Villa
Surgical & Equipments Ltd.

Medical X-ray Equipment

Recommendation

High Frequency Mobile Digital FPD C-arm System

PLX118F

1. Equipment information

2.1 Equipment brief introduction

PLX118F is a mobile dynamic flat-panel C-arm specially designed for orthopedics, equipped with the latest amorphous silicon dynamic flat-panel detector, making it a mobile device that is more suitable for orthopedic clinical needs. This product can provide clear image effects, at the same time, it retains the characteristics of ordinary C-arm mobile, which optimizes the use environment of orthopedic surgery.

Clinical application: orthopedics, general surgery, orthopedics, trauma surgery, urology, spine surgery, pain surgery, gastroenterology, oncology, obstetrics and gynecology and other departments.

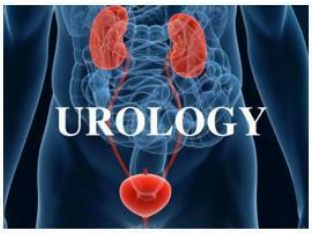
General Surgery

Orthopedics

Spine Surgery

Gynecology

Emergency Department



Urology

Trauma

Pain Management

2.2 PLX118F advantages

2.2.1 Effective guarantee of low-dose X-ray source

2.2.2 Effective guarantee of the image acquisition system with full digital technology

2.2.3 Effective guarantee of image processing system

2.2.4 Effective guarantee of the display system

2.2.5 Effective guarantee of intelligent control system

2.2.6 Humanized mechanical structure design guarantee

2.2.1 Effective guarantee of low-dose X-ray source

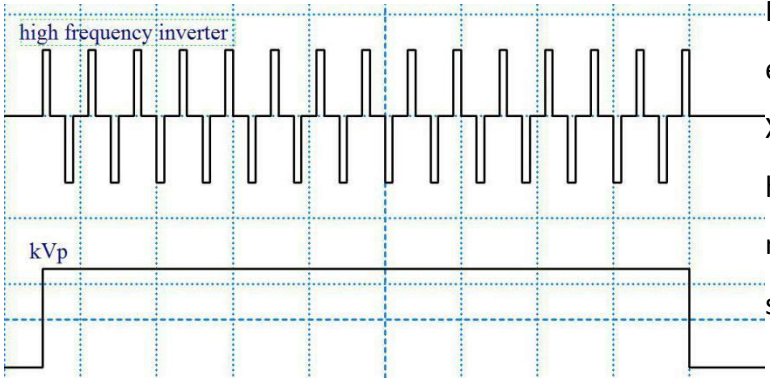
●X-ray Tube：

PLX118F has a large output power, the power reaches 5KW. This technology can guarantee the need of instantaneous large dose continuous exposure in digital spot photography and large mA pulse acquisition;

PLX118F adopts a unique tube (tube heat dissipation technology), which greatly improves the comprehensive heat dissipation efficiency of the device, and greatly enhances the long-term working ability of the device. Under the continuous pulse fluoroscopy, the tube can work for a long time;

Micro focus makes images sharper;

●High Inverter Frequency： 110KHZ



In order to ensure that the imaging equipment can provide sufficient and effective X-ray quality, the X-ray source adopts high-frequency inverter technology, and the main inverter frequency is above 40kHz for some similar brands.

While the main inverter frequency of PLX118F reaches a high frequency of 110kHz, which is more than 100% higher than that of ordinary products.

The inverter waveform presents a rectangular wave with low scattering lines, which eliminates the generation of soft rays from the source, ensures accurate radiation dose control, and essentially improves the quality of the X-ray source.

The high-voltage generator is fully digitally controlled, with high precision, strong stability and good repeatability.

●Electric Adjustable Collimator：

According to the needs of complex clinical operations, the requirements for the light field are more stringent. This requires the imaging equipment to be equipped with a high-quality light field control system.

PLX118F adopts a linear symmetrical electric adjustable beam limiter to realize horizontal and vertical light field control. This component can effectively adjust the projection field of view, reduce scattered rays, and improve the image signal-to-noise ratio.

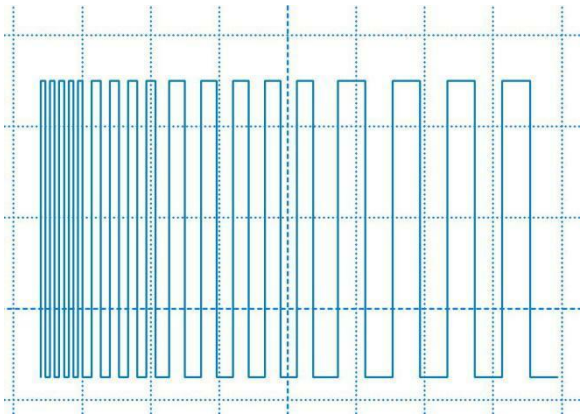
In addition, the radiation dose of X-rays can be reduced by shielding unnecessary rays, thereby reducing radiation damage to medical staff and patients.

●Intelligent pulse technology：

PLX118F adopts the international leading digital pulse dose intelligent control technology. The application of real-time, continuous pulse fluoroscopy technology realizes arbitrary adjustment of multi-frequency, instantaneous high mA output, meets the multi-pulse frequency requirements of various clinical operations, and provides high-quality images for accurate diagnosis.

In the pulse mode, the current of the fluoroscopy tube reaches 30mA, which is much higher than the. current of the fluoroscopy tube of other similar products. In this mode, users can easily obtain ultra-high-definition perfect image data to meet the needs of high-precision and difficult diagnosis and treatment.

The intelligent frequency conversion pulse design reduces the total radiation dose per unit time by more than 60%, which greatly reduces the radiation dose received by the user. This technology is perfectly combined with a high-quality video chain. While obtaining better images, it greatly reduces the radiation damage suffered by doctors and patients, and is truly green.



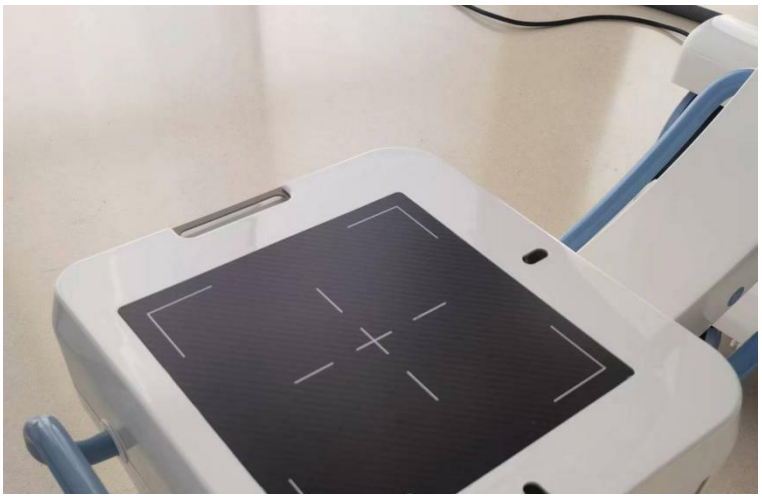
2.2.2 Effective guarantee of the image acquisition system with full digital technology

●Removable Grid：

According to the needs of clinical operations, it can effectively improve the image contrast and reduce the fog. The PLX118F image acquisition system has a built-in fiber grid, which can effectively eliminate scattered rays, improve image contrast, reduce fog, and provide important guarantees.

●PLX118F adopts large size dynamic flat panel detector

PLX118F adopts dynamic flat panel detector, larger field of view, and obtains high-definition and distortion-free images, ensuring accurate and reliable image information, in order to obtain detailed and accurate information of small lesions. Meet the needs of a variety of special clinical operations; high dynamic display range, can achieve the best detailed imaging of human soft tissue and bone tissue.



In lumbar spine, cervical spine, hand and foot surgery, a larger field of view can reduce exposure times, reduce radiation dose, avoid overlapping omissions, and shorten operation time. High-definition and distortion-free images ensure accurate and reliable image information, meeting various special clinical needs of multiple departments.

Compared with the ordinary shadow-enhanced C-arm, the flat panel is less disturbed by the external environment in imaging, and its image quantum detection rate (DQE) and spatial resolution have the most essential improvement, and the image has no saturation artifacts and no distortion, the uniformity is better, and there is no over-white or over-black area.

When imaging the target, the region of interest can be clearly displayed, which greatly enhances the accuracy and confidence of doctors in the clinical treatment process.

2.2.3 Effective guarantee of image processing system

●Standard dedicated digital workstation with powerful image processing capabilities:

The image processing software adopts a unique GPU-based rapid dynamic image processing and display platform (RCDPS), multi-resolution analysis image enhancement processing technology, and different image processing for different parts, to accurately meet the diverse needs of customers.

The dedicated digital workstation has the function of automatic gamma correction, which can edit the gamma

curve of the image through gamma correction, so as to perform nonlinear tone editing on the image, detect the dark part and the light part in the image signal, and make the The ratio of the two is increased, so as to improve the contrast effect of the image, and the contrast is appropriate.

The dedicated digital workstation has a built-in comprehensive, professional expert edition report printing module. Through this module, expert-level medical record report output and printing can be easily realized,

which can reduce the burden of doctors and improve the efficiency of diagnosis.

Dedicated digital workstations with see-through storage capabilities. During the fluoroscopy process, still and dynamic images can be captured and stored for real-time image comparison, effectively reducing repeated exposures.

The dedicated digital workstation applies large-capacity digital storage technology. Perspective and point slice images are stored in digital format losslessly, which can be quickly edited, encrypted, network shared, etc. as needed;

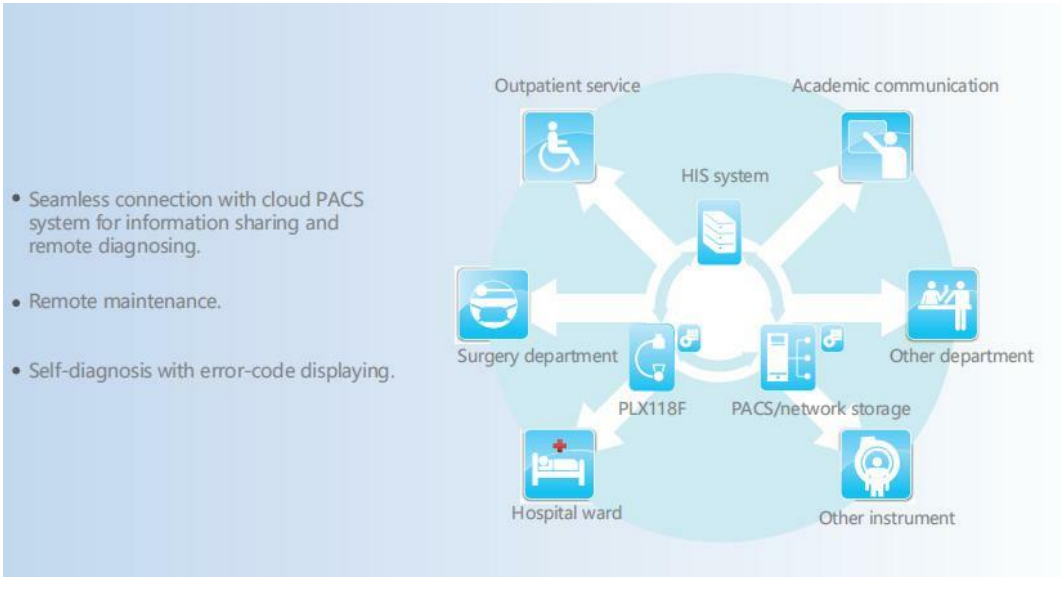
In the process of image processing, all acquisition actions of the initial test image can be accessed at any time through a dedicated digital workstation, and detailed comparisons can be made and archived.

Dedicated digital workstations have a variety of professional measurement functions. Static measurement of various areas, angles and lengths provides intuitive and quantitative software assurance for the effective development of clinical operations.

In addition, the dedicated digital workstation also has real-time window width, window level adjustment, equalization of areas of interest, grayscale conversion, flipping, noise reduction, enhancement, smoothing, sharpening, compression, enlargement, annotation and other rich and powerful processing. Function.

●Powerful network sharing capability

Free choice of worklist registration or manual registration, which can be seamlessly connected with the hospital information system;The open PACS/RIS communication method provides rapid transmission



of patient information;

Special digital workstation, standard DICOM3.0 interface, fully compliant with DICOM main protocol standards. Through a dedicated digital workstation, it can be seamlessly connected with hospital HIS, RIS, PACS systems and dry cameras. It can easily realize the open sharing of resources and effectively optimize the work flow of the department;

Portable storage of valuable image data can be carried out through DICOM DVD-RAM, which can be imported and exported arbitrarily;

2.2.4 Effective guarantee of display system (medical monitor)

●Medical Monitor

The PLX118F is equipped with 3 sets of 19-inch LCD monitors as standard, which realizes the design of dual monitors in the operating room and outside the operating room, which can facilitate the surgeon to observe the images in the operating room and outside the operating room, and avoid the surgeon going back and forth in and out of the operating room.

In order to achieve the best image display effect, we choose a liquid crystal display with a resolution of 1280*1024, and its brightness is 2-3 times that of an ordinary display, thus ensuring high-quality image effects and meeting the high-quality clinical diagnosis. need. Provide users with large-scale distortion-free images with professional quality. Image brightness and contrast are far superior to ordinary monitors.

Through the high-contrast and high-brightness display system, the image level observed by the user is more abundant and delicate, and the high and low-density microscopic lesions can be observed accurately and clearly.

The monitor can be rotated at multiple angles, allowing users to observe sharp images from multiple angles.

2.2.5 The intelligent control system guarantees the stable and smooth clinical

treatment process

●Intelligent dose control and working mode

PLX118F adopts intelligent dose control technology, which can easily and accurately adjust the irradiation dose according to different body types and different parts. It enables the operator to achieve lower dose and clearer diagnostic images in any use environment. The intelligent dose exposure system cooperates with real-time dynamic image optimization to optimize the image by itself, so that the image quality is always in the best state.

PLX118F has a variety of working modes to meet the requirements of various image effects in clinical practice. High-dose mode and low-dose mode can be quickly switched; in terms of dose adjustment, intelligent dose

adjustment and manual dose adjustment can be changed at will; complex surgery can be selected with compound mode, simple surgery can be selected with single mode, multiple selection and multiple applications .

PLX118F applies advanced human body graphic program control technology. Different from the previous text and symbolic parameter settings, the human body graphic parameter setting is mainly based on human body graphics, the visual effect is more intuitive, and the operation is more simple and convenient.

Human body graphic program control technology has rich and accurate APR parameter setting. A variety of parts selection, a variety of body shape selection, can provide up to hundreds of human body projection parameter settings. In addition, individual parameter settings can be saved according to user needs to meet individual needs.

●Parameter setting and motion control humanization

PLX118F adopts human body liquid crystal touch screen control panel structure design and parameter

handheld controller. Users can perform various operations such as working mode selection and parameter adjustment on the host and workstation.

During surgery, the user can perform various remote or compartmental manipulations through the system. For example, the free switching of the working mode, the adjustment of parameters, the beam limiter and other complex operations.

The PLX118F adopts a compartment exposure foot brake design. Through this advanced design, users can easily realize compartment exposure and easily realize surgical exposure fluoroscopy.

2.2.6 Humanized mechanical structure design guarantees a safe and comfortable surgical environment

●Flexible Mechanical Movement

PLX118F adopts optimized mechanical structure design, lower center of gravity, smaller volume, lighter and

more flexible body, more suitable for use in operating room. This design not only effectively meets the projection needs of different body positions and different parts, but also leaves a loose operation space for the cooperative team of complex operations.

The C-arm track has a longer glide trajectory, and the C-arm slides 0-135° along the arc, resulting in wider coverage.

The lateral swing range of the C-shaped arm is larger, reaching ±15°, and the projection of the non-central part is more handy,and the host does not move and the person does not move.

2. PLX118F Technical Specification

3.1 Configuration

1	C-arm new design mainframe	1 set
2	Combined high-frequency high-voltage X-ray generator monoblock (5.0kW, 110 kHz, 40-120kV)	1 set
3	9*9 inch Dynamic flat panel detector	1 set
4	Medical using ultra-low illumination digital radiography	1 set
5	Digital acquisition workstation software	1 set
6	Imported dense grain grid	1 set
7	Electrical adjustable beam (collimator)	1 set
8	19 inch IM medical LCD monochrome monitor	3 sets
9	Unique hand-held controller	1 set
10	Footbrake exposure	1 set

3.2 Technical Specification

Power supply High frequency inverter	Power output: 5.0kW Main inverter frequency: 110 kHz
Automatic fluoroscopy	tube voltage 40 kv~120kv,adjust automatically tube current : 0.3mA~~4mA adjust automatically
Manual fluoroscopy	tube voltage 40 kv~120kv, continuous tube current : 0.3mA~~4mA continuous
Pulse fluoroscopy	tube voltage 40 kv~120kv, continuous tube current : 0.3mA~~30mA continuous 40KV~120KV, 25mA~100mA, 1.0mAs~280mAs
Photography tube voltage, mA	
X-ray tube special for high frequency	Dual focus:0.3/1.5mm thermal capacity: 650kJ (867kHu)
Detector	9*9 inch Dynamic flat panel detector
Monitor	19”medical LCD monochrome display *3 sets
Workstation software	Image W/L adjust, grayscale conversion, interest area balance, turn, noise reduction, enhancement, smoothing, sharpening, compression, zoom, measure, mark, print layout, Dicom image sending, Dicom image print and movie playback, etc.
Direction wheel and main wheel	Direction wheel can rotate in any direction, and main wheel can rotate in ±90°
C-arm movement	The up and down(motorized): 400mm; Forward and backward movement: 200mm; Revolution around horizontal axis : ±180°; Revolution around vertical axis: ±15°, Distance from focus to screen: 1000 mm; C-arm open distance: 800mm C-arm arc depth: 660mm; Slipping on orbit : 135°;

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3. PLX118F clinical images