

AcuitSign M5

Modular Patient Monitor



New Features:

- 12.1"LCD High Resolution Display with Full Touch Screen option
- Unique Multi-measurement & Transport Module Design
- Advanced Modular Design with powerful Networking
- High-end Parameters: BIS,CO,ICG,8-Temp, 8-IBP, EtCO2, AG, etc.
- Powerful Data Review with 168 hours of graphic & numeric data review
- Up to 12 channels of waveforms with various screen layout
- Ultra Quiet Design suitable for night-time operation

Feature highlight:

Multi-measurement module EMS & MMS, small in Size, big in Capacity:

- 3.5" full-touch color display and wireless networking come with the EMS Module
- Difference parameter configuration enables continuous monitoring of patient
- To ensure seamless information workflow
- Multi-measurement Server

Main unit of AcuitSign M5:

- Display: 12.1"TFT-LCD display,
- Touch screen: Full touch screen option
- 4 Standard module slot,1Additional module rack Slot(for EMS /MMS all-in-one module), 1 RJ45 internet socket ,1 Defibrillation Output,1 Nurse Call socket, 1VGA port,4 USB1.1 port,1 Auxiliary Module Rack connector

Module Option

- EMS/MMS Module: 12 types
- Other Modules:
 Sidestream EtCO2 module, Mircostream EtCO2 module, Mainstream EtCO2 module, AG module, IBP module, TEMP module, Nellcor SpO2 module, Masimo SpO2 module BIS module,CO module,ICG module

Suitable for:

- OR, ICU, ER, General Ward

EMS/MMS module list:

	RESP	2-TEMP	NIBP	SpO2	Nellcor SpO2	Masimo SpO2	3/5 lead ECG	12 lead ECG	2-IBP
EMS/MMS1	√	√	√	√			√		√
EMS/MMS2	√	√	√	√				√	√
EMS/MMS3	√	√	√	√			√		
EMS/MMS4	√	√	√	√				√	
EMS/MMS5	√	√	√		√		√		√
EMS/MMS6	√	√	√		√			√	√
EMS/MMS7	√	√	√		√		√		
EMS/MMS8	√	√	√		√			√	
EMS/MMS9	√	√	√			√	√		√
EMS/MMS10	√	√	√			√		√	√
EMS/MMS11	√	√	√			√	√		
EMS/MMS12	√	√	√			√		√	



MMS Module



EMS Module



EMS Charging Stand



TECHNICAL SPECIFICATION: AcuitSign M5

Size and Weight

- Size: 350mm×340mm×207mm
- Weight: ≈ 6.5kg
- Standard module slot: 4
- Additional module rack Slot: 1

Power supply

- Power Voltage: AC 100-240V 50/60Hz
- Power Input: ≈ 150VA
- Input Current: 1.7~0.8V
- Safety class: Category I

Display

- 12.1" Color TFT-LCD
- Resolution: 800×600 pixels

Battery (Option)

- Type: Rechargeable Lithium battery, 11.1V/4.0AH
- Operating time under the normal use and full charge: ≈ 150minutes
- (2 batteries for 300 minutes)

Recorder (Option)

- Method: Thermal dot array
- Paper width: 50mm (1.97 in)
- Paper length: 15m
- Paper Speed: 12.5/25/50(mm/sec)
- Traces: Maximum 3 tracks
- Recording way: Real-time recording, Periodic recording, Alarm recording

Alarm

- Level: Low, medium and high
- Indication: Auditory and visual
- Patient Physiological Alarm Light color: Yellow & Red;
- Equipment Technical Alarm Light color: Blue
- Supports Pitch Tone and multi-level volume;
- Supports custom arrhythmia tone

Input device

- Touch screen (Option)
- knob: standard config
- Mouse input: Support
- Keyboard input: Support

System Output & Extensible Interfaces

- Ethernet Network: 1 Standard RJ45 socket
- Defibrillation Output: 1 RJ11 socket
- Nurse Call: 1 BNC socket
- Video Output: 1VGA port
- USB1.1 port: 4
- Auxiliary Module Rack connector: 1
- SD memory card: 2G (option)
- Analog Output (ECG or IBP): Option

Trend & Reviewing

- Trend: 168 hours
- NIBP measurement reviewing: 1000 groups
- ARR event: 128 groups of ARR event and the associated waveform
- Alarm events: 128 groups of parameter alarm events and associated parameter
- Waveform at the alarm moment
- Holographic waveform: The storage time depends on the stored waveforms and the quantity of them.

Environment

- Operating temperature: 0~+40℃
- Storage temperature: -20℃ to +50℃
- Operating humidity: 15% to 85% (non condensing)
- Storage humidity: 10% to 93% (non condensing)
- Operating atmospheric pressure: 860hPa to 1060hPa
- Storage atmospheric pressure: 500hPa to 1060hPa

Safety:

- IEC60601-1 Approved, CE marking according to MDD93/42/EEC

Performance:

ECG

- Lead Mode: 3-leads ECG input
- 5-leads ECG input
- 12-leads ECG input
- Lead selection: I, II, III
- I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6 (option)
- Gain: 2.5mm/mV (×0.25), 5mm/mV (×0.5), 10mm/mV (×1), 20mm/mV (×2), 40mm/mV (×4), Auto
- CMRR: Monitor mode ≈ 105dB
- Surgery mode ≈ 105dB
- Diagnostic mode ≈ 90dB
- Frequency response (-3dB):
- Monitor mode 0.5~40Hz
- Surgery mode 1~25Hz
- Diagnostic mode 0.05~150Hz
- input impedance: ≈ 5.0Mohm
- ECG signal range: ±10.0mV
- Electrode offset potential: ±500mV
- Patient Leakage Current: <10uA
- Standardizing signal: 1mV±5%
- Baseline recovery: <5s after Defibrillation (Mon or Surg mode)
- Indication of electrode separation: Every electrode (exclusive of RL)
- Protection: Breakdown Voltage 4000AVC 50/60Hz; defibrillator proof
- Sweep speed: 12.5mm/s, 25mm/s, 50mm/s

HR

- Range: Adult 10~300bpm
- Pediatric & Neonate: 10~350bpm
- Refreshing time: ≈ 50 bpm per 2 pulses
- 50~120bpm per 4 pulses
- ≈ 120bpm per 6 pulses
- Resolution: 1bpm
- Accuracy: ±1% or ±1bpm, whichever is greater

ST segment

- Measurement range: -2.0mV ~ 2.0mV
- Accuracy: 0.8mV~0.8mV; ±0.02mV or ±10% whichever is greater
- Over ±0.8mV: unspecified
- Resolution: 0.01mV

RESP

- Method: Thoracic impedance
- Lead Selected from: I (RA-LA) or II (RA-LL); Default: I
- Gain: ×0.25 ×1 ×2 ×4
- Bandwidth: 0.25Hz to 2.0Hz (-3dB)
- Sweep Speed: 6.25mm/s, 12.5mm/s, 25mm/s
- Measurement Range: 0~150 rpm
- Resolution: 1rpm
- Accuracy: ±2rpm or 2% whichever is greater
- Delay of Apnea Alarm: 10s, 15s, 25s, 30s, 35s, 40s, 45s, 50s, 55s, 60s

NIBP

- Way of measurement: Automatic oscillometry
- Range of measurement:
- Adult: SYS 30~270mmHg
- DIA 10~220mmHg
- MAP 20~235mmHg
- Child: SYS 30~235mmHg
- DIA 10~220mmHg
- MAP 20~225mmHg
- Neonate: SYS 30~135mmHg
- DIA 10~100mmHg
- MAP 20~125mmHg
- Cuff pressure range: 0~300mmHg
- Resolution: 1mmHg
- Pressure Accuracy: Static: ±2% or ±3mmHg, whichever is greater
- Clinical: ±5mmHg average error
- Standard deviation: ≈ 8mmHg
- Unit: mmHg, kPa
- Measurement mode: Manual, Auto, STAT
- Intervals for AUTO measurement time: 1, 2, 3, 4, 5, 10, 15, 30, 60, 90 minutes; 2, 4, 8, 12 hours
- STAT mode cycle time: keep 5 minutes, at 5 seconds interval.
- Overpressure Protection: Hardware and software double protections
- Pulse rate range: 40~240bpm

Standard SpO2 (Digital)

- Measurement Range: 0~100%
- Resolution: 1%
- Accuracy: At70~100% ±2%
- At10~69%, unspecified

PR

- Measurement Range: 25~255bpm
- Resolution: 1bpm
- Accuracy: ±1% or ±1bpm, whichever is greater

Nellcor-SpO2

- Measurement Range: 0~100%
- Resolution: 1%
- Accuracy: At70~100% ±2% (Adult)
- At70~100% ±3% (Neonate)
- At70~100% ±2% (Low Perfusion)
- At10~69%, unspecified

PR

- Measurement Range: 20~300bpm
- Resolution: 1bpm
- Accuracy: 20bpm to 250bpm: ±3bpm
- 251bpm to 300bpm: unspecified

Masimo-SpO2

- Measurement Range: 0% to 100%
- Resolution: 1%
- Accuracy: 70% to 100% ±2% (adult/pediatric, non-motion conditions)
- 70% to 100% ±3% (neonate, non-motion conditions)
- 70% to 100% ±3% (motion conditions)
- 0% to 69%, unspecified
- Average time: 2-4s, 4-6s, 8s, 10s, 12s, 14s, 16s

PR

- Measurement Range: 25bpm to 240bpm
- Accuracy: ±3bpm (non-motion conditions)
- ±5bpm (motion conditions)
- Resolution: 1bpm

TEMP

- Max Channel: 8
- Measurement way: Thermal resistance way
- Measurement Range: 0.0℃ ~ 50.0℃ (32℉ ~ 122℉)
- Accuracy: ±0.1℃ or ±1℉ (exclusive of probe)
- Resolution: 0.1℃ or 1℉
- Unit: Celsius(℃), Fahrenheit(℉)
- Connecting cable: Compatible with YSI-400 serial

IBP

- Max Channel: 8
- Measurement way: Directly invasive pressure measurement
- Sensitivity of transducer: 5uV/mmHg, ±2%
- Impedance of transducer: 300 to 3000Ω
- Measurement Range: -50~+350mmHg
- Resolution: 1mmHg
- Unit: mmHg, kpa, cmH2O
- Accuracy:
- Static: ±1mmHg or ±2%, whichever is greater (exclusive of transducer)
- ±4mmHg or ±4%, whichever is greater (inclusion of transducer)
- Dynamic: ±4mmHg or 4%, whichever is greater
- Transducer sites: Arterial Pressure (ART)
- Pulmonary Artery Pressure (PA)
- Left Atrium Pressure (LAP)
- Right Atrium Pressure (RAP)
- Central Venous Pressure (CVP)
- Intracranial Pressure (ICP)
- P1/P2
- Selection of measurement range:
- ART: 0~+350mmHg
- PA: -10~+120mmHg
- CVP/RAP/LAP/ICP: -10~+40mmHg
- P1/P2: -50~+350mmHg

EtCO2(Sidestream)

- Measure method: Infrared spectrum
- Measure Range: 0.0~13.1%(0~99.6mmHg)
- Resolution: 1mmHg
- Unit: % mmHg, kpa
- Accuracy: 0% to 4.9% ±0.3% (±2.0mmHg)
- 5.0% to 13.1%, <±10% of the reading
- Measurement range of awRR: 3~150rpm
- Calibration: Offset calibration: auto, manual, Gain calibration

EtCO2(Mainstream)

- Measure method: Infrared spectrum
- Warm up time: Capnogram displayed in less than 15 seconds. At an ambient temperature of 25℃, full specifications within 2 minutes.
- Measure Range: 0.0~19.7%(0~150mmHg)
- Resolution: 1mmHg
- Rise time (10l/min): ≈ 60ms
- Unit: % mmHg, kpa
- CO2 Accuracy: 0-40mmHg, ±2mmHg
- 41-70mmHg, ±5% of reading
- 71-100mmHg, ±8% of reading
- 101-150mmHg, ±10% of reading
- (At 760 mmHg, ambient temperature of 25℃)
- awRR measurement range: 0~150rpm
- awRR measurement Accuracy: ±1rpm

EtCO2(Microstream)

- Measure method: Infrared spectrum
- Warm up time: Capnogram displayed in less than 20 seconds. At an ambient temperature of 25℃, full specifications within 2 minutes.
- Measure Range: 0.0-19.7%(0-150mmHg)
- Resolution: 1mmHg
- Unit: % mmHg, kpa
- CO2 Accuracy: 0-40mmHg, ±2mmHg
- 41-70mmHg, ±5% of reading
- 71-100mmHg, ±8% of reading
- 101-150mmHg, ±10% of reading
- (At 760 mmHg, ambient temperature of 25℃)
- (When RR>80 rpm, all the range is ±12% of reading)
- CO2 response time: <3S
- awRR measurement range: 2~150rpm
- awRR measurement Accuracy: ±1rpm
- Sample Flow Rate: 50ml/min ±10ml/min

Multi Gas

- Measure method: Infrared spectrum
- Fi and ET values: CO2, N2O, O2, AG (HAL, ISO, NEF, SEV, DES)
- Resolution: 1%
- Unit: %
- Calibration: Room air calibration automatically when changing airway Adapter (<5 sec)
- Warm-up time: <10S, full accuracy within 1min
- Measurement and alarm range of AG
- Gas Range Accuracy
- CO2 0-100% ±(0.3% ABS+4%REL)
- N2O 0-100% ±(2% ABS+8%REL)
- O2 10-100% ±(2% ABS+2%REL)
- HAL, ISO, ENF 0-5% ±(0.15% ABS+10%REL)
- SEV 0-8% ±(0.15% ABS+10%REL)
- DES 0-18% ±(0.15% ABS+10%REL)
- awRR measurement range: 0~150rpm
- awRR measurement Accuracy: ±1rpm
- Rise time (flowing speed 10l/min) CO2 ≈ 90ms O2 ≈ 300ms O2 ≈ 300ms
- N2O ≈ 300ms Hal, Iso, Enf, Sev, Des ≈ 300ms
- Total system response time: <1.5seconds

BIS

- More details please refer to BIS specification

CO

- More details please refer to CO specification



Main Unit of AcuitSign M5:

- Main unit: 12.1" TFT-LCD display, 4 Standard module slot, 1 Additional module rack Slot (for EMS / MMS all-in-one module), 1 RJ45 internet socket, 1 Defibrillation Output, 1 Nurse Call socket, 1VGA port, 4 USB1.1 port, 1 Auxiliary Module Rack connector

Option of AcuitSign M5:

- Option Module: 12 types of EMS modules, 12 types of MMS modules, Sidestream CO2 module, Microstream CO2 module, Mainstream CO2 module, AG module, IBP module, Temp module, Nellcor SpO2 module, Masimo SpO2 module, BIS module, CO module, ICG module
- Module Rack: Auxiliary Module Rack
- Navigating: USB compatible mouse and keyboard.
- Printing: 3 Channel Thermal Recorder
- Mounting: Rolling stand, Wall mount
- Battery: 11.1V/4.0AH Rechargeable Lithium Battery (max 2 pcs).
- Other options: External Display, Wireless Lan, Extensive Memory card, Analog Output (ECG or IBP), Full Touch Screen, SD memory, EMS Charging Stand, HL7 Output

Specification subject to be changed without prior notice.

Sino-Hero (Shenzhen) Bio-Medical Electronics Co., LTD.

Address: Unit 608, 6/F., First Building, ZhongXing Industrial Park, Chuangye Road, Nanshan District, Shenzhen 518054, P. R. China

Tel: 86-755-26408541

Fax: 86-755-26420566

E-mail: manager@sinoheromed.com

inohero
www.sinoheromed.com

ENG-M5-20150909