

VAMC CINCINNATI, OH
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TRADE-IN FOR EE#45741 TOSHIBA
AQUILION CT SCANNER, SERIAL
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AQUILION ONE CT SCANNER

Aquilion ONE is a multi-functional Dynamic Volume CT scanner. It is the first CT to not only perform routine multi-slice imaging, but cover entire organs dynamically with lower radiation and less contrast dose. The 16 cm coverage of the Aquilion ONE's unique Quantum V detector acquires whole volumes of the entire brain, heart, and other organs in a single rotation without table movement. In addition, the Aquilion ONE is the most flexible scanner offering conventional helical and step and shoot modes.

The whole organ coverage of Aquilion ONE offers a completely new way to image critical organs such as the head or heart without the need for over sampling or overlapping since the entire organ can be acquired in one rotation. This volume coverage gives outstanding image quality with significantly less contrast and lower radiation dose. Because of the lower dose, new applications such as dynamic motion, vascular flow studies and perfusion imaging are routinely performed with one scan and just a single contrast injection.

COMPONENTS:

- eVolution Gantry with iStation
- eVolution 660 lb Couch with custom table pad and positioning accessories
- Dual Consoles with ergonomic operator controls
- High Speed reconstruction hardware
- MegaCool™ V X-ray tube
- Quantum V detector and DAS
- Operator manuals and quality assurance phantoms

KEY FEATURES

coneXact Image Quality Breakthrough

Toshiba's unique cone beam reconstruction algorithm is designed specifically for 16 cm coverage cone beam reconstruction. This breakthrough algorithm eliminates the artifacts typical when off the shelf cone beam algorithms are applied to wide area detectors. New coneXact and VolumeXact algorithms reconstruct diagnostic images with more coverage area per rotation than any other scanner as well as adapting images between two wide volume scans. These algorithms overcome the inherent challenges associated with wide beam geometry which include adeptly incorporating the wide cone angle into the image reconstruction and reducing geometrically-imposed data truncation.

SURETechnologies

Improve workflow with a comprehensive toolset ensuring the fastest data to diagnosis span at the lowest possible dose with the best image quality. The following SURETechnologies are standard with the Aquilion ONE:

- SUREExposure 3-D- Automated dose modulation tools including 3-D and ECG modulation as well as adaptive collimation for clear images at lower doses
- SUREStart – Real-time contrast detection for perfect vascular timing of the volumes with breath instruction and fast volume transition for enhanced workflow
- SUREConnect – Fastest data to diagnosis from data acquisition to review at the workstation

DOSE REDUCTION FEATURES

The Aquilion CT systems from its dual-supported anode grounded x-ray tube, to the ultra-efficient Quantum Detector system and low noise data acquisition system (DAS), to the dose-saving ^{SURE}Exposure3D (x, y, z mA modulation software), to advanced adaptive reconstruction (QDS) and noise reduction algorithms (Boost3D), to Adaptive Iterative Dose Reduction have been designed to deliver the best image quality at the lowest possible dose.

Adaptive Iterative Dose Reduction

This new, revolutionary Adaptive Iterative Dose Reduction (AIDR) technology lowers the radiation dose to the patient when compared to conventional scanners. The result is the best image quality at the lowest possible dose enabling clinicians to make better and more accurate diagnoses.

Images processed with AIDR show improved image quality with lower noise levels in comparison to standard protocols using identical dose. Toshiba's AIDR technology is adaptive, automatically calculating the optimized number of iterations for any acquisition, swiftly producing optimized image quality with minimal operator input.

Quantum Denoising Software - QDS (Adaptive Noise Reduction)

Toshiba's Quantum Denoising Software is an adaptive noise reduction algorithm that works in the image data space by preferentially smoothing areas of uniform density while preserving the edge information of the image. QDS works in both two and three dimensions and can drastically reduce image noise, allowing a corresponding savings in patient dose. Most importantly, QDS works in conjunction with the ^{SURE}Exposure3D software to adjust the mAs based on the expected noise reduction from QDS. In this way, patient dose reduction is totally integrated in the Aquilion console software prior to turning on the x-ray beam.

SUREExposure3D (x, y, z automated mA modulation software)

Toshiba's SUREExposure3D software automatically adjusts the mAs rapidly during the scan to adapt to and compensate for changes in attenuation level produced by the non-uniformity of the anatomy being imaged. Therefore, as the scan moves from the shoulders to the lung, the mAs goes down, and as the tube rotates around the patient, less mAs is used anterior-posterior than laterally. For the same image quality level, compared to non-modulated scanning, SUREExposure3D can reduce the dose to the patient.

Boost3D

Boost3D is an adaptive, three-dimensional algorithm that virtually eliminates degradation of image quality due to highly attenuating anatomical structures, such as the pelvis or shoulders. Without dose reduction algorithms, like Boost3D, these highly attenuating areas require increased mAs and kVp to overcome the low photon count. Instead, Boost3D seeks out portions of the raw-projection data where there is a disproportionate loss in x-ray signal and applies a three-dimensional algorithm locally to reduce the image noise and streak artifacts.

CLINICAL SERVICE LINE FEATURES

Pediatric

Aquilion ONE offers the ability to scan smaller pediatric patients in a single rotation, dramatically reducing radiation exposure and minimizing the need for sedation. The scanner offers an estimated dose for each exam protocol prior to scanning to assist technologists with setup. Reducing sedation helps utilize resources more efficiently, limit staffing, and reduce the amount of time for the study. Aquilion ONE also offers the ability to scan at 80 kV and to do volume imaging on small body parts with a single rotation at a lower dose.

In addition Aquilion ONE has a 12-inch LCD screen iStation on the scanner which uses video and voice prompts to ensure patient compliance during scanning the iStation video of a small child in the video tells patient when to raise their arms, when to hold their breath, and so on--child-friendly instructions, coming from a child helps assure patient compliance. For pediatric radiologists Aquilion ONE can minimize the dosage, the drugs, and the trauma that a child experiences. Pediatric specific protocols include presets for ^{SURE}Exposure pediatric neck scans and dedicated pediatric ^{SURE}Cardio parameters for hearts which minimize exposure and produce excellent images for diagnosis.

EQUIPMENT COMPONENTS

eVolution with iStation

The philosophy behind eVolution is to design and build medical imaging equipment with less energy and more recycled materials leading to a much more environmentally 'green' platform.

The iStation in the Aquilion ONE is a 12-inch LCD screen which uses video and voice prompts to ensure patient compliance during scanning. This is especially useful during pediatric scanning as the iStation displays a video of a small child that tells the patient when to raise their arms, when to hold their breath, and so on. These child-friendly instructions, coming from a child figure helps assure compliance.

Gantry

The eVolution gantry is the world's most eco-friendly gantry design built using 30% less energy than standard, multi-slice CT's.

- Hybrid slip ring technology conserves unused electricity
- Self cleaning system reduces the frequency of preventive maintenance visits and associated scheduling issues
- Gantry tilt
- Large aperture
- Five scan fields of view
- Wide range of scan times provides greater flexibility for optimal image quality

Couch

The eVolution couch is patient friendly for the largest or smallest of patients with easy access and comfort.

- Widest metal-free couch top
- Controls from gantry or console
- Large patient capability (660lbs)
- 2000 mm scan range
- Customizable additional foot pedal placement (option)
- Exclusive lateral couch movement (option) of 8.4 cm. minimizes patient dose and provides better access for interventions

Console – Acquire and Display

Two powerful console computers, one for scanning and reconstruction, one for display and reconstruction. Display, image feed, filming, and transfer for the generated MPR images are available on both the scan system monitor and the image processing monitor, using the same user interface for axial images.

- Capable of true simultaneous scanning, retrieving, reconstruction, archiving and filming without interruption – genuine multi-tasking system for multi-slice and volumes
- Two powerful reconstruction towers with 4 CPUs and 25 hard drives with RAID 5 controllers
- Consists of user friendly keyboards, mouse, monitors, CPU cabinet and reconstruction enclosures

MegaCool™ V X-ray Tube

The Aquilion ONE is equipped with MegaCool™ V X-ray tube. This compact, high-performance tube was built on the proven anode grounded MegaCool tube technology used on every Aquilion multi-slice CT. MegaCool V is designed specifically to handle the dynamic volume X-ray beam required for Aquilion ONE scanning.

Quantum V Detectors and DAS

- Unique Toshiba ceramic, solid-state detector array and DAS
- Covers organs in 16 cm rotations including brain or heart in a single rotation without any table motion
- ^{SURE}Connect DAS— Ultra-fast DAS to acquire large volume data of detector

IMAGE MANAGEMENT

Aquilion ONE images can be stored on hard disk or DVD and transferred via high performance gigabit Ethernet connection using DICOM 3.0 standards.

DICOM 3.0 (Storage SCU)

- Allows the CT scanner to export images onto a network
- Consists of software only and utilizes pre-existing Ethernet ports on the CT scanner to connect to a coax-Ethernet-based network running TCP-IP communication protocols
- The protocols in the system can be set to automatically transfer images to the network after an exam is complete

Enhanced DICOM

Provides the fastest transfer of Aquilion ONE images to the workstations and storage using the new enhanced multi-frame DICOM standard

Storage and Archiving

- Can be automated with each eXam plan
- Raw data and image data can be protected to prevent deletion from console

Filming

- Auto filming can be set as part of the eXam plan
- Images are displayed in 512x512 or 1024x1024

CUSTOMER CARE SERVICES

Innervision

Remote diagnostics proactively monitor the system to minimize downtime.

Image Maker Express

The Image Maker Express is a marketing support online resource designed exclusively for Toshiba customers that helps you create outreach programs to generate awareness about your imaging services.

- Includes positioning and messaging guides to help you strategize your communications efforts and tactics
- Contains product information, ready-to-use collaterals, and ideas for creating custom materials to promote your new imaging capabilities

Image Maker Express gives you access to:

- Product images
- Clinical images
- PowerPoint presentations
- Sample brochures
- Sample press releases
- Marketing strategy tutorials
- Updates at www.imagemaker.toshiba.com/express

**Offerings may vary per product*

Build demand by:

- Sending a press release
- Developing a strategic plan
- Creating brochures
- Finding tips on effective presentations

APPLICATION TRAINING

Each system includes three phases of education including three weeks of on-site training using a customized approach for dynamic volume imaging.

Phase I: A one-week intensive course on the operation of the scanner

- Conducted at the Toshiba Education Center in Irvine, California
- Two attendance vouchers good for course and travel expenses provided with each system
- Intensive training for two technologists
- One technologist must attend prior to system installation
- The second voucher is valid for six months following installation
- Accredited for continuing education by the ASRT Education Foundation
- Additional vouchers available for \$4,000

Phase II: 64 hours (two weeks) of training that builds on the Phase I training

- On-site at client facility that follows a proven education guideline
- Training for up to four technologists
- Technologist who attends the Phase I course must attend Phase II

Phase III: 32 hours (one week) of follow-up training

- On-site at client facility
- Approximately 8-10 weeks after Phase II training
- Toshiba recommends follow-up training within 6 months of installation for maximum benefit

Performance Pro:

“Performance Pro” is a custom program created to offer a unique approach to education and focuses specifically on achieving technical proficiency and optimal productivity. The program includes the following:

- A planning meeting at your facility with Toshiba’s CT Applications Manager. The purpose of the meeting is to discuss objectives and timing, and to explain Toshiba’s custom approach. During the meeting the manager will also ensure the following takes place:
 - Review Toshiba’s New Customer Education Guide (what to expect and how to plan and prepare).
 - Introduce the Toshiba Three Phase Education Program and the role of the Toshiba Education Center.
 - Co-develop a custom training program based on the facility’s specific needs and ensure it is well documented for execution.
- A specially trained Applications Specialist will be assigned as owner of the education experience for the facility. They will perform the following duties:
 - Participate in planning meetings with the project team to address any training issues in a proactive fashion.
 - Communicate with the facility prior to the turnover date to ensure everything is on track and all questions or concerns are addressed.
 - Ensure all materials (training manuals and learning aids) are on site at the time of the go live date.
- A Quality Installation Checklist developed by Toshiba’s service team and physicists will be used to ensure all system requirements have been met and the scanner is working properly and yielding good image quality.
- A Clinical Evaluation will be conducted by a National Clinical Support specialist prior to the turnover to ensure the system is ready for go live date. They will communicate their approval to the Applications Manager, the assigned Applications Specialist, the Account Executive and Service Team.

- Consistent on-site service support during the turnover.
- The Toshiba Education Center will properly train and prepare the “core trainers” to perform their role with the most advanced education approach in the industry.
- Toshiba will send two Application Specialists to the turnover. One to work with technologists for two consecutive weeks (the assigned Applications Specialist) and the other one to work with physicians for one week to achieve desired image quality.
- At the start of the turnover, Toshiba will begin with a presentation for the staff and referring physicians to highlight system capabilities and generate excitement.
- “Performance Pro” is a blended learning approach and includes prerequisites and additional accredited CE courses for the clinical staff.

A special visit will be conducted by National Clinical Support Specialist 4 to 6 weeks after turnover to check protocols and image quality. They will be available to meet with physicians and technologists to answer all questions.

Additional On-Site Training:

Additional On-site training available for purchase.

Applications support is available by phone on the toll-free ASSIST line.

COMPONENT SUMMARY:

CT SCANNER AQUILION ONE

**DICOM MODALITY WORKLIST MANAGEMENT (MWM) SERVICE
CLASS USER (SCU) SYSTEM**

Allows the CT system to receive patient demographic data from an HIS/RIS system in conformance with the DICOM 3.0 standard.

Note: This option does not include a DICOM gateway for the HIS/RIS system.

DICOM 3 PERFORMED PROCEDURE STEP SCU

COT-33D (MPPS) is to be used in combination with COT-32D (MWM). MPPS provides examination information back to a RIS that supports DICOM MPPS (SCP). This information consists of notification of the start and end of the examination. Also examination record and patient information can be sent to the RIS.

DICOM 3 QUERY/RETRIEVE SCU AQ/MP

The Q/R Service Class User (SCU) option allows a device to initiate a request for Patient, Study, Series and/or Image information from the Provider device in accordance with the DICOM 3.0 standard.

DICOM 3 STORAGE COMMITMENT SCU SOFTWARE

DICOM Storage SCU function is used for the transfer of images reconstructed by the CT system and its function is to inform the CT system of the results of images storage verification at the server after the image transfer.

- Allows operator to determine if data is stored correctly at the PACS server, avoiding unintentional image deletion
- Improves efficiency of image management operations
- Provides fail-safe method to prevent image data from being deleted unintentionally even in the event of a communication failure (during image transfer or during a storage verification response)

Prerequisite: V3 Software

PGP STUDY SPLIT

Presentation of Grouped Procedures (PGP) and Exam Hard Split

PGP provides preset and automatic transfer solutions for multiple exams from a single CT acquisition. Ideal for facilitating the clinical viewing of images and reporting of individual requested procedures.

PGP is an Integrated Health Enterprise (IHE) standard designed specifically with multiple examination orders (Request Procedures) that can be performed in a single CT acquisition. The PGP feature can be used with PACS systems that are IHE PGP compliant. For PACS systems that are not yet IHE PGP compliant, the Hard Split option can be used to physically split images into separate multiple examinations

Prerequisites: V3 Software.

ACCESSORY KIT FOR HIGH CAPACITY COUCH

Includes each of the following items:

- Rolled Edge Foot Extension Pad
- Wide & Medium Security Straps
- Chin and Forehead Straps
- Adult Head Rest Pads (Medium and Large)
- Tilt Wedge
- Knee Support Wedge
- Coronal Head Support
- Table Pad
- Protective Table Covers (Box of Four)
- Detachable rail 77"

CT PHANTOM

Measures image quality to ensure compliance to Toshiba standards for:

- High-contrast resolution
- Low-contrast resolution
- Slice thickness
- Noise
- Contrast scale

CHAIR WITH ADJUSTABLE ARMS AND BACK

MEDIA FOR DVD-RAM DRIVE (9.4 GB)

9.4 GB Removable Cartridge Media for DVD-RAM Drive.

- Type 4, Double-sided
- 3x Speed

CONSOLE DESK 65" X 36" X 30"

Measures 65" x 36" x 30"

SERVICE MODEM CABLE

FLOOR LEVELING EPOXY KIT

TOSHIBA'S INJECTOR SYNCHRONIZATION SOFTWARE

Aquilion SYNC Inject software provides synchronization of the Aquilion CT with a contrast injector which supports CAN Protocol Level 1. This enables the CT scan to be started remotely using the injector during contrast enhanced CT exams.

Key features:

- Improve contrast timing and optimize workflow
- Synchronized start improves control of contrast enhancement
- Simplified operation enables single operator workflow

Enhance Safety:

- One-button on either the scanner or injector starts and stops the sync protocol (provides stop message at console when stopped at injector)
- Technologist can remain at the patient's side

Prerequisite: V3 software and Acist or MEDRAD Injector with Injector Synchronization. For injectors with other options, such as MEDRAD's Certegra platform, additional DICOM options, such as Performed Procedure Step, will be required as well.

CAN PROTOCOL

CT INJECTORS

ACIST MEDICAL SYSTEMS - EMPOWERCTA INJECTOR, CEILING MOUNT, EDA AND INJECTOR SYNCHRONIZATION

Ceiling mounted EmpowerCTA injector system with Extravasation Detection and Injector Synchronization

EmpowerCTA injector

Key features:

- Double Barrel Injector Head with Controller
- Touch Screen Remote Control with Desktop Mounting System
- All system parameters may be reviewed, and the system armed, at the injector, with the head tilted in either direction.
- Pressure readings are displayed at the injector head and at the remote control, so the technologist can monitor as necessary.
- Flow rates ranging from 0.1 to 10 mL/sec may be manipulated while the procedure is in progress

Extravasation Detection.

Acist's patented EDA (Extravasation Detection Accessory) is an aid in the detection of extravasations which helps radiologists realize the full potential of high scanning speeds, confident that their good technique is backed by leading-edge technology.

Key features:

- EDA monitors skin impedance
- Alerts the operator and pauses the procedure when it detects clinically significant contrast extravasation (20 mL) under the EDA patch.

Injector Synchronization

The Injector Synchronization, EmpowerSync, interface enables communication with the Aquilion CT by using CAN Protocol level 1.

Key features:

- Improve contrast timing and optimize workflow
- Synchronized start improves control of contrast enhancement
- Simplified operation enables single operator workflow

Enhance Safety:

- One-button on either the scanner or injector starts and stops the sync protocol (provides stop message at console when stopped at injector)
- Technologist can remain at the patient's side

Note: Injector comes with the EmpowerSync "ready" interface for the injector only.

Injector synchronization feature can only be activated with installation of optionally purchased #AQ-SYNC/INJECT for the Aquilion CT

LATERAL COUCH MOVEMENT KIT

Exclusive lateral couch movement option. Lateral movement of 8.4 cm minimizes patient dose and provides better access for interventions.

SURESUBTRACTION FOR AQUILION ONE, PREMIUM, 64, 32, AND 16

This neurovascular CT digital subtraction angiography (CT DSA) software enhances diagnostic accuracy through greater image clarity and improves workflow. The software automates digital subtraction of the intra- and extra-cranial vessels from bone, providing superior clinical images in a fraction of the time of manual subtraction.

Enhanced Diagnostics

- Subtraction volume is completely free of bone, providing unsurpassed subtraction CTA studies of the brain
- More easily achieves arterial and venous segmentation
- In just seconds, creates 3DVR and MIP images with 360° left-to-right and head-over-heels tumble views

Enhanced Workflow

- Less than 5 minutes to load, process and display images
- Subtracted dataset is still in DICOM format
- Maximize productivity with programmable features
- Streamline patient throughput with a simple 3-step process
- No special head immobilization required

Pre-requisite: V3.2 software must be installed on the system

ULTRA HELICAL 160 DETECTOR ROW SCAN KIT

Ultra Helical 160-detector row helical scanning can image the entire chest, abdomen and pelvis in less than five seconds, which is 2.5 times faster than standard 64-detector row CT imaging. This imaging mode is ideal for routine body imaging and for patients who have difficulty staying still during exams, such as trauma patients and pediatrics. It produces significantly less motion artifact and provides clinicians with high-quality images for accurate diagnosis.

SUREFLUORO: CT FLUORO KIT WITH FLAT-PANEL MONITOR

The CT Fluoroscopy option provides the ability for continuous imaging during interventional procedures. Single image viewing rate is 8 fps in a 512 matrix. All operations are performed by an operator at tableside. The operator is able to control table movement, gantry movement, and X-ray exposure while observing the progress of the procedure. The pistol-grip control handle initiates fluoro with an index finger trigger and the table motion is controlled by a thumb switch. Reconstructed images are displayed on a 19" diagonal high line rate in-room monitor as they are acquired. The *last-image hold* feature maintains the latest image while the beam is switched off.

This option can greatly improve CT scanner productivity for biopsies and percutaneous therapy by speeding the procedures and allowing small targets close to critical structures to be accurately and safely approached.

Patient dose is kept within reasonable levels by using low tube currents. A complimentary biopsy needle holder is provided so the operator can manipulate a needle while X-rays are "ON" without exposing extremities to the primary X-ray beam.

Contents:

- In-room control console and stand
- X-ray on/off footswitch
- CT Fluoro biopsy tool kit
 - o Biopsy needle insertion guide holder
 - o Syringe clamp
- Aspire CI: CT Fluoro software
- Hardware interfaces and electronics

CT FLUOROSCOPY

LCD MONITOR 19" FOR FLUOROSCOPY REMOTE VIEWING-ONLY FOR SUREFLUORO

- Only for SureFluoro

Simultaneously displays the same images as those on the main console to assist in needle placement.

Includes:

- Flat-panel, image-display unit
- Video cables (30 m)
- Manuals
- Resolution controller
- Multiplexer

Prerequisite: CT Fluoroscopy

NEEDLE HOLDER KIT FOR CT FLUOROSCOPY

- For SureFluoro

Allows users to keep their hands outside the primary X-ray beam while inserting a biopsy needle under CT fluoroscopic guidance.

FLUOROSCOPY STERILIZATION KIT FOR AQUILION-4 THROUGH AQUILION ONE

Fluoroscopy Sterilization Kit for Aquilion 4 -ONE

Includes ten (10) sterile CT hyper handle drapes and ten (10) non-sterile gantry aperture drapes.

SURECARDIO WITH PHASEXACT FOR AQUILION ONE

Includes:

- Prospective ultra low dose coronary imaging,
- Single heartbeat acquisition for coronaries and functional imaging,
- Adaptive multi-segment imaging for complete patient flexibility.
- Real-time beat control monitors R-R interval to assure diagnostic cardiac images even with challenging patients.
- Target CTA prospective cardiac CTA mode offers further flexibility to this ultralow dose protocol.
- phaseXact eliminates the need for unnecessary multiple reconstructions by automatically selecting the cardiac phase with the least motion.

This configuration includes tools specifically designed for routine clinical cardiovascular imaging, providing unsurpassed views of the heart and coronary arteries. Built on the award winning Aquilion platform, the Aquilion ONE provides increased patient comfort and the most flexible choice of speed and accuracy in CT scanning. Just like all Aquilions, the Aquilion ONE performs all multi-slice scan modes including helical and step and shoot modes all with the industry's proven thinnest 0.5 mm detector element. Aquilion ONE improves patient care and outcomes by aiding in diagnosis of conditions (*e.g.*, chest problems and stroke) at early stages, with both increased accuracy and speed.

- The reconstructed images for specific (cardiac) phases are generated (by raw data processing) from the Aquilion ONE scan data acquired simultaneously by the ECG-gated scan system.
- phaseXact eliminates the need for unnecessary multiple reconstructions by automatically selecting the cardiac phase with the least motion.

ECG GATING SCANNING SYSTEM

ECG MONITOR, R-WAVE TRIGGER

- Compact ECG monitor with fast gated trigger output for R-wave synchronization applications
- 6.5" Color LCD Display (TFT Active Matrix)
- Integrated ECG simulator to test the integrity of the patient cables, lead wires, and electronic circuitry.

SYSTEM UPS 480 VOLT INPUT / 480 VOLT OUTPUT

VRDU 480 V Input / 480 V Output with UPS functionality -includes Battery Cabinet and Remote Alarm Status Panel

The VRDU is engineered to address the vast majority of common power problems found in the hospital environment, thus providing clean power and good grounding for optimal reliability and performance of CT systems.

Toshiba's UPS Functionality provides true on-line dual-conversion systems, providing the highest quality conditioned and uninterrupted power to critical loads and to any equipment sensitive to variations in the utility power supply. Provides 16 minutes of battery backup at full load.

The Remote Status Alarm Panel (RSAP) is used to monitor the alarm condition and state of any UPS remotely. The RSAP is wall-mounted and can be located up to 1,000 feet from the UPS. The panel shows the current input status, the output that is being used and UPS faults conditions. The RSAP also has an audible alarm to warn of UPS fault conditions.

NOTE: Frontline must make arrangements 14 days prior to installation for TIC on-site startup.