

# X-Panel 2222s

CMOS X-ray flat panel detector series



**The X-Panel 2222s** is a CMOS (complementary metal oxide semiconductor) X-ray flat panel detector series that includes application-optimized variants for mobile and mini C-arm systems. For greater patient and healthcare professional experience and safety, the digital X-Panel 2222s equips C-arms with premium quality, low-dose imaging at fast scanning speeds.

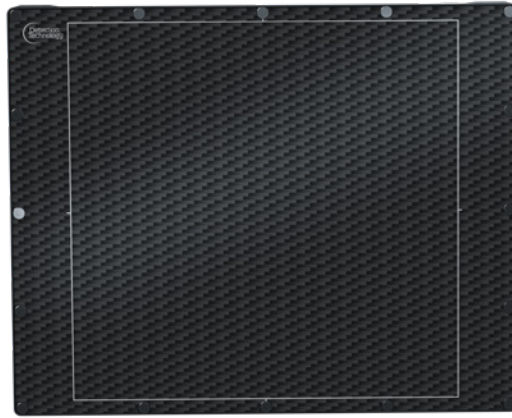
The X-Panel 2222s features a high-resolution zoom mode with native 100  $\mu\text{m}$  pixel pitch, ultra-low noise with close to 1 ADU (analog-to-digital unit) temporal dark noise (@14 bits), and a large active area of 222-by-216 mm. It makes grayscale images clear with its true 16-bit analog-to-digital conversion.

It is equipped with a fast sensor that provides up to 60 full frames per second through 5 GigE (Gigabit Ethernet) interface. The X-Panel 2222s is proven to be inherently ultra-stable, even in cases of longer scans.

For both use cases, the X-Panel 2222s enables small system form factors that take less space in operating rooms, and a larger field of view (FOV) that is unaffected by geometrical distortions. In addition to enhanced imaging quality, this is something that only flat panel detectors provide for image-guided surgery.

System integration of the X-Panel 2222s is made straightforward for faster time-to-market and notable total cost savings. The X-Panel 2222s comes with a mechanical outline that suits existing mobile and mini C-arm system designs, and strong worldwide service.

A complete developer aid kit is available for speeding up system designs. The kit includes an application-programming interface (API), demo application-specific software, necessary cabling, and developer guides.



---

## BENEFITS

- Premium quality, low-dose imaging at fast scanning speeds
- High-resolution zoom mode with native 100  $\mu\text{m}$  pixel pitch
- A large active area
- True 16-bit gray level resolution
- Ultra-stable performance, even in longer scans
- A mechanical outline that suits existing C-arm designs
- Compact, lightweight mechanics
- In-built functionalities for ease of use
- Optimized models for mobile and mini C-arms
- Comes with a developer aid kit and global engineering support

## KEY FEATURES

- Active area 222-by-216 mm
- Application-optimized CsI scintillator
- Active CMOS pixel sensor (APS)
  - Dual gain (LFW/HFW) 100  $\mu\text{m}$  pixel
  - 16-bit ADC
  - Frame rate up to 60 fps (@full frame, scan-to-buffer mode)
- Scan-to-buffer-mode up to 100 full frames
- In-built correlated double sampling (CDS) for extended surgical scans
- In-built dark, gain, and defect pixel correction
- Fully programmable ROI
- 5 GigE / Camlink full / USB 3 data interface options
- Imaging performance
  - Dynamic range +80 dB
  - DQE(0) >70% @RQA5
  - MTF 60% @ 1 lp/mm / 30% @ 2 lp/mm

## APPLICATIONS

- Image-guided surgery: mobile and mini C-arms

## KEY CHARACTERISTICS

PARAMETER	SPECIFICATION
X-ray energy range	40-80 kVp (mini-C arms) / 40-120 kVp (mobile-C arms)
Active area	220 x 216 mm
Pixel pitch	100 $\mu$ m
Pixel matrix	2220 x 2165
Frame rate	Up to 60 fps, full frames
ADC	configurable up to 16 bit ADC
Gain modes	2 (LFW/HFW)
ROI mode	Programmable size and location
Binning	1x1, 2x2
Scan to buffer mode	Up to 100 frames @full frame & resolution
In built functionalities	Defect pixel correction Flat field correction Offset stability / noise reduction enhancements
Trigger modes	Continuous / synchronous
Scintillator type	CsI optimized for mini and mobile C-arms
Data interfaces	5 GigE (standard) / Camlink and USB3 (optional)
Power supply	12 V
Power consumption	<20 W
Weight	4.9 kg
Saturation dose, @RQA5	LFW 2 $\mu$ Gy, HFW 10 $\mu$ Gy
Dynamic range	+80 dB
DQE(0)	>70% @RQA5
MTF	60% @ 1 lp/mm / 30% @ 2 lp/mm
Lag negligible	Image lag negligible

## X-PANEL 2222s

