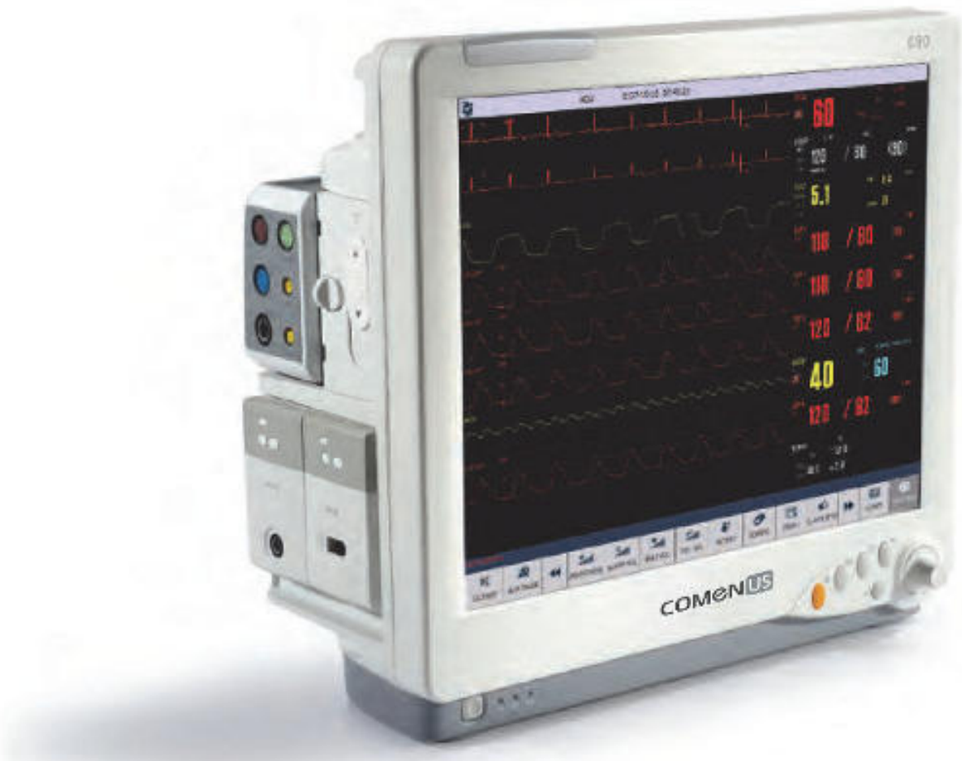
COMENUS

C60 Neonatal Monitor

C60 equips with 8.4 high-definition color TFT screen, providing the touch screen and information hand-writing input function, embody the user-friendly design with special care to all users. According to the character of neonatal cardiovascular System, COMEN develops ExNeo® Neonate ECG technology, Adap-DSP® NIBP measurement technique, caring for the life with precision and profession attitude. Also, world famous OxiVax® neonatal SpO2 technology, SatSecondsTM intellectualized alarming system, Specialized neonatal suffocation self-saving function equipped with oxygen density monitoring function; special newborn accessories are applied to model provide more care to the neonates.C60 model fills up the blank of the Chinese Neonatal Monitoring field, giving more energy to the world neonatal monitoring field.

C80 Intensive Care Unit Monitor

C80 uses CardioTec™ ECG technology, world leading OxiMax® technology, high precision AccuTec™ hypertension monitoring technology as standard configuration. C80 incorporates world's best medical technology for SpO2, ICG, EtCO2, Anesthesia Gas Monitoring from the world's best OEM technology providers like NELLCOR, RESPIRONICS, ARTEMA & BIOZ. Precisely, C80 provides medical professionals with powerful monitoring options and functionality to match the demands of a wide range of care, in any hospital environment.



C90 Modular Monitor

Integrated with the world-leading technology of life parameter monitoring and IT application, C90 modular monitor makes a high-end life monitoring platform and provides a comprehensive monitoring solution.

ComenUS

4901 Morena Blvd., Suite 505
San Diego, CA 92121
info@comenus.com
Tel: 888.602.7767

CE 0434

Comprehensive monitoring management in hospital and outside hospital

To monitor the patient parameter comprehensively and integratively from the first- aid spot to the recovery of patients as a complete management system.

1 First-aid on the spot

3 Lifted onto stretcher

6 **Treated in the operating room**
C90 modular monitor will carry out all-round monitoring and diagnosing to the patient's condition. With displaying 12-channel ECG simultaneously, the accurate ECG measurements will help doctors to make good diagnosis and have the operation carried out more smoothly. The combination with an anesthesia machine a respirator will help doctors to control operation time more accurately.

10 Discharged from hospital
Filing up the patient's recores.

9 **Transferred a general ward**
The patients will be transferred to general ward after their condition improved and became stable; the patient's information accumulated in operating room and ICU unit will be transferred through a small host C30 to a large frame C90 modular monitor to ensure the continuity and real-time updating for patient's information.

2 Put on to ambulance

4 **Sent to an emergency room**
Once C30 ambulace transport monitor is connected into C90 modular monitor, the patient would be fully mon tored by C90.C90 will take over to monitor and start working.

5 Transferred from emergency room to an operating room

7 Transferred from the operating room to ICU

8 Icu ward
C90 modular monitor has taken an important position ICU; as a device to directly display the patient's condition after operation, it allows doctors to control the condition at any time in ICU, and it will give an alarm under abnormal condition to remind medical stuff such so that the patient's condition could be effectively controlled until the patients are gradually recovered.

The world leading technology and high-level materials and advanced manufacturing process ensure that C90 modular monitor provides a high-end life monitoring platform.

External Design

- 17 inch screen with high-resolution: 1280 X 1024
- Dual operation system: Touch screen and operation buttons make double assurance
- Built-in lithium battery for 4 hours continuous monitoring
- Multi mount solutions: Wall mounting, trolley
- External laser printer and built-in thermal printer
- Gole-plated module contacts, automatic data exchange through IR transmission

- The mould of the C90 is processed and manufactured by CINCINNATI Processing center and Charmill WEDM-LS machine. The injection molding process is adapted with the most advanced molding machine-Kraus maffe., with ensures the stability and reliability of the C90 extremely.
- The mould of C90 is also adapted with German process, technology and materials.
- Al-Zn alloy heat dissipation components: having an extraordinary heat dissipation effect.

- handle: built-in handle for space saving and ease to carry around.

- 360° visual alarm lamp: three-color alarm lamp to strike your eye definitely, and make clear for physiological alarm and technical alarm.

- SD socket: to expand memory connect capacity.
- Multiple USB interfaces can support external keyboard, mouse and support data transfer as well as software upgrade.
- Various ports for external devices: anxiliary plug-in box, monitor, CIS and cable network interface and so on.
- External ports management house: to conceal interfaces, to keep dust awat, to prevent foreign matter to drop in, and to manage uniformly the data lines.

Hardware technology – module

• 4+1functional module slot, which is hot swappable, supporting full-module random combination, automatic identification with software, and interface dynamic combination (picture attached)

Diversified C30 6-parameter plug-in module

6 Parameter

- C30 with in-situ 4.3'' LCD display, coped with independent operating system which can be used either for C90 plug-in module or separate monitor.
- C30 used together with C90 can be displayed with double screens simultaneously.
- Patient data can be exchanged between C30 and C90, such that C30 can help to realize the data transfer and to share the data between C90 one another.
- C30 built-in 2600mAh lithium cell can support hot swap with power on thereby transferring patient's information monitored without any obstacle.
- C30 6-parameter module: electrocardiography/ heart rate/ respiratory rate/ NIBP/ pulse oxygen saturation.

❶ ECG twelve channel electrocardiograph technology
With CardioTec™ twelve channel electrocardiograph it can realize to display 12-channel electrocardiographic wave at the same screen simultaneously. The accurate measurements can help doctors to give a good diagnosis. A common mode rejection ratio (CMRR) can reach 105db such that it has an extreme interference free capability in ECG. It also can analyze heart rate timely and can retrieve alarm.

❷ SpO_2 pulse oxygen saturation technology
Gold standard OxiMax® pulse oxygen saturation system in the worldwide blood oxygen monitoring field is ensured to take a leading position in the technology with its unique LoSat™ technique thereby ensuring the widest range of accuracy to extend its accurate measurement range to 60%-100%. The special SatSeconds™ intelligent alarm management system can effectively reduce fake alarm so as to

❸ relieve workload on the medical personnel.
NIBP, non-invasive blood pressure technique
Use of AccuTec™ non-invasive blood pressure technique to allow C90 accuracy to reach world leading level in the light of blood pressure measurement.

- IBP invasive blood pressure module

Through the US Abbott/Medex invasive blood pressure attachment it can monitor arterial pressure, pulmonary arterial pressure, central venous pressure, and intracranial pressure, etc.

- $EtCO_2$ module

RESPIRONICS CO_2

To work together with US RESPIRONICS we chose mainstream/ side stream (miniflow) CO_2 module. As small in size, durable and light in weight, the mainstream sensor can be used to provide all intubated patients from new born child to adults for an accurate reliable CO_2 monitoring. It can be automatically corrected, an LoFlo side flow probe (without dewatering bottle) is used to monitor non-intubated patients. The flexible and compact CO_2 sensor can provide adults, child and newborn babies for a continuous and reliable CO_2 monitoring. And, the sampling rate (miniflow) is ≤50mL/min.

Phasein IRMA CO_2 (Mainstream)

Extremely compact design (25g!); Maintenance free-no calibrations needed; Intelligent disposables; Extremely easy to integrate; "Plug in and measure".

Phasein ISA CO_2 (Sidestream)

Unique water handing-nomoline; Low sample flow-50ml/ min for all type of patients; "Instant on" - warm-up time 10/ 20 seconds until full spec; Extremely low power and weight; "Plug in and measure" ; Maintenance free-no routine calibrations needed.

- AG module

Be able to monitor eight different gases (O2, CO2, N2O, ENF, ISO, DES, SEV, HAL). It can automatically identify what kind of anesthetic gas is in use, characterized by its short period of warmming time and long service life as well as MAC value provided (minimum alveolar concentration).

• IoC (Depth of Anesthesia)

The IoC module has been designed to be used in the monitoring of the level of consciousness of a person during the application of general anaesthesia or in intensive care. This is accomplished by registering the electroencephalographic signal (EEG) by means of surface electrodes which is then analyzed by a digital process.

As a result of the applied calculation, an index "IoC" is obtained, which serves as guidance to the experts who use it to determine the level of consciousness of the patient during surgery.

• ICG noninvasive blood flow dynamics module

Collaborated with U5 BIOZ® an impedance ECG is adopted to realize noninvasive blood flow dynamics monitoring, which is characterized by its noninvasive, continuous and highly accurate and strong interference-resistant capability as well as lower cost and easy operation. A disposable special electrode is used to transmit a tiny electric signal through chest. The impedance of the electric signal can be measured and displayed in an ICG waveform. As blood volume and blood flow rate in the aorta vary along with each subsequent heartbeat a DISQ® (digital impedance signal quantification) technology is used to cope with variation of impedance signal. The impedance variation is used in non-invasive ZVIARC™ algorithm (the aorta compliance regulation) so as to obtain hemodynamic parameters, such as stroke volume (SV), cardiac output (CO), system vascular resistance (SVR), myocardial contractility and fluid state (TFT), etc.

• C.O. invasive cardiac output

C90 is involved itself in invasive cardiac output technique, but C.O. measurement is conducted with conventional thermo dilution invasive cardiac output and other hemodynamic parameters. The monitor can measure "blood temperature", "calculating cardiac output", "calculating hemodynamics". The cardiac output is measured with floating catheter led from vein to pulmonary artery followed by injecting a certain amount at 0℃–25℃ injecta such that the blood temperature will be varied after the injecta and blood output from the heart are mixed together thereby achieving cardiac output by measuring blood temperature variation before and after infected in accordance with the principle of heat balance.

• C90 plug-in expansion slot

Eight module slots can be provided for function expansion.

Software technology-interface

High-informatization and high-intelligence operation system and analysis software can provide precise digital support for clinical decision-making.
Self-adapting working interface adjustment function and humanized operation system allow you to enjoy the best operation experience.

•Software technology

Unique I-Klok™ intelligent alarm system: to identify alarm level automatically according to variation of measurement parameters. There are high, middle and lower alarm levels. There are different sounds and lighting prompts for every level with delay alarm and delay time which can be adjusted. There is also automatic alarm & printing function. Different from traditional alarm, there is practical clinical significance for alarm to reduce mis-alarm and useless alarm.

- Powerful network function to support wire and wireless access;
- Prompt module identification and interface switching without flashing feeling during interface switching;
- The Maodule Extension Function with automatic identification for software and dynamic adjustment for interface.

•Interface

Module MAP diagram: To display operating status of modules.

Complete touch operation design to bring in new touch experience;

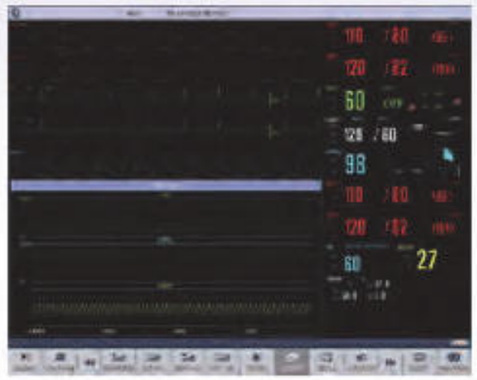
Informatization integration function of record archives a complete medical record management to record all life monitoring information from hospital entry to exit.

Detailed patient information.

Maximums 12 channels of waveform display: Various parameter waveforms can be combined and switched over freely according to user demands.

ECG waveform review interface: 90 minutes ECG waveform review , important waveform segment withdraw for clinical analysis and important information.

New data storage mode without compression, waveform distortion;
With data power failure storage function, 1,200 hours trend diagram & chart, Storage for 5,000 groups NIBP list which can saving 60 minutes waveform review.



Respiration oxygenation interface: It consists of HR, SpO2 and RR trend or compressed respiration wave. 4 trend periods such as 1 minute, 2 minutes, 4 minutes and 8 minutes is selectable. Compressed respiration wave or dynamic trend diagram of RR also can be selected.

Large-character interface: Long-distance clear observation is especially suitable for ICU, CCU, operating room, night guard or patrol inspection.

7-lead/12-lead ECG waveforms displayed in one screen: lead acquisition & amplification. Rhythm lead calculation can be selected randomly and synchronous display on the screen.

With ST analysis, arrhythmia analysis, drug dose calculation, titration form and CIS electronic medical record;

Bed to bed review interface: To display other bed information such as bed No., patient's name, alarm information and parameter setup. It supports at most 4 waveforms of another bed. Users can configure dynamic configuration and waveform.

List interface: to record NIBP, HR ,PR and pulse oxygen respiration for clinical comparison & observation.

Trend coexistence interface: Trend review for 12, 48 and 96 hours shall be selected. It captures different scopes of date precisely according to clinical demand.

Calculation interface: It includes calculation for drug, oxygenation, ventilation and renal function (The system can store the records of the last 10 calculations)

Digital application

The advanced electronic management - Information integration engine technology

Information integration engine technology can be connected to patient monitor and bedside medical equipment with centralized and real-time display & review of equipment information based on the information network in the hospital. Messages of different administrative or technical offices such as RIS, PACS and LIS, etc in the court can be integrated to integrate clinical information.

ICU

The solution of Digital ICU Life Infomation

- Built in ICU electronic medical record system (including temperature chart and liquid entrance & exit balance form)
- Perfect physiological score system (including Apache Ⅱ and Apache Ⅲ)
- Powerful of integrating engine (Connected to ICU equipment such as respirator and infusion pump, etc)
- To realize multi-platform working of various kinds of medical information (Such as PACS image invoking)

OR

Digital OR life informationsolution

- Comprehensive clinical equipment information (Connected to operating equipment such as anesthesia machine and infusion pump, etc)
- Built-in electronic record system for anesthesia department/operating room
- Automatic acquisition of physiological indications and important events during operative period
- Convenient input mode