

Pro Focus 2202 Ultrasound Scanner

Product Data

Applications

- Surgical applications
- Urological applications
- Brachytherapy
- Abdominal scanning
- Small part scanning
- Vascular scanning
- Obstetric and gynecological scanning
- Breast scanning
- General imaging
- Intraoperative scanning
- Interventional procedures

BENEFITS

- Combines high class image quality and Doppler performance with state-of-the-art specialist transducers
- Compact construction makes the system very mobile
- Extremely user-friendly, due to the fast, intuitive, customizable user interface and ergonomic design
- Palm Control Unit (option) for use in sterile environments
- Change both transducer and application with programmable transducer Start-Stop button
- Specially designed puncture guides for convenient intraoperative, laparoscopic and percutaneous interventional procedures
- Fully digital signal processing delivers high image quality
- Simultaneous triplex imaging with high Pulse Repetition Frequency (PRF) maximizes the on-screen information
- Application-specific transducers and advanced calculation packages cover a variety of clinical needs
- Contrast Imaging (option)
- Fully integrated 3D capabilities (option)
- DICOM® capabilities (option)
- 17" flat screen, also available on an articulating arm (option)
- 360° scanning



General Description

B-K Medical's Pro Focus 2202 Ultra-sound Scanner is a fully digital, multipurpose scanner with the latest advances in ultrasound technology. The system platform is based on the latest PC technology and Windows® software making it easy to implement upgrades as required. The Pro Focus is highly integrated and can be operated in the following modes:

- B-mode
- B-mode with Tissue Harmonic Imaging
- B-mode + M-mode
- Doppler mode including:
 - Spectral Doppler (PW & CW)
 - Power mode (including Directional Power Doppler)
 - Color mode (Color Doppler)
 - Triplex-(B-mode plus Spectral Doppler and either Color Doppler or Power Doppler)
- Contrast Imaging

The Pro Focus 2202 ultrasound scanner

Transducers available for the Pro Focus 2202

Transducer	Frequency Range	Type	Supported by Blue / Green	Puncture guide	Tissue Harmonic Imaging	Contrast Imaging	Abdominal	Intraoperative	Musculoskeletal	Obstetrics	Pediatrics	Peripheral Vascular	Small Part	Transrectal	Transvaginal	Fetal	Neurosurgery	Cardiac
1850 8539 6004 6005	5-10 10 5-10	SE	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓				✓						✓ ✓ ✓ ✓				
2050	6-16	SE	✓											✓	✓			
8551	6-10	SE	✓	✓										✓				
8658	4-9	CA/ LA	✓	✓	✓									✓				
8659	5-9	LA		✓	✓			✓			✓		✓					
8661	5-7.5	CA	✓	✓											✓	✓		
8662	5-8	CA		✓				✓			✓						✓	
8663	5-8	CA		✓				✓									✓	
8666	5-10	CA		✓	✓	✓		✓										
8667	5-10	CA	✓	✓	✓									✓				
8801	2-5	CA	✓	✓	✓	✓	✓			✓						✓		
8802	3-6	CA	✓	✓	✓		✓			✓	✓					✓		
8803	3-5	CA	✓	✓	✓		✓			✓	✓					✓		
8804	5-10	LA		✓	✓				✓		✓	✓	✓					
8805	6-12	LA		✓					✓			✓	✓					
8806	4.3-9	CA	✓	✓											✓	✓		
8808	5-10	CA	✓	✓	✓									✓				
8809	6-15	LA		✓				✓	✓			✓	✓					
8811	5-12	LA	✓	✓	✓			✓	✓		✓	✓	✓					
8812	3.75-8	LA		✓							✓	✓	✓					
8814	5-10	CA		✓	✓	✓		✓	✓			✓	✓					
8815	5-10	CA		✓	✓	✓		✓	✓		✓	✓	✓					
8817	2-4	CA	✓		✓													✓
8820	2-6	CA	✓	✓	✓	✓	✓			✓						✓		
8827	2-4	PA	✓		✓													✓

Transducer Type: SE = Single Element (Mechanical), CA = Convex Array, LA = Linear Array, PA = Phased Array

Specifications Pro Focus 2202

SCANNING MODES (MAIN)

B (B-mode)
M (M-mode)
PW (Pulsed Wave Doppler)
CW (Continuous Wave Doppler)
C (Color Flow Mapping: Velocity, Variance And Velocity + Variance)
P (Power Doppler and Directional Power Doppler)
THI (Tissue Harmonic Imaging)
Contrast (Optional)

SCANNING MODES (COMBINATION)

B + M
B + PW (Duplex)
B + CW (Duplex)
B + C
B + P
B + C + PW (Triplex)
B + C + CW (Triplex)
B + P + PW (Triplex)
B + P + CW (Triplex)

SCANNING MODES (SIMULTANEOUS SPLIT)

B + B
B + THI
B + Contrast
B + (B + C)
B + (B + P)

TRANSDUCER CENTER FREQUENCY RANGE

Linear and convex array transducers: 1.9-15MHz
Phased array transducer: 2-4 MHz
Single-element transducers (option): 5-20MHz
360° rotating single-element transducers (option): 5-20MHz
Volumetric transducer (option): 5-20MHz

FREQUENCY SELECTION

B-mode: Up to 6 manual and 128 Automatic (Depth dependent)
THI: Up to 128 Automatic (Depth dependent)
C-mode: Up to 3 Manual
D-mode: Up to 3 Automatic

DISPLAY

15" screen. SVGA. 75Hz.
17" LCD flat screen

IMAGE CHARACTERISTICS

Ultrasound image: 512 x 480 pixels; 256 gray levels, 4096 colors
Graphics overlay: 800 x 600 pixels; 32-bit true color
Presentation: Images can be mirrored up/down and left/right

SWEEP SPEED

2-14 seconds per screen (1-9cm/s)

SIZE (ZOOM)

Examination Penetration: Max 28cm
Examination Penetration: Min 0.5cm
Works in Freeze and Scanning mode

FRAME RATE

>600Hz (automatically optimized), depending on the transducer and the scanning mode

PREPROCESSING

TGC: Overall gain, fine gain (TGC)
System dynamic range: 170dB
Gray scale conversion: 20 scales
Color scale conversion: 19 scales
Doppler conversion: 16 scales
B-mode Color Overlay: 32 bit

POST PROCESSING

Gray Scale Selection
Color Scale Selection
Noise Reject
Depth
Zoom
Pan
Gain

FOCAL ZONES

Up to 25 transmit zones depending on transducer
Up to 8 transmit zones for composite focus
Continuous receive focusing

FEATURES

Fully digital
Pulse Inversion Tissue Harmonic Imaging
Contrast Imaging (Optional)
Split screen (vertical and horizontal)
Simultaneous live split-screen imaging
User setups
Multibeam: 4 in parallel, Quad Beam
Channels: 1024 processing capability
Copy/Recall system and transducer setup
Image Review (cine) for up to 3000 images depending on scanning mode
Image Storage: CD, hard disk and USB storage device
Hard disk capacity: Expandable to 530GB (30GB built in), 530,000 images (30,000 on built-in HDD)
Clip browser
Report function
DICOM networking (option)
Fully integrated 3D (option)
Palm Control Unit (PCU) (option)
On-screen timer
Edge enhancement
Non-linear 2D persist filter
Picture-in-Picture (option)
User-defined hard keys
Automatic Mode Adjustment
Matching sliding filters
True Hilbert detection
Post-processing
Freeze Zoom (or Post Zoom)
Adjustable monitor and keyboard
Supports phased array transducers

PATIENT ARCHIVING

Search possibilities: Includes Patient name, ID, Last Exam Date, Archive Status, Free-Text search
Archive database of all patients on CD or DICOM PACS
Thumbnail display of selected exam
Document types: Frozen Images, Live Images, 3D data sets, Reports
Export Functions:
Archiving to CD, DICOM network
Copy to CD, USB-drive, External HDD
Format: BMP, AVI, html, BK3d

IMAGE MARKINGS

Image scale
Puncture lines

IMAGE ANNOTATIONS

Alphanumeric
Adjustable annotation arrow
Labels and comments (user-defined libraries)
Bodymarks (user-defined libraries)
Patient and hospital ID's
Real-time clock showing date and time

CINE

Cine Frames: >3000
Cine Doppler: >20 min
Loop Function
Clip: Up to 8 hours in chapters of max. 5 min

PULSED WAVE DOPPLER

Sample volume size: 1- 20mm
Units: cm/s or kHz
Flow inversion: Yes
Flow offset: Yes
Pulse repetition frequency: 1-15kHz
Wall filter: Digital filter. Cutoff frequency 1-10% of PRF
Detectable speed: 0.1cm/sec-10.8m/sec (0°-60°)
Display: B/W or color FFT spectra, 256 levels
Frequency resolution: Max. 5.2 Hz (PRF = 1 kHz)
Time resolution: Max. 4msec
Angle correction: 1° steps
Doppler audio output: max. 2 x 1W

STEERABLE DOPPLER

Angle: up to 40° (±20°)

COLOR FLOW MAPPING

CFM Modes: Velocity, Variance, Velocity + Variance
Sample: Max. 512 points
Pulse repetition frequency: 0.2-12kHz
Wall filter: Digital filter. Cutoff frequency 1-10% of PRF
Detectable speed: 0.1cm/sec-8.6m/sec (0°-60°)
Display: 4096 colors; 8 different color scales
Color Doppler interleave factor: 64 lines

POWER DOPPLER – Directional Power Doppler

Sample: Max. 512 points
Pulse repetition frequency: 0.2-12kHz
Wall filter: Digital filter
Display: 256 colors. 11 different color scales

CONTINUOUS WAVE DOPPLER

Range: 1.3-30kHz
Wall filter: Digital filter. Cutoff frequency 1-20% of PRF
Detectable speed: 0.3cm/sec-18.4m/sec (0° to 60°)

MEASUREMENT FACILITIES

Trackball (point, move, measure)
Pro Packages: General (including Vascular), OB/GYN, Surgery, Urology, Cardiac

CONNECTION POSSIBILITIES

Transducers: 3 or 4 active sockets; 2 or 3 for linear and convex array transducers and 1 for 360° and single-element (option)
External controls: Foot switch, transducer button, Palm Control Unit (PCU) (option)
Signal output: Audio (stereo line level), video (composite color, composite black/white, RGB, S-video), 2 x SVGA, 75Hz
Image storage: Internal hard disk, CD-RW or USB storage device, Digital B&W printer, Digital color printer
Documentation trigger: 2 units
Signal input: Audio (stereo line level), video (composite color, S-video, RGB)
Communication: Expandable to 8 x USB 2.0 (3 built in), RS232 serial channel, 2 x IEEE 1394a FireWire, 10/100 Ethernet
Isolated auxiliary power outlets: 100-230V AC (equal to input voltage), max total output available for use 350VA
DICOM network (optional)

POWER SUPPLY

Complies with requirements for Class 1 (protective earth) devices of EN/IEC 60601-1[1]
Voltage: 100-230V AC
Frequency: 50-60Hz
Power consumption: 900VA total (incl. the 350VA isolated power outlet)
Automatic circuit breakers: 2

NOISE

Fan noise during operation: <30dBA

ENVIRONMENTAL LIMITS

Operating temperature: +10 to 40°C (+50 to 104°F)
Storage temperature: -25 to +60°C (-13 to +140°F)
Operating/storage humidity: max 85% RH non-condensing
Operating pressure: 700-1060hPa (normal atmospheric pressure)

DISINFECTION

Chemical resistance of console during disinfection:
Wiping with:
Sodium hypochlorite up to 2% in water
Chlorhexidine gluconate 5% in water
Chlorhexidine 1.5% and cetriride 15% in water
Chlorhexidine 0.5% in ethanol 70%
Glutaraldehyde 2% solution
Ethanol 70% in water
Isopropanol 70% in water

APPROXIMATE DIMENSIONS

Height: 1410-1500mm (adjustable)
Width: 530mm

Specifications Pro Focus 2202

<p>Depth: 780mm Weight: 69kg (with flat screen, excluding transducers and printer)</p> <p>ELECTROMAGNETIC COMPATIBILITY Complies with requirements for Class A devices of EN/IEC 60601-1-2 [2]</p> <p>SAFETY Complies with EN/IEC 60601-1[1], EN 60601-2-37[3], UL2601-1[4], and CSAC22.2 No. 601.1[5]</p> <p>APPROVALS UL International DEMKO (CB certification) UL Listed CUL (UL listing for Canada) TÜV</p>	<p>MARKET CLEARANCE USA - FDA, Market Clearance Canada - Health Canada, Licence EU - Notified Body (DCM), CE certification Japan - PMDA, Licence (pending)</p> <p>MANUFACTURER B-K Medical Mileparken 34 DK-2730 Herlev Denmark</p> <p>REFERENCES [1] EN 60601-1:1990 + A1:1993 + A2:1995 + A13:1996 <i>Medical electrical equipment. Part 1: General requirements for safety.</i></p>	<p>[2] EN 60601-1-2:2002 + A1:2006 <i>Medical electrical equipment – Part 1-2: General requirements for safety. Collateral standard: Electromagnetic Compatibility-Requirements and tests.</i></p> <p>[3] EN 60601-2-37:2001+ A1:2005 + A2:2005 <i>Medical electrical equipment – Part 2-37: Particular requirements for the safety of ultrasonic medical diagnostic and monitoring equipment.</i></p> <p>[4] UL 2601-1:2003 <i>Medical Electrical Equipment – Part 1. General Requirements for safety.</i></p> <p>[5] CSA C22.2 No. 601.1–M90:2001 <i>Medical Electrical Equipment – Part 1. General Requirements for safety.</i></p> <p>[6] EN 60601–1–1:2001 <i>Medical electrical equipment –Part 1-1: General requirements for safety. Collateral standard: Safety requirements for medical electrical systems.</i></p>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Ordering Information Pro Focus 2202

<p>ACCESSORIES INCLUDED</p> <p>BB1279: Pro Focus 2202 Extended User Guide (English)*</p> <p>BB1564: Transducer Care, Cleaning & Safety (English)**</p> <p>SC1617/SC1638: Control Panel Guide (English)</p> <p>BZ2100: Technical Data CD</p> <p>BZ2200: Screen texts CD</p> <p>QA0228: Trackball adjustment tool</p> <p>UA0967: Hand rest</p> <p>* A user guide is available in other languages ** other language versions available</p> <p>Transducers For more information about B-K Medical's transducer program, please contact your local sales representative.</p> <p>OPTIONS</p> <p>UA2222: 3D Professional (includes 3D module mover)</p> <p>UA2222-K: 3D mover module kit</p> <p>UA2223: 360° mechanical input module</p> <p>UA2223-K: 360° mechanical input module kit</p> <p>UA2207: 3D Freehand</p> <p>UA2205: Picture-in-Picture (PiP)</p> <p>UA2206: DICOM option (license)</p> <p>UA2215: Contrast Imaging</p> <p>UA2214: Tissue Harmonic Imaging</p> <p>UA2220: 3rd Array Transducer Connector</p> <p>UA2203: ECG (includes AO366 and QA0210)</p> <p>AO0366: ECG electrode cable (3.5m)</p> <p>QA0210: ECG electrodes (box of 50)</p> <p>UA2230: 2202 Blue to Green upgrade kit[†]</p>	<p>UA2231: 2202 Green to Yellow upgrade kit[†]</p> <p>UA2232: 2202 Blue to Yellow upgrade kit[†]</p> <p>UA2233-K: B/W to Color upgrade kit for 2202 Blue to Green^{††}</p> <p>UA2251: Flat Screen for 2202</p> <p>UA2251-K: Flat Screen kit for 2202</p> <p>UA2252: Flat Screen on arm for 2202</p> <p>UA2252-K: Flat Screen on arm kit for 2202</p> <p>ACCESSORIES AVAILABLE</p> <p>UA0967: Hand rest</p> <p>UA2240: Printer shelf (Blue and Green systems)</p> <p>UA1215: Foot switch</p> <p>EJ4000: Plug for isolated auxiliary power outlets</p> <p>UA2204: Cord retaining kit</p> <p>UA0610: Scanning gel (5L)</p> <p>WQ0739: Scanning gel (290ml)</p> <p>DZ9756: Transducer holder inlay</p> <p>UA1302: Endo probe holder</p> <p>DP0889: Paper holder</p> <p>UA2410: Palm Control Unit (PCU)</p> <p>UA1271: Adaptor for PCU</p> <p>UA0955: Scanner cover</p> <p>SC1624: Shortcut stickers</p> <p>UA2210: Docking cable</p> <p>UA2211: Docking box</p> <p>UA2212: Holder for docking cable and PCU</p> <p>Documentation</p> <p>UA4100: Digital B/W printer start-up kit</p> <p>EQ4100: Digital B/W Printer (Sony UP D897)</p> <p>EQ4067: Monochrome Video Graphic Printer (Sony UP-980MD)</p>	<p>EQ4068: Printing paper for UP-980MD (Sony UPP-210HD)</p> <p>EQ4069: Blue transparency film for multiformat use with UP-980MD (Sony UPT-210BL)</p> <p>EQ4072: Printing paper (Sony UPP-110HG)</p> <p>EQ4099: Digital Color Printer (Sony UP-D23MD)</p> <p>EQ4086: Remote control unit for UP-2800 and UP-895CE (Sony RM-91)</p> <p>EQ4092: Color Video Printer (Sony UP-21MD)</p> <p>EQ4093: Color printing pack for UP-21MD (Sony UPC-21S)</p> <p>EQ4094: Color printing pack for UP-21MD (Sony UPC-21L)</p> <p>3D Scanning Accessories</p> <p>UA0550: Endocavity Rotational Mover (ECRM)</p> <p>UA0551: ECRM cradle for 8658</p> <p>UA0552: Pullback mover for 1850 and 8808</p> <p>UA0553: Variable friction support arm</p> <p>[†] For scanners purchased before February 2007 ^{††} For scanners purchased after February 2007</p>
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Ordering Information Pro Focus 2202

Available versions for Pro Focus 2202

There are 3 versions of the Pro Focus 2202 available for order: Yellow (high-end color scanner), Green (midrange color scanner) and Blue (high-end B&W scanner). Upgrade kits are available (see Ordering Information for details).

Feature	Blue	Green*	Yellow
17" Flat screen	Optional*	Optional*	Optional
17" Flat screen on arm	Optional*	Optional*	Optional
Detachable monitor	-	-	Included
Digital B/W printer	Optional	Optional	Optional
Printer shelf	Optional	Optional	Included
Power Doppler	-	Included	Included
Directional Power Doppler	-	Included*	Included
Color Flow Mapping	-	Included*	Included
Pulsed Wave Doppler	-	Included*	Included
Continuous Wave Doppler	-	-	Included
Tissue Harmonic Imaging	Included	Included	Included
Contrast Imaging	-	-	Optional
Picture-in-Picture	-	-	Optional
DICOM	Optional	Optional	Optional
3D Freehand	Optional	Optional	Optional
3D Professional and mover	Optional	Optional	Optional
ECG module	Optional	Optional	Optional
3rd Linear and Convex Array (electronic) transducer connector	-	Optional	Included
Support for single element (mechanical) transducers: 1850, 2050, 8551	Optional	Optional	Optional
Support for transducers: 8658, 8661, 8667, 8801, 8802, 8803, 8806, 8808, 8811, 8817, 8820, 8827	Included	Included	Included
Support for transducers: 8659, 8662, 8663, 8666, 8804, 8805, 8809, 8812, 8814, 8815	-	-	Included

* only available in some countries



The Sentinel Imaging Group
1172 Winola Road
Clarks Summit PA 18411
Toll Free: 888 838 7488

This Document is for informational purposes only and the information in this document is subject to change without notice. The Sentinel Imaging Group is not affiliated with the Original Equipment Manufacturer, BK Medical and is only a 3rd Party providing equipment and Services.