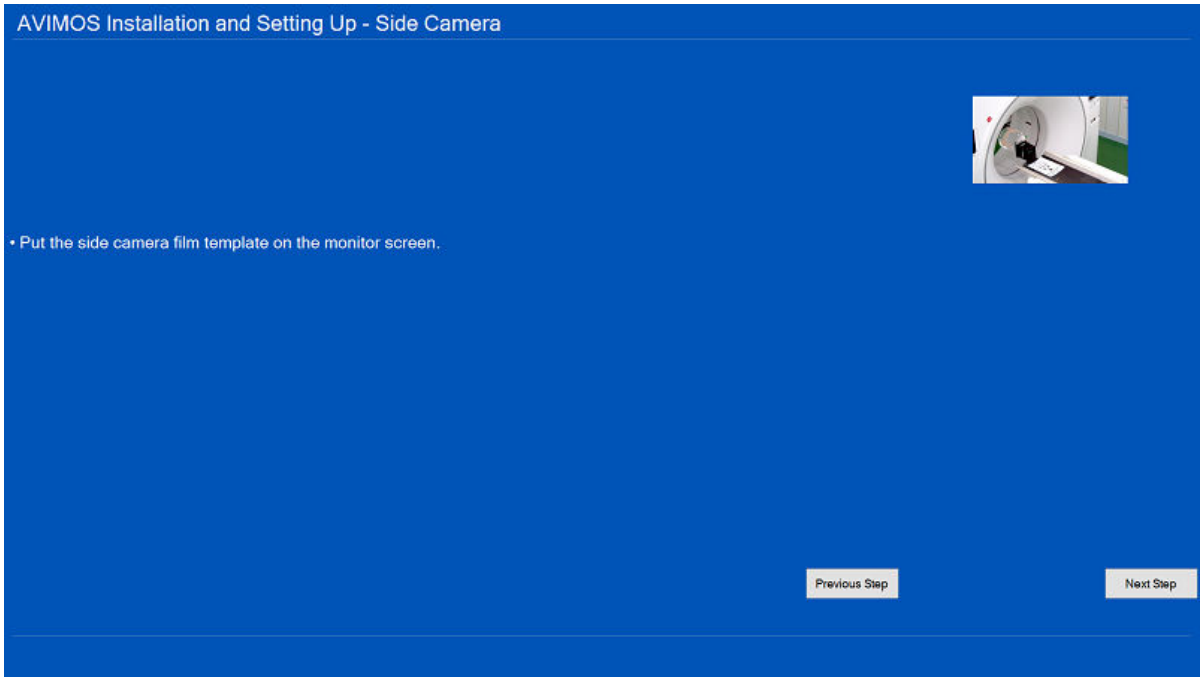
c. Put the Eye Chart 1 onto cradle with paper edge located to the phantom holder as shown.

Figure 4-1 Eye Chart 1



d. Move the cradle in until the internal laser line located on middle the 20QA phantom in Z direction.

7. Put the side semi-transparent film template on the monitor screen and click **Next Step**.

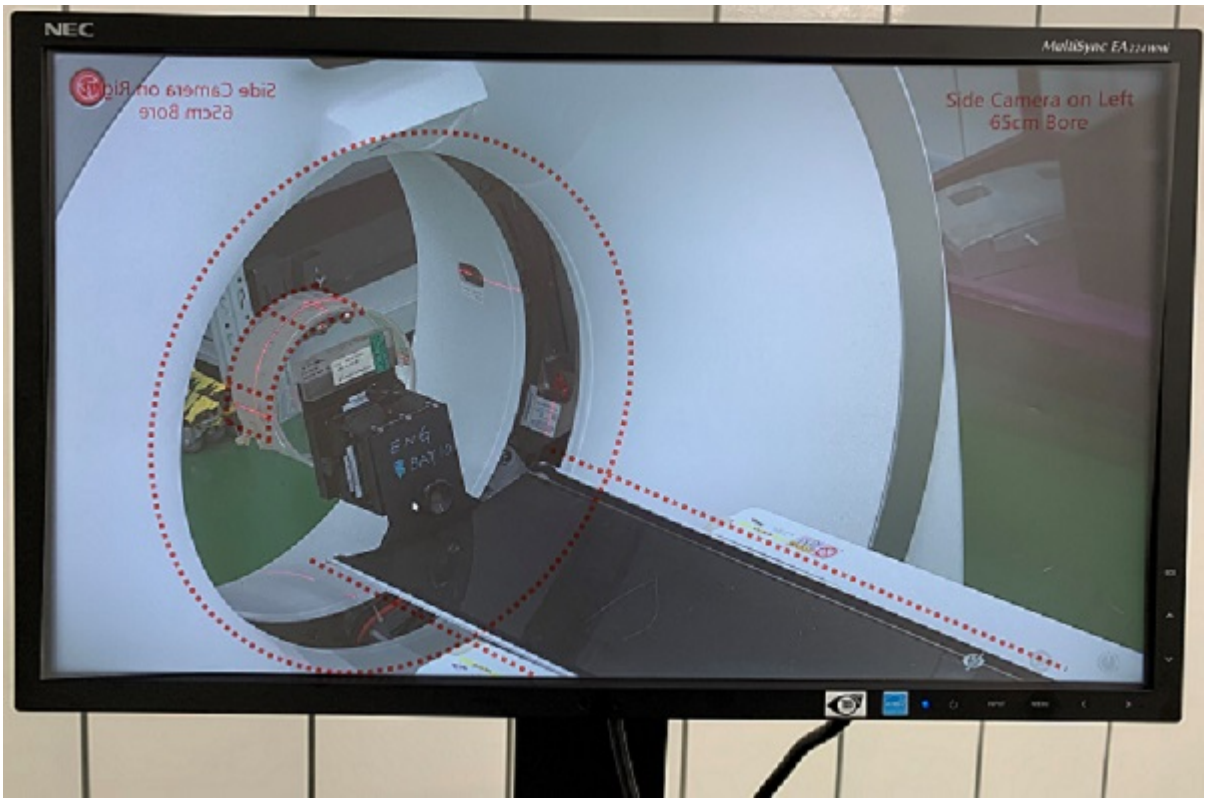


8. Follow procedures on the monitor screen to adjust the side camera.

NOTE

Dim the scan room lighting equivalent to what the customer would use to align the patient with lasers.

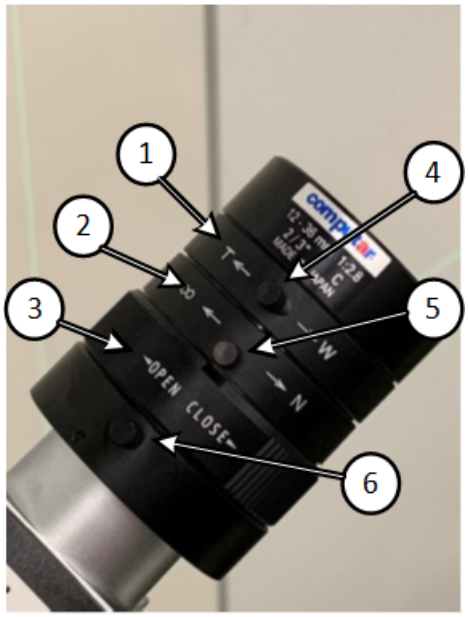
a. Adjust the camera position by manually manipulating the camera on the bracket until the template circle and bore align along with the center line of the table.



b. Use the lens aperture ring to adjust the brightness of the image and lens zoom ring to size the image, use the sharpness ring to focus the image.

NOTE

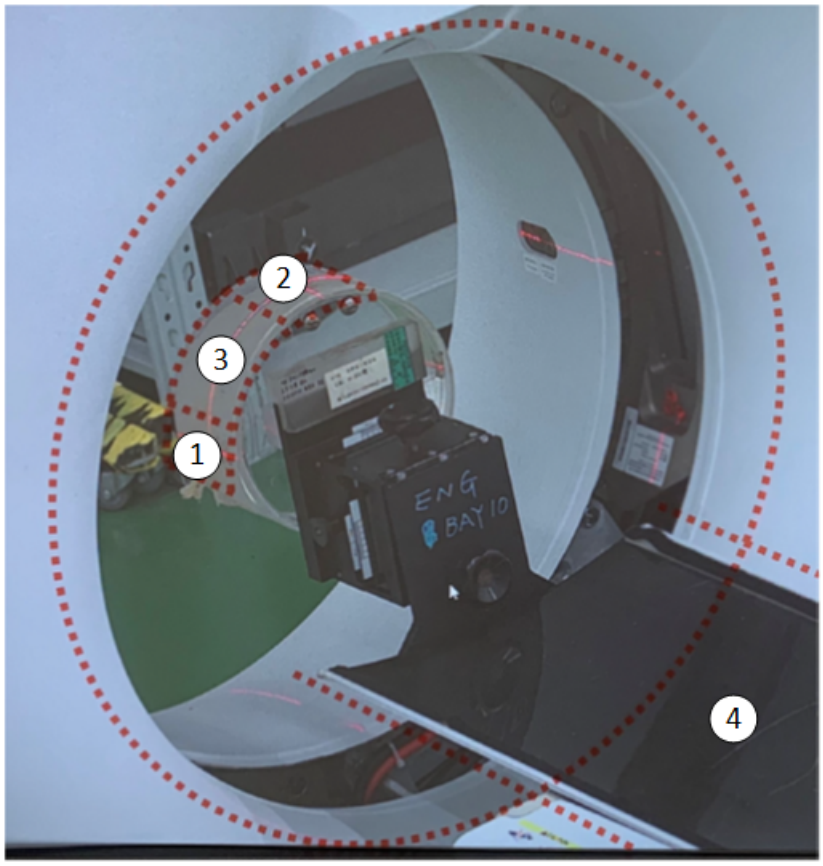
This process is iterative and may take a few attempts. Final sharpness adjustment of the image is done in a later step.



Item	Description
1	Zoom ring
2	Sharpness ring
3	Aperture ring
4	Zoom lock
5	Sharpness lock
6	Aperture lock

c. Observe the monitor screen, once the characterized target displays clearly into the expected area marked by the red dotted lines/circles, lock all adjusters, and then click **Next Step**.

Figure 4-2 Example of red dotted areas 1 through 4



Item/Area	Description
1	Projected Sagittal laser line
2	Projected Coronal laser line
3	Projected axial laser line
4	Projected table cradle line

Figure 4-3 Proper side camera position (left)

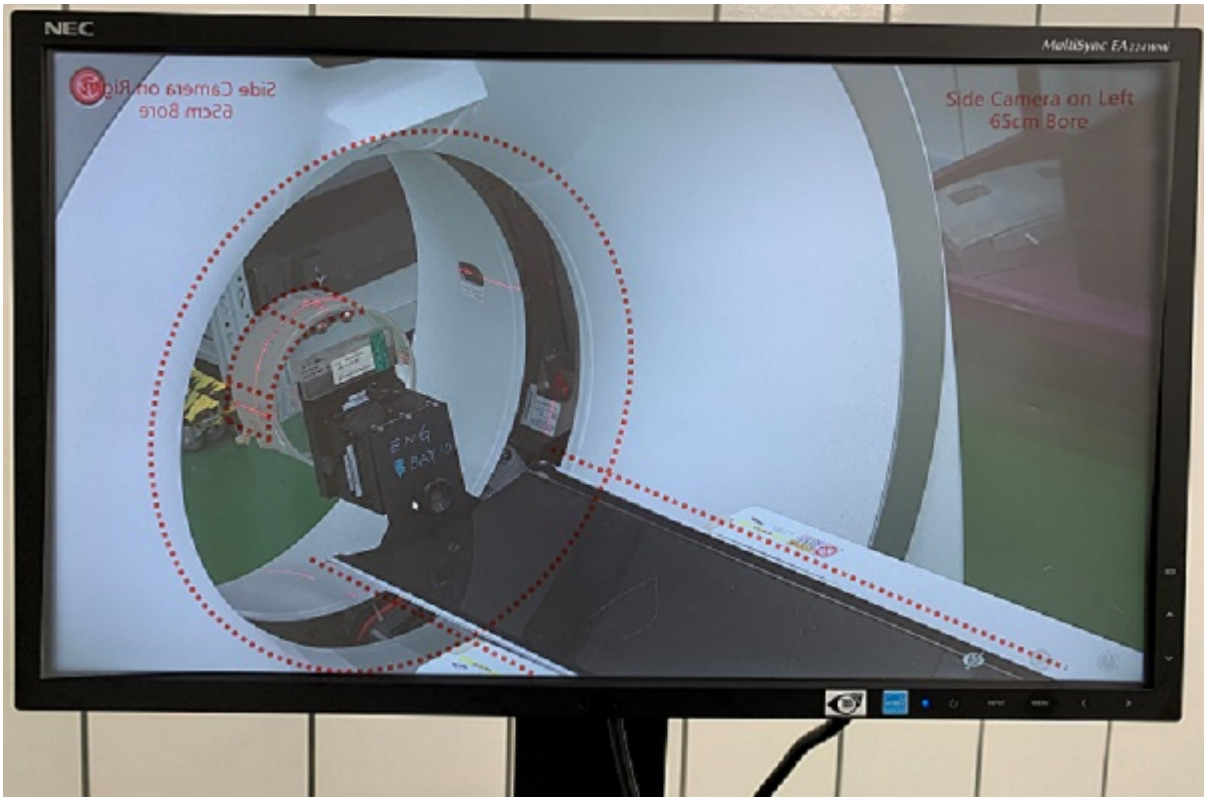
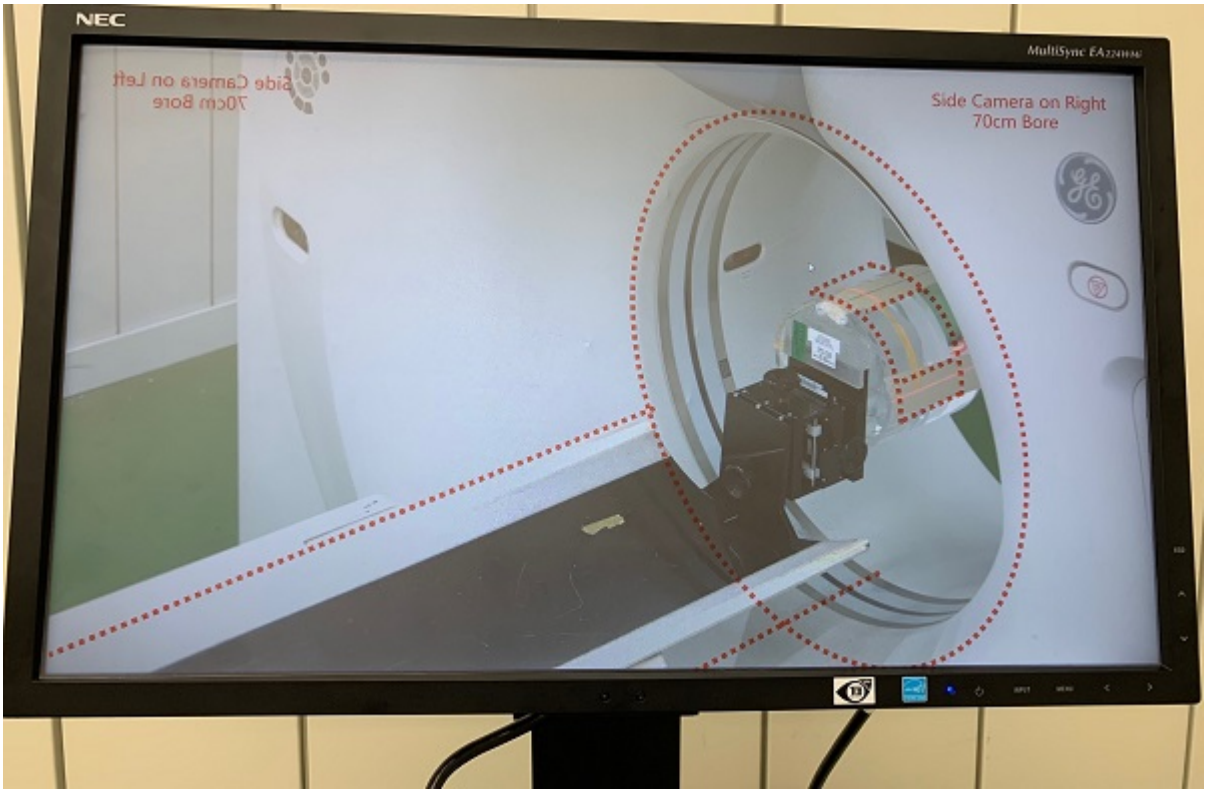


Figure 4-4 Proper side camera position (right)

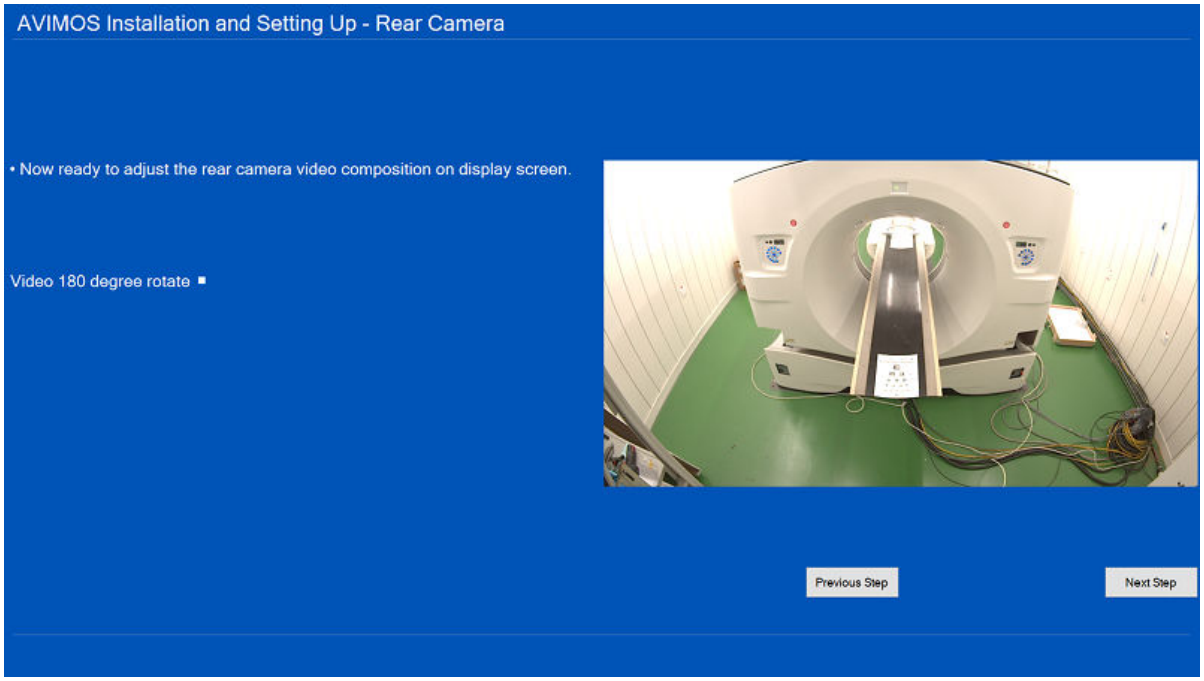


9. Remove the semi-transparent film template from the monitor.
10. Adjust parameters according to the site condition. Reference the following to see immediate results:
    a. Select **Exposure Time (Raw)** to decide the exposure time for camera. Generally if Auto is checked, it is OK.
    b. Select **LightSource Selector** according to site room light condition. Generally LED 5500 Kelvin is OK, but you can select others according to site YELLOW/WHITE light condition.
    c. Select **Tonal Range Source Bright** value. Generally 255 is OK.
    d. Select **Tonal Range Source Dark** value. Generally 0 is OK.
    e. Select **Sharpness Enhancement** value. Generally 180 is OK.
    f. Select **Limit Framerate** value.
        - Generally set *Limit Framerate* to **25** for non-Revo systems such as Revolution HD / Revolution Frontier, Optima CT520/CT540/CT620/CT670/CT680/CT660/EVO, Revolution Maxima, Tai-16, Revolution ACT, NGX/NGX-F.
        - Generally set *Limit Framerate* to **20** for Revolution CTES and Revolution Apex system because Revo systems.

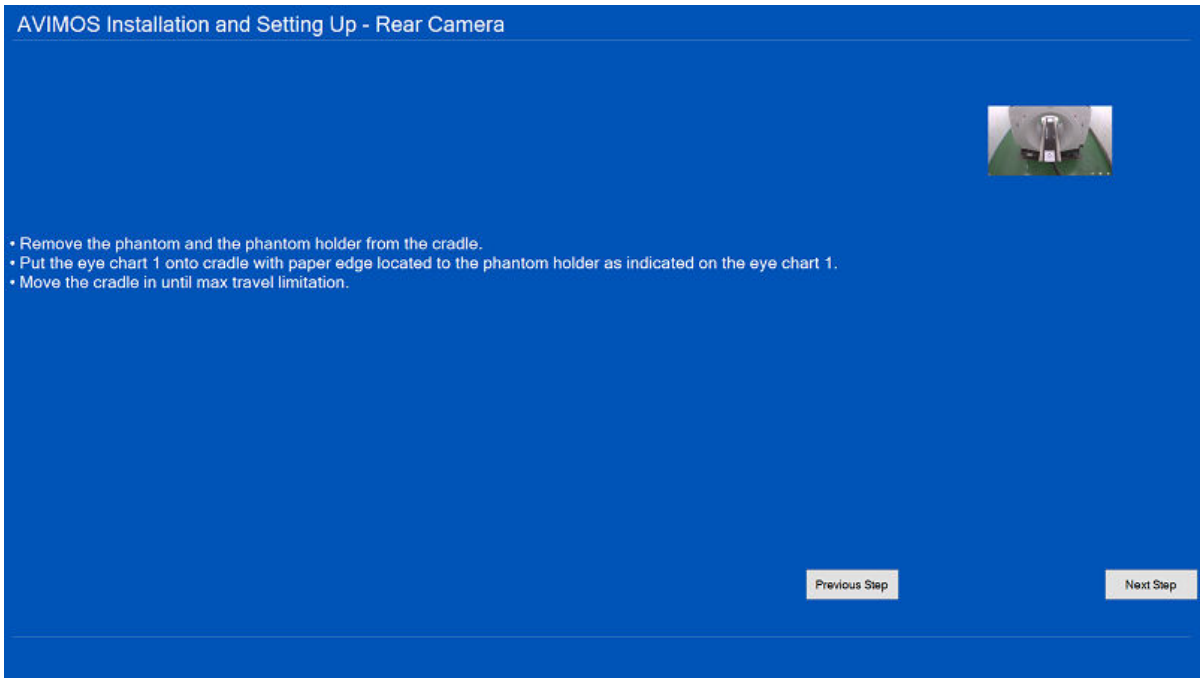
    NOTE

    You can also select one of the **Auto Mode** buttons, which provides suggested LightSource Selector, Sharpness (180), and Limit Framerate values.
11. Select **Synchronize Parameters to Camera and Save to Computer** button, once successful, and then click **Next Step**.

12. To adjust the rear camera, click **Next Step**.



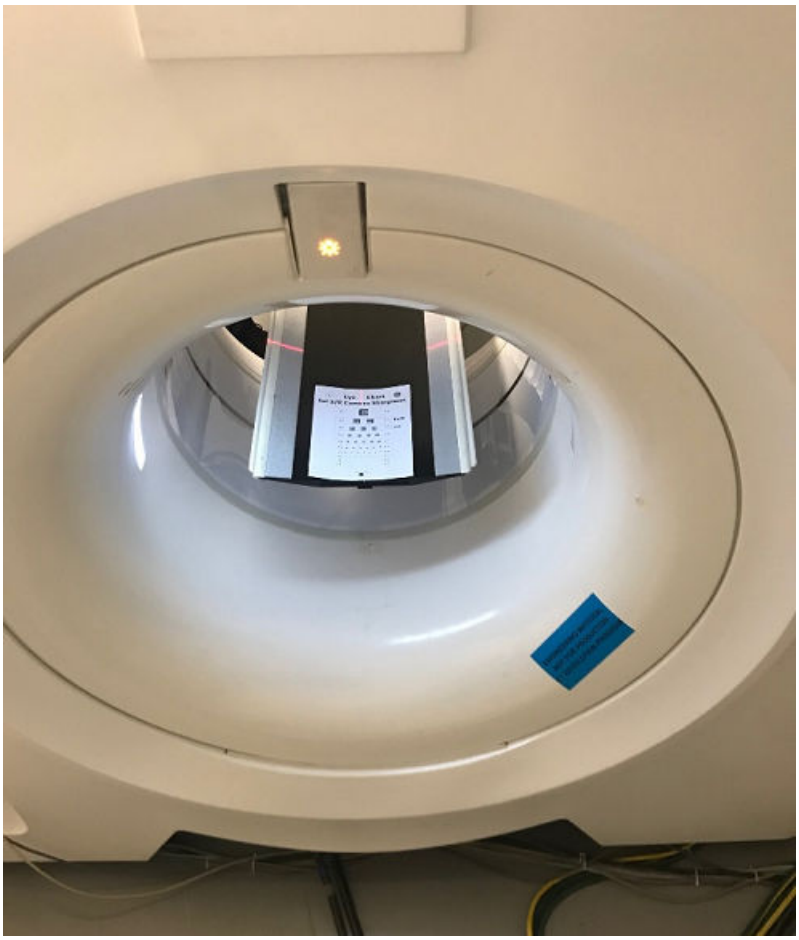
13. When the rear camera adjustment procedures display on the monitor, follow them to adjust the rear camera. Click **Next Step**.



    a. Remove the phantom and the phantom holder from the cradle.
    b. Put the Eye Chart 1 onto cradle with paper edge located to the phantom holder as shown in Figure 4-1 Eye Chart 1 on page 48.
    c. Move the cradle in until the maximum travel limitation is reached.

14. Put the rear semi-transparent film template on the monitor screen, click **Next Step**.

15. Follow procedures on the monitor screen to adjust the rear camera.
    a. Turn on internal laser lights.
    b. Place eye chart on the table, positioning the table and chart so it is fully in view of the rear camera.



    c. Use the camera lens sharpness and zoom rings to adjust until the indicated sharpness line is seen.
    d. Tighten the sharpness and zoom locking screws on the camera lens.
    e. Observe the monitor screen, once the characterized target displays clearly into the expected area marked by the red dotted lines/circles, lock all adjusters, and then click **Next Step**.
16. Adjust parameters according to the site condition. Reference the following to see immediate results:
    a. Select **Exposure Time (Raw)** to decide the exposure time for camera. Generally if **Auto** is checked, it is OK.
    b. Select **LightSource Selector** according to site room light condition. Generally LED 5500 Kelvin is OK but you can select others according to site YELLOW/WHITE light condition.
    c. Select **Tonal Range Source Bright** value. Generally 255 is OK.
    d. Select **Tonal Range Source Dark** value. Generally 0 is OK.
    e. Select **Sharpness Enhancement** value. Generally 180 is OK.

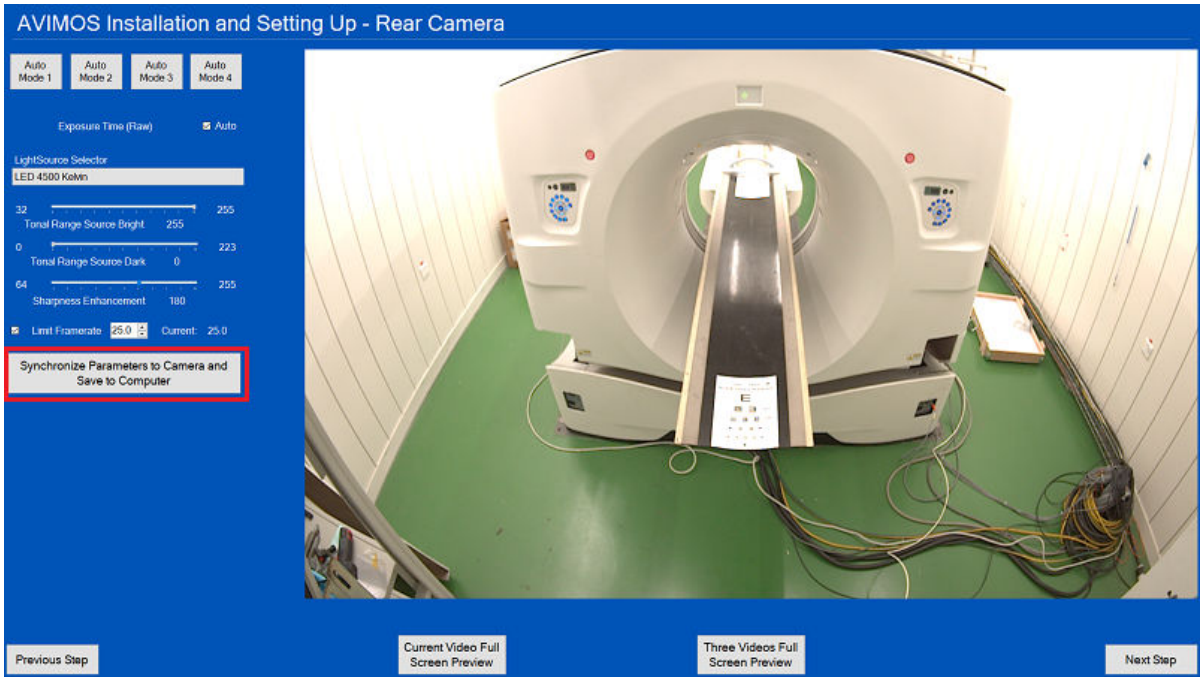
f. Select **Limit Framerate** value.

- Generally set **Limit Framerate** to **25** for non-Revo systems such as Revolution HD / Revolution Frontier, Optima CT520/CT540/CT620/CT670/CT680/CT660/EVO, Revolution Maxima, Tai-16, Revolution ACT, NGX/NGX-F.
- Generally set **Limit Framerate** to **20** for Revolution CTES and Revolution Apex systems.

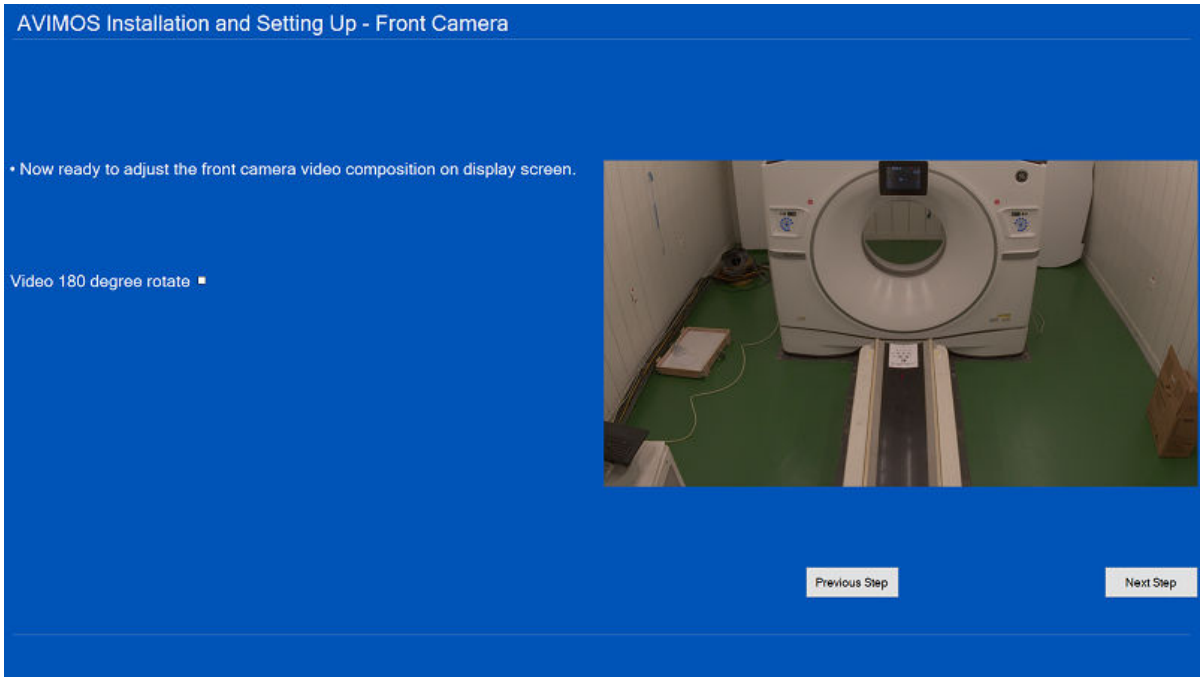
NOTE

You can also select one of the **Auto Mode** buttons which provides a suggested LightSource Selector, Sharpness (180), and Limit Framerate values.

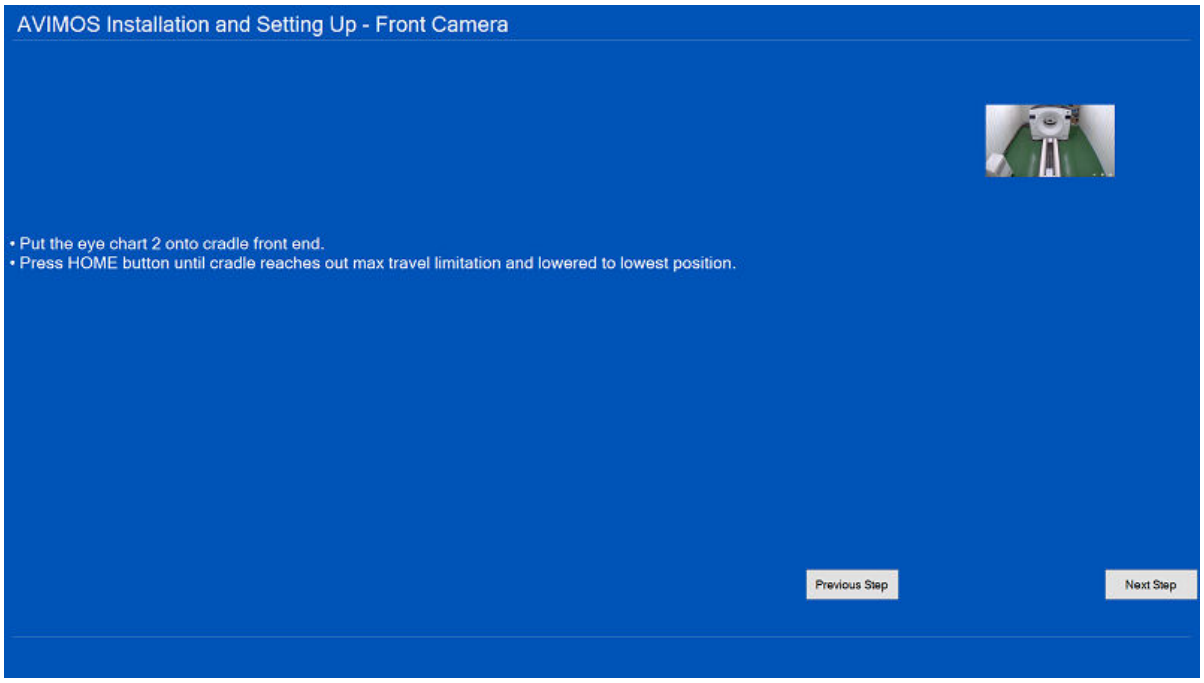
17. Select **Synchronize Parameters to Camera and Save to Computer button**, once successful, click **Next Step**.



18. To adjust the front camera, click **Next Step**.



19. When the front camera adjustment procedures display on the monitor, follow them to adjust the front camera. Click **Next Step**.

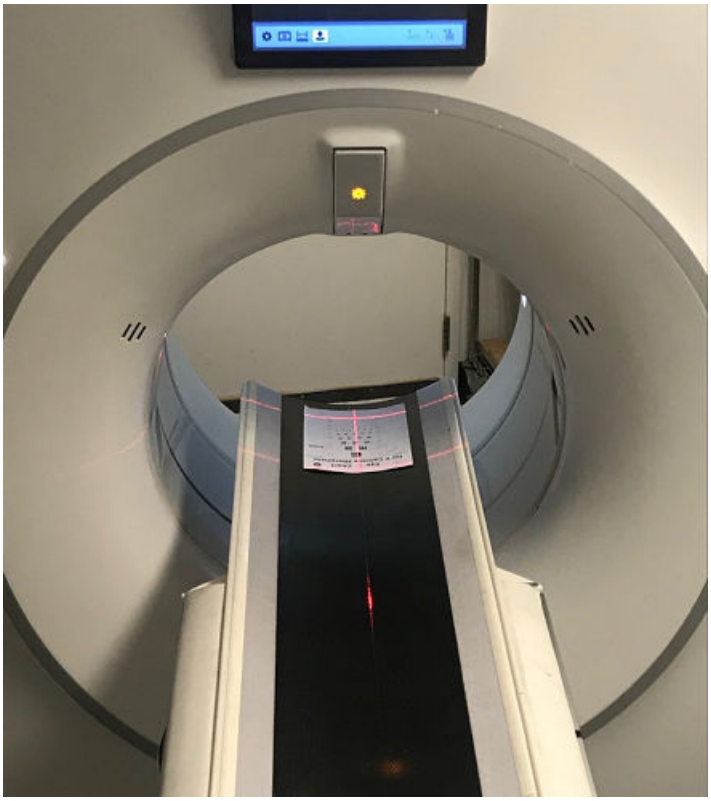


- Put the Eye Chart 2 onto cradle front end.
- Press **HOME** button until cradle reaches out max travel limitation and lowered to lowest position.

20. Put the front semi-transparent film template on the monitor screen, click **Next Step**.
21. Follow procedures on the monitor screen to adjust the front camera.

a. Turn on internal laser lights.

b. Place eye chart on the table, positioning the table and chart to the indicated laser alignment lines on the chart.



c. Use camera lens to sharpness and zoom rings to adjust until the indicated sharpness line is seen.

d. Tight the sharpness and zoom locking screws to the camera lens.

e. Observe the monitor screen, once the characterized target displays clearly into the expected area marked by the red dotted lines/circles, lock all adjusters, and then click **Next Step**.

22. Adjust parameters according to the site condition. Reference the following to see immediate results:

a. Select **Exposure Time (Raw)** to decide the exposure time for camera. Generally, if **Auto** is checked, it is OK.

b. Select **LightSource Selector** according to site room light condition. Generally, LED 5500 Kelvin is OK, but you can select others according to site YELLOW/WHITE light condition.

c. Select **Tonal Range Source Bright** value. Generally 255 is OK.

d. Select **Tonal Range Source Dark** value. Generally 0 is OK.

e. Select **Sharpness Enhancement** value. Generally 180 is OK.

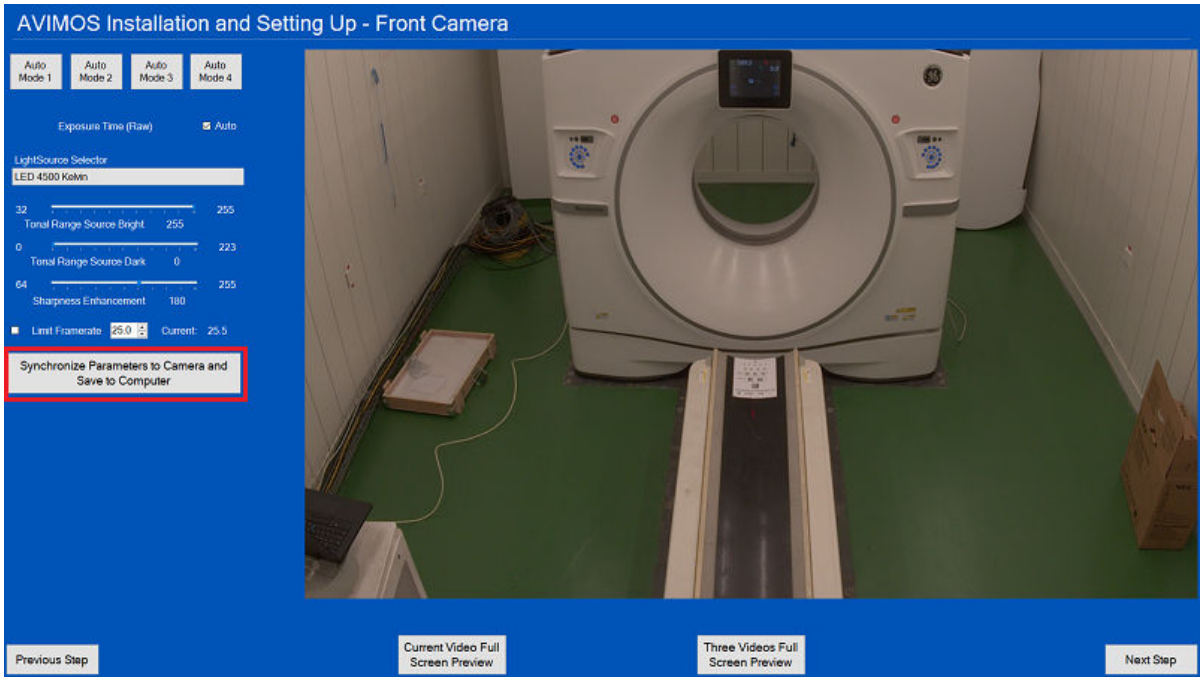
f. Select **Limit Framerate** value.

- Generally set **Limit Framerate** to **25** for non-Revo systems such as Revolution HD / Revolution Frontier, Optima CT520/CT540/CT620/CT670/CT680/CT660/EVO, Revolution Maxima, Tai-16, Revolution ACT, NGX/NGX-F.
- Generally set **Limit Framerate** to **20** for Revolution CTES and Revolution Apex systems.

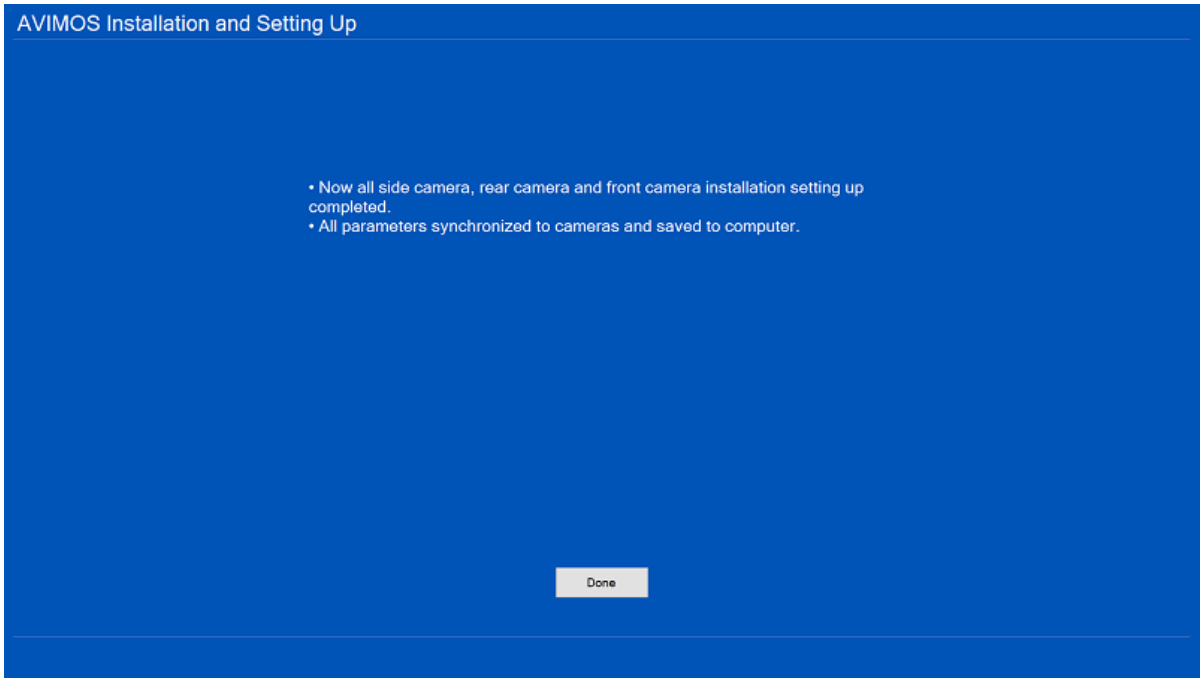
NOTE

You can also select one of the **Auto Mode** buttons which provides suggested LightSource Selector, Sharpness (180), and Limit Framerate values.

23. Select **Synchronize Parameters to Camera and Save to Computer** button, once successful, click **Next Step**.

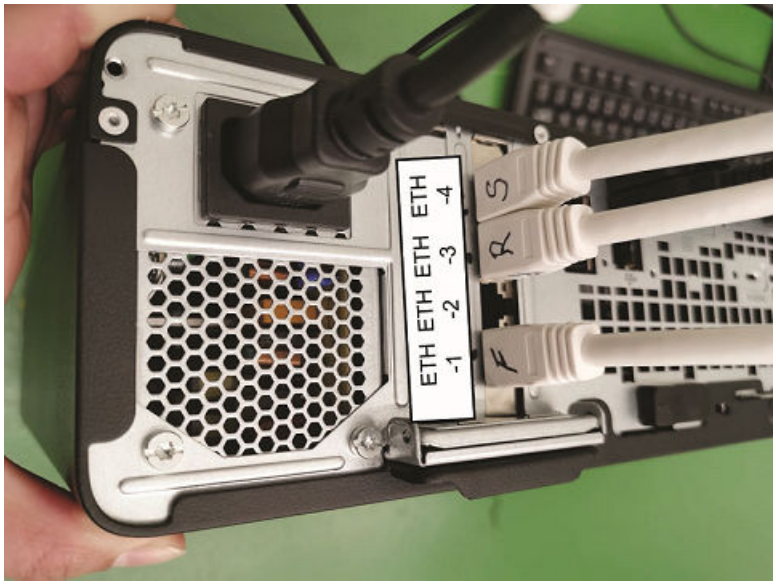


24. When all camera set up is completed, click **Done**.



25. Shutdown the AVIMOS system.
26. Disconnect and remove the three (3) JIG cables, and RT45 to RJ45 connectors.

27. Move the AVIMOS computer and the LCD monitor to the location on the console desk near the system monitors.
28. Connect the three (3) camera cables to the AVIMOS computer.



29. Power ON the AVIMOS computer power.
30. Retain the eye chart and the semi-transparent film.

NOTE

Properly store the eye chart and the semi-transparent film as they are used during the replacement and alignment process.

5 Appendix

5.1 RCK Parts List

Prerequisites

Table 5-1 Safety

NOTICE

PPE REQUIRED

Follow ALL required safety and PPE procedures customary for your organization when working on this product.

This Appendix provides the following:

- Material lists on page 61
- Cameras position confirmation on page 63
- 5.2 RCK Planned Maintenance on page 68
- 5.3 AVIMOS Component Replacement on page 71

Material lists

Prerequisites

Table 5-2 B-Cat list for RCK-AVIMOS

B-Cats	Description
B75852CC	RCK-AVIMOS for non-tilt and non-up/down system with 65cm bore (SVCT with fix table)
B75872CC	RCK-AVIMOS for non-tilt and up/down system with 65cm bore (SVCT with up/down table)
B75862CC	RCK-AVIMOS for tilt and up/down system with 70cm bore
B75892CC	RCK-AVIMOS for tilt and up/down system with 75cm bore (NGX)
B75882CC	RCK-AVIMOS for non-tilt and up/down system with 70cm bore (TaiX/Tai16/dragon-leap)
B75922CC	RCK-AVIMOS for system with 80cm bore (Revo CT)

Table 5-3 B-Cat list for extendable pipe

B-Cats	Description
B77752DA	Extendable pipe for camera ceiling mount, 40 to 60cm
B77762DA	Extendable pipe for camera ceiling mount, 85 to 150cm

Table 5-4 B-Cat list for power cord kits

B-Cats	Description	Country
B77872DA	PWR SPLY CRD EUROPE KOREA 10A 250V STRAIGHT 2.5M	Europe, Korea
B77882DA	PWR SPLY CRD ITALY 10A 250V STRAIGHT 2.5M	Italy
B77892DA	PWR SPLY CRD UK IRELAND 10A 250V STRAIGHT 2.5M	England
B77902DA	PWR SPLY CRD ISRAEL 10A 250V STRAIGHT 2.5M	Israel
B77912DA	PWR SPLY CRD SWITZERLAND 10A 250V STRAIGHT 2.5M	Switzerland
B77922DA	PWR SPLY CRD DENMARK HOSPITAL GRADE 10A 250V STRAIGHT 2.5M	Denmark
B77932DA	PWR SPLY CRD CHINA 10A 250V STRAIGHT 2.5M	China
B77942DA	PWR SPLY CRD JAPAN AND TAIWAN 12A 125V STRAIGHT 2.5M	Japan
B77952DA	PWR SPLY CRD INDIA 10A 250V STRAIGHT 2.5M	India
B77962DA	PWR SPLY CRD ANZ 10A 250V STRAIGHT 2.5M	Australia
B77972DA	PWR SPLY CRD UNITED STATES - CANADA 15A 125V STRAIGHT 2.5M	USA, Canada
B77982DA	PWR SPLY CRD BRAZIL 10A 250V STRAIGHT 2.5M	Brazil
B77992DA	PWR SPLY CRD ARGENTINA 10A 250V STRAIGHT 2.5M	Argentina
B78002DA	PWR SPLY CRD S AFRICA 10A 250V STRAIGHT 2.5M	South Africa

Table 5-5 AVIMOS material list (5849583)

Part Number		Description	Qty.
5857407		AVIMOS video system from Basler	1.0
	5857405	Basler camera with AL adapter, C mount, for side, CAM320-36GC-S	1.0
	5857405-2	Basler camera with AL adapter, CS mount, for rear, CAM320-36GC-R	1.0
	5857405-3	Basler camera with AL adapter, CS mount, for front, CAM320-36GC-F	1.0
	5857402	M3Z1228C-MP, side camera lens	1.0
	5857401	E3Z3915CS-MPWIR, rear and front camera lens	2.0
	5857165	Camera bracket: 360° / 90° -- White color	3.0
	5857399	A4paper eye chart for sharpness check for AVIMOS setting up	1.0
	5857164	Safetychain 200 mm	3.0
	5866885	2kgweight, service tool	2.0
	5866522	RT45 to RJ45 Connector	3.0
5857406		HP600 computer with preloaded BASLER APP, a mouse, with POE card. No power cable	1.0
8771221-02		21.5 inch Data Display – HP E22 G4	1.0
5866523		LAN cable for AVIMOS from TIME	1.0
	5788613-28	Ethernet Cable CAT6 26AWG Stranded Conductor Foil Braid CM 7.5m	3.0
	5863794	LANcable for AVIMOS front camera	1.0
	5863794-2	LANcable for AVIMOS rear camera	1.0
	5863794-3	LANcable for AVIMOS side camera	1.0

Table 5-5 AVIMOS material list (5849583) (Table continued)

Part Number		Description	Qty.
5863746		Junction platefor standard	3.0
1000-M4C016-04		Hexagon socket head cap screw, M4-0.7, X16 mm long, grade 8.8 steel, zinc plated, RoHS fastener	12.0
1000-M5C016-04		Hexagon socket head cap screw, M5-0.8, X1 6mm long, grade 8.8 steel, zinc plated, RoHS fastener	4.0

Cameras position confirmation

About this task

GE PMI and Installation Design Center is responsible for the cameras position calculation using AVIMOS Calculator and mark the cameras position on the site drawing as shown in Figure 1-4 Scan room layout on page 13.

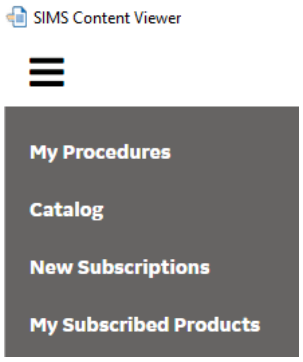
The PMI is also responsible to support the customer contractor for the installation of the junction plate in the proper position; GE FE is responsible for the cameras position confirmation and AVIMOS installation to the junction plate.

Cameras position calculate

Procedure

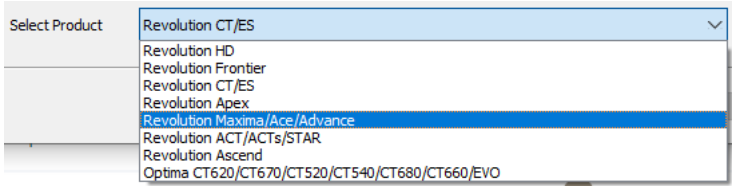
1. Search the AVIMOS camera calculator (DOC2588256/DOC2493088) from SIMS Content View Catalog to download it.

Figure 5-1 SIMS Content Viewer



2. After downloaded, unzip file and run the tool **AVIMOS Cameras Installation Tool.exe**.
3. Select the product which you will install AVIMOS cameras on, then click **Next**.

Figure 5-2 Product Selection



Example: Revolution Maxima/Ace/Advance

NOTE

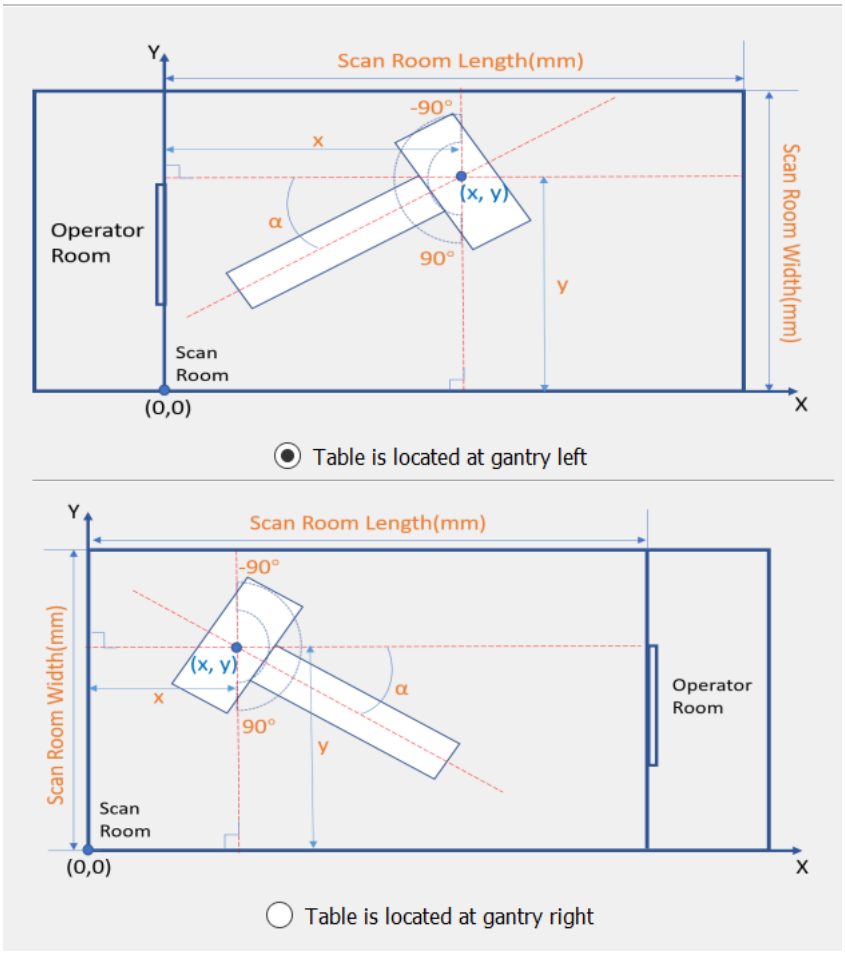
If the system was upgraded to Apex Edition, select **Revolution CT/ES**.

4. **Camera Installation Guidance** windows display.

   a. Confirm which direction you will mount the side camera, it could be “Table is located at gantry left” or “Table is located at gantry right” depending on the real site condition.

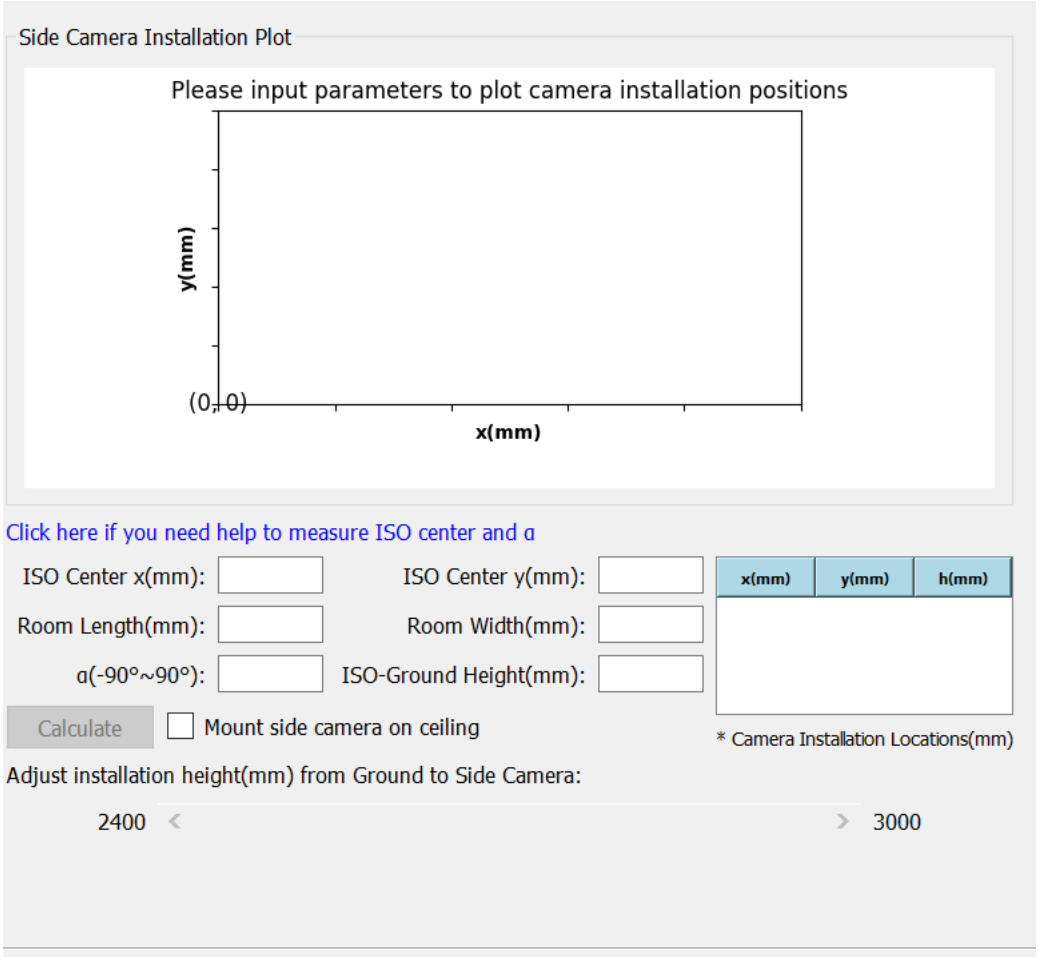
   Example: Table is located at gantry left.

   Figure 5-3 Gantry/Table Position Selection



   b. Once the direction is confirmed, the scan room could be regarded as a 2D-coordinate system, and exactly the left lower corner of scan room is the (0,0) point. Now you can start to input the parameters regarding to scan room measured including (ISO center coordinate x and y, room length and width, gantry angle α along with horizontal axis, the height from ISO center to ground).

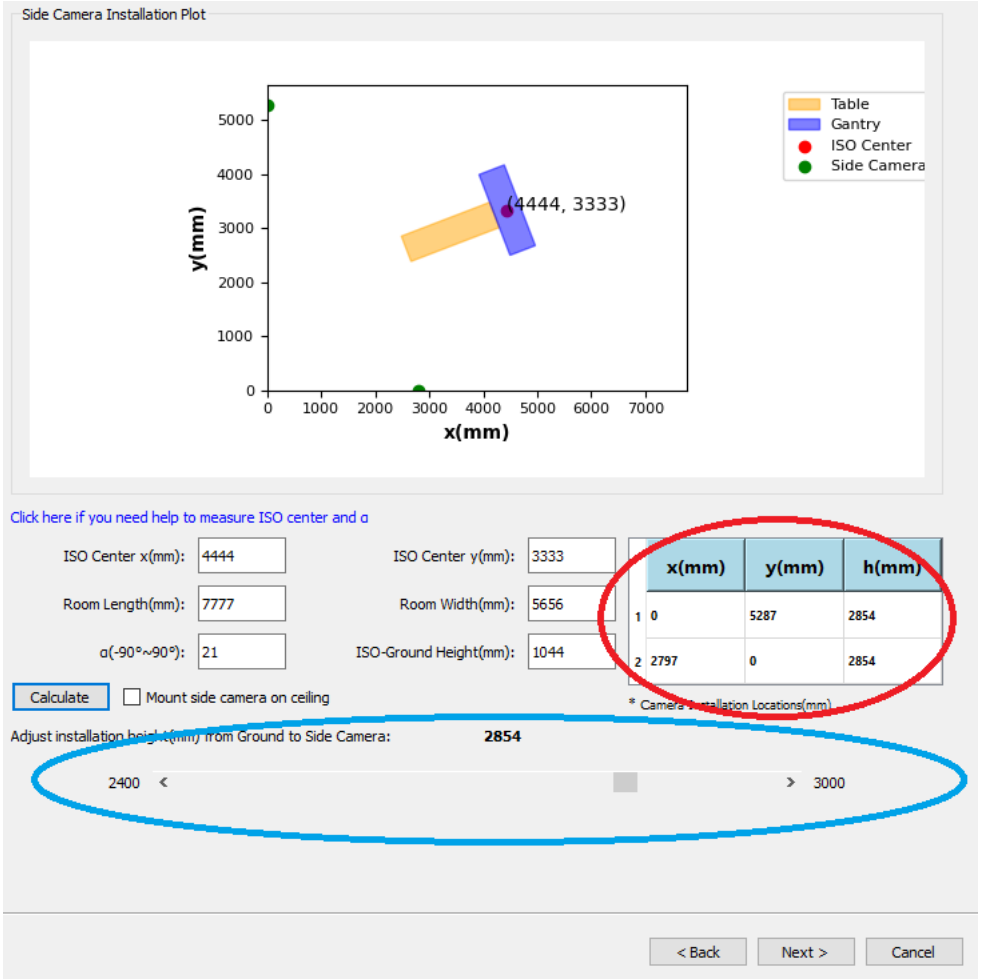
Figure 5-4 Parameters



c. After all required parameters inputted, click **Calculate**, the 2D-coordinate system will display scan room plot. The position coordinates of camera will be calculated and displayed in red circle section (see Figure 5-5 Start to Input Parameters on page 66). User can use any of these coordinates as the side camera mount position.

In blue circle section (see Figure 5-5 Start to Input Parameters on page 66), you can also modify the installation height of camera to adjust its mount position.

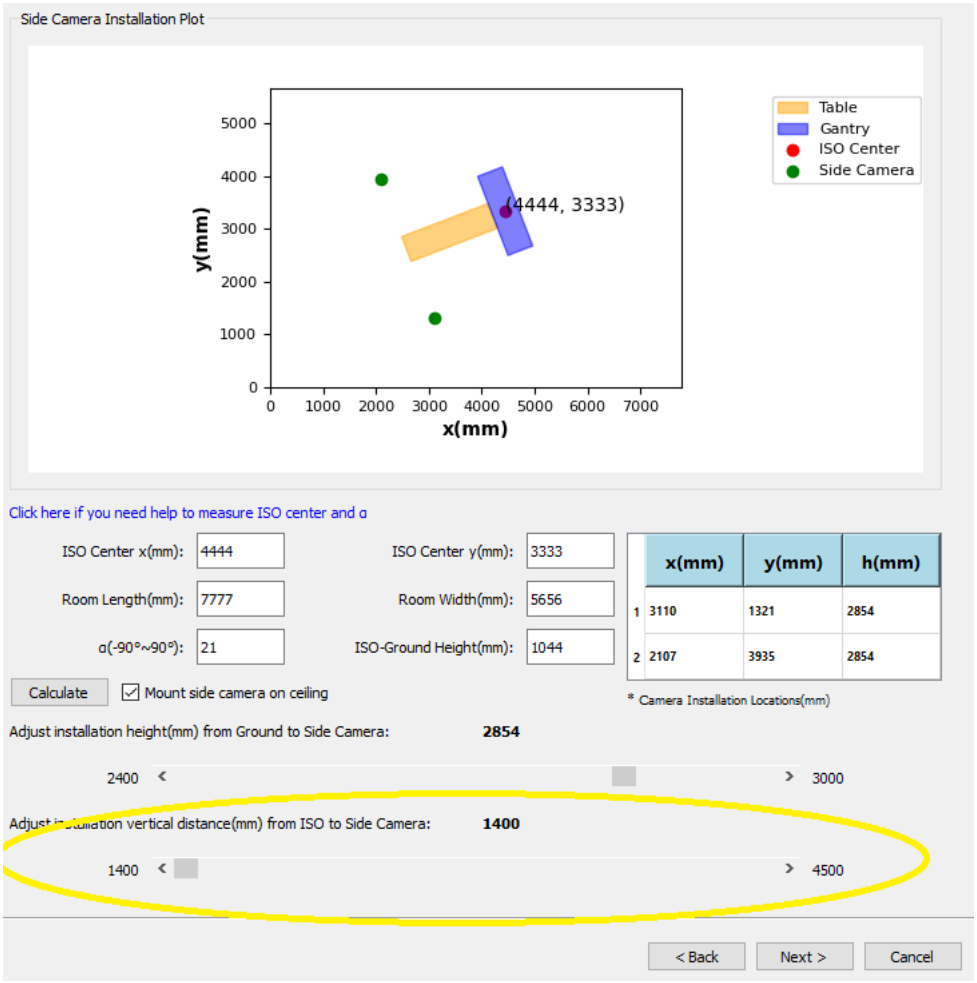
Figure 5-5 Start to Input Parameters



d. If user want to mount the side camera on ceiling instead of wall, need to select checkbox “Mount side camera on ceiling” and click **Calculate**.

e. The orange circle section (see Figure 5-6 Adjust Side Camera Mount Position on page 67) will be displayed, user can change the distance to adjust the side camera mount position from wall to ceiling.

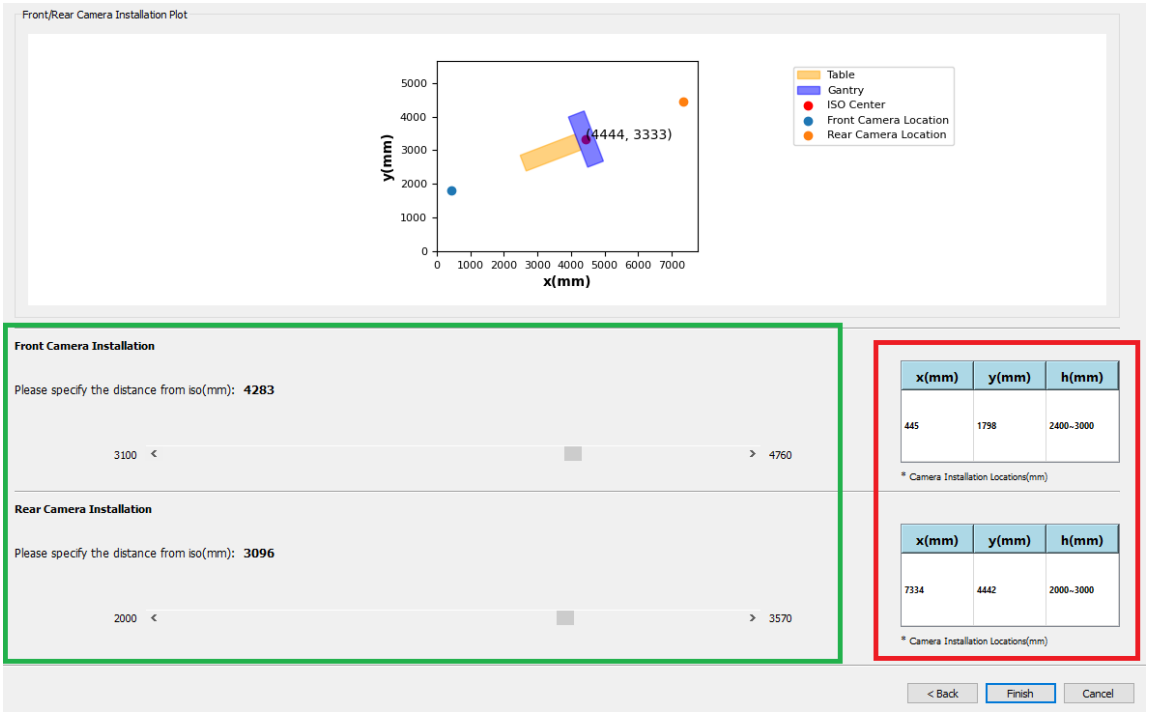
Figure 5-6 Adjust Side Camera Mount Position



f. Once the side camera mount position is confirmed, click **Next** to confirm front and rear camera mount positions.

g. Since there is no special calculation for these two cameras, user only needs to specify the distance from ISO to camera by adjusting the distance (green circle section). The front and rear camera mount positions will be display in red circle section (see Figure 5-7 Adjust Front/Rear Camera Mount Position on page 68).

Figure 5-7 Adjust Front/Rear Camera Mount Position



h. The front and rear camera mount positions are confirmed, click **Finish** to exit this tool.

5.2 RCK Planned Maintenance

Prerequisites

Table 5-6 Consumables

Item	Quantity	Effectivity	Part number	Manufacturer
Air can	1	-	2226685	-

Table 5-7 Replacement parts

Item	Quantity	Effectivity	Part number	Manufacturer
Film spare parts	-	-	5857448-5	-

Table 5-8 Required conditions

Condition	Reference	Effectivity
Only trained service personnel should service the GE Scanner.	-	-

Table 5-9 Safety

⚠ CAUTION

FALL HAZARD

Failure to follow proper methods for working at heights may cause serious personal injury.

Use of a harness or personal fall arrest is recommended at all times when using a portable ladder.

NOTICE

PPE REQUIRED

Follow ALL required safety and PPE procedures customary for your organization when working on this product.

As a monitoring system, the planned maintenance is necessary to ensure accuracy and clarity of the AVIMOS.

- For **Revolution™ CT**, **Revolution™ CT ES**, **Revolution™ Apex** and **Revolution™ CT with Apex Edition**, a FE **must** complete a minimum of three (3) camera inspections for in the Planned Maintenance, refer to Full Year Schedule for frequency of PM tasks.
- For other products, a FE **must** complete a minimum of three (3) camera inspections for in warranty PM (1 time/year) and out-of-warranty PM (3 times/year), refer to the following inspection procedure.

NOTE

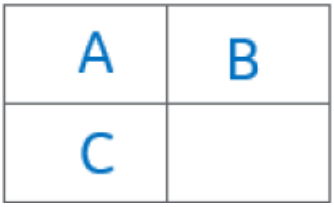
Eye Chart and the Semi Transparent films are needed for this procedure.

NOTE

Camera lens may require cleaning. Clean camera lenses with air can to remove dust and lint. If required, a lint free cloth maybe used to wipe off the lenses, but touching the cameras could cause miss-alignment.

1. Obtain QA water phantom and align it to the laser alignment lights.
2. Power ON the AVIMOS computer if required to view the user interface.

Figure 5-8 User interface



3. Click **A** to zoom the side video.
4. Put the **Eye Chart 1** onto cradle with paper edge located to cradle edge.
5. Put the side semi-transparent film template on the monitor screen.
6. Observe the monitor screen and verify the following:
   - The symbol for side camera on the **Eye Chart 1** can be seen.
   - The characterized target is displayed clearly into the expected area marked by the red dotted lines/circles.
   - If alignment is required, **do not** adjust at this time. Continue with camera inspections.
7. Return to the main interface.
8. Click **B** to zoom the rear video.
9. Move cradle into the gantry until max travel limitation has been reached.
10. Keep the **Eye Chart 1** onto cradle with paper edge located to cradle edge.
11. Remove the side semi-transparent film template and put the rear semi-transparent film template on the monitor screen.
12. Observe the monitor screen and verify the following:
    - The symbol for rear camera on the **Eye Chart 1** can be seen.
    - The characterized target is displayed clearly into the expected area marked by the red dotted lines/circles.
    - If alignment is required, **do not** adjust at this time. Continue with camera inspections.
13. Return to the main interface.
14. Click **C** to zoom the front video.
15. Press the table home button until cradle is lowered to the lowest position
16. Remove the **Eye Chart 1** and put the **Eye Chart 2** onto cradle front end.

17. Remove the rear semi-transparent film template and put the front semi-transparent film template on the monitor screen.
18. Observe the monitor screen and verify the following:
    - The symbol for front camera on the **Eye Chart 2** can be seen.
    - The characterized target is displayed clearly into the expected area marked by the red dotted lines/circles.
    - If alignment is required, **do not** adjust at this time. Continue with camera inspections.
19. If the inspection fails, follow 4.1 AVIMOS Installation and Set Up on page 44 to re-adjust cameras.

NOTE

A keyboard will be required. Set scan room lighting to low lighting (**for example**, the same lighting that is used to align a patient to the lasers).

Important

Properly store the eye chart and the semi-transparent film as they are used during the replacement and alignment process.

5.3 AVIMOS Component Replacement

Prerequisites

Table 5-10 Personnel requirements

Required persons	Preliminary requirements	Procedure	Finalization
1	N/A	2 hours	N/A

Table 5-11 Required conditions

Condition
Only trained service personnel should service the GE Scanner.

Table 5-12 Safety

⚠ CAUTION

FALL HAZARD

Failure to follow proper methods for working at heights may cause serious personal injury.

Use of a harness or personal fall arrest is recommended at all times when using a portable ladder.

NOTICE

PPE REQUIRED

Follow ALL required safety and PPE procedures customary for your organization when working on this product.

NOTE

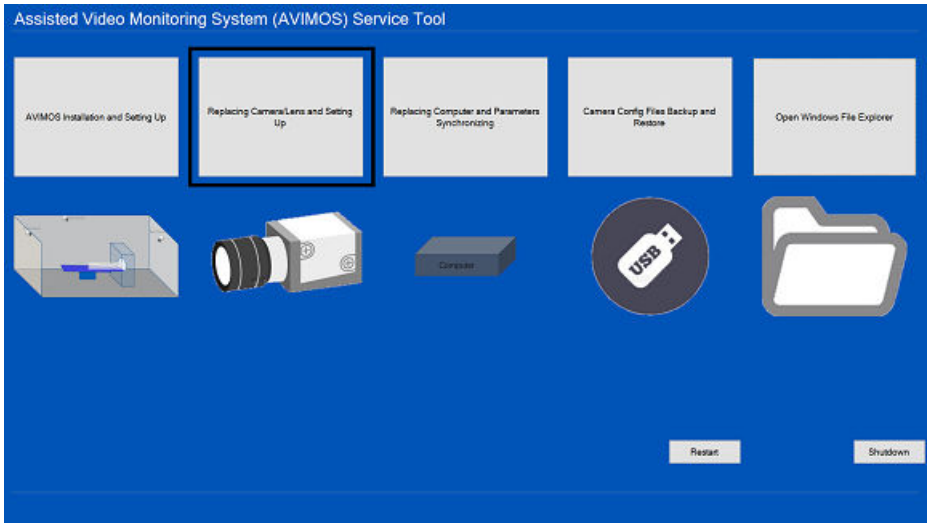
Properly store the eye chart and the semi-transparent film as they are used during the replacement and alignment process.

- Replace side camera on page 73
- Replace rear camera on page 79
- Replace front camera on page 82
- Replace defective computer on page 85
- Re-install AVIMOS operating system on page 87
- Camera config backup on page 100

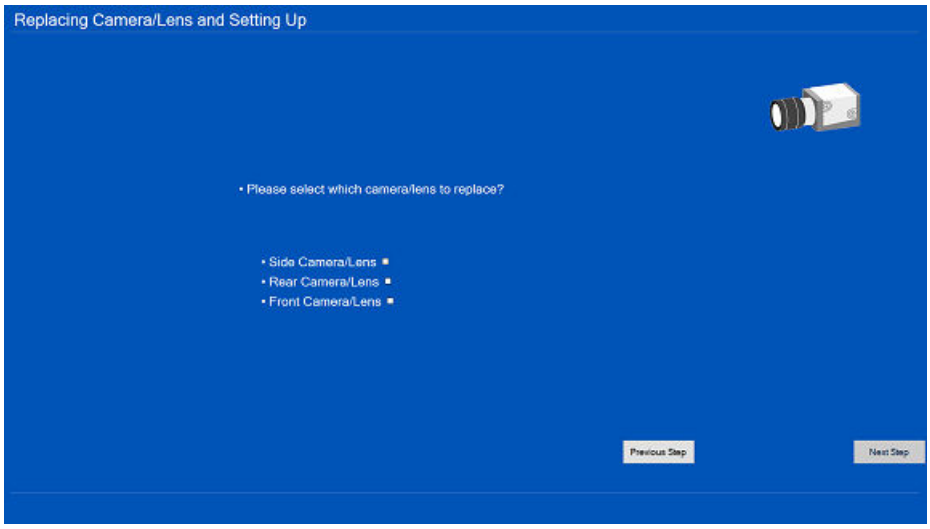
Replacing camera(s) and set up

Procedure

1. Power OFF the AVIMOS computer.
2. Disconnect the camera cable from the defective camera.
3. Replace the defective camera/lens with the new one and re-connect the camera cable.
4. Power ON the AVIMOS computer power. When the monitor light comes on and GE logo displays, press **Ctrl+G+E** simultaneously within 5 seconds.
5. Enter User Name and Password to access the AVIMOS service tool.
6. Select **Replacing Camera/Lens and Setting Up** in AVIMOS service tool.



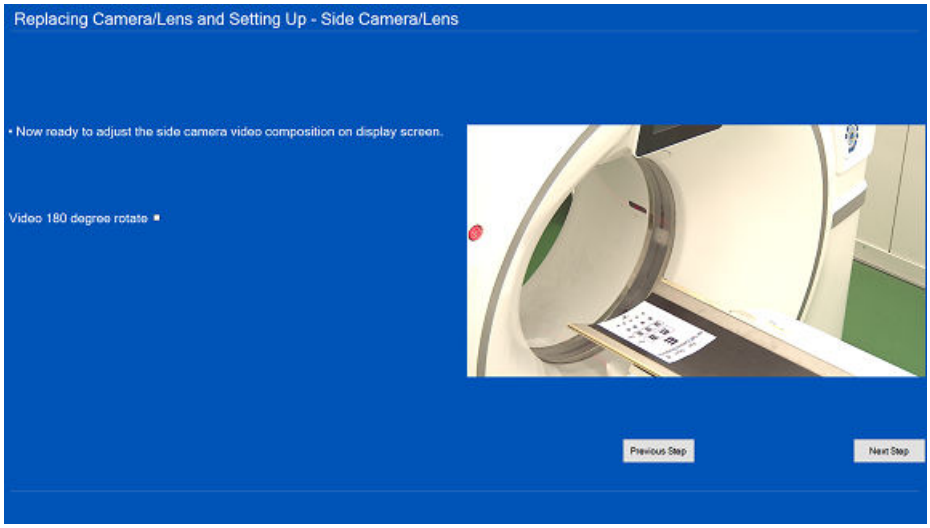
7. The camera selection window displays, select which camera needs to be replaced, and then click **Next Step**.



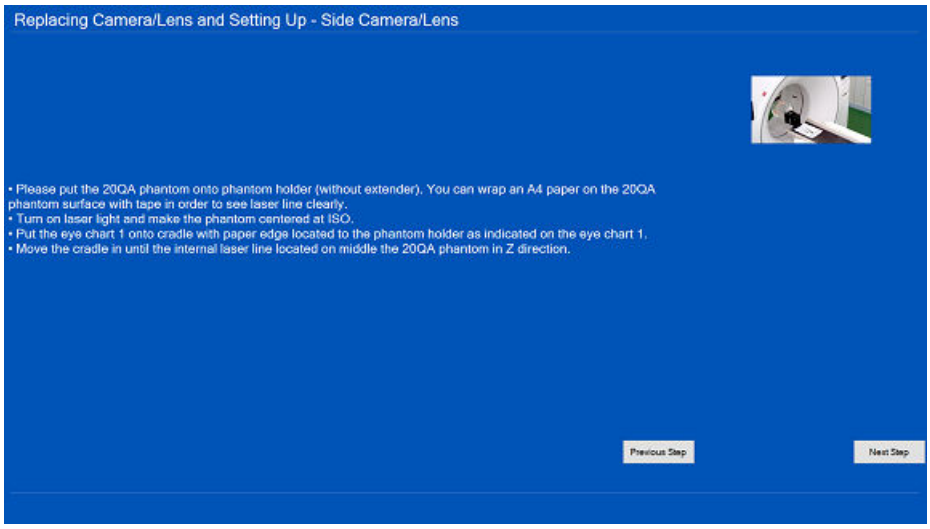
Replace side camera

Procedure

1. Check and confirm the side camera/lens is correctly installed and the side camera cable is correctly connected. Click **Next Step**.
2. To adjust the side camera, click **Next Step**.



3. When the side camera adjustment procedures display on the monitor, follow them to adjust the side camera. Click **Next Step**.

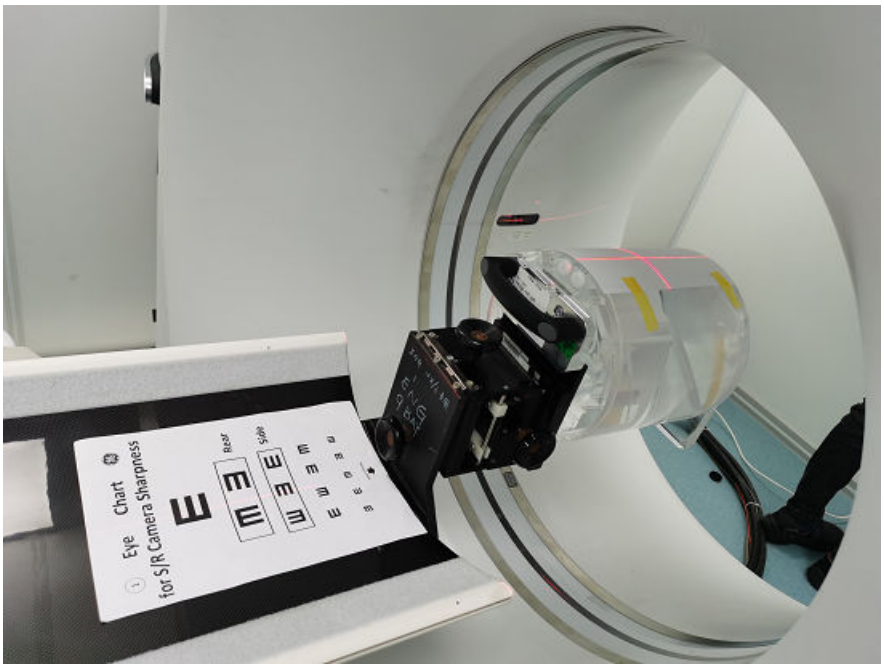


a. Put the 20QA phantom onto phantom holder (without extender). You can wrap paper on the 20QA phantom surface with tape in order to see laser line clearly.

b. Turn on laser lights and move the phantom to IOS center.

c. Place Eye Chart 1 onto the cradle with paper edge located to the phantom holder as shown.

Figure 5-9 Eye Chart 1



d. Move the cradle in until the internal laser line located on middle the 20QA phantom in Z direction.

4. Put the side semi-transparent film template on the monitor screen and click **Next Step**.

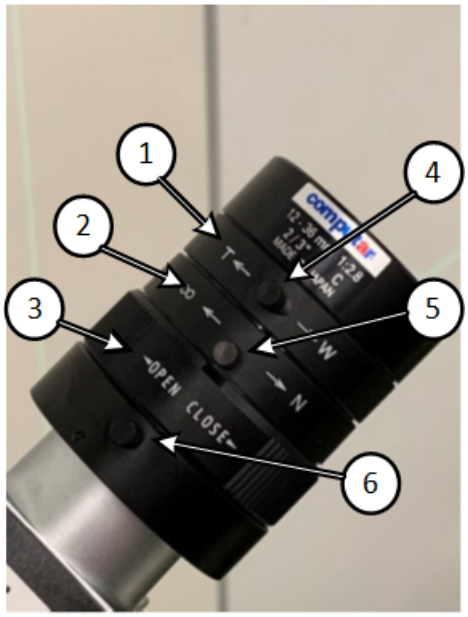
5. Follow procedures on the monitor screen to adjust the side camera.

   a. Adjust the camera position by manually manipulating the camera on the bracket until the template circle and bore align along with the center line of the table.

b. Use the lens aperture ring to adjust the brightness of the image and lens zoom ring to size the image, use the sharpness ring to focus the image.

NOTE

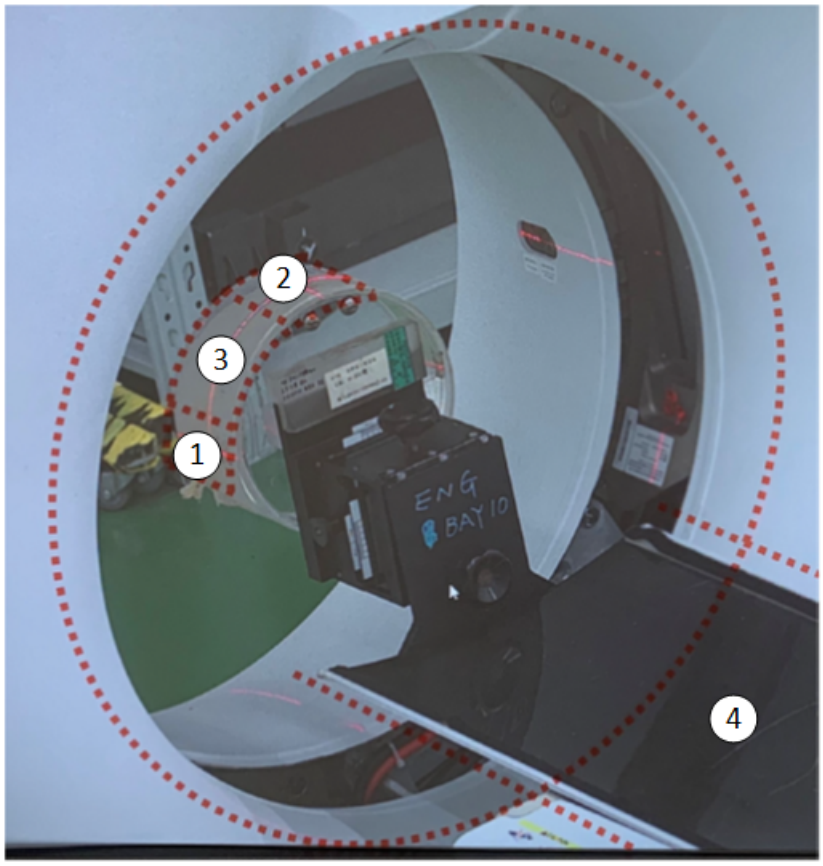
This process is iterative and may take a few attempts. Final sharpness adjustment of the image is done in a later step.



Item	Description
1	Zoom ring
2	Sharpness ring
3	Aperture ring
4	Zoom lock
5	Sharpness lock
6	Aperture lock

c. Observe the monitor screen, once the characterized target displays clearly into the expected area marked by the red dotted lines/circles, lock all adjusters, and then click **Next Step**.

Figure 5-10 Example of red dotted areas 1 through 4



Item/Area	Description
1	Projected Sagittal laser line
2	Projected Coronal laser line
3	Projected axial laser line
4	Projected table cradle line

Figure 5-11 Proper side camera position (left)

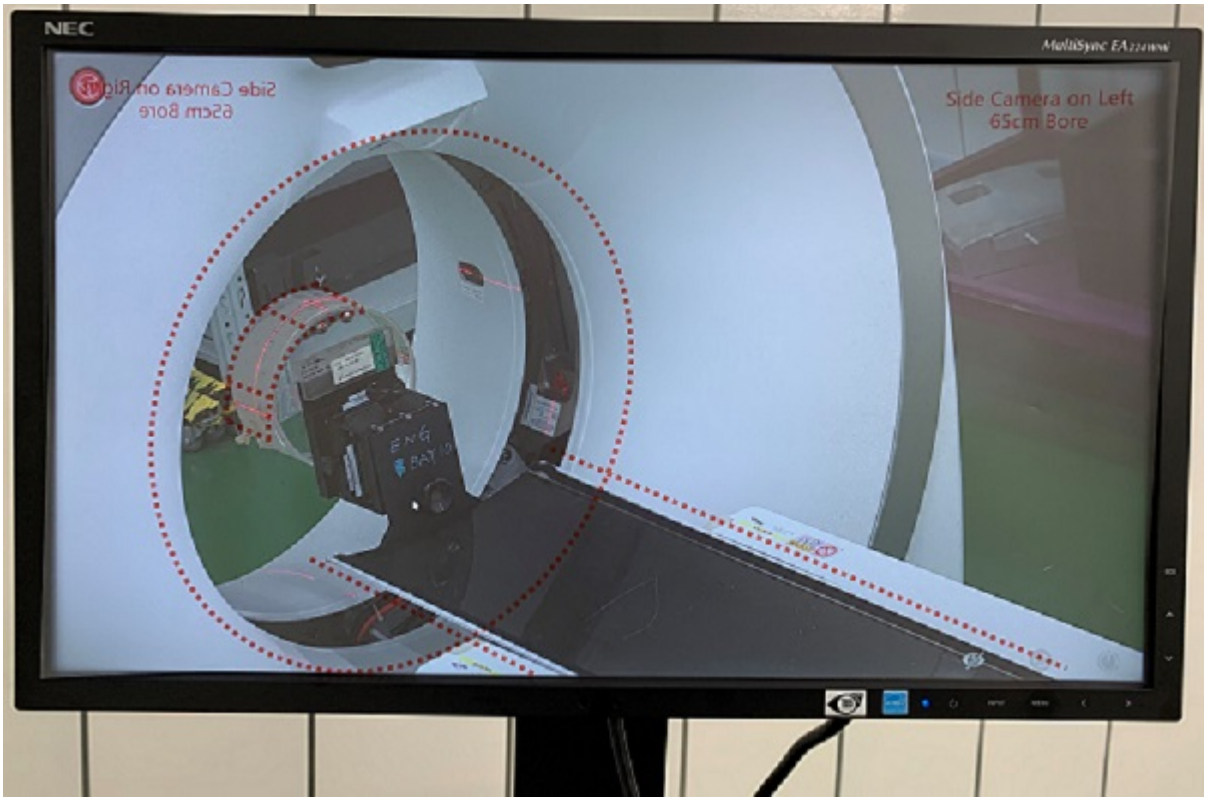
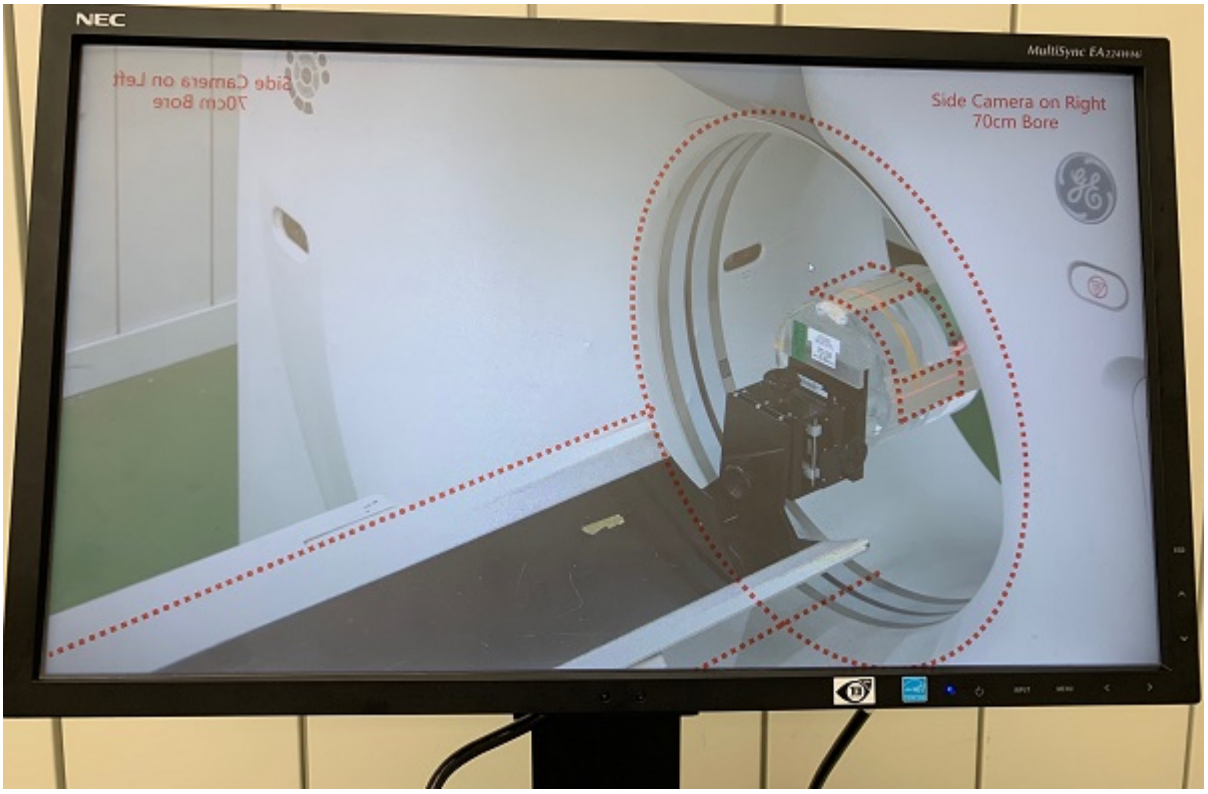
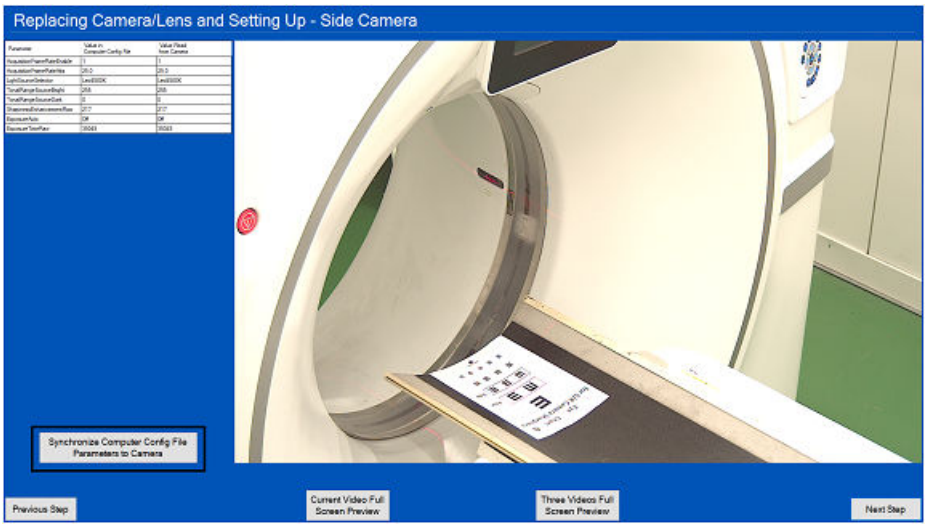


Figure 5-12 Proper side camera position (right)



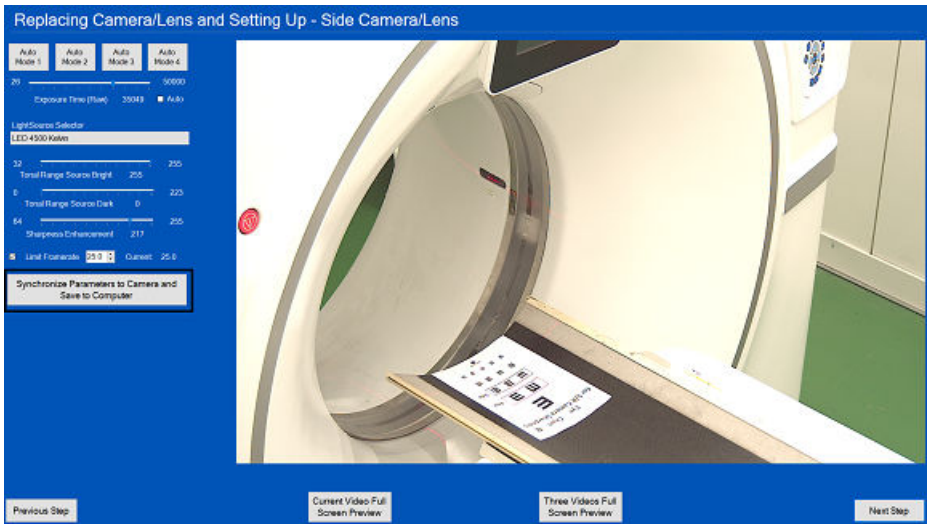
6. Click **Synchronize Computer Config File Parameters to Camera** button and click **Next Step**.



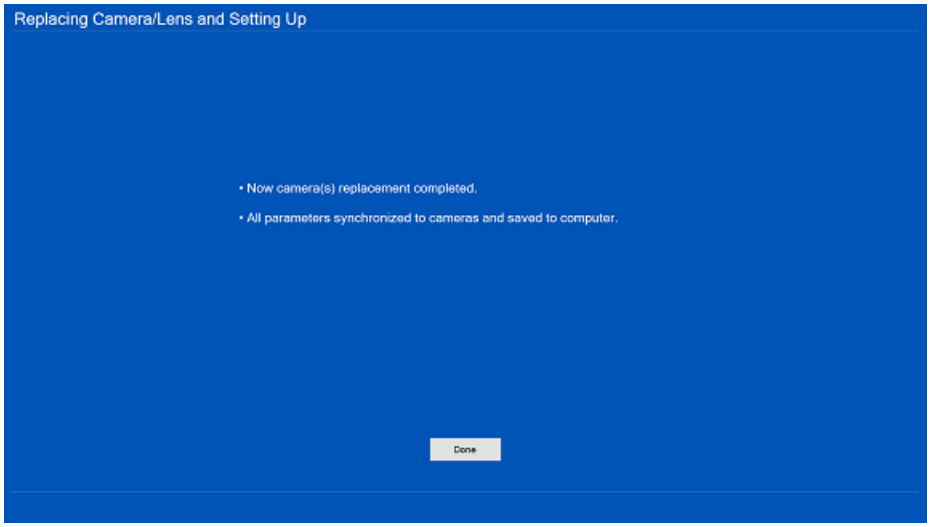
7. Remove the semi-transparent film template from the monitor.
8. Adjust parameters according to the site condition. Use the following to see immediate results:
   a. Select **Exposure Time (Raw)** to decide the exposure time for camera. Generally if Auto is checked, it is OK.
   b. Select **LightSource Selector** according to site room light condition. Generally LED 5500 Kelvin is OK but you can select others according to site YELLOW/WHITE light condition.
   c. Select **Tonal Range Source Bright** value. Generally 255 is OK.
   d. Select **Tonal Range Source Dark** value. Generally 0 is OK.
   e. Select **Sharpness Enhancement** value. Generally 180 is OK.
   f. Select **Limit Framerate** value.
      - Generally set *Limit Framerate* to **25** for non-Revo systems such as Revolution HD / Revolution Frontier, Optima CT520/CT540/CT620/CT670/CT680/CT660/EVO, Revolution Maxima, Tai-16, Revolution ACT, NGX/NGX-F.
      - Generally set *Limit Framerate* to **20** for Revolution CTES and Revolution Apex systems.

      NOTE

      You can also select one of the **Auto Mode** buttons which provides suggested LightSource Selector, Sharpness (180) and Limit Framerate values.
9. Click **Synchronize Parameters to Camera and Save to Computer** button, once successful, click and then **Next Step**.



10. When the camera replacement is completed, all parameters are synchronized to camera and saved to computer, click **Done**.

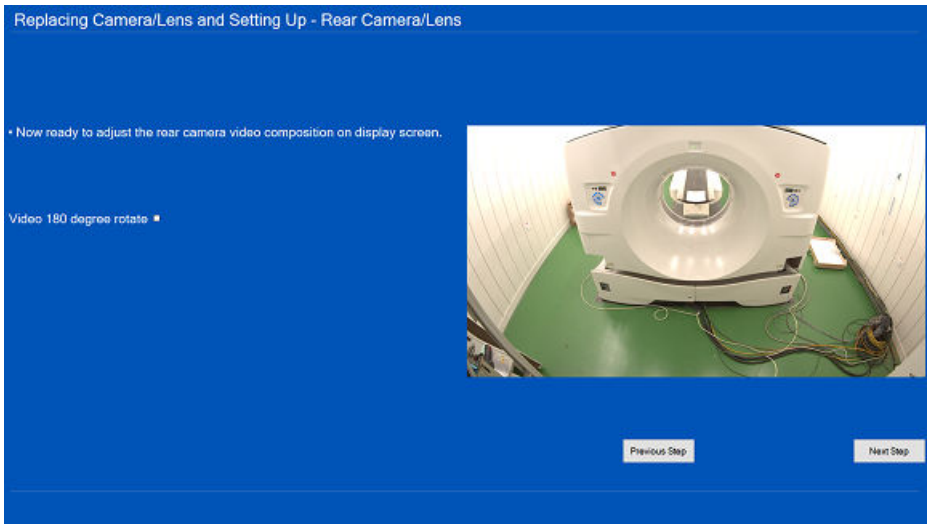


11. Click  to restart the AVIMOS computer.

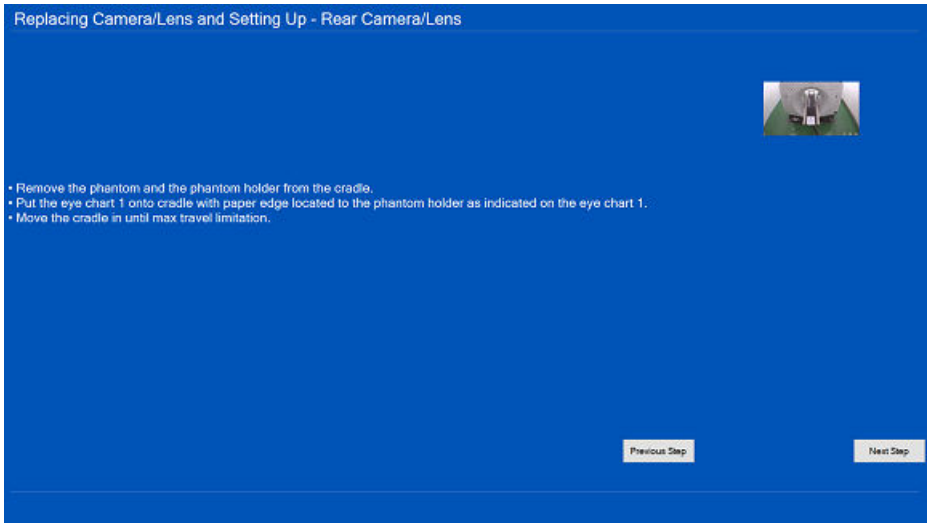
Replace rear camera

Procedure

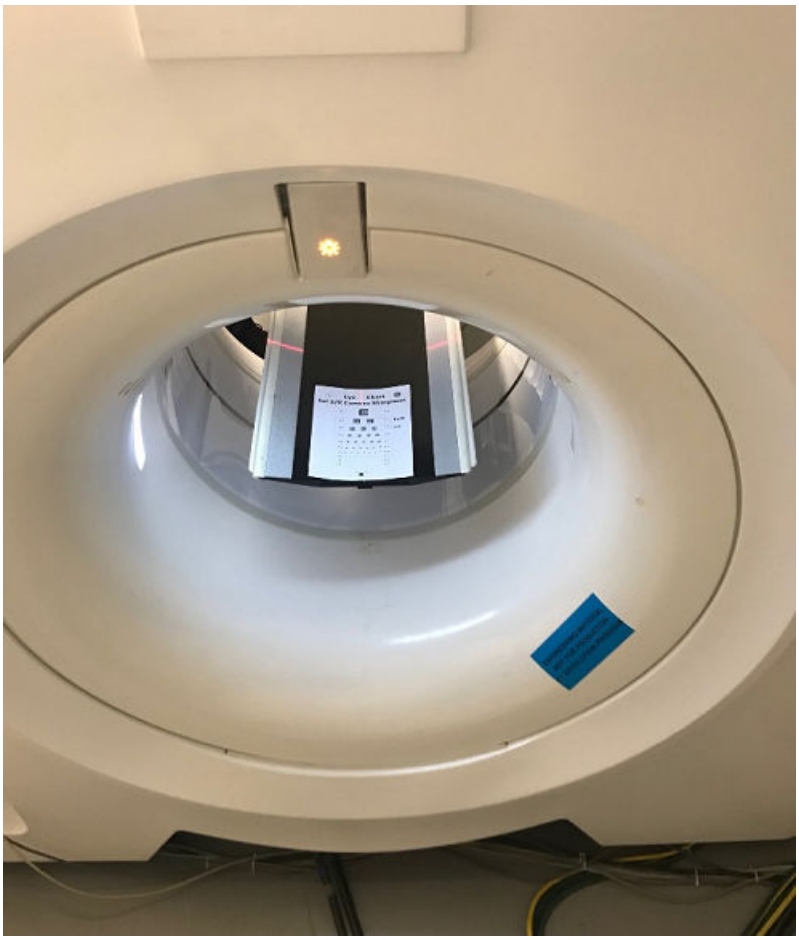
1. Check and confirm the rear camera/lens is correctly installed and the rear camera cable is correctly connected. Click **Next Step**.
2. To adjust the rear camera, click **Next Step**.



3. When the rear camera adjustment procedures display on the monitor, follow them to adjust the rear camera. Click **Next Step**.



   a. Remove the phantom and the phantom holder from the cradle.
   b. Put Eye Chart 1 onto cradle with paper edge located to the phantom holder as shown in Figure 5-9 Eye Chart 1 on page 74.
   c. Move the cradle in until the maximum travel limitation is reached.
4. Put the rear semi-transparent film template on the monitor screen, click **Next Step**.
5. Follow procedures on the monitor screen to adjust the rear camera.
   a. Turn on internal laser lights.
   b. Place eye chart on the table, positioning the table and chart so it is fully in view of the rear camera.



c. Use the camera lens sharpness and zoom rings to adjust until the indicated sharpness line is seen.

d. Tighten the sharpness and zoom locking screws on the camera lens.

e. Observe the monitor screen, once the characterized target displays clearly into the expected area marked by the red dotted lines/circles, lock all adjusters, and then click **Next Step**.

6. Adjust parameters according to the site condition. Use the following to see immediate results:

   a. Select **Exposure Time (Raw)** to decide the exposure time for camera. Generally if **Auto** is checked, it is OK.

   b. Select **LightSource Selector** according to site room light condition. Generally LED 5500 Kelvin is OK but you can select others according to site YELLOW/WHITE light condition.

   c. Select **Tonal Range Source Bright** value. Generally 255 is OK.

   d. Select **Tonal Range Source Dark** value. Generally 0 is OK.

   e. Select **Sharpness Enhancement** value. Generally 180 is OK.

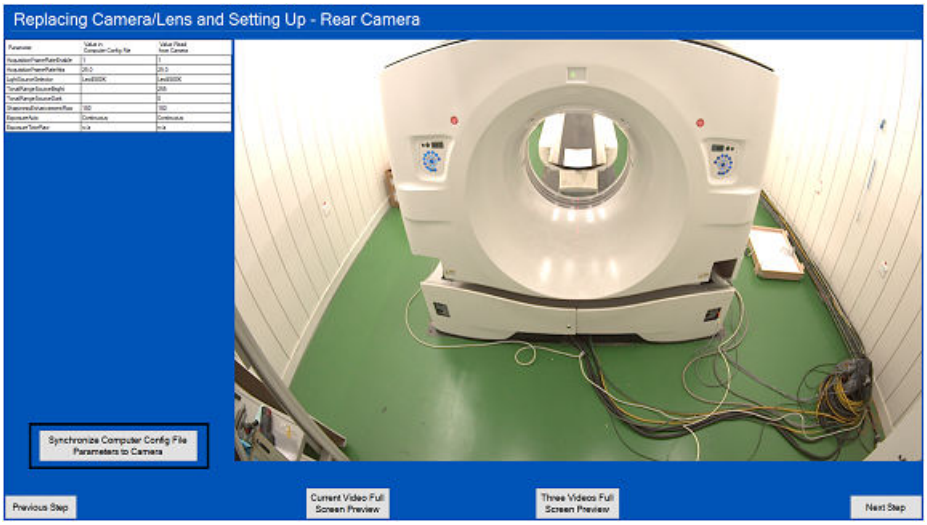
   f. Select **Limit Framerate** value.

      - Generally set *Limit Framerate* to **25** for non-Revo systems such as Revolution HD / Revolution Frontier, Optima CT520/CT540/CT620/CT670/CT680/CT660/EVO, Revolution Maxima, Tai-16, Revolution ACT, NGX/NGX-F.
      - Generally set *Limit Framerate* to **20** for Revolution CTES and Revolution Apex system.

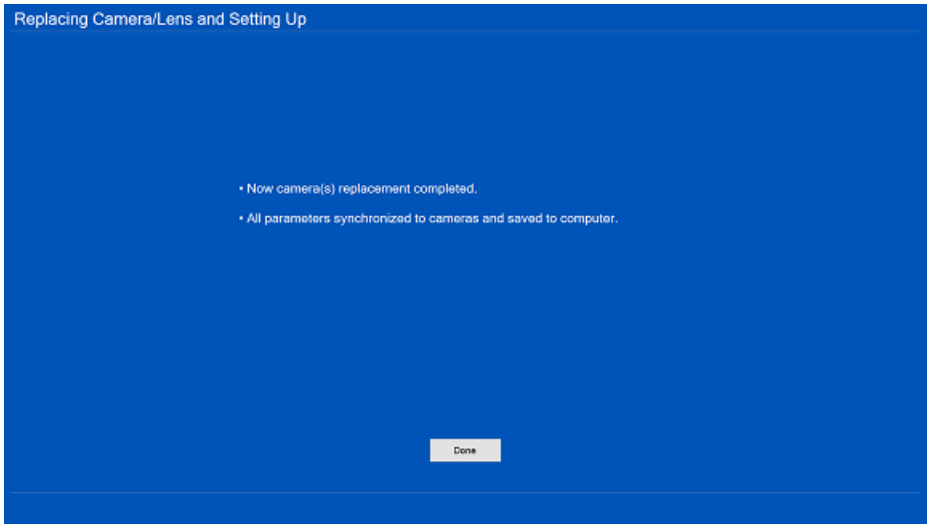
NOTE

You can also select one of the **Auto Mode** buttons which provides suggested LightSource Selector, Sharpness (180) and Limit Framerate values.

7. Select **Synchronize Computer Config File Parameters to Camera** button, click **Next Step**.



8. When the camera replacement is completed, all parameters are synchronized to camera and saved to computer, click **Done**.

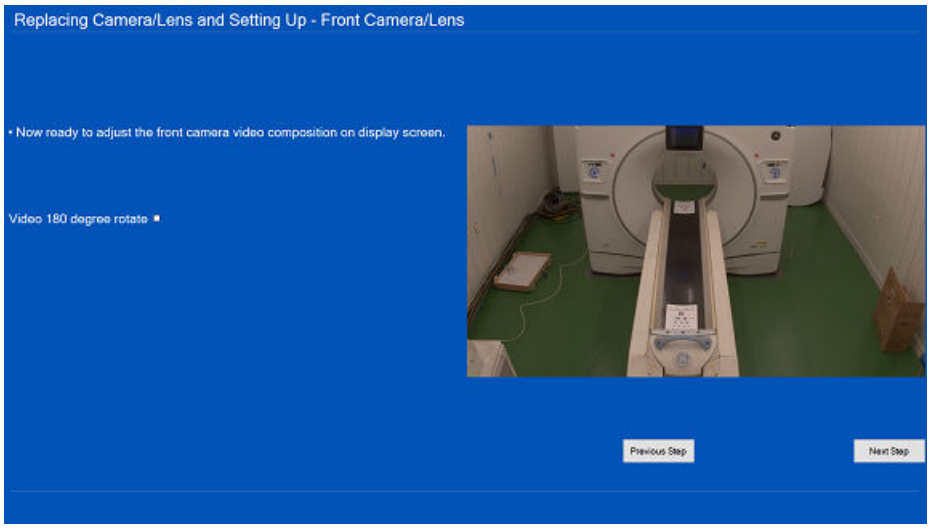


9. Click  to restart the AVIMOS computer.

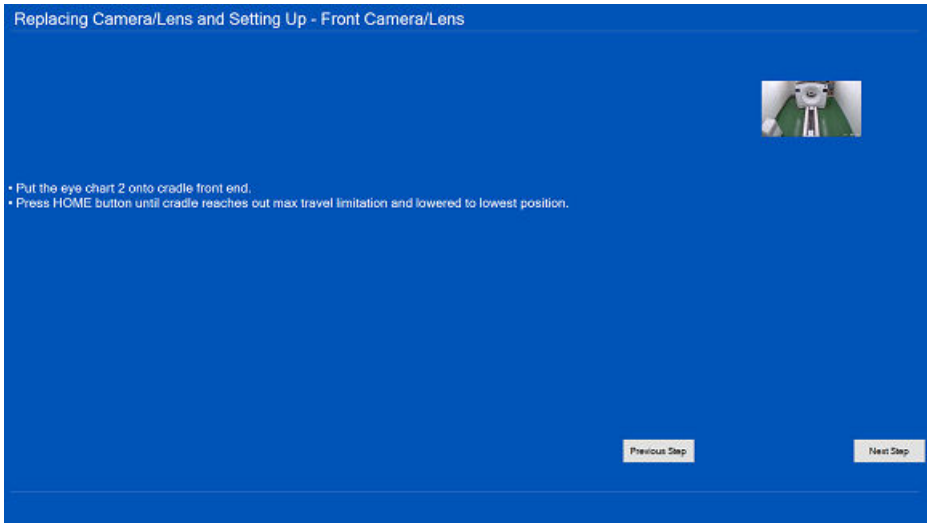
Replace front camera

Procedure

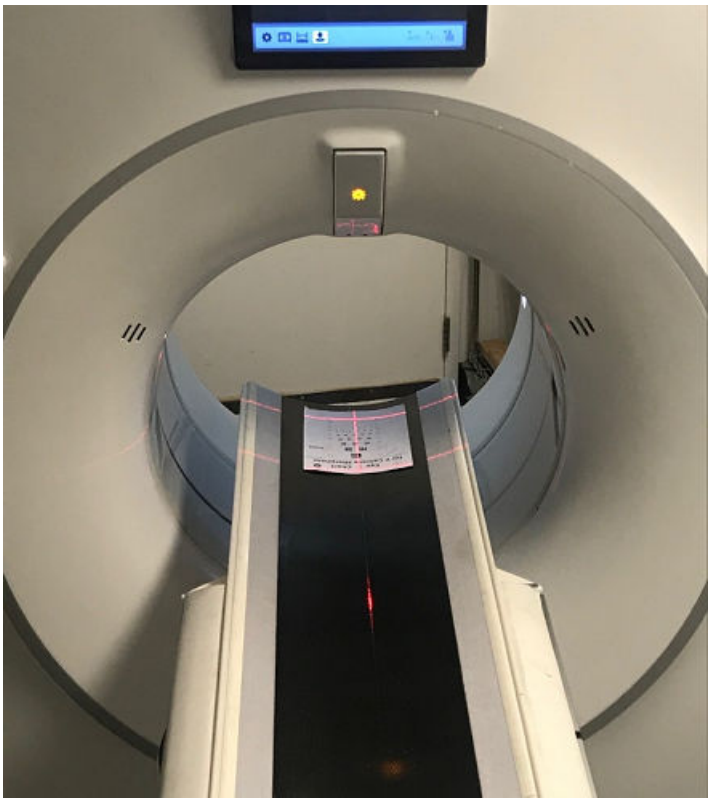
1. Check and confirm the front camera/lens is correctly installed and the front camera cable is correctly connected. Click **Next Step**.
2. To adjust the front camera, click **Next Step**.



3. When the front camera adjustment procedures display on the monitor, follow them to adjust the front camera. Click **Next Step**.



   - Put the Eye Chart 2 onto cradle front end.
   - Press **HOME** button until cradle reaches out max travel limitation and lowered to lowest position.
4. Put the front semi-transparent film template on the monitor screen, click **Next Step**.
5. Follow procedures on the monitor screen to adjust the front camera.
   a. Turn on internal laser lights.
   b. Place eye chart on the table, positioning the table and chart to the indicated laser alignment lines on the chart.



c. Use camera lens to sharpness and zoom rings to adjust until the indicated sharpness line is seen.

d. Observe the monitor screen, once the characterized target displays clearly into the expected area marked by the red dotted lines/circles, lock all adjusters, and then click **Next Step**.

6. Adjust parameters according to the site condition. Use the following to see immediate results:

   a. Select **Exposure Time (Raw)** to decide the exposure time for camera. Generally if **Auto** is checked, it is OK.

   b. Select **LightSource Selector** according to site room light condition. Generally LED 5500 Kelvin is OK but you can select others according to site YELLOW/WHITE light condition.

   c. Select **Tonal Range Source Bright** value. Generally 255 is OK.

   d. Select **Tonal Range Source Dark** value. Generally 0 is OK.

   e. Select **Sharpness Enhancement** value. Generally 180 is OK.

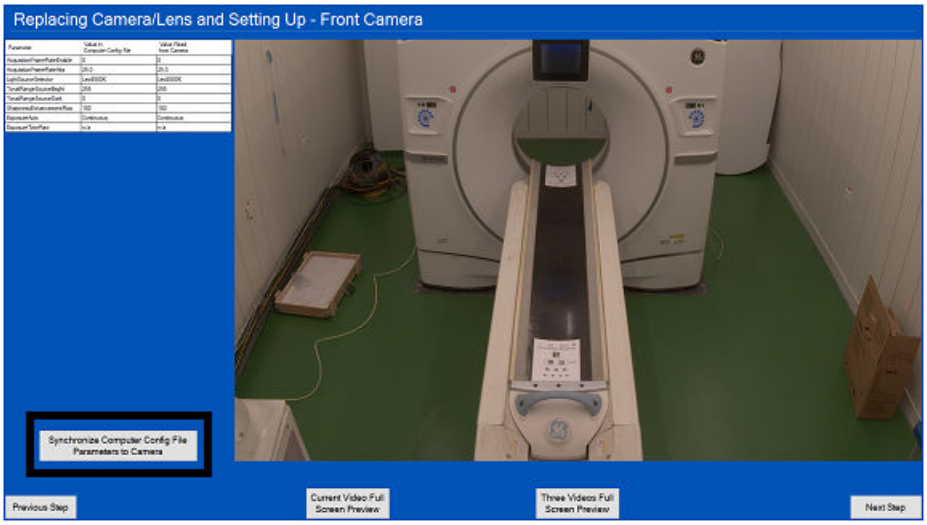
   f. Select **Limit Framerate** value.

      - Generally set *Limit Framerate* to **25** for non-Revo systems such as Revolution HD / Revolution Frontier, Optima CT520/CT540/CT620/CT670/CT680/CT660/EVO, Revolution Maxima, Tai-16, Revolution ACT, NGX/NGX-F.
      - Generally set *Limit Framerate* to **20** for Revolution CTES and Revolution Apex systems.

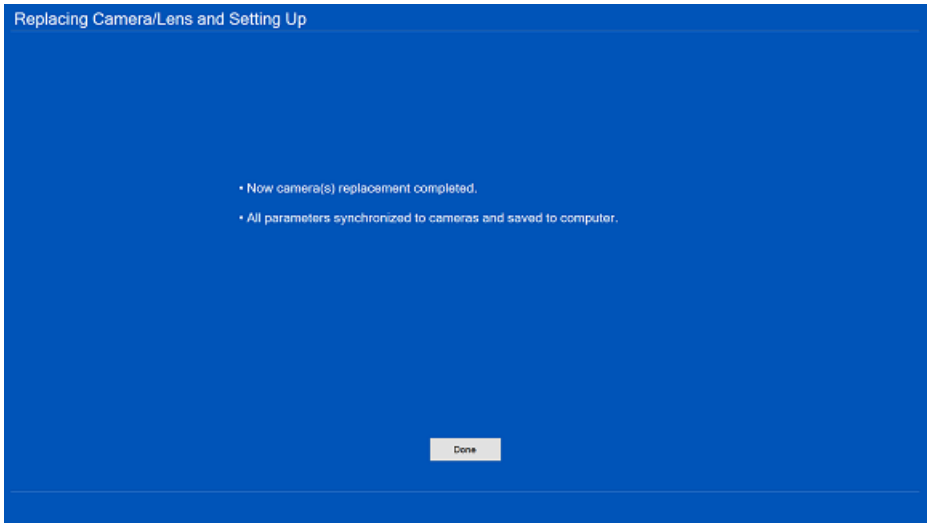
      NOTE

      You can also select one of the **Auto Mode** buttons which provides suggested LightSource Selector, Sharpness (180) and Limit Framerate values.

7. Select **Synchronize Computer Config File Parameters to Camera** button, click **Next Step**.



8. When the camera replacement is completed, all parameters are synchronized to camera and saved to computer, click **Done**.



9. Click  to restart the AVIMOS computer.

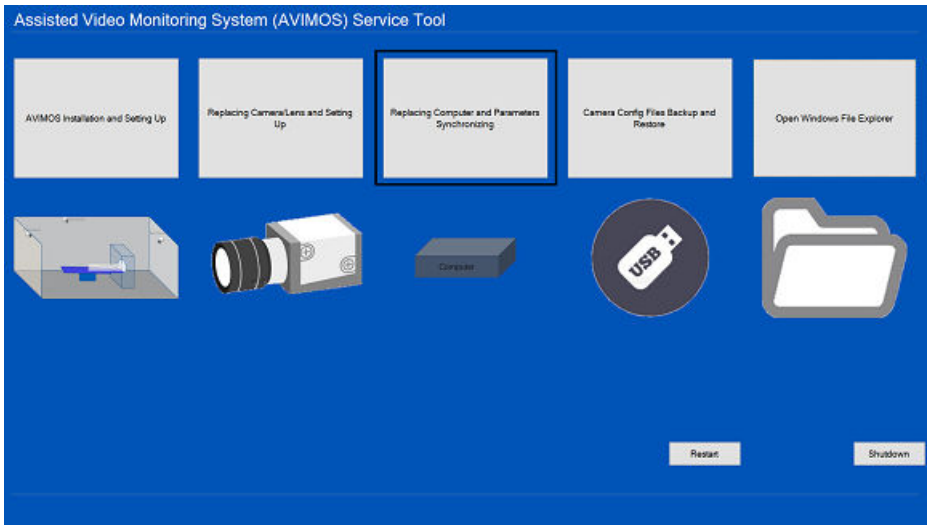
Replace defective computer

Replacing the defective computer

Procedure

1. Power OFF the AVIMOS computer.
2. Disconnect the camera cables, mouse, monitor cables, and power cable from the defective computer.
3. Replace the defective AVIMOS computer and reconnect all cables including the keyboard and mouse.

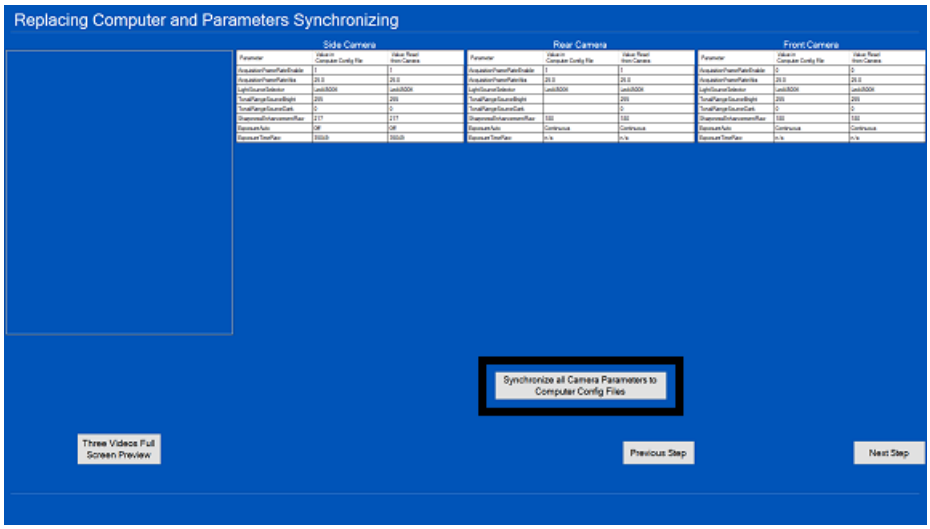
4. Power ON the AVIMOS computer. When the monitor light comes on and GE logo displays, press **Ctrl+G+E** simultaneously within 5 seconds.
5. Enter User Name and Password to access the AVIMOS service tool.
6. Select **Replacing Computer and Parameters Synchronizing** in AVIMOS service tool.



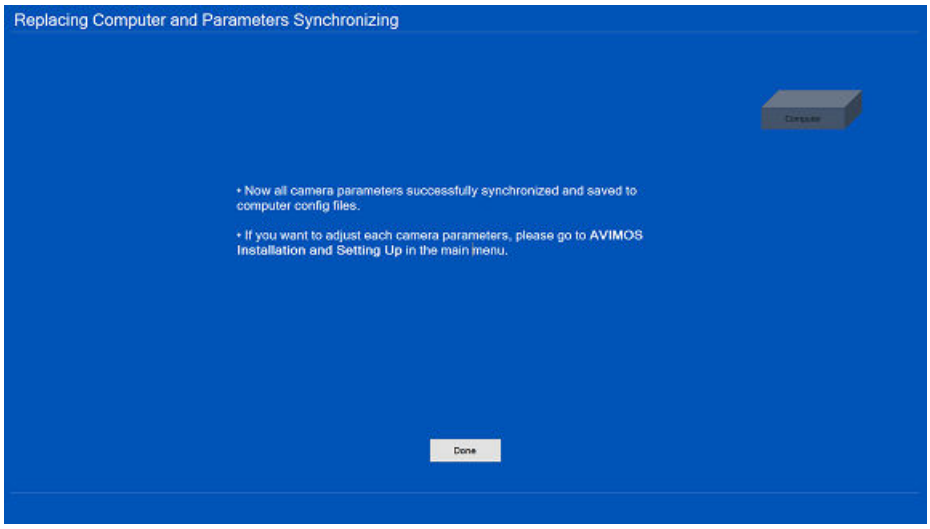
NOTE

The AVIMOS computer is delivered with the operating software already installed from the manufacture.

7. Ready to read parameters from three camera to computer, then click **Next Step**.
8. Click **Synchronize all Camera Parameters to Computer Config Files** button.



9. When the `Synchronized all camera parameters to computer config files successfully` pop- up displays, click **OK**.
10. Click **Next Step**, when all camera parameters are successfully synchronized and saved to the computer config files, click **Done**.



11. Click to  restart the AVIMOS computer

Re-install AVIMOS operating system

Prerequisites

- The AVIMOS computer can not start normally.
- USB flash drive (for example, USB flash memory stick or hard drive, minimum 32 GB, formatted NTFS.)
- Downloaded AVIMOS operation software (winpe_GHO.iso) from *eDelivery Portal* or from your PSE/TSE/OLE.
- Downloaded the latest version of **Ghost ImageUSB** software from official website (the imageUSB is a free utility to write an image concurrently to multiple USB flash drives. It supports writing of an ISO file byte-by-byte directly to a USB drive.)

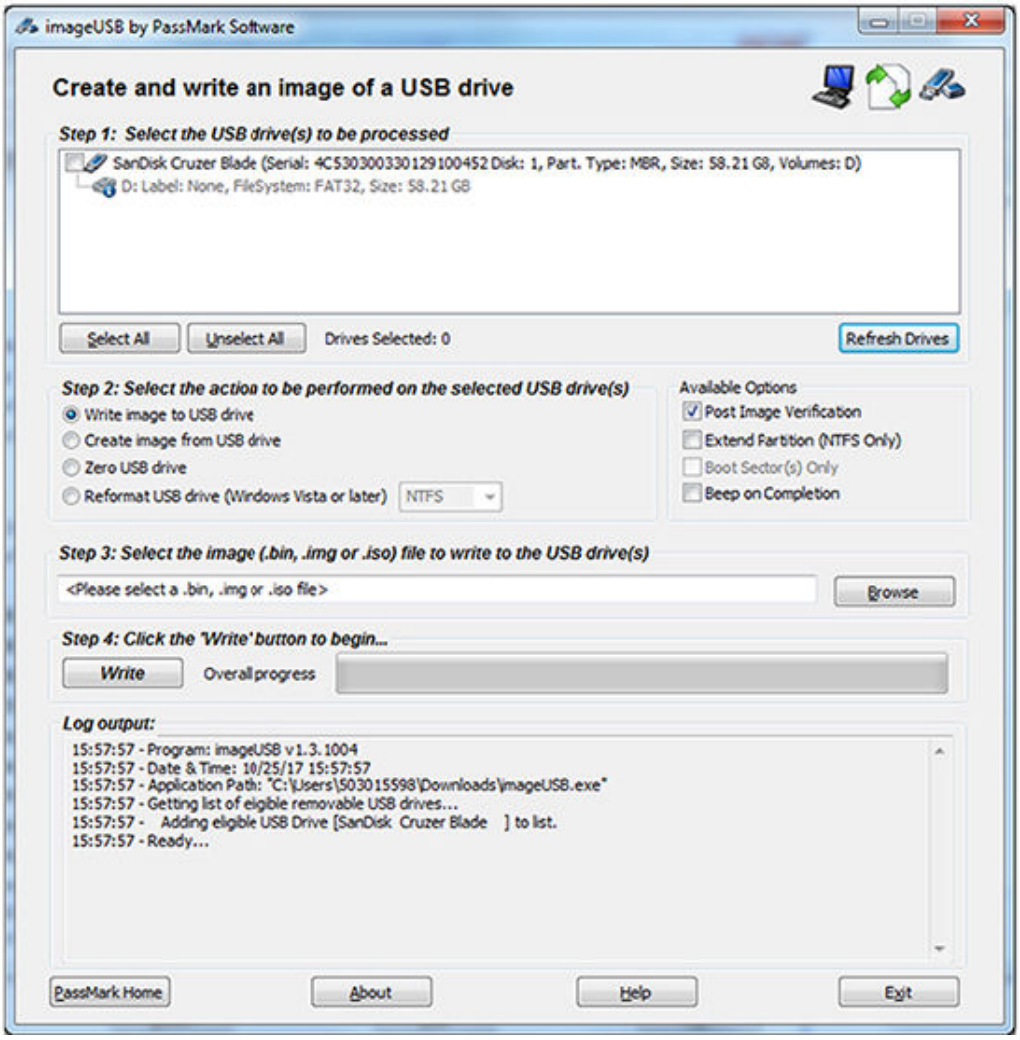
Media creation procedure

Procedure

1. Connect the USB flash drive to your computer.
2. Browse to the downloaded file location and run **ImageUSB.exe**.
3. If the *Windows User Account Control* dialog box displays, click **Yes** to allow the program to make changes to your computer.

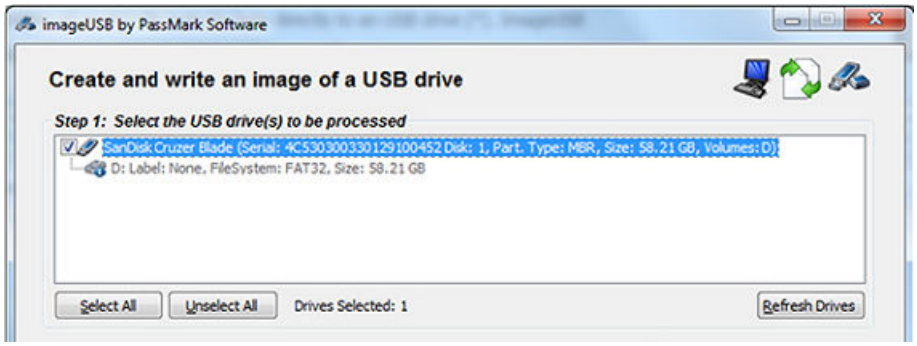
4. The *imageUSB by Passmark Software* main window displays.

Figure 5-13 imageUSB by Passmark Software



5. In the *Step 1* field, select the correct target USB.

Figure 5-14 Select target USB

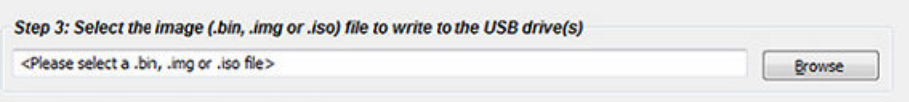


6. In the *Step 2* field, select **Write image to USB drive**.

Figure 5-15 Write image to USB drive

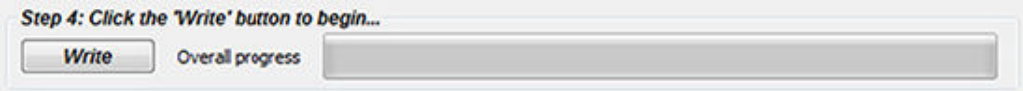
7. In the *Step 3* field, click **Browse** and then select the **winpe_GHO.iso** file.

Figure 5-16 Select .iso file



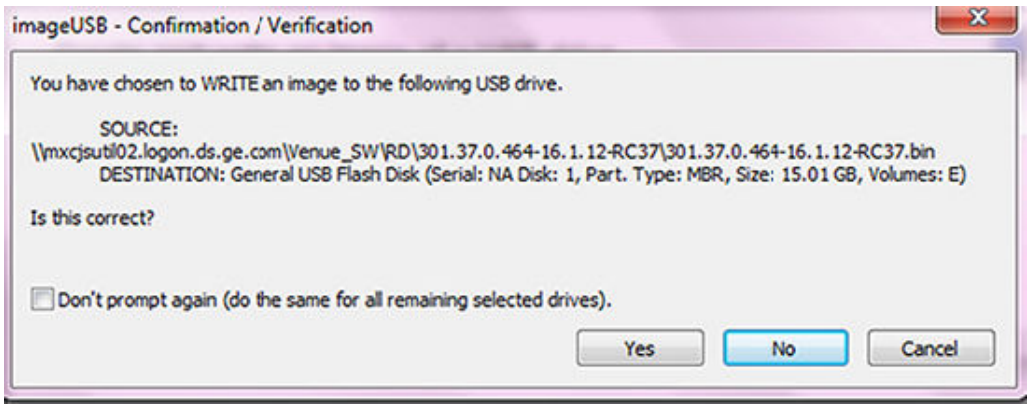
8. In the *Step 4* field, click **Write** to start the writing process.

Figure 5-17 Writing process



9. Click **Yes** in the dialog box to continue the writing process.

Figure 5-18 Confirmation/Verification window



10. View the writing process in the Overall progress status bar (see Figure 5-17 Writing process on page 89).

a. If the software writing process completes successfully, the `Imaging Completed!` message displays. Click **OK** to close the notification window.

Figure 5-19 Imaging Completed!

b. If the software writing process fails, the `Imaging Failed!` notification window displays. Click **OK** to close the notification window. Repeat the above steps using a different USB media.

11. Exit the **imageUSB** utility.

Re-install AVIMOS operation software

Procedure

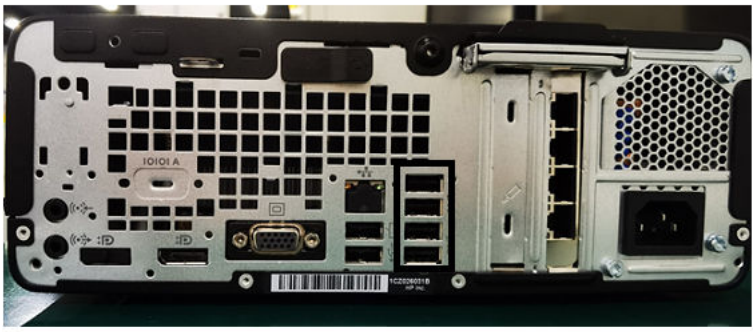
1. Identify the AVIMOS computer type by label.

Figure 5-20 Identify computer type

2. Insert the USB flash drive into any of the USB ports located on the back of the AVIMOS computer.

Figure 5-21 USB ports on the back of the computer

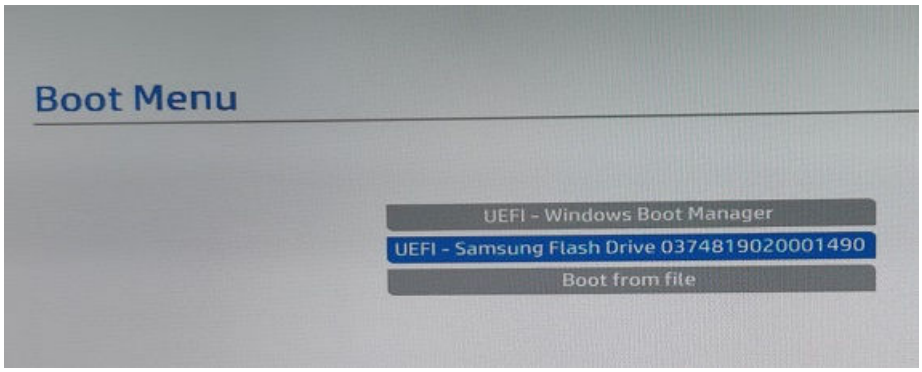
HP600 G5



HP600 G6

3. Shutdown and re-power the computer.
4. Press **F9** multiple times to enter Boot Menu after powering on.
5. Select USB flash drive from the Boot Menu.

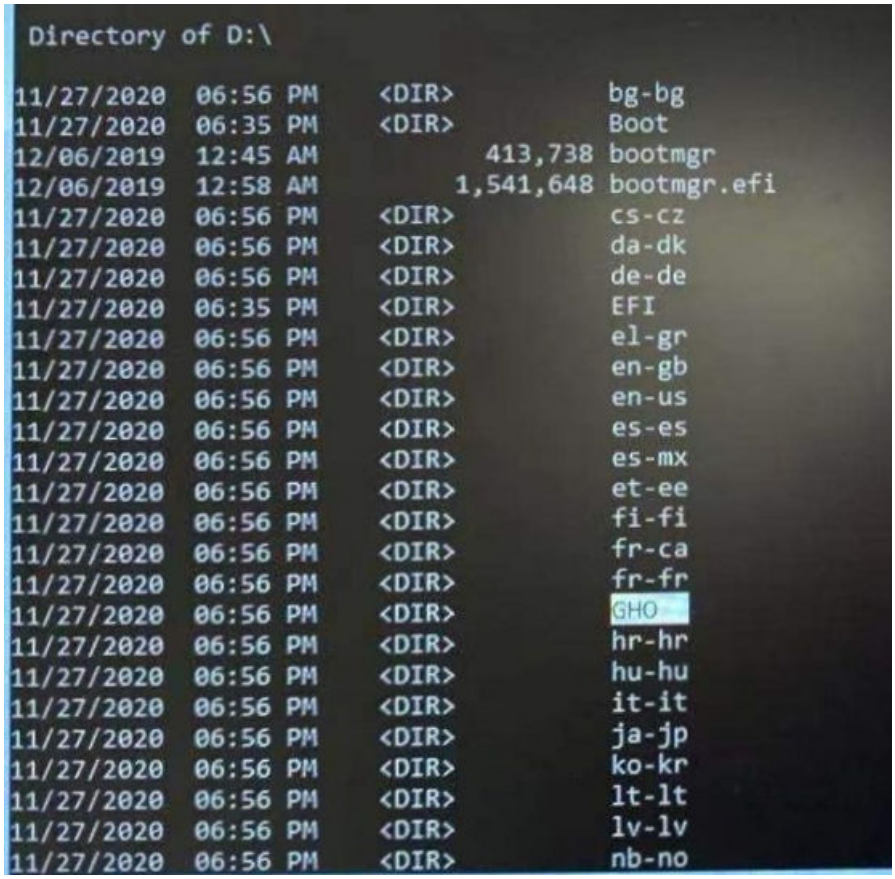
Figure 5-22 Boot Menu (example for USB)



6. Shell command window pops up with the following command line: `x:\windows\system32>wpeinit`.
7. Wait about 1 minute for the next command line to appear, type `x:\windows\system32>d:` press **Enter**, and then `D:\>dir` press **Enter**.

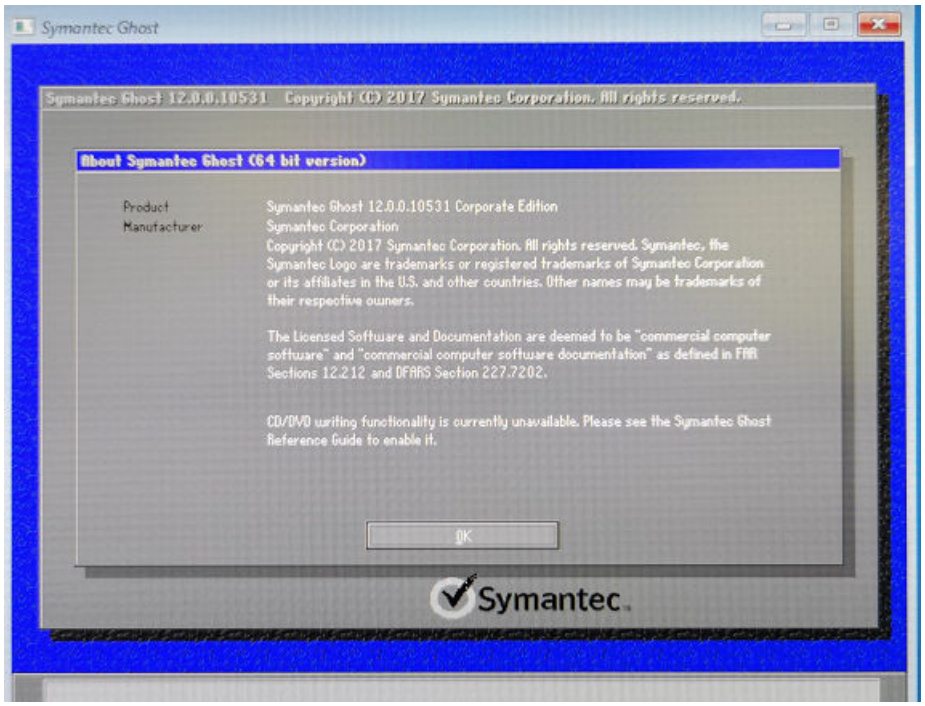
8. Find the **GHO** folder on drive D: and type, `D:\>GHO\Ghost64-10531.exe` and then press **Enter**.

Figure 5-23 GHO folder on drive D:



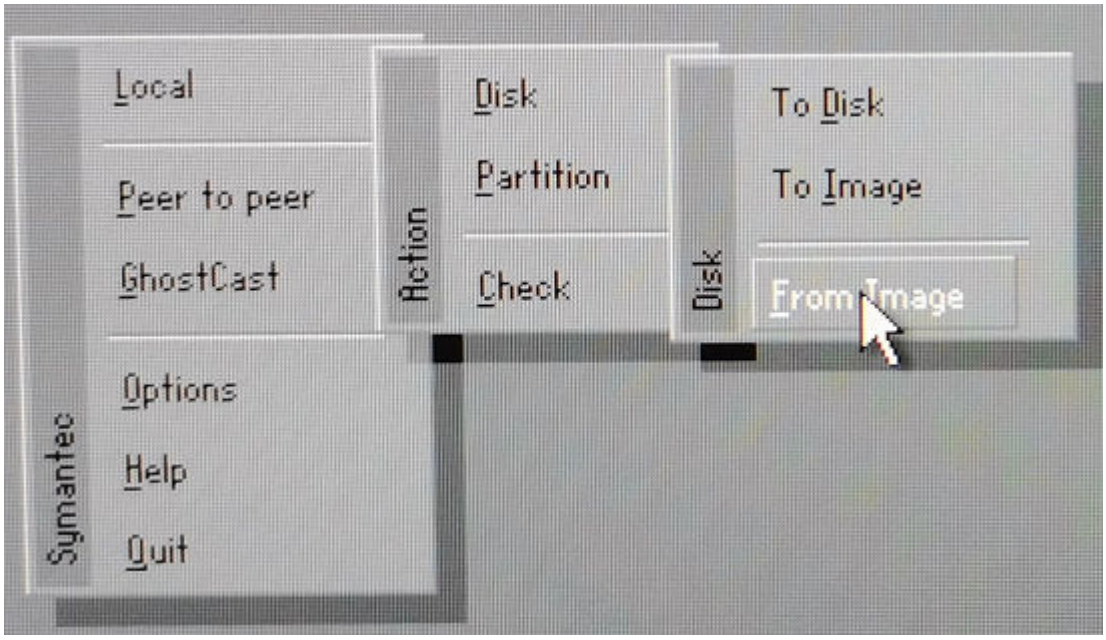
9. *Symantec Ghost* starts up, click **OK**.

Figure 5-24 Symantec Ghost



10. Click **Local** > **Disk** > **From Image** to open USB drive.

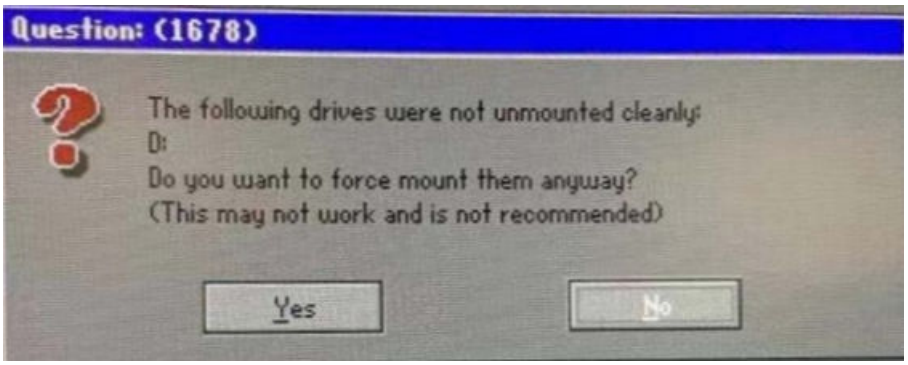
Figure 5-25 Find USB drive



NOTE

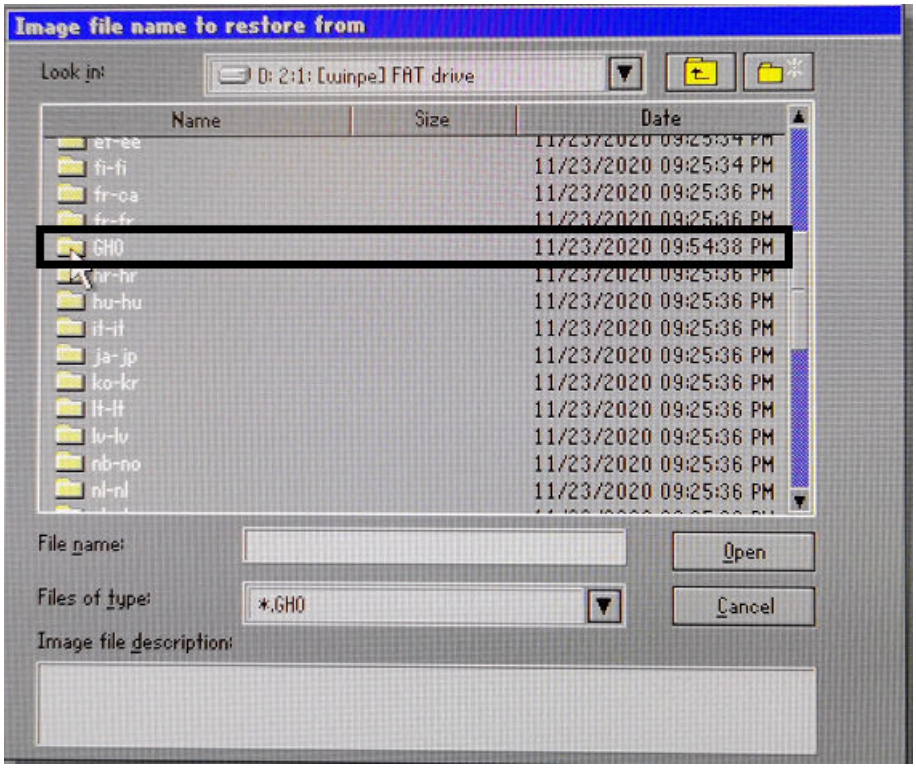
A pop-up message displays to force mount drives. Click **Yes**.

Figure 5-26 Force mount of drives



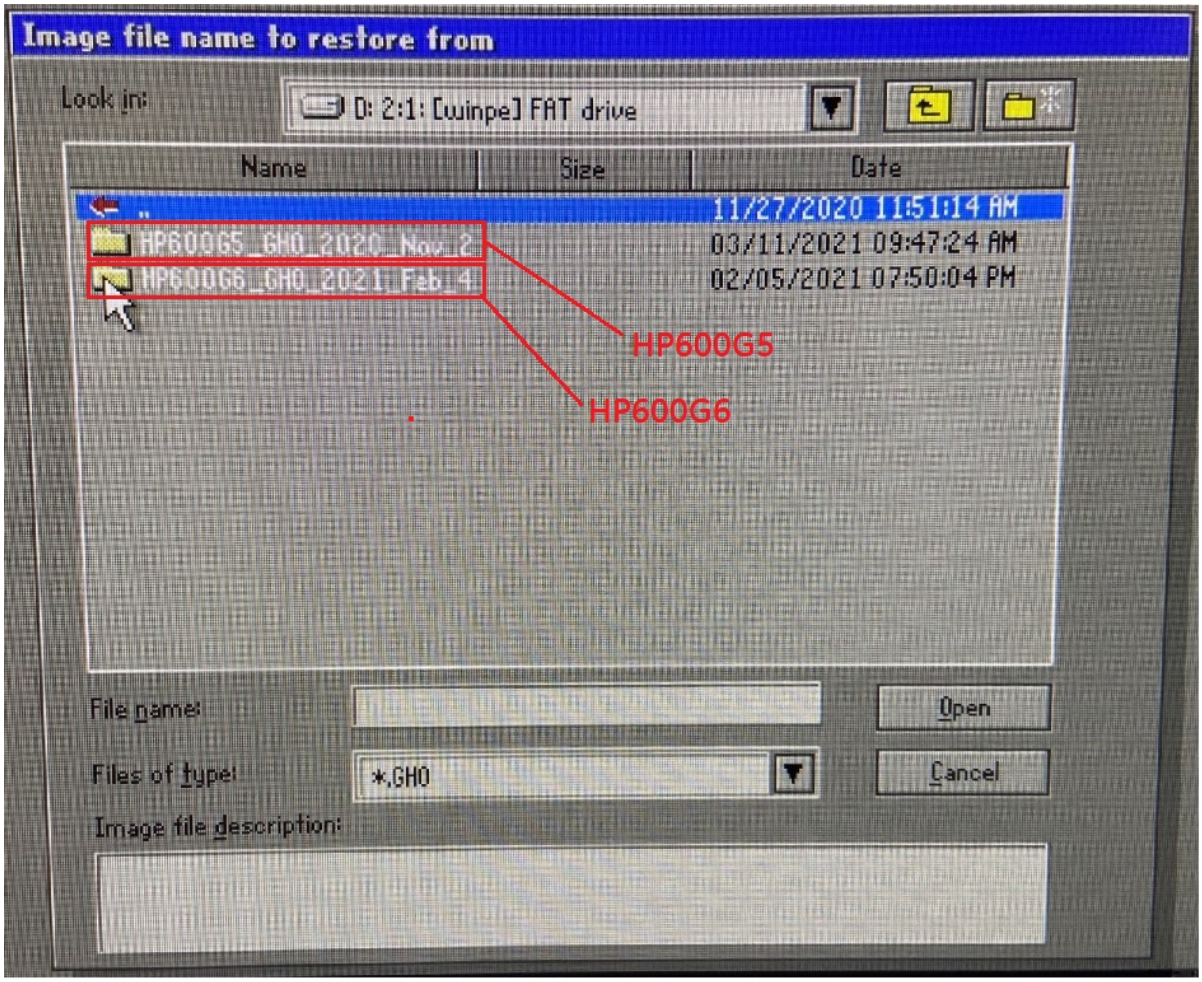
11. Select the **GHO** folder and click **Open**.

Figure 5-27 GHO folder



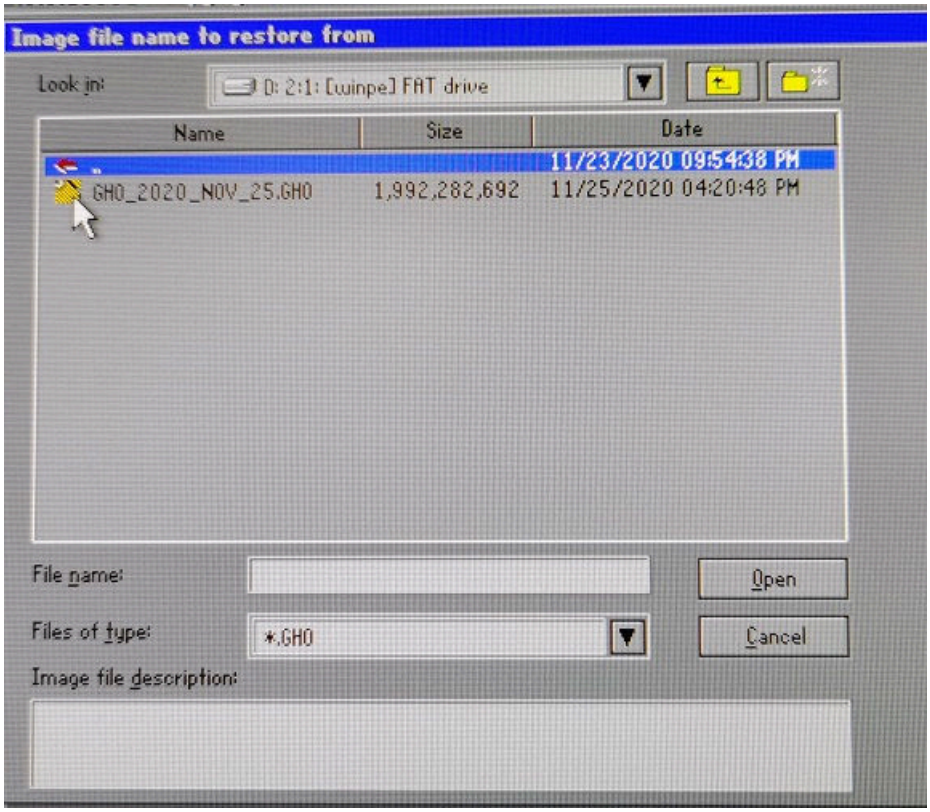
12. Select the proper **GHO** folder according to the computer type identified in Step 1, then click **Open**.

Figure 5-28 GHO G5_G6 foler



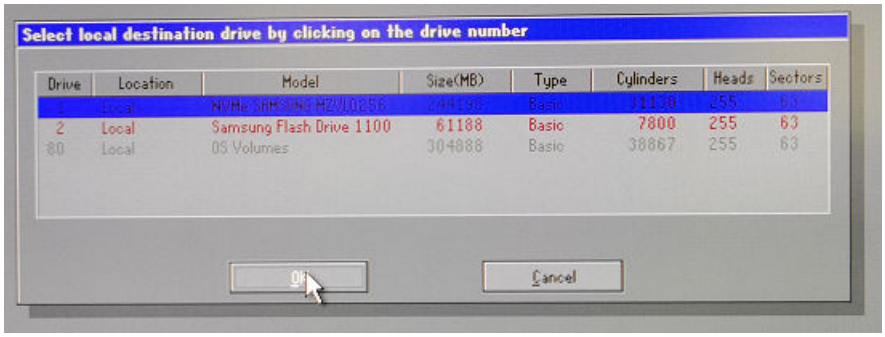
13. Select ***.GHO** file and click **Open**.

Figure 5-29 Example for G5 GHO file



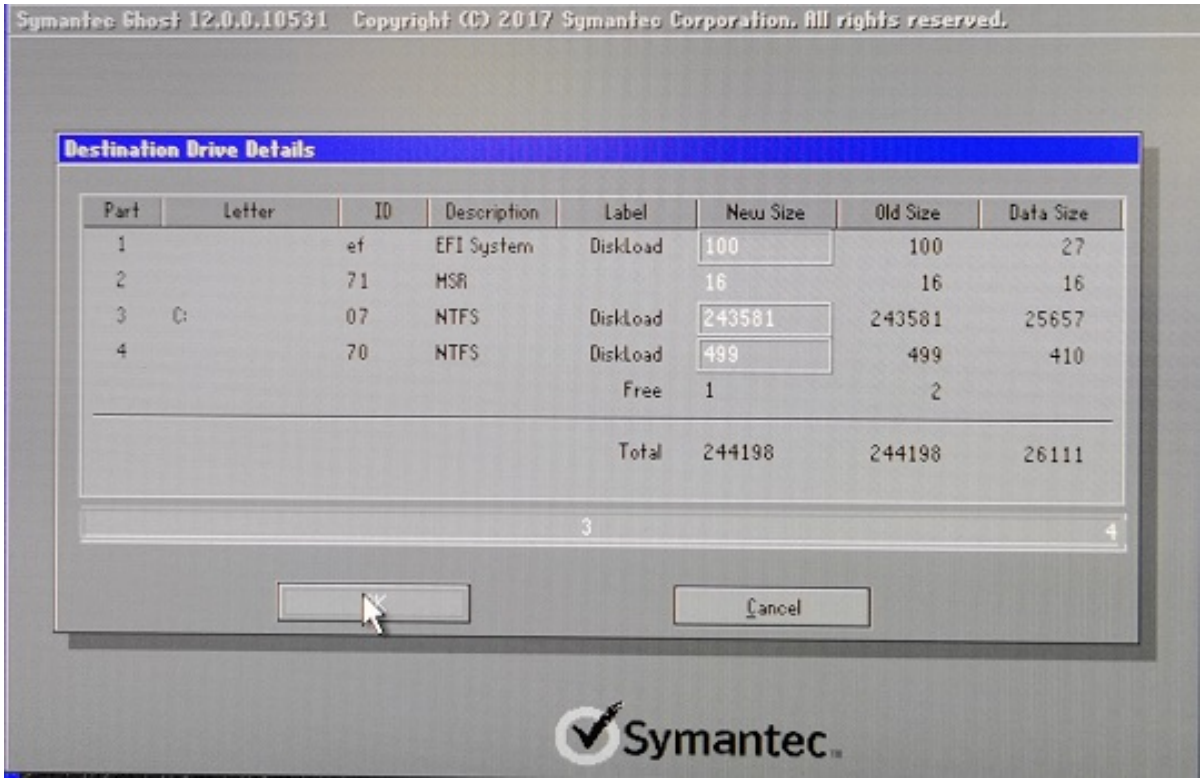
14. Select the local destination drive (**NVMe SAMSUNG**) by the drive number and click **OK**.

Figure 5-30 Select local destination drive



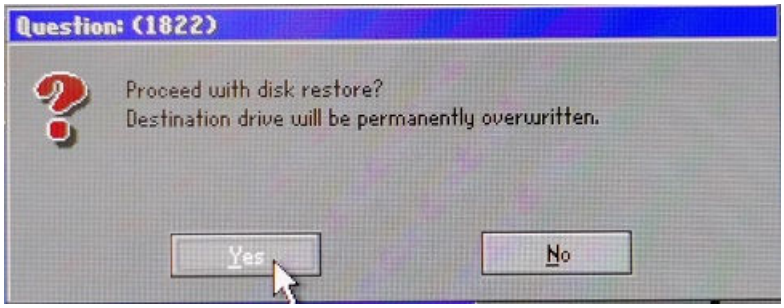
15. Click **OK** to display *Destination Drive Details* window and click **OK**.

Figure 5-31 Destination drive details



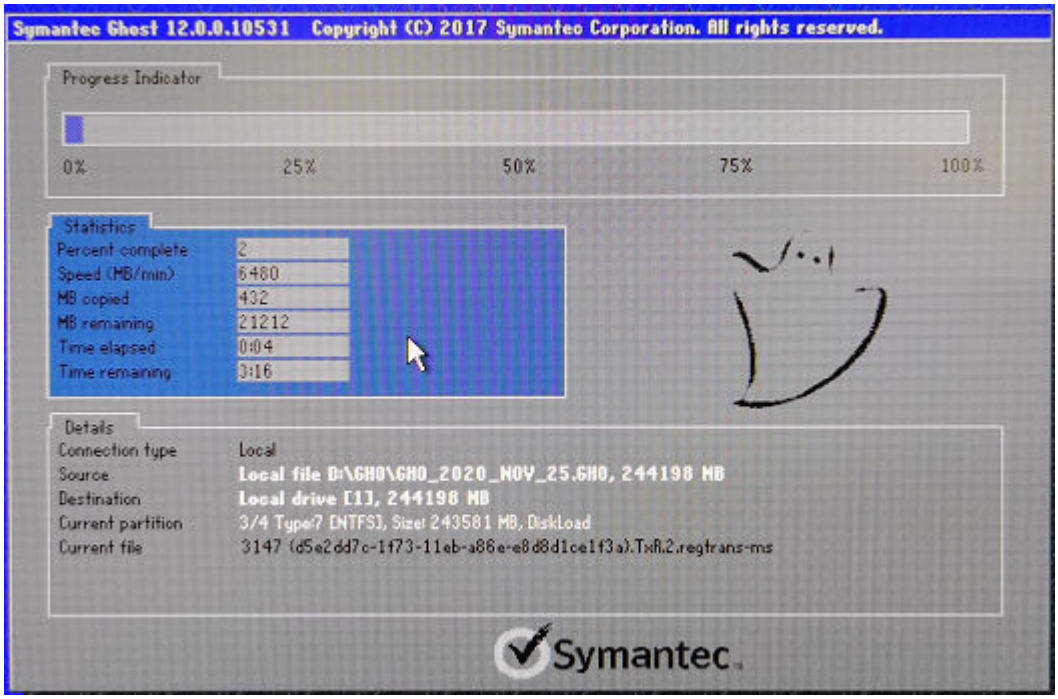
16. When the *Question* window pops up, click **Yes**.

Figure 5-32 Question window



17. The system starts the clone process, which takes approximately 10 minutes to complete.

Figure 5-33 Start installation

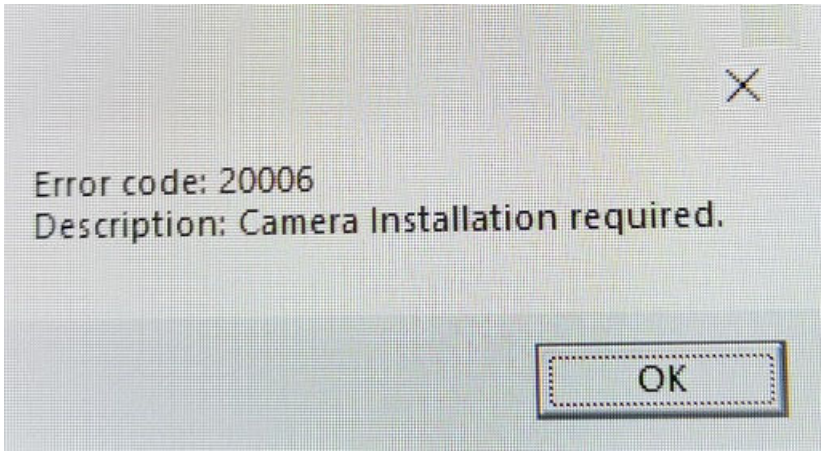


18. The *Clone Complete* window displays after cloned successfully. Click **Reset Computer**.

Figure 5-34 Clone Complete window

19. An error code pop-up displays. Click **OK** and then  to restart the AVIMOS computer.

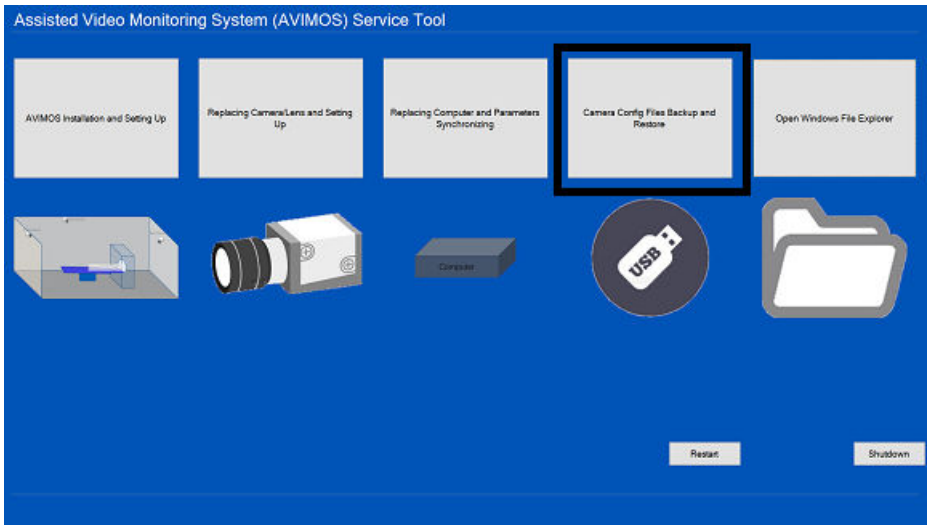
Figure 5-35 Error code pop-up



Camera config backup

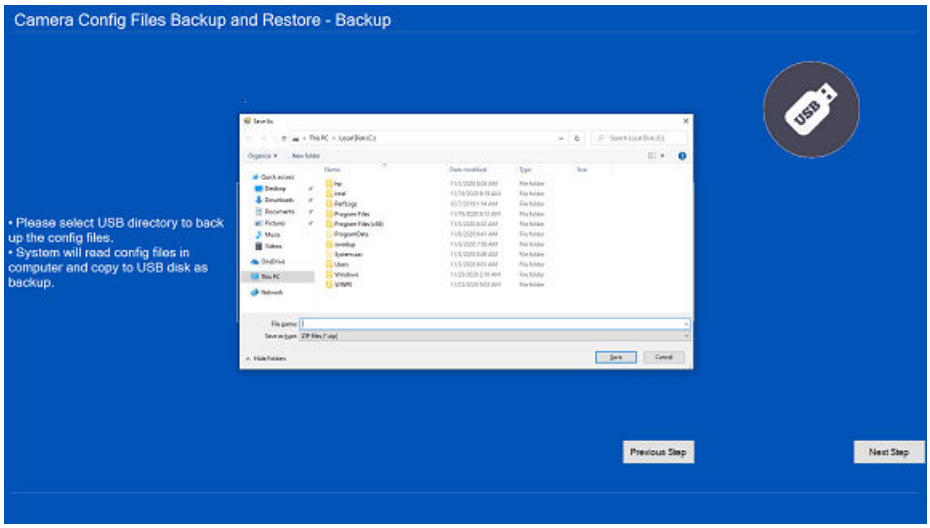
Procedure

1. Select **Camera Config Files Backup and Restore** in AVIMOS service tool.



2. The *Backup and Restore* window displays.

3. Insert the USB flash drive into any of the USB ports located on the back of the AVIMOS computer. (See Figure 5-21 USB ports on the back of the computer on page 92.)
4. Select **Backup Camera Config Files from Computer to USB Disk** to open backup window.



5. Select USB directory to backup the config files. System will read config files in computer and start to copy USB disk as backup.
6. The *Backup* window displays. Once done, click **Next Step**.

7. The `Now camera config files backup completed successful` displays, click **Done**.
8. From the *Backup and Restore* window, select **Restore Camera Config Files from USB Disk to Computer** to restore files.

9. Select the config files on USB directory that you would like to restore, the config files will be restored to computer target directory automatically. Click **Next Step**.
10. The `Now camera config files restore completed successful` displays. Click **Done**.
11. Click  to restart the AVIMOS computer

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