



# ESSE-70

Digital 12-channel  
ECG Machine



**CARDIOLOGY**



## Outlook

- Touch Screen, more intuitionistic display
- 8 inch color LCD, 12 waveforms synchronously display
- QWERTY keyboard design, multi-function shortcut key, easy for operation

## Data saving

- Support saving internal data
- Support saving High-capacity data via SD card
- Support saving data via U dish
- Support data transferring & reviewing & reanalyzing

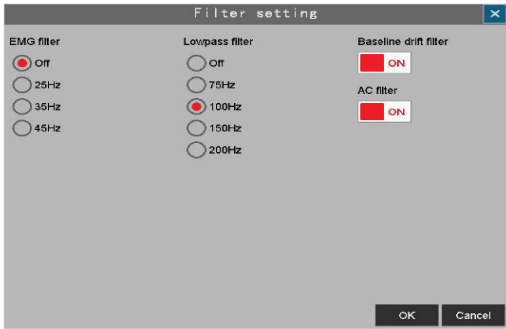
## Improved Performance

- Adapt Innovative digital filters for better performance
- Fast-speed baseline correction algorithm rapidly stabilize baseline
- Adapt 24-bit high-resolution data sampling
- Adapt 1000Hz high- frequency data sampling
- 24-bit high-accuracy data saving ensure the accuracy of follow-up data analysis
- Synchronization analysis for 12 lead waveforms, supporting report preview & report format adjustment

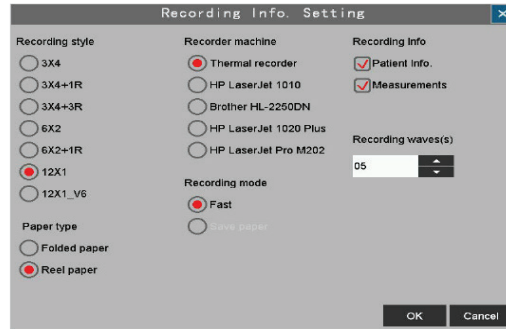
## Function Upgrading

- Automatic measurement and interpretation certified by CSE database
- Rhythm report realized synchronous display of multi-channel data
- Support Pre-sampling mode, Real-time sampling mode & Trigger sampling mode
- Automatic energy saving function
- Support folded & reel type thermosensitive printing paper
- Automatic position function, support external printer
- Defibrillation protected & Pacemaker pulse rejection function
- Diagnosis analyze:  $\geq 140$  kinds
- Support barcode scanner
- Fast FTP file transfer realizes data remote communication and management

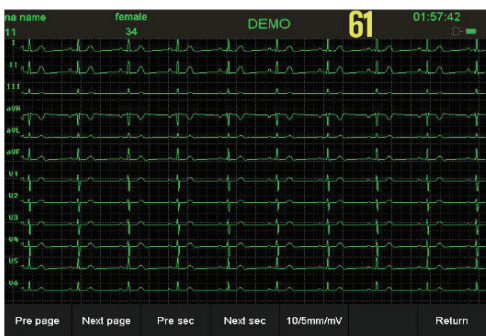




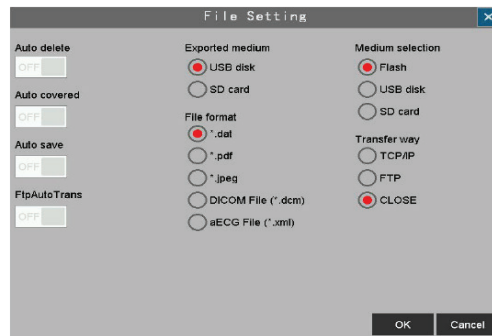
High-speed baseline correction filter ensures rapidly correcting the baseline



The length of record waveforms is selectable



Support saving 300 seconds digital 24 bit uncompressed waveform



The date dimension allows data file management to be summarized by date



More than 10 kinds of printing methods, supporting Folded /Reel thermosensitive printing paper



Separated keycaps help to press key more easily and more accurately



Data transmitting to PC via LAN/Wi-Fi  
Expand storage capacity via SD card  
FTP transfer for data remote control



## Specification

### Size and Weight:

- Size: 400mm×330mm×146mm
- Weight: ≤6kg

### Display

- Type: 8.0", 800×600 TFT LCD touch screen

### Power Supply:

- Input voltage: AC:100V~240V, 50Hz/60Hz
- Input power: 100VA
- Standard: Comply with IEC 60601-1 and IEC 60601-1-2

### Battery

- Type: Rechargeable lithium-ion battery
- Rated Voltage: 11.1V
- Capability: 4000mAH
- Operating time: Used continuously for 4 hours (print 150 shares of cardiogram)
- Indication of battery capability: With Input/Output Specification
- Keyboard: Standard PC 104 (position)
- Standard touch-screen connector (4 lines)
- Network connector: RJ-45 (one) TCP/IP; upgrade, Web function
- USB connector: 1 x USB Host Support hot-swap, external USB printer  
1 x USB Device connects PC computer
- SD card: 1 x Standard SD card(Optional)

### Data Storage

- Fixed Memory: 800 groups of ECG data
- Optional Memory: Flash, SD card or U disk
- Storage mode: Background storage automatically
- Storage format: PDF, DAT, Dicom, FDA-XML, JPEG

### Recorder

- Recording way: Thermal dot array
- Horizontal resolution: 40 dots/mm
- Vertical resolution: 8 dots/mm
- Recording speed: 5 mm/s, 6.25 mm/s, 10 mm/s, 12.5 mm/s, 25 mm/s, 50 mm/s, error: ±3%
- Record width: 215mm (effective record width is selectable between 210mm and 215mm)
- Paper: 210mm/215mm×20m (reel)  
210mm×140mm×20m (Z type)
- Paper type: Reel/Folded thermosensitive printing paper
- Recording type: more than 10 kind of printing methods (Auto: 3×4, 3×4+1R, 3×4+3R, 6×2, 6×2+1R, 12×1, 12×1\_V6; Manual: 3 path, 6 path, 12 path, Rhythm: single-lead, three-leads, R-R: R-R)

### Measure and Diagnosis of ECG Waveform

- HR range: 30bpm -300bpm
- HR precision: ±1bpm (10s average)
- Coefficient error: ≤5%, 0.333
- Measure info of ECG waveform: P time limit, PR interphase, QRS time limit, QT interphase, QTC interphase, RV5swing, SV1swing, RV6swing, SV2swing, RV5+SV1swing, P axis, QRS axis, T axis
- Diagnosis analyze: ≥140 kinds

### Display of ECG Collection

- Signal input: 12-lead, defibrillator-proof, Pacemaker pulse rejection
- Degree of protection against electric shock: 4000V, Type CF applied part
- Electrode offset potential: ±600 mV d.c.
- Response to frequency: 0.05Hz-200Hz
- Baseline filter: On/Off
- ECG filter: Off, 25Hz, 35Hz, 45Hz
- Lowpass filter: Off, 75Hz, 100Hz, 150Hz, 200Hz
- Frequency filter: Off/On
- Gain selection: 2.5, 5, 10, 20, 10/5, 40, AGC (mm/mV)
- Gain accuracy: ≤5%
- Time base selection: 5 mm/s, 6.25 mm/s, 10 mm/s, 12.5 mm/s, 25mm/s, 50mm/s
- Input impedance: ≥50MΩ (10Hz)
- Current of input loop: ≤15n A
- Patients leakage current: ≤10 μ A
- CMRR: ≥110 dB (with AC filter)
- Time for response to wave displaying: ≤5s
- Time for baseline recovered after switching leads: ≤1s
- Defibrillator-proof: 5000V 360J
- Standard complied with: IEC 60601-2-25

### Environmental Specifications

- Operating:
  - Temperature: 5°C~40°C
  - Relative humidity 25%~95% (non condensing)
  - Atmospheric pressure: 700hPa~1060hPa
- Transportation and storage:
  - Temperature: -20°C~+55°C
  - Relative humidity: 25%~95% (non condensing)
  - Atmospheric pressure: 500hPa~1060 hPa



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