



# Patient Monitor Model X-5



**Masimo SET® SpO2**  
Measure-through Motion and Low Perfusion pulse oximetry delivers accurate and reliable oxygenation



**Bispectral Index™** by Aspect  
Monitor the level of consciousness of the patient under general anesthesia or sedation. provides BIS, SQI, EMG, SR, SEF, TP, PC value and EEG wave.



**Masimo Gas Technology**  
IRMA™ Mainstream & ISA™ Sidestream Analyzers  
Allows selection of the modality best suited to the application



**NMT**  
Neuromuscular monitoring



**IBP**  
2-4 Channel, support IBP waveform overlapping display



**C.O.**  
Cardiac Output

## SPECIFICATION

### Physical Specification

Display	15.6" TFT Touch Screen
Resolution	1366 x 768
Number of traces	10, up to 12 ECG waveform
Dimension	398 x 302 x 183mm (W x H x D)
Weight	<7 Kg under stand configuration
LAN	1 standard RJ45 port
WLAN	IEEE 802.11b/g/n
USB	2 USB connector
HDMI	1 HDMI monitor Connector
Output1	Connector for Nurse call, Defib sync analog output

### ECG

Lead type	3-lead, 5-lead, 12-lead(optional)
ECG waveform	2, 7, 12 channels
Display sensitivity(wave Gain)	1.25mm/mV(x0.125),2.5mm/V(0.25),5mm/mV(x0.5),10mm/mV(x1.0), 20mm/mV(2.0),40mm/mV(x4.0), Auto
Wave sweep speed	3.125mm/s,6.25mm/s,25mm/s, 50mm/s
Bandwidth	Diagnostic mode:0.05Hz~150Hz Monitor mode: 0.5Hz~40Hz Surgery mode: 0.5Hz~25Hz Strong filter mode: 5Hz~25Hz
CMRR>100db	
Notch	50/60Hz notch filter can be set to on or off Differential input impedance>5M
Electrode polarization voltage range	+400mV
HR Range	15-350 bpm
Baseline recovery time	<3s after defibrillation (in monitor and surgery mode)
Calibration signal	1mV(peak-peak)
Accuracy	+3%

### RESP

Measurement method	Thoracic electrical bioimpedance
Measuring lead	Lead I, II
Waving Gain	x0.25, x0.5, x1, x2

Respiration impedance range	0.5-5
Respiration range	0-150bpm
Baseline impedance	500-4000
Gain	10 grades
Scan speed	3.125mm/s, 6.25mm/s, 12.5 mm/s, 25mm/s

### Pulse Rate

Range	30-300 bpm
Resolution	1 bpm
Accuracy	+2bpm (non-motion) +5bpm (motion)
refreshing rate	1s

### TEMP

Accuracy	+0.1 C or 0.2 C F (without probe)
Measurement ranges	5~50 C (41~122 F)
Channel	Two channels
Resolution	0.1 C

### SPO2

Measurement range	0~100%
Parameter monitoring	Perfusion Index (PI) Pleth Variability (PVI)
Resolution	+1%
Accuracy	+2% or 2bpm
Refreshing rate	1s
Pleth wave speed	3.125mm/s, 12.5mm/s, 25mm/s

### Masimo SET SPO2 (optional)

Measurement range	0-100%
Resolution	1%
Accuracy	+2% (70-100%, Adult/Pediatric, non-motion, low perfusion); +3% (70-100% Neonate,Non-Motion); +3% (70-100%, motion); 0-69% unspecified
Refreshing rate	1s

## SPECIFICATION

### NIBP

Measurement method	Automatic oscillometric	
Operating Mode	Manual, automatic, continuous	
Measurement Type	Systolic, Diastolic, Mean	
Typical measurement Time	20~40s	
Measurement range (mmHg) range of systolic pressure :	Adult	40-280
	Pediatric	40-200
	Neonatal	40-135
range of diastolic pressure :	Adult	10-210
	Pediatric	10-150
	Neonatal	10-95
range of mean pressure :	Adult	20-230
	Pediatric	20-165
	Neonatal	20-105

Measurement accuracy  
 Maximum average error: +5mmHg  
 Maximum standard deviation: 8 mmHg  
 Resolution: 1mmHg  
 Interval: 1,2,3,4,5,10,15,30,60,90,120,180,240,480 minutes  
 Over pressure Protection: software and hardware, double safety protection  
 Cuff pressure range: 0-300mmHg

### IBP (optional)

Channel	2 or 4 channel	
ART	0 to 300 mmHg	
PA	-6 to 120 mmHg	
CVP/RAP/LAP		
ICP	10 to 40 mmHg	
Measurement range	P1/P2-50 to 30 mmHg	
Resolution	1 mmHg	
Accuracy	+2% or +1 mmHg, whichever is greater (without sensor)	
Sensitivity	5uV/mmHg/V	
Impedance range	300 to 3000	

### Masimo ISA Sidestream CO2 (optional)

Warm-up time	Full accuracy within 10 sec
Sampling flow rate	50ml/min (+/-10/min)
Measurement range	0-25%
Accuracy	0~15% (+0.2% of the reading)
Accuracy	0~15% (0.2% of the reading)
	15~25%, unspecified
Rise time	200ms, typical at 50ml/min flow rate
Total response time:	within 3 seconds (with 2 m Momoline sampling line)
AWRR range	0-150bpm
AWRR Accuracy	+1 breath

### Masimo IRMA Mainstream CO2 (optional)

Measurement range	0-25%
Accuracy	0~15% (+0.2% of the reading)
	15~25%, unspecified
Warm-up time	Fully accuracy within 10 sec
AWRR range	0-150bpm
AERR accuracy	+1 breath

### Masimo Multi-gas ISA AX+Mainstream CO2 (optional)

Gas:	CO2,N2O,HAL,ISO,ENF,SEV,DES with automatic identification
Warm-up time:	Full accuracy within 20 sec for IRMA AX+CO2
Accuracy:	0~10%; +(0.2%+2% of the reading)
N2O Accuracy:	0~100%; +(2%+2% of the reading)
HAL,ISO,ENF:	0~8%; +(0.15%+5% of the reading)
SEV:	0~10%;+(0.15%+5% of the reading)
DES:	0~22%;+(0.15%+5% of the reading)
Agent identification time:	<20s (typical <10s)
AWRR range	0-150bpm
AWRR accuracy	+/-1bpm
Apnea time	20~60s

### C.O. (optional)

Method	Thermodilution
Range	C.O.: 0.2 to 20 L/min
	TB : 23 to 45 C
	T1 : -1 to 27 C
Accuracy	C.O.: +5% or +0.1L/min, which ever is greater TB, T1: +0.5 C (without sensor)

## SPECIFICATION

### Aspect BISx module (optional)

Parameter measurement  
 BC 0~30(only limited to the combined use of an external sensor with BIS module)  
 EMG 30~55dB(bar chart) with intensity between 30dB and 20dB(tendency chart)  
 BIS 0~100  
 SQI 0%~100%  
 SR 0%~100%  
 SEF 0.5Hz~30Hz  
 TP 40~100Db  
 EEG measurement  
 Input impedance>5M  
 Noise (RTI)<2 uV (0.25~50Hz)  
 Input signal range +1mv  
 EEG bandwidth between: 0.25Hz~110Hz

### NMT (Optional)

Microprocessor-controlled  
 Stimulation Mode: TOF, TOFS,PTC,1Hz Twitch,0.1 Hz Twitch, DBS DBS3.3 and 3.2 (Double Burst), Tetanic stimulation (urst), 5s-50Hz or 100Hz  
 Output (Accuracy+5% of full scale value)  
 Surface electrodes:  
 Constant Current,0-60mA(0-12/18 uC)  
 Monophasic, 200 us or 300 us pulse width  
 Needle electrodes:  
 Constant current,0.6mA(0-0.24 uC) up to 5KOhm.  
 Monophasic, 40 us pulse width  
 Acceleration transducer: Accuracy +5% of full scale value  
 Temperature sensor : Range 20.0-41.5 C (accuracy +5%)

### Sidestream CO2 optional

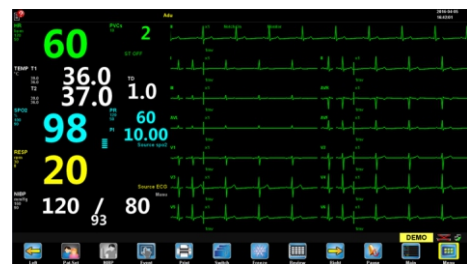
Measurement range 0-205 (0-150mmHg)  
 Accuracy < 5.0% CO 2: +2mmHg  
 > 5.0% CO 2: <6% of reading  
 Respiration rate 2~150 BPM  
 Respiration rate accuracy 1% +1BPM  
 Warm-up time :97% within 45s, full accuracy within 10min  
 Rise time (t10-90%): About 100ms, when flow is 100ml/min, adult water trap, 1.5m sampling tube  
 Delay time: <3sec when flow is 100 ml/min, adult water trap 1.5m sampling tube

### Recorder (optional)

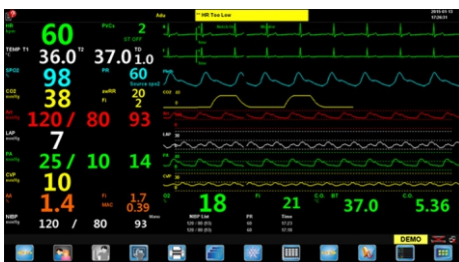
Built-in, Thermal dot array  
 Horizontal resolution: 16 dots/mm (25 mm/s paper speed)  
 Vertical resolutions: 8 dots/mm  
 Paper speed : 12.5mm/s,25mm/s,50mm/s  
 Number of Waveform channels: 3

### Operation Environment

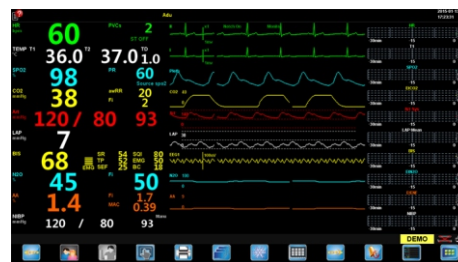
Power AC 100-250V, 50/60Hz  
 Temperature 5-40 C  
 Humidity <80%  
 Patient Range Adult, Pediatric, Neonate



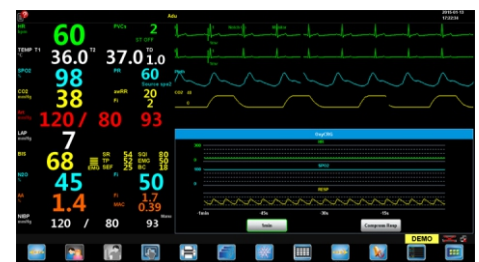
12-Lead ECG



4 channel IBP



Dynamic trends



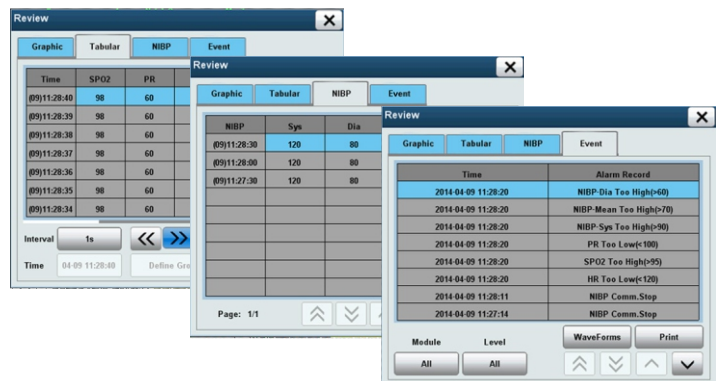
OxyCRG screen

## Features

- 15.6" High resolution TFT LCD Touch screen
- 10 waveform display, up to 12-lead ECG analysis
- Powerful calculation (Hemodynamic, Dose, Oxygenation, Ventilation)
- MEWS (Modified Early Warning Score)
- Pacemaker detection
- ST & arrhythmia analysis (26 types)
- SpO2 support PVI and PI, low perfusion 0.2%
- Night mode, standby mode, venipuncture mode
- Trolley/wall mount bracket solutions
- Support BIS module, NMT module
- Wired/Wireless/4G connection, support HL7 protocol to HIS
- SpO2 pulse-tone modulation (Pitch Tone)
- VGA/HDMI support external display
- Graphical & tabular trend review
- Rechargeable Lithium-ion Battery
- 72 hours full disclosure wave review for each patient

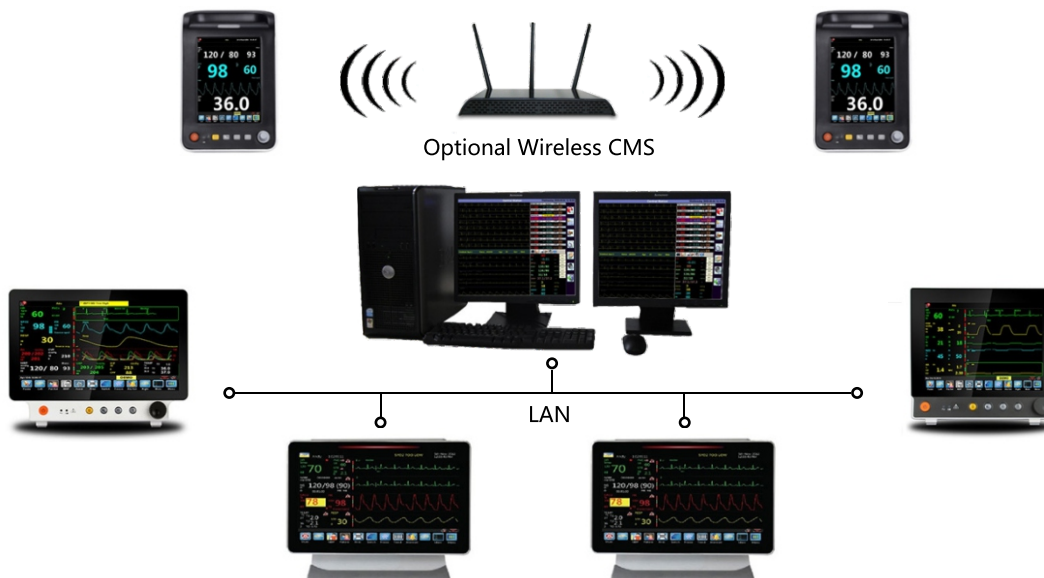
### Easy access to view the historical data

<b>240</b>	Hours long trend
<b>120</b>	Min short trend
<b>1000+</b>	NIBP measurement
<b>200</b>	alarm event



## Central Monitoring System

Up to 64 beds  
 Network is compatible to wired or wireless CMS  
 Auto adaptable to different screen resolution



## Configuration

5-Lead ECG, Spo2, NIBP, TEMP, Resp, PR, Touchscreen, HDMI, Li-ion battery

## Optional

12-Lead ECG, Masimo/Nellcor Spo2, IBP, C.O., Etco2, Multi-gas, BIS, NMT; Thermal Recorder, Wired/ Wireless CMS, 4G module

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