



ANKE - The Reliable Medical Equipment Manufacturer



ANATOM 128 CT



ANATOM 128 Multi-slice Spiral CT Scanner Proposal

As Chinese advanced CT technology leader, ANKE has been committed to innovation and adhering to the "bring technology to healthcare. We are devoted to provide high-quality, efficient and reliable new technologies and products for users. The Chinese first low dose single - row CT, the first Chinese mobile CT, the world first non-contact slip ring 16-slice, the precision platform of 64/128-slice CT and spectral CT ANATOM 256, ANKE has always been at the forefront of the development of new technology of CT in China, leading the technology innovation of Chinese CT trend and direction.

The 16-slice CT is the basic system for the vast majority of applications. In addition, there is intense competitive pressure. Healthcare providers not only have to manage an increasing number of patients at lower costs, but also set themselves apart in terms of clinical range. And they must find ways to increase efficiency and attract patients by offering service that is more personalized, transparent, and affordable. In order to provide full clinical applications and affordable CT scanning service for our users, ANKE creatively CT has developed ANATOM 128 with core hardware and top technologies to fulfill your demanding.

ANATOM 128 is the latest revolutionary CT scanner of ANKE that will power for your comprehensive application needs. It's been featured a revolutionary brushless technology PowerLink™ which is unique and first applied on a 128-slice CT scanner. PowerLink™ can remarkably reduce the costs of carbon brush & slip ring maintenance and replacement. Without contact and friction, high stability and less risk of electronic component failures can benefit you a lot than you expected.

It's capable of achieving fast speed, high quality acquisition at optimized dose high fast throughput with superb image quality for patients young and old, large and small, across a wide spectrum of applications: cardiac, angiography, brain, chest, abdomen, orthopedic, and more.

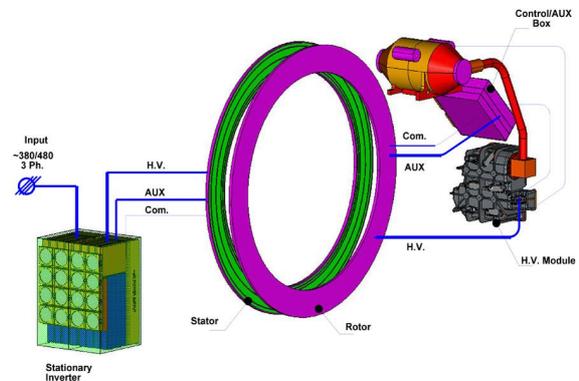
ANATOM 128 is not powered by its high hardware configurations but also the world leading software technologies. Like HD OptiWave detector, powerful X-ray tube, HV generator, PowerLink™, stable gantry, LISA™ noise reduction, Admir^{3D} iterative, Adose dose optimization and so on.



The main hardware features of ANATOM 128 system

— The most advanced revolutionary PowerLink™ gantry

ANATOM 128 uses the revolutionary PowerLink™ non-contact power transmission technology, which can achieve the transmission of power, from the fixed part to the rotation part without slipping ring/carbon brush structure. This technology eliminates the limit of the current rack rotation system, because it does not need the carbon brush/slipping ring. It eliminates the carbon brush wear, contact ignition and other current CT design drawbacks to make the system maintenance/care interval time extend and increase the lifetime of the machine.



The integrated application of PowerLink™ and other patented technologies make the system extraordinary and excellent:

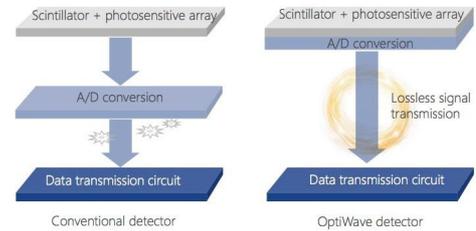
- Brushless - Save on maintenance and lower operating costs
- Non-contact - Never attrited and ultra-stable
- Dual Mode - Wireless power and data transmission

— Multi-bowtie filters

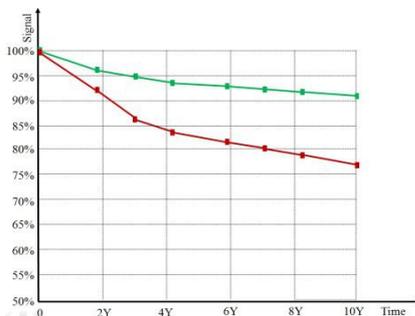
According to the different scanning position, scanning protocols and scanning VOI, multi-bowtie filters make automatic selection of filter with different cases, not only to ensure the efficiency of the use of X rays, but also shield the soft X ray useless, to minimise radiation. Adaptive filters reduce pattern noise (streaks) in nonhomogenous bodies, improving overall image quality.

— OptiWave detector

As is known to us, the detector technology is the driving force to promote the development of multi layer CT. ANATOM 128 uses a high performance OptiWave wave detector which is completely independent research and development of ANKE, to achieve the highest spatial resolution 0.24mm of 128-slice CT of industry.



Spatial resolution (high contrast resolution) and density resolution (low contrast resolution) are the key indicators to evaluate the quality of CT images, which are directly related to the quantum efficiency and SNR of CT detectors. In the design process of OptiWave detector, our R & D team has made full use of in-depth understanding of physical process of signal, and established the most perfect signal quantisation simulation model. Further, An optimisation design has been worked out on the basis of the detector quantum efficiency and SNR, which is not only to provide hardware support and technical support for ANATOM 128 to obtain the best spatial resolution and density resolution, but also to ensure the balance between spatial resolution and density resolution at low dose condition. Compared with the traditional detector, OptiWave detector has simplified the detector module and subsequent circuit connection and communication by using the compact module design of digital readout circuit combined analog digital conversion. Without high density analog signal cables or flexible circuit boards which is used by traditional detectors, thereby OptiWave detector has greatly improved the anti-interference ability of the module.



Field replaceable unit (FRU) design, the key parts be easily disassembled, all are in order to achieve the purpose of simplifying the maintenance operation and reducing the maintenance time. Each detector module can be independent of disassembly and replacement which makes the detector module maintenance and system upgrades completed quickly at the scene. It can reduce the user's operation and maintenance costs, on the other hand, ensure

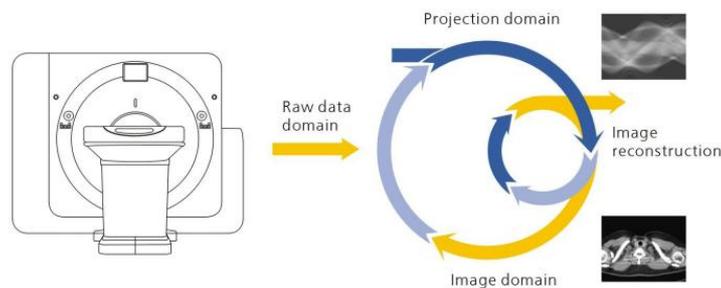
the equipment with continuous upgrading ability. Under the same conditions, the service life of the CT detector depends on the decay amplitude of the output signal induced by accumulated



exposure dose over time. OptiWave detector has been designed of the optimal structure, even after 10 years of use, the radiation damage caused by signal attenuation is less than 8%. It not only prolongs the service life of the detector but also ensures the users's maximum return on investment.

Technology features

— Admir^{3D} iterative reconstruction technology



ANATOM 128 is equipped with a Admir 3D mathematical and physics models to accurately construct and describe the signal's quantum characteristics. Admir Iterative designed to maintain critical image quality aspects of low-contrast detectability and spatial resolution while enabling dramatically lower dose levels. It's performed in the three domains of raw data, projection and image, to greatly reduce the image noise and achieve optimal image quality with low dose.

Admir^{3D} noise reduction of raw data

According to the characteristics of electronic noise, a specific mathematical model is established. During the process of data acquisition, signals of different frequencies are repetitively and selectively processed. Then, the signals are intelligently amplified to improve the signal quality from the original data sources to obtain more balanced and effective images.

Admir^{3D} iterative reconstruction

Traditional CT in order to improve the image quality can only be achieved by increasing the dose of X- ray, but at the same time the patient's radiation



dose will also be greatly increased. In order to better solve the problem of image quality and radiation dose, Admir3D accurately constructs and describes the photon characteristics of the signal through a unique mathematical model, iterates it in the original data domain, the corrected projection domain and the image domain. The dose can be reduced by 40% to 50% but without compromise of image quality. Admir3D processing effect can be performed from 1 to 100 levels, corresponding to the noise reduction requirements.

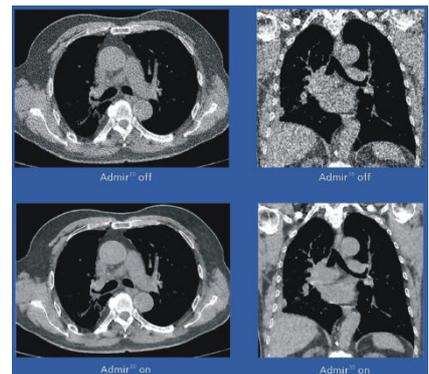
Admir^{3D} fast reconstruction engine technology

Admir3D iteration technology is based on the original data field, the projection field after correction and image field, which will no doubt greatly increase the system's computing load. According to this feature, Admir3D platform is equipped with Intel 8-core dual-CPU parallel processor and 64G RAM, combined with multi-core processor-based fast-channel interconnect technology to achieve greater data processing bandwidth and higher data processing efficiency. Its powerful data processing capability allows the system to mass data processing speed increased nearly 5 times.

— Adose dose management platform

Automatic mA technology automatically controls tube current to increase or decrease the signal as necessary to maintain constant image noise while lowering dose. Automatically controls the tube current rotationally, increasing the signal over areas of higher attenuation (lateral) and decreasing signal over areas of less attenuation.

Pediatric dose optimization specially dedicated protocols for pediatric patients with ultral-low dose care.



Admir3D and LISA can achieve low dose and low noise scanning without compromising image quality

Dose monitoring - A comprehensive dose management solution, based on principle of as low as reasonably achievable (ALARA), tracks and monitors patients, cumulative radiation dose, and receives notifications and alerts if your predetermined dose levels exceeded. System creates DICOM structured report for dose

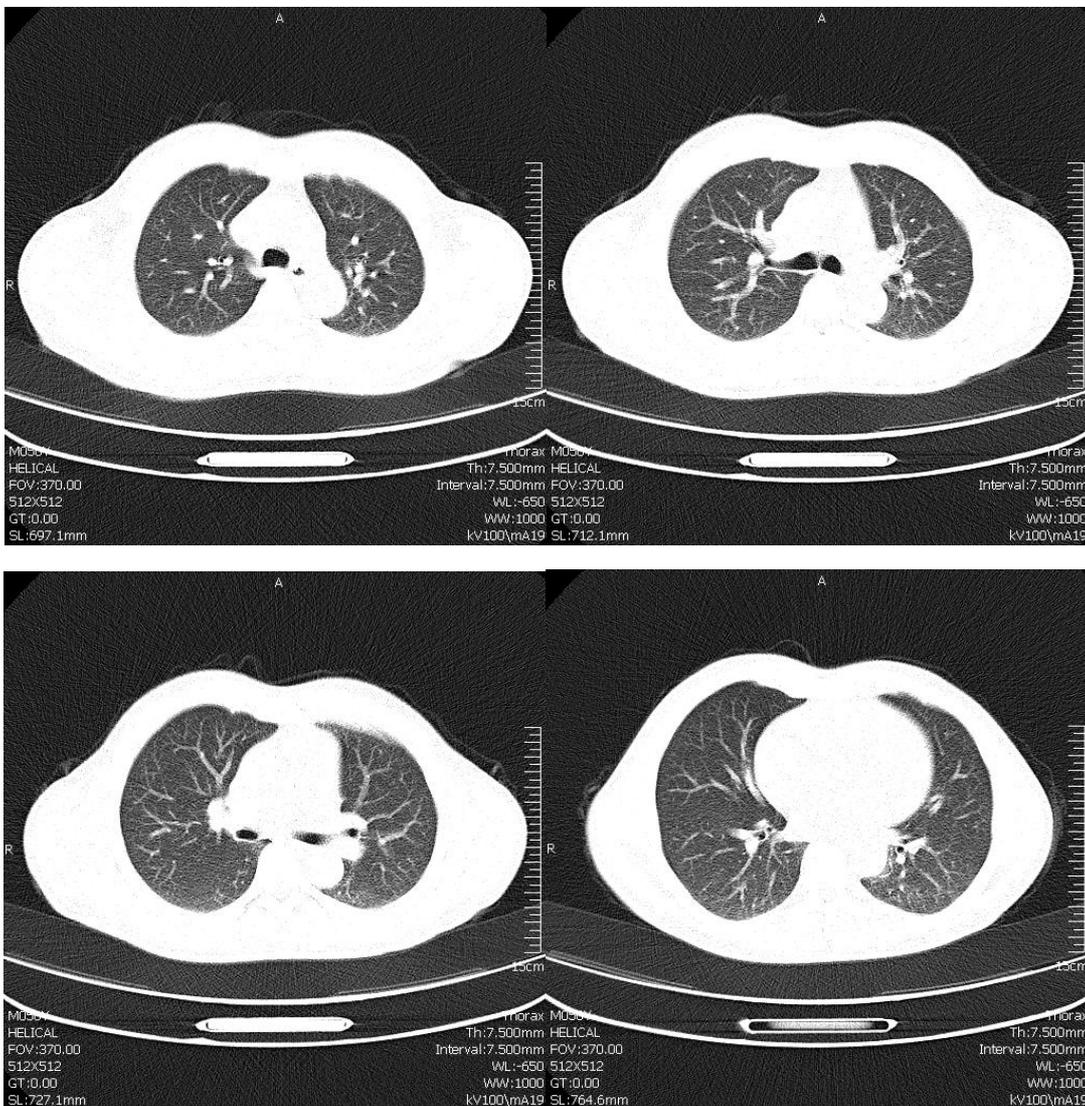


Information that can be used by external systems such as HIS/RIS and PACS systems to extract dose information for a given patient.

— Ultra-low Dose Lung Screening

WHO authoritative data show that the incidence and mortality of lung cancer all over the world are in the forefront of malignant tumors. The treatment effect of lung cancer is closely related to the early and late pathological changes. The 5 year survival rate of advanced lung cancer is less than 20%, and the 5 year survival rate of early lung cancer is close to 100%.

Ultra-low dose scan of ANATOM 128 can make early detection, which is more precise and exhaustive compared with 2D X-ray exposure, of sub-centimeter lesions with 5-10% dose of routine CT scan examinations.

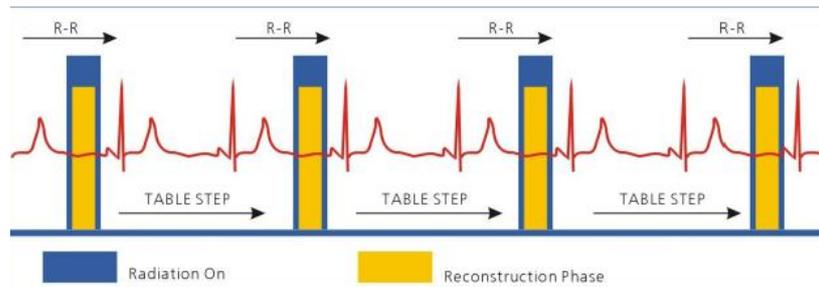


Effective dose < 0.5 mSv with 100 kVp, Scan time <4.0 seconds. Thickness is 7.5 mm.

— Easy and convenient cardiac imaging

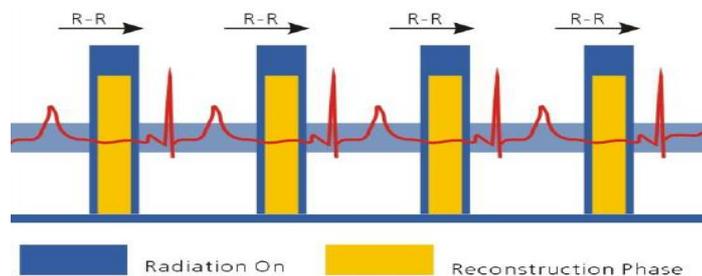
Axial Snap-Shot Imaging

Sharply reducing dose in Cardiac CT exams, this feature pulses the X-ray “on” only during a phase of the cardiac cycle using prospectively gated step-and-shoot cardiac scanning – reducing radiation dose.



Spiral continuous Imaging

Spiral scanning with AEC, This tube current modulation can control radiation dose only during cardiac cycle by combing prospectively gated cardiac scanning. It not only reducing dose but also the scanning time without step and shot process.



— Abast bone artifact suppression technology

Artifacts caused by the density and structure of the brain have been a blind spot in the brainstem and cerebellar structures and lesions diagnosed by conventional CT. For example, infarcts such as brainstem and cerebellum are not easily displayed due to the influence of artifacts. Of course, these artifacts will also affect the a small amount of hemorrhagic lesions of the diagnosis in posterior cranial fossa. Abast can eliminate the x-ray hardening effect to the cerebellum, brain stem and other parts, clearly to show the structure and improve the reliability of diagnosis



— Amast metal artifact suppression technology

Metal implants in the human body can lead to metal artifacts in CT reconstructed images. The traditional method uses the interpolation technique to replace the metal contaminated data in the original projection data, so as to achieve the purpose of removing metal artifacts, but easy to produce secondary artifacts. In order to solve the shortcomings of traditional methods, Amast provides a metal artifact elimination method based on iterative correction. Firstly, a preprocessed image is obtained by using the interpolation correction method. Then, iterative correction is performed on the basis of the preprocessed image, and the total image quality is optimised in each iteration process. After several iterations, the final image is obtained. Experiments show that compared with the traditional interpolation method, Amast technology can more effectively remove metal artifacts, and better suppress the generation of secondary artifacts.

Other features

— The most efficient examination process



AccuEmergency — Emergency mode

New emergency interface, free of registration, quick to start scanning for emergency patients

AccuScanning — Accurate scanning

Default AccuScanning scanning protocol, easy to get high resolution images

AccuTracking — Accurate trigger

Dynamic monitoring of contrast agents in the region of interest, provide accurate scanning delay time to make enhanced scan easy and reduce the repetitive scan

AccuReconstruction — High-speed reconstruction

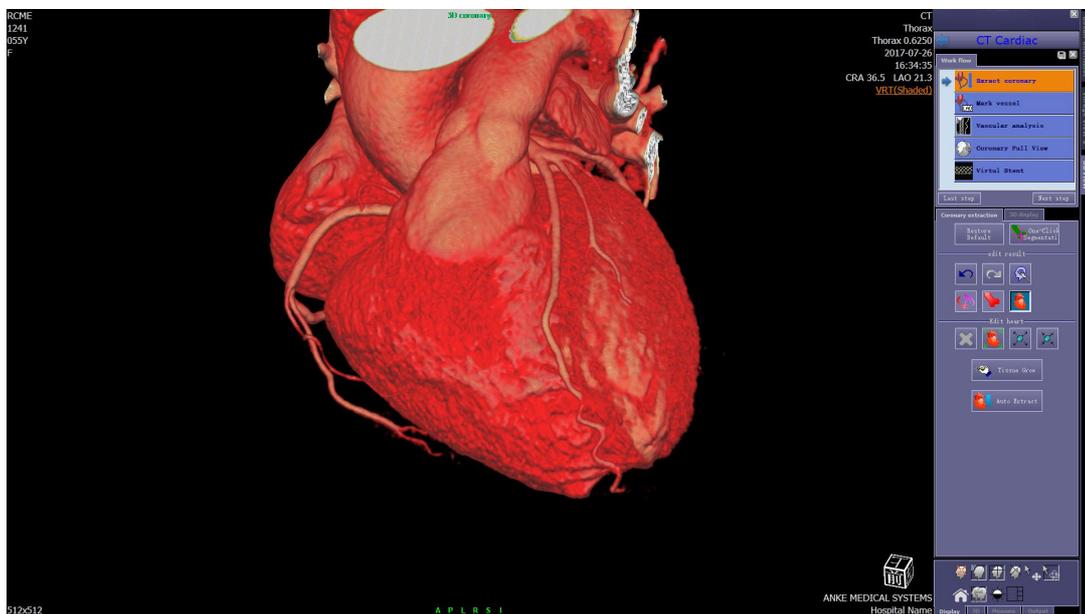
Up to 50f/second reconstruction speed, 10 times the speed of traditional CT reconstruction, significantly improve the efficiency

AccuPrinting — Quick print

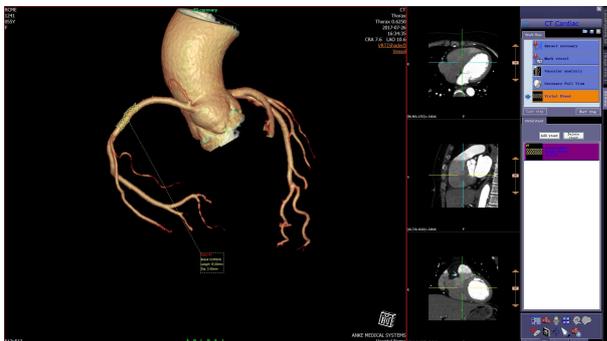
Smart layout and flexible adjustment for printing, automatic printing mode for time saving.

Comprehensive clinical applications

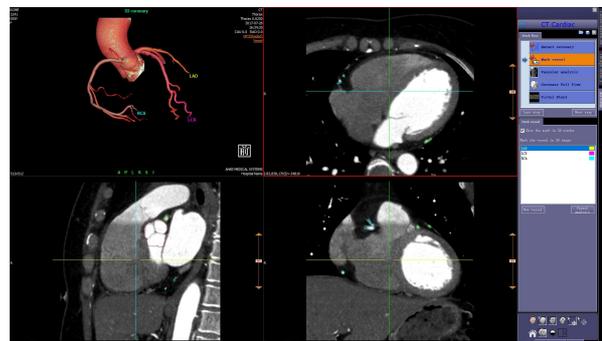
Image quality and clinical application are the standards to test the quality of imaging equipment, CT is also the development of focusing clinical needs of continuous innovation and change. Anke has always been adhering to the "Insight into life" concept to promote the CT technology to leading position in the domestic industry's, and continue to expand the clinical application of new areas. The ANATOM 128 has the most complete clinical applications in the industry. The newest features of the ANATOM 128 include a variety of functions including neurology, cardiac, orthopaedics, gastroenterology, respiratory, internal medicine, and so on.



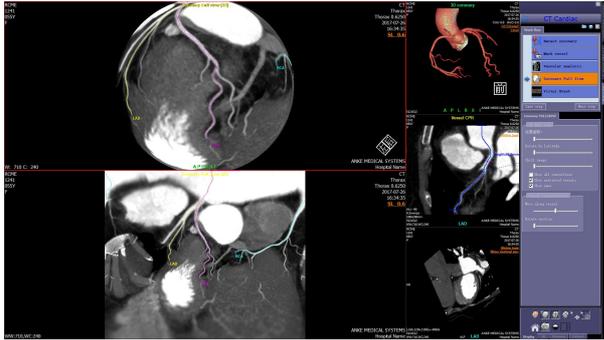
3D Heart View



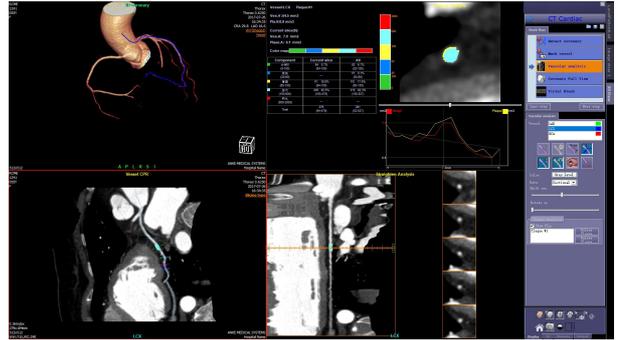
Stent Simulation



Coronary Artery Auto-label



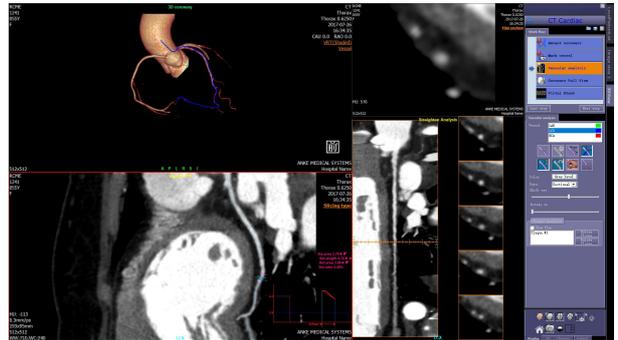
Panoramic View



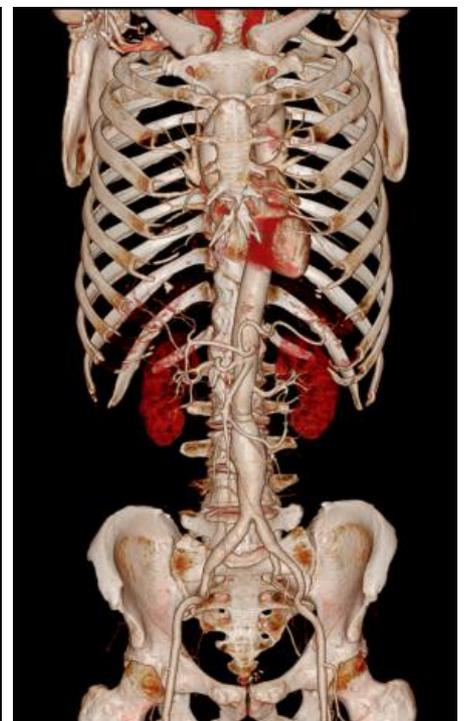
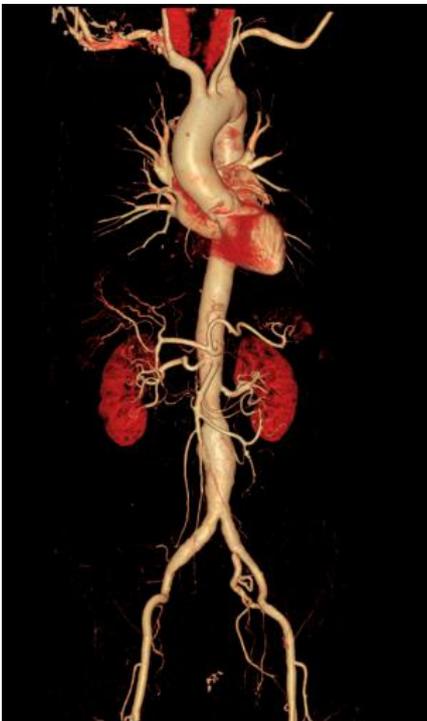
Plaque Analysis



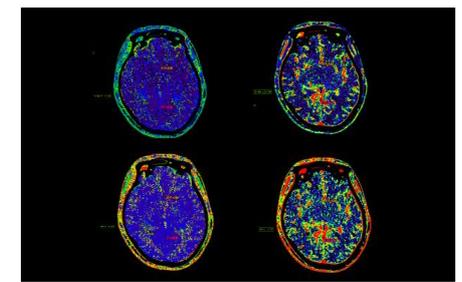
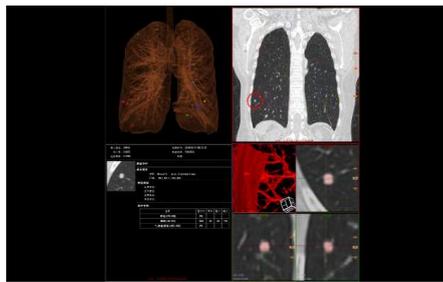
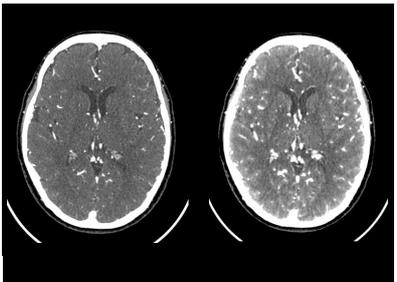
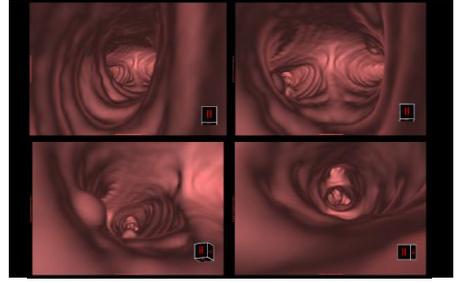
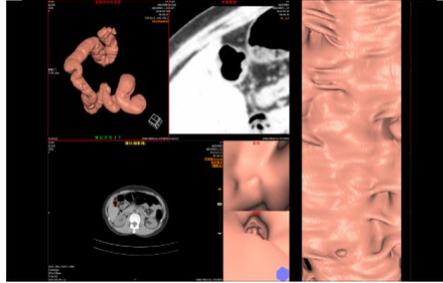
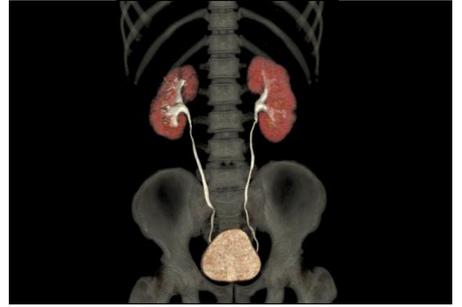
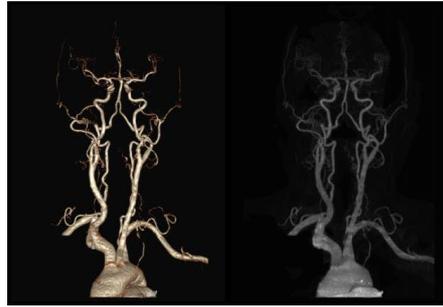
Blood Vessel VE



Stenosis Analysis



CTA



Others