

vPad-A1™ - HASTA SİMÜLATÖRÜ



DATREND
Systems Inc.



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Multiparametrik Hasta Simülatörü **vPad-A1™**

Multiparametrik hasta simülatörü **Datrend vPad-A1** ; tablet teknolojisini ilk uygulayan ve hasta simülasyonlarını ülkemizde yürürlükteki standartlara tam uygun olarak yapan bir test ve vital parametre simülatör cihazıdır.

Pacer, fetal/maternal simülasyon, CO, 60'ın üzerinde aritmi ve her şeyden önemlisi testleri kablosuz bir tablet üzerinden yaparak ve sonuçları büyük bir ekranda göstererek ölçümü yapan teknik ekibe büyük avantaj sağlamaktadır.

Cihazlarda en fazla arıza yapan tuşlu membran klavye eskimesi ve deformasyonu ile lcd ekran problemi yaşanmaz.

Yenilikçi V-Pad Teknolojisine dayanan Datrend Systems'in vPad-A1'i, hepsi bir arada bir hasta vital parametre simülasyon cihazıdır.

vPad-A1 modülerdir ve çok-Parametrelili PS Hasta Simülatörü modülü (EKG, Sıcaklık, Solunum, IBP,CO,Fetal), SpO2 test modülü, NIBP test modülü ile ve çeşitli kombinasyonlarda bağımsız olarak kullanılabilen simülasyon modüllerinden oluşur.



vPad-A1™

vPad-A1™

Genel Teknik Özellikler

Vpad-A1 aşağıdaki özellikleri destekler ve rakiplerinden öne geçmesini sağlar.

Genel Teknik Özellikler

Vpad-A1 aşağıdaki özellikleri destekler ve bu ürünü diğerlerinden ayırır.

- 12 lead EKG simülasyonu; bağımsız çıkış
- ST Segment simülasyonları: 8 elevated ve 8 depressed
- Axis Deviation: Normal (intermediate), horizontal, ve vertikal.
- Neonatal Mode desteği
- EKG Performans Testi
- 60 üzerinde Aritmi simülasyonu
- 2 kanal IBP simülasyon
- Sıcaklık
- Solunum
- Pacer simülasyonu
- Cardiac output – Kardiyak çıkış simülasyonu (opsiyonel – ilave adaptör ile)
- SpO2 simülasyonu
- Non-Invasive BP modüller (Tüm ana üretici ürünleri ile uyumlu ve ürün ekleyebilme)
- Otomatikleştirebilen ön ayarlar
- Otomatik test dizileri oluşturabilme,
- Anlık test raporları internet üzerinden iletme ve paylaşma , BT ile baskı alma.



Innovation by design

ECG General:

Full 12-Lead ECG; independent outputs for each signal lead
- color coded to AHA and IEC Standards.
Output Impedances: 500, 1000, 1500, & 2000 ohms
ECG Amplitude: 0.05 - 5.5 mV
Amplitude Accuracy: \pm (2% setting + 0.05 mV)
High Level ECG: 500x lead II signal
High Level Accuracy: \pm 5%
Rate Accuracy: \pm 0.25 BPM

Normal Sinus Rhythm:

Rates: 10-360 BPM, 1 BPM steps, Accuracy \pm 0.25BPM
user defined presets (15), user input specific rates
Amplitudes (Lead II): 0.05mV to 0.5mV (0.05mV steps);
0.5mV to 5.5 mV (0.25mV steps)
Neonatal Mode: ECG QRS width is reduced from 80ms
to 40ms.
Artifact: 50Hz, 60Hz, muscle, baseline, respiration
Axis Deviation: Normal , horizontal, and vertical.

ECG Performance Testing:

Square Wave: 0.125, 2, 2.5Hz
Triangle Wave: 0.125, 2, 2.5Hz
Pulse: 30, 60 BPM with 60ms pulse
Sine Waves: 0.05 - 200 Hz.
QRS and R Wave Detection Test:
Rate: 30 - 250 BPM triangle wave
Width: 8 - 200ms
ST Segment Adjustment (Lead II):
Rate: 60 BPM; ST Segment: \pm 80% of ECG amplitude
Tall T wave:
Rate: 80 BPM; ST Segment: 0 - 150% of ECG amplitude

Fetal / IUP(ch1 only) Simulations:

Fetal heart rates: 60 to 240 BPM 1 BPM steps
12 Preset rates, user defineable
Uniform, Early and Late Deceleration,
Uniform Acceleration
Dynamic intrauterine pressure (IUP) waveform:
Positive bell shaped pressure curve
Peak pressure: 50 or 90 mmHg,
Contraction duration: 90 sec
IUP Period: 2, 3, 5 min and Manual
Pressure transducer sensitivity: 5 or 40 m v/v/mmHg
Input/output impedance: 300 ohms \pm 10%

2 Blood Pressure Channels:

Electrically Isolated Channels
Transducer Sensitivity: 5 or 40 μ V/V/mmHg
Input/output impedance: 300 ohms \pm 10%
Excitation : 2 to 16 Vp; DC to 5000Hz
Calibrated Rate: 80 BPM normal sinus rhythm
Static Levels BP1/2:
-10 to 400 mmHg in 1 mmHg steps
15 User defined presets; user input specific pressures
Accuracy: \pm (1% of setting + 1mmHg)

Dynamic Simulations:

Arterial (120/80)
Arterial (90/40)
Arterial (160/110)
Radial Artery (120/80)
Left Ventricle (120/0)
Right Ventricle (25/0)
Pulmonary Artery (25/10)
Pulmonary Artery Wedge(25/2)
Right Atrium [CVP] (120/0)
Left Atrium (14/4)
Swan-Ganz (channel 1 only)
Automatic (every 15, 25sec) with Pause
Manual, advance is manually triggered
Artifact/Respiration (larger of):
5mmHg or 5%
10mmHg or 10%

Pacemaker:

Pulse Amplitude: -700mV to +700mV
Pulse Polarity: Positive or negative.
Pulse Width: 0.1, 0.2, 0.5, 1.0, 2.0 ms
Accuracy : \pm (5% setting + 0.2mV) Lead II
Pacer Rhythm:
Ventricular
Asynchronous 75 BPM
Demand with frequent sinus beat
Demand with occasional sinus beat
A-V sequential
Non-capture
Non-function
Atrial
Atrial 80 BPM
A-V sequential

Temperature:

20 - 42°C in 0.5°C increments
Accuracy: \pm 0.01 °C high precision simulations
(30, 32, 35, 37, 40, 42 °C)
 \pm 0.03 °C general
Probe Compatibility: 400 or 700 series YSI

Respiration:

Baseline Impedance:
500, 1000, 1500, 2000 ohms on LEADS I, II, III
Impedance Variations (Delta):
0.05 to 1.0 Ω in 0.05 Ω increments;
1.0 to 5.0 Ω in 0.25 Ω increments;
Rates: 10 to 150 BrPM; 1 BrPM steps; 0 BrPM for APNEA
Apnea Selections: 12, 22, 32 seconds, and continuous
Respiratory Effort (Inspiration/Expiration Ratio:) 1/1, 1/2,
1/3, 1/4, 1/5
Ventilated 1/1
Respiration Lead LA or LL

Cardiac Output:

Baseline Temperature: 36, 37 and 38°C, ± 0.03 °C
 8 Inject Temperatures 0, 2, 20 & 24°C; Spacelabs and
 Phillips
 1 user adjustable
 Simulations:
 C.O. of 3, 4, 5, 6, 7l/min
 Slow Injectate Curve
 Faulty Injectate Curve
 Left to Right Shunt Curve
 Cal Pulse: 1°C for 1 second

Arrhythmia Selections:

General 1

Asystole 1
 Asystole 2
 Asystole 3
 PVC1 Bigeminy
 PVC1 Trigeminy
 PVC2 Bigeminy
 PVC2 Trigeminy
 Premature Atrial Contraction (PAC)
 Nodal Premature Nodal Contraction (PNC)
 Multifocal PVC (once)
 Frequent Multifocal PVCs

Ventricular Arrhythmia (PVC1\left or 2\right)

PVC Ventricular (once)
 PVC Ventricular (every 10th beat)
 PVC Early, Ventricular
 PVC R-on-T, Ventricular
 PVC 6/Minute
 PVC 12/Minute
 PVC 24/Minute
 Pair PVCs (1 time event)
 Run 5 PVCs (1 time event)
 Run 11 PVCs (1 time event)

Conduction Defects:

First Degree Heart Block
 Mobitz I, Second Degree Heart Block
 Mobitz II, Second Degree Heart Block
 Third Degree Heart Block
 Right Bundle Branch Block
 Left Bundle Branch Block

Fibrillations

Coarse Atrial Fibrillation
 Fine Atrial Fibrillation
 Coarse Ventricular Fibrillation
 Fine Ventricular Fibrillation

Supraventricular Arrhythmia

Atrial Tachycardia
 Paroxysmal Atrial Tachycardia
 Supraventricular Rhythm @ 90 & 120 BPM
 Supraventricular Tachycardia @ 140, 150, 160,
 180, 190, 200, 210 & 220 BPM
 NSR @ 160 BPM

General 2

Atrial Flutter
 Sinus Arrhythmia
 Missed Beat @ 80 BPM (1 time event)
 Miss every 10th @ 80 BPM
 Miss every 10th @ 120 BPM
 Nodal Rhythm
 Sinus Bradycardia <60 BPM

AutoSettings

Unlimited number of user programmable,
 simulation parameter setups available.

Communication / User Interface:

via vPad-A1 Base Unit
 Android 5" tablet:
 Touchscreen User Interface
 Wired (USB) or Bluetooth mode
 WiFi
 16 GB memory
 Dual XBUS for Datrend test automation

Power Supply:

via vPad-A1 Base Unit
 External AC adapter
 Internal rechargeable Li-Ion batteries (for 10 hrs
 of simulation with full charge)

Dimensions:

98mm x 208mm x 56mm (3.85" x 8.2" x 2.21")
 PS Unit (incl. A1 Base)

Weight:

660g (1.44lb) PS Unit (incl. A1 Base)
 200g (0.44lb) wireless tablet interface

Environment:

15°C to 40°C, 10% to 90% RH, Indoor Use Only,
 Category II

All specifications subject to change without notice.

vPad-O₂TM - Performance Specifications

Saturation (SpO₂):

Range: 30% to 100%
Increments: 1%
Presets: 6, user definable
Range of adjustment and presets may vary according to pulse oximeter specifications

SpO₂ Accuracy:

Saturation within DUT specified range:
±1 count + specified accuracy of the DUT

Heart Rate:

Range: 20 to 300 BPM
Increments: 1 BPM
Presets : 6, user definable
Accuracy: ± 0.25 BPM (sync mode)
otherwise, ±1 BPM

Pulse Amplitude:

Range: 0 to 100%
Increments: 1% steps.
Presets : 6, user definable
Accuracy: ± 1%

Signal Artifact:

Four preset simulations:
Movement
Tapping (Spike artifact)
Shivering (Tremor artifact)
Shake Table (2.5Hz Sinewave)

Auto Presets:

Unlimited preset patient simulations
Default Auto Presets:
Normal Adult
Hypoxia
Movement Artifact
Tachycardia
Bardycardia
Neonate
Low Perfusion
No perfusion
Tremor (Shivering Artifact)

Alarm Tests:

Automated test sequences for determining oximeter alarm response time to:
Low Saturation
Low Heart Rate
High Heart Rate
Low Perfusion
Signal Artifact
Five defaults, plus unlimited programmable alarm sequences

Communication / User Interface:

via vPad-A1 Base Unit
Android 5" tablet:
Touchscreen User Interface
Wired (USB) or Bluetooth mode
WiFi
16 GB memory
Dual XBUS for Datrend test automation

Power Supply:

via vPad-A1 Base Unit
External AC adapter
Internal rechargeable Li-Ion batteries (for 10 hrs of simulation with full charge)

Dimensions:

98mm x 208mm x 30mm (3.85" x 8.2" x 1.18") A1 Base
90mm x 160mm x 24mm (3.54" x 6.3" x 0.95") SpO₂ Probe

Weight:

440g (0.96lb) A1 base
122g (0.27lb) SpO₂ Probe

Environment:

15°C to 40°C, 10% to 90% RH, Indoor Use Only, Category II

All specifications subject to change without notice.



MEDİBİM MEDİKAL BİLİŞİM ve KALİBRASYON
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Manufacturer Envelopes:

GE Dinamap and Dinamap Pro
Critikon Dinamap Plus
Datascope Passport
Welch-Allyn Spot LXi and 52000
Fukuda Dynascope
Colin Press-Mate
...and more custom simulations

Pressure Units:

mmHg, mbar, kPa, inH₂O, cmH₂O

BP Presets:

Systolic/Diastolic (mmHg)
Adult Neonatal
255/195 150/100
200/150 120/80
150/100 100/65
120/80 80/50
100/65 60/30
80/50 35/15
60/30

BP Simulation:

Simulation type: oscillometric
Rate Range: 20 – 240 BPM
Accuracy: ±0.25 BPM in sync mode
±1 BPM otherwise
Amplitude: 0 – 2 mL
1.25 mmHg into 500ml cuff
Amplitude Range: 0 – 150%
Amplitude Accuracy: better than 0.5%
AutoSettings: unlimited, user definable

Envelope Shift:

± 50 mmHg max
Minimum Diastolic: 15 mmHg
Maximum Systolic: 275 mmHg

Manometer:

Pressure Range: 0.0 to 400.0 mmHg
Accuracy: ± 0.5 mmHg
Resolution: 0.1 mmHg

Regulated Pressure Source:

Pressure Range: 10.0 to 400.0 mmHg
Accuracy: ± 0.5 mmHg
Resolution: 0.1 mmHg

Leak Test:

Automatic/manual Inflation
Automatic Timer
Leak Test Time: 30 - 600 seconds (user defined)
Target Pressure: 20 to 400 mmHg
Range: 0 to 200 mmHg/min
User Definable Presets: 12
User Definable AutoSettings: unlimited

OverPressure Test:

Automatic/manual Inflation
Range: 20 - 400 mmHg
Release Time: 1-999 sec
User Definable Presets: 12
User Definable AutoSettings: unlimited

Standard Features / Accessories:

- Autosequences
- Unlimited User Defined Settings
- vPad-A1 Power Base / Display
- Universal Hose Adapter Kit

Communication / User Interface:

via vPad-A1 Base Unit
Android 5" tablet:
Touchscreen User Interface
Wired (USB) or Bluetooth mode
WiFi
16 GB memory
Dual XBUS for Datrend test automation

Power Supply:

External AC adapter
Internal rechargeable Li-Ion batteries (for 200+ simulations with full charge)

Dimensions:

98mm x 275mm x 97mm (3.87" x 10.82" x 3.80")
BP Unit (incl. A1 Base)

Weight:

1080g (2.38lb) BP Unit (incl. A1 Base)
200g (0.44lb) wireless tablet interface

Environment:

15°C to 40°C, 10% to 90% RH,
Indoor Use Only, Category II

Please contact the factory for the availability of other calibration tables, or visit our web site for updates at www.datrend.com

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**MEDİBİM MEDİKAL BİLİŞİM KALİBRASYON
TEKSTİL SANAYİ TİCARET LİMİTED ŞİRKETİ
TÜRKİYE YETKİLİ DİSTRİBÜTÖRÜ**

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