

HOTCL5000 12 Channel Holter ECG Monitoring System



Brief Introduction

TCL5000 Dynamic ECG Systems adopts internationally standard 12-lead systems, can record continuously ECG waves for 24-hour, and analyses ECG waves with PC software. It is applicable in hospital and community medical establishment.

Recorder Features

1. With advanced design and technology ,the recorder can work stably,dependably and durably.
2. Be provided with the capability of anti-jamming and aseismatic
3. Small volume with OLED screen.The resolution is 160*128
4. Be provided with functions of waveform preview, record review and event marking
5. Accurate record of the start time of the data sampled owing to the real time clock of itself.

6. Avoid damage owing to the repeating inserting and pulling out by using the inbuilt TFT card to storage the data.
7. The maximum capacity can be 2GB,so the original data can be saved perfectly by no compression.
8. The average review time of single case can be less than 40 seconds by using interface of USB2.0
9. Record waveform details inextenso by the design of high precision and sampling perfectly.
10. Record the state of pacemaker exactly by higher sampling frequency.
11. International standard of 12 leads.Record 24-hour DECG with the same standard of the ECG

Software Features

1. Quick and accurate analysis system.
2. The 12-lead synchro analysis, to find accurate, QRS search can be accurate and no distortion.
3. There're more than 10 templates as atrial premature beat module, ventricular premature beat module, long interval module, atrial flutter module, atrial fibrillation module etc. and multiply user-defined templates could almost identify every kind of pathologic waveforms.
4. Flexible analysis channel selection function, can choose an channel as the mainly analysis the channel.
5. Flexible atrial fibrillation analysis, so that physicians can use full, segmented automatic, manual analysis of atrial fibrillation, make the analysis more quickly and accurately.
6. Powerful pacemaker analysis, on the AAI, VVI, DDD etc, all pacemaker analysis.
7. Many pacing modules have been added.
8. Fast view analysis function, can be any period of time the review single lead of all leads electrocardiogram.
9. Analysis of heart rate variability with short-range 5 minutes and long-range 1 hour and 24 hour analysis of heart rate variability.

10. One-stop printing operation, report printing process is convenient and quick.
11. Perfect function of case management.
12. Advanced ST segment analysis and myocardial ischemia total load, can for the ST abnormal analysis according to the whole and event, make the doctor can comprehensive judgment myocardial ischemia.
13. Unique "Sleep breath pause syndrome analysis "analysis can predict sleep breath pause risk.
14. "HRT" analysis can predict the risk of death patients with myocardial infarction.
15. "T wave alternation" analysis is an important index to predict malignant arrhythmia and sudden cardiac death.
16. With QT discrete degree analysis, ventricular late potential analysis, vector ECG analysis, time vector analysis and so on many kinds of additional analysis function, make analysis report more reference value.

Technical Information

P	
Number of channels	12 channels
Sampling accuracy	12Bit
Record time	24h
Power	2AA size batteries
Interface	USB2.0
Scale voltage	1mV \pm 5%
Standard sensitivity	10mm/mV \pm 5%
Noise level	\leq 30 μ V
CMRR	\geq 60dB
Low-frequency characteristics	Time constant \geq 3.2s
Scan speed	25mm/s \pm 5%
Enduring polarization voltage	\pm 300mV DC polarization voltage, sensitivity shift \leq \pm 10%
Least measure signal	50 μ V P-P
Product safety type	Type B(Internally powered)

Accessories

1 holter recorder, 1 CD of software, 10 pieces of patient cable, 10 pieces of disposable ECG sensor, 1 porch for hanging recorder, 1 USB cable for data download, Instruction manual

H08000S Treadmill

Stress ECG



Features

1. Real-time print ECG waveform during collecting, record and save ECG data in whole process
2. Real-time observe the change of ST segment, Lead selected by user can be magnified, and ST segment data can be calculated automatically.
3. Adopt screen waveform antialiasing technology, ensures more true waveform and more outstanding detail for ECG wave-form.
4. Adopt anti-interference technology, which ensures stable baseline and reduces the influence for ECG waveform arising from EMG interference, baseline drift and AC interface.
5. Standard and user-defined exercise protocol are optional, automatic and instantaneous print function and BP measurement prompt can be set according to exercise phase.
6. Events can be marked during exercising, and the marked Event ECG waveform can be used to compare with current ECG waveform. After exercising, events can be checked, edited and printed.
7. Display and print different trend graphs, including HR, BP, METS, HR*BP, exercise trend, ST segment level/change/slope/three-dimension/J-level and ST/HR, etc.
8. Dynamic review function, which can dynamically review the whole process of exercising, and review speed can be accelerated, decelerated, paused and jumped during reviewing.

9. With the function of static review, ECG waveform in any time can be checked, the property of QRS waveform group can also be modified.
10. Powerful case management function, historical cases and cases information can be checked, modified and deleted.
11. Import/Export case function, save cases with the mode of compressed files, which saves disk space. PC software is correlative with the file type of operating system, more simply and quickly to import cases.
12. Many items can be set in system settings, such as switch between Chinese and English, display waveform format and mode (12*1,6*1,3*2,3*1 etc), color of background grid, relative settings for print, filter settings and display optional parameters.
13. Use-friendly interface, many information (such as IME, Tooltip and doctor information etc.) can be present according to user's habit. Corresponding settings in the last time can be automatically saved as "User Favor" which will be recovered next time.
14. Provide several useful tools, such as equipment management, case statistics.
15. Collect ECG data by wireless mode, which improves anti-interference capacity.

Technical Specification

PARAMETER	SPECIFICATION
Lead	Standard 12 Lead
Input mode	Floating and defibrillation protection
CMRR	>60dB, >100dB (add filter)
Time constant	≥3.2s
Patient leak current	<10μA
Calibration voltage	1mV
Sampling frequency	Up to 1000Hz
Sampling accuracy	Up to 24-bit
Input circuit current	≤50nA
Input impedance	≥50MΩ
Noise level	≤15μ Vp-p
Frequency response	0.05Hz~150Hz(-3dB~+0.4dB)
Polarizing voltage	±500mV
Power supply	2xAA alkaline batteries
Communication mode	Wi-Fi
Optional Accessories	Lunch box, ECG lead, wireless card, elastic velcro, leather sheath, disposable electrodes

HOAME-18 Digital EEG And Mapping System



Performance

1. 16 channels of EEG+2 channels of ECG(ECG is optional)
2. Sampling rate:100dots/s
3. Accuracy:12 bit
4. Input impedance: $\geq 10\text{M}\Omega$
5. Patient leak current: $< 10\mu\text{A}$
6. Noise level: $\leq 5\mu\text{Vp-p}$
7. CMRR: $\geq 90\text{dB}$
8. Magnification multiple:10000
9. Filter constant: all digital and free enactment
10. Display speed (paper speed):5,10,15,30,60,120mm/s
11. Amplitude:1,1.5,2,3,5,7.5,10,12,15,20,30,50mm/50 μV
12. Playback speed:1time,2 times,3 times,10 times,20 times,40 times,60 times
13. 50Hz interference suppression: $\geq 30\text{dB}$
14. Safety type: Class II, type BF applied part

Features

1. Method of 10/20 electrodes placement under international standard system, leads can be changed during replaying. Support different types of combines leads during sampling.

2. Adopt bioelectricity amplifier for distilling brainwave, continuous recording time can be up to 24 hours, integrated full-automatic calibration system.
3. Powerful playback function: amplitude and display speed are adjustable. The special subdividing time line divides the waveform in one second into 5parts, which is easy for doctors to look over the waveform.
4. Digital filter system can be set as required, providing different window types.
5. EEG signal clipping function, analyze and store any section of EEG wave, and select several waveform segments for automatically analyzing and distilling to different parameters.
6. Electronic frequency ruler, convenient to measure the basic information of any appointed EEG waveform. With partial enlarging window, accurate measurement of EEG Period, amplitude and frequency, which can be adjusted according to personal judgement.
7. Mark EEG wave under the events of opening eyes. Closing eyes and flashing with different colors and user-defined events can be added, waveform color for evoked event can also be set freely. Ensures that the waveform in corresponding time can be rapidly found by event name during case playback.
8. Powerful automatic analysis function, can carry through the power spectrum analysis and pathologic wave detection for appointed waveform. Many graphs can be displayed in the same screen, including kings of BEAM, numerical BEAM, compressed spectrum graph, trend graph, and so on.
9. Professional isolation transformer, dual power supply isolation system and optoelectronic data transmission to ensure security. Use USB interface to transmit data which just need to be inserted.
10. Multifunctional flash stimulator of USB interface, and flashing can be controlled manually or auto manually. A flash stimulation scheme can be set and performed in the process of sampling.
11. Perfect case management function, provides many means for research and quick statistic information, convenient case export and import function, and stores with MO or CD-RW disk. Which is easy for data research.
12. Integrative image and character report, report can be edited in mode with switched to word document.
13. Case files can be transformed info EDF and BDF data format, convenient for data exchange, academic exchange and further analysis.

14. System parameters and display modes can be set as required, which meets different User's requirement.
15. Add marks and annotations to the waveform designated, which can rapidly find the wave form in that time by marks.
16. Optional video function's camera is easy to install, convenient to use and exact to record, With flexible playback function, which can browse the waveform of any time along with the corresponding isochronous sampled image.
17. SpO2 function is optional.
18. Computer is optional.

Physical Characteristic

Dimension	186mm(L)x135mm(W)x89.2mm(H)
Weight	550g

Operation environment

Temperature	+5°C~+40°C
Relative humidity	25%~95% (no condensation)
Atmospheric pressure	700hPa~1060hPa
Power supply	USB5V DC

Storage environment

Temperature	-20°C~+55°C
Relative humidity	≤90%
Atmospheric pressure	700hPa~1060hPa

Accessories

Standard

EEG Lead/EEG electrode/Data line/Headgear/ Strobe light/Strobe light power supply/PC software CD/User manual/Earth wire/EEG bracket/Aluminum block

Optional

ECG module, Computer

HOAME-24 Digital EEG And Mapping System



Performance

1. 19 channels of EEG+5 channels of multi-parameter (1 channel of ECG+1 channel of EMG+2 channels of EOG+1Channel of Breath), multi-parameter are optional
2. Sampling rate:200 dots/s
3. Accuracy:12 bit
4. Input impedance: $\geq 10\text{M}\Omega$
5. Patient leak current: $< 10\mu\text{A}$
6. Noise level: $\leq 5\mu\text{Vp-p}$
7. CMRR: $\geq 90\text{dB}$
8. Magnification multiple:10000
9. Filter constant: all digital and free enactment
10. Display speed (paper speed):5,10,15,30,60,120mm/s
11. Amplitude:1,1.5,2,3,5,7.5,10,12,15,20,30,50mm/50 μV
12. Playback speed:1time,2 times,3 times,10 times,20 times,40 times,60 times
13. 50Hz interference suppression: $\geq 30\text{dB}$
14. Safety type: Class II,type BF applied part

Features

1. Method of 10/20 electrodes placement under international standard system, leads can

be changed during replaying. Support different types of combines leads during sampling.

2. Adopt bioelectricity amplifier for distilling brainwave, continuous recording time can be up to 24 hours, integrated full-automatic calibration system.
3. Powerful playback function: amplitude and display speed are adjustable. The special subdividing time line divides the waveform in one second into 5parts, which is easy for doctors to look over the waveform.
4. Digital filter system can be set as required, providing different window types.
5. EEG signal clipping function, analyze and store any section of EEG wave, and select several waveform segments for automatically analyzing and distilling to different parameters.
6. Electronic frequency ruler, convenient to measure the basic information of any appointed EEG waveform. With partial enlarging window, accurate measurement of EEG Period, amplitude and frequency, which can be adjusted according to personal judgement.
7. Mark EEG wave under the events of opening eyes. Closing eyes and flashing with different colors and user-defined events can be added, waveform color for evoked event can also be set freely. Ensures that the waveform in corresponding time can be rapidly found by event name during case playback.
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9. Professional isolation transformer, dual power supply isolation system and optoelectronic data transmission to ensure security. Use USB interface to transmit data which just need to be inserted.
10. Multifunctional flash stimulator of USB interface, and flashing can be controlled manually or auto manually. A flash stimulation scheme can be set and performed in the process of sampling.
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12. Integrative image and character report, report can be edited in mode with switched to word document.

13. Case files can be transformed into EDF and BDF data format, convenient for data exchange, academic exchange and further analysis.
14. System parameters and display modes can be set as required, which meets different User's requirement.
15. Add marks and annotations to the waveform designated, which can rapidly find the wave form in that time by marks.
16. Optional video function: USB camera is easy to install, convenient to use and exact to record, With flexible playback function, which can browse the waveform of any time along with the corresponding isochronous sampled image.
17. SpO2 function is optional.
18. Computer is optional.

Physical Characteristic

Dimension	186mm(L)x186mm(W)x89.2mm(H)
Weight	700g

Operation environment

Temperature	+5°C~+40°C
Relative humidity	25%~95% (no condensation)
Atmospheric pressure	700hPa~1060hPa
Power supply	USB 5V DC

Storage environment

Temperature	-20°C~+55°C
Relative humidity	≤90%
Atmospheric pressure	700hPa~1060hPa

Accessories

Standard

EEG lead/EEG electrode/Data line/Headgear/ Strobe light/Strobe light power supply/PC software CD/User manual/Earth wire/EEG bracket/Aluminum block

Optional

Computer, 5 channels of multi-parameter module (1 channel of ECG+1 channel of EMG+2 channels of EOG+1 channel of Breath

HOAME-32 Digital EEG And Mapping System



Performance

1. 32 channels of EEG
2. Sampling rate:200 dots/s
3. Accuracy:12 bit
4. Input impedance: $\geq 10\text{M}\Omega$
5. Patient leak current: $< 10\mu\text{A}$
6. Noise level: $\leq 5\mu\text{Vp-p}$
7. CMRR: $\geq 90\text{dB}$
8. Magnification multiple:10000
9. Filter constant: all digital and free enactment
10. Display speed (paper speed):5,10,15,30,60,120mm/s
11. Amplitude:1,1.5,2,3,5,7.5,10,12,15,20,30,50mm/50 μV
12. Playback speed:1time,2 times,3 times,10 times,20 times,40 times,60 times
13. 50Hz interference suppression: $\geq 30\text{dB}$
14. Safety type: Class II,type BF applied part

Features

1. Method of 10/20 electrodes placement under international standard system, leads can be changed during replaying. Support different types of combines leads during sampling.

2. Adopt bioelectricity amplifier for distilling brainwave, continuous recording time can be up to 24 hours, integrated full-automatic calibration system.
3. Powerful playback function: amplitude and display speed are adjustable. The special subdividing time line divides the waveform in one second into 5parts, which is easy for doctors to look over the waveform.
4. Digital filter system can be set as required, providing different window types.
5. EEG signal clipping function, analyze and store any section of EEG wave, and select several waveform segments for automatically analyzing and distilling to different parameters.
6. Electronic frequency ruler, convenient to measure the basic information of any appointed EEG waveform. With partial enlarging window, accurate measurement of EEG Period, amplitude and frequency, which can be adjusted according to personal judgement.
7. Mark EEG wave under the events of opening eyes. Closing eyes and flashing with different colors and user-defined events can be added, waveform color for evoked event can also be set freely. Ensures that the waveform in corresponding time can be rapidly found by event name during case playback.
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10. Multifunctional flash stimulator of USB interface, and flashing can be controlled manually or auto manually. A flash stimulation scheme can be set and performed in the process of sampling.
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15. Add marks and annotations to the waveform designated, which can rapidly find the wave form in that time by marks.
16. Optional video function's camera is easy to install, convenient to use and exact to record, With flexible playback function, which can browse the waveform of any time along with the corresponding isochronous sampled image.
17. SpO2 function is optional.
18. Computer is optional.

Physical Characteristic

Dimension	186mm(L)x186mm(W)x89.2mm(H)
Weight	750g

Operation environment

Temperature	+5°C~+40°C
Relative humidity	25%~95% (no condensation)
Atmospheric pressure	700hPa~1060hPa
Power supply	USB 5V DC

Storage environment

Temperature	-20°C~+55°C
Relative humidity	≤90%
Atmospheric pressure	700hPa~1060hPa

Accessories

Standard

EEG lead/EEG electrode/Data line/Headgear/ Strobe light/Strobe light power supply/PC software CD/User manual/Earth wire/EEG bracket/Aluminum block

Optional

SpO2 module/Video module, Computer

HOAME6600 EMG System



Features

1. Professional EMG/EP operation platform and perfect test projects, complete each test in the shortest time.
2. Perfect case report data and graph creating system.
3. Special database management system.
4. Select test part with Neuro and muscle navigation system and projects selecting system fleetly and conveniently.
5. Powerful normal value system, contrast with normal data automatically.
6. Flexible software design, configure systems according to requirements.
7. High-speed data collection, electromagnetic interference suppression capability for using high strength and light quality metal enclosure.
8. Simple and convenient operation panel.
9. Good Electrostatic and electromagnetic interference suppression capability for using high strength and light quality metal enclosure.
10. Selectable 1-4 channel input mode meets multi-working modes in clinical EMG test.
11. High-speed collect and process data with parallel processing technology, display data with graph.

Functions

General electromyogram (EMG), Sensory nerve conductor velocity (SCS), motor nerve conductor velocity (MCS), Fwave, HRe-flex, Blink Reflex, Repetitive nerve stimulation (RNS), Brainstem auditory evoked potential (BAEP), Visual evoked potential (VEP), Somatosensory evoked potentials (SEP). Computer is optional.

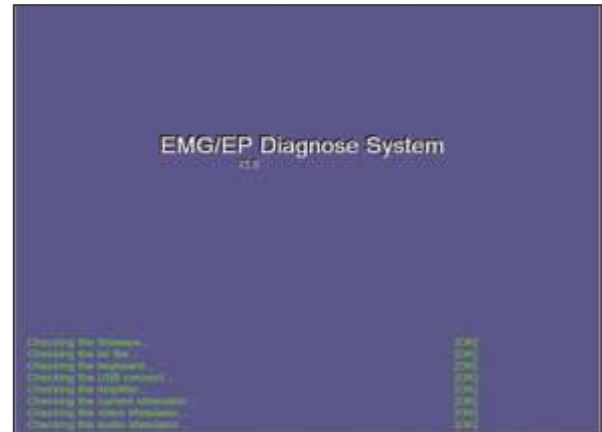
Technical Specifications

PARAMETER	SPECIFICATION
Computer part	
CPU	Intel Pentium III (more than 800MHz)
EMS memory	More than 256M
HD	More than 40G
CD driver	CD-ROM or higher configuration
I/O interface	More than USB2.0 interfaces
Operating system	Windows 7,vista,XP 62bit,32bit
Laser printer	Yes
Main system part	
A/D conversion resolution	16Bit
Sampling ratio	200kHz
Analysis time	5-5000ms
Amplifier part	
Channel	4
Sensitivity	0.05 μ V-20mV/Grid
CMRR	≥ 100 dB
Filter frequency	Low-pass:1Hz~3000Hz (-3dB)
	High-pass:10Hz~20000Hz(-3dB)
Gain amplifies	25 times~400000 times
Stimulator part	
Constant current	0.2-100mA
Pulse width	50-1000 μ S
Stimulation Frequency	1Hz~5Hz
Stimulation type	Single or continuous stimulation
Protection	Short circuit and overloading protection
Auditory stimulator	
Stimulation waveform	40Hz short, Sound stim
Stimulation polarity	Non-dense wave, dense wave and alternant wave
Sound intensity	40-120dB (5dB per level)
Frequency of 40Hz carrier wave	500-8000Hz
Visual stimulator	
Adopts CRT display whole size	Not less than 200mmx200mm
Mode	Tessellation, horizontal bar and vertical bar
Stimulation view	All-view, half-view and quarter-view
Resolution	3x4,6x8,12x16 ,24x32,48x64

Software function

1.System self-checking function

System will check each part of hardware can work normally when it is powered on to ensure patient safe.



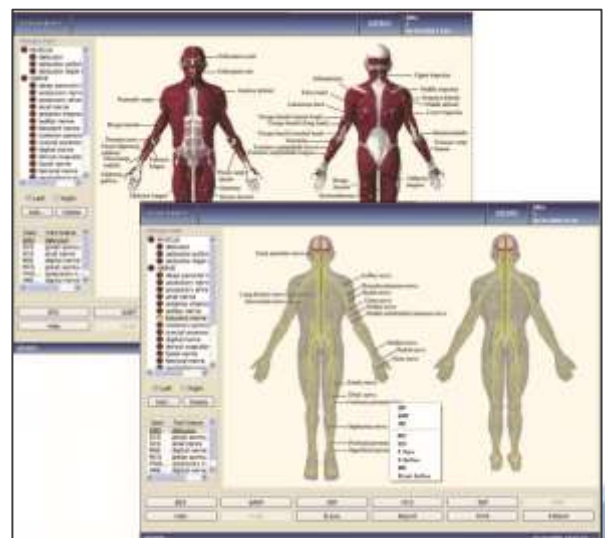
2.Case database management system

The function in this module include: add, delete, modify query, import and export cases information. In addition, the system also provides advanced and intelligent search function for case



3.Projects select

The module is the bridge connection case database and checking project. It provides information with graph and characters, which is convenient for user to select test part and project.



4.Impedance test

To achieve optimal test effect, firstly open impedance test function to record that the impedance of body surface complies with condition which is less than SK.



5. Perfect EP/NCS/EMG test system.

The detailed test projects are showed as below:

Test system		Test project
EP	BAEP	Sound stimulate
		40Hz short voice stimulate
	VEP	mode switch stimulate
		flash stimulate
NCS	SEP	SEP
		MCS
		SDS
		F Wave
		H Reflex
		Blink Reflex
EMG		RMS
		General EMG

5.1 EP system: including SEP, VEP (which contains EP-mode switch and flash) and BAEP.

5.2 NCS

5.2.1 MCS

The system can analyses the collection waveform and adjust baseline automatically, and nerve conduction velocity in two nerve segments and latency can be calculated.

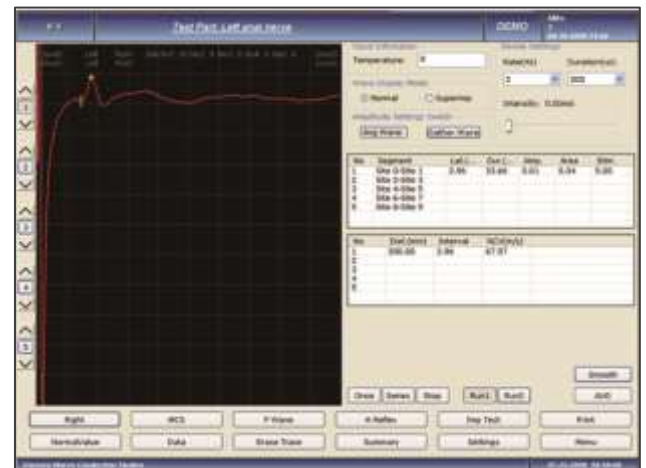


5.2.2 H Reflex

H-wave latency ,H-wave amplitude and H/M rate can be calculated.

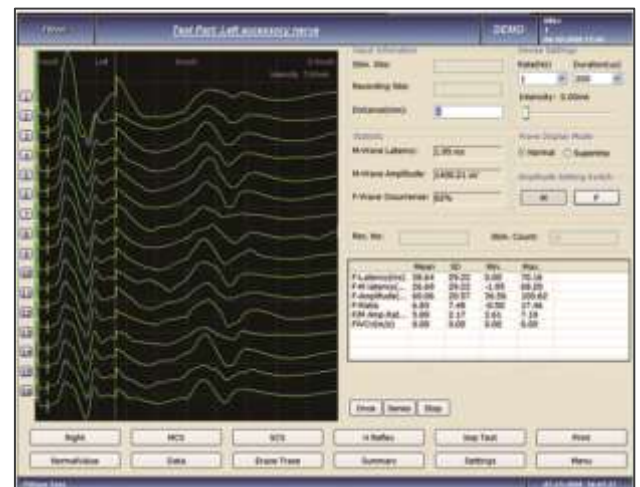
5.2.3 SCS

Get bigger signal noise ration (SNR) and strong anti-interference capability by lesser superimposed waveform. And nerve conduction velocity in tow nerve segments and latency can be calculated.



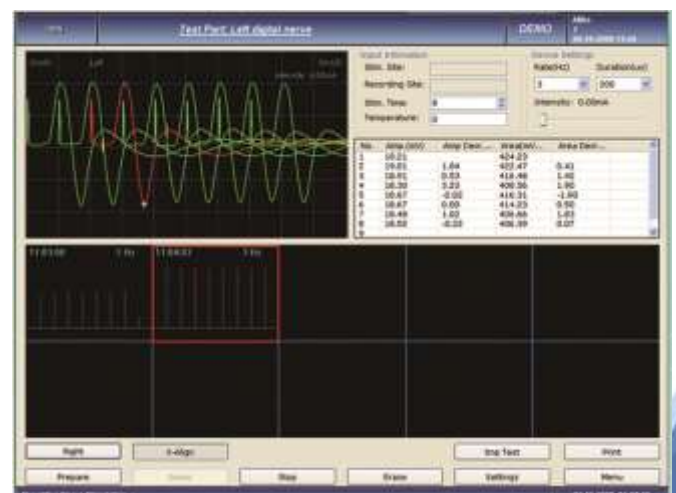
5.2.4 F Wave

This Window displays two waveform (M wave in left and F wave in right),It can calculate F-wave latency , F-wave Amplitude, F-Wave occurrence, F/M amplitude rate and F-wave conduction velocity.



5.2.5 RNS

Many Repetitive stimulation checks can be done in one test, and stimulation waveform amplitude, amplitude decremental percentage, waveform area decremental percentage can be calculated.



5.2.6 Blink Reflex

Dual-channel collection can record trigeminal signal from two sides.

5.3 Standard EMG system

This system reduces baseline drift by superimposing eight EMG waveforms, real time analyse motor unit potential and interference phases.

