| NASAN SIMPLE. RELIABLE. | Title: Website Catalog & specification Document | Document no: NASAN-D&D-D-007 |
|---|---|---|
| | | Rev no: 6 |
| | | Date: 29-1-2024 |
| | | Details of change: new format |

Simul-G is a resting ECG machine with facility of Measurement and Interpretation.  It connects with PC through USB interface.

**Technical Specifications**

## 1. Dimension and Weight

Dimension (in mm) (L x B x H) : 105X65X40 mm

Weight (in Kg)                     :   150gm

## 2. Environmental

Operating Temp              : 0 ºC to +50 ºC

Operating & Storage        : 0 to 95 % non-condensing

Humidity

## 3. Power supply

Input                              : USB powered

Power consumption         : < 10 Watt

## 4. Performance

Display                          : 1024 x 768 pixels,

Language                       : English

Alarm                           : Audio alarms for HR

QRS Beep                      : On each QRS

### Acquisition

Frequency response        : 0.05 Hz to 100 Hz with notch at 50Hz

Filter                            : DSP

Input impedance             : 10 MΩ

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Time constant   : > 3.2 sec

A/D conversion   : 12 bit

Noise   : < $20\mu V_{p-p}$

Leakage current   : < 10 µA

Patient isolation   : Optical isolation.

Gain   : 5, 10 & 20 mm/mV selectable.

CMRR   : > 120 dB

Sweep speed   : 25.0 mm/S.

Accuracy of HR   : +/- 2 BPM.

Sampling Frequency   : 250 samples per second simultaneous

Storage   : 12 lead unaveraged ECG, 10 second Rhythm strips

  of 12 leads, Medians after every 8 sec along

  with HR, BP and fiducial points,

Printout   : Manual printing with grid On/Off facility, print
Colour reports

## 5. Minimum Requirement of PC for Simul-G system:

1. Operating system   : Windows 10 professional 64bit
2. Motherboard   : Intel corei3
3. RAM   : 4 GB
4. USB port   : working USB port for Simul-G unit connection.
5. Monitor   : Color monitor.
6. Hard disk   : minimum 500 GB.
7. Display Settings   : Resolution  - 1024X 768.
8. Keyboard   : with 101 keys.
9. Mouse
10. UPS   : 1 OR 2 KVA
11. Independent earthing connection.

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## 6. Detailed features

❖ **Acquisition**
- o   Body level acquisition of 12 lead ECG
- o Simultaneous acquisition of 12 Leads of ECG @ 250 samples per second per channel with ADC resolution of 12-bit.
- o Frequency Response – DSP filter of 0.05 to 100Hz with notch at 50Hz
- o Facility to store 12 lead Unaveraged ECG
- o Facility to Rerun test
- o Automatic detection of P+ start, P+ end, P – end, Q start, R Start, R end, S end, r' end, s' end, T Start, T End, U start, U end points on the median once.

❖ **Acquisition display**
- o Display of 4 seconds of ECG traces of 12 leads with standardization pulse and corresponding medians next to each lead
- o Display HR
- o Display long lead, QRS detection Lead, BP and gain
- o Leads-Off detection with a message indicating the lead during the test.

❖ **Acquisition settings**
- o Relearn the median template
- o Gain: 0.5, 1.0, 2.0 mV/cm
- o Facility to change long lead, QRS detection lead and amplify QRS lead

❖ **Review display modes**
- o Review data of selected patient
- o 12 medians screen: 12 medians are displayed with ST-level
- o Resting ECG display: 2.5 sec all leads with medians and 10 sec of long lead.
- o Zoom Median:
  - ▪ Display the amplitude in volts of all fiducial points
  - ▪ Displays following **ECG interpretation**
    1. Rhythm statements
       a. Sinus Rhythm / Junctional or NonSinus Rhythm suspected / Sinus Bradycardia / Sinus Tachycardia
    2. PR interval statements
       a. PR is normal / PR is long / PR is short
    3. QRS interval statements
       a. Normal QRS Width / Wide QRS
    4. QT interval statements
       a. Normal QT interval / QT Interval is prolonged / QT Interval - Little clinical significance
    5. QRS Axis statements
       a. QRS Axis is normal / Right axis deviation / Left axis deviation / QRS Axis is indeterminate
    6. ST abnormalities statements
       a. Normal ST level / ST Elevation / ST Depression
    7. T wave inversion

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        a. Lead names of leads showing T wave inversion
- Facility to edit fiducial points (E, J, Post J) of selected median
- Display duration of P.Q,R ,S,T in ms
- ST level and ST slope
- Display intervals of PQ,PR,QRS,QTC in ms and axes in degree of P,QRS and T
- Display RR interval and HR
- Facility to change P+ start, P+ end, P – end, Q start, R Start, R end, S end, r' end, s' end, T Start, T End, U start, U end points.

❖ **Review settings**
- Grid/Graph/No grid option on all review screens
- Facility to edit HR and BP of any stage
- Facility to edit Patient Details
- Create the bitmap (GIF) of the selected report/s and save at selected location
- Facility to backup patient data and review saved data.
- Facility to Edit interpretation
- Facility select / deselect printing of interpretation

❖ **Reports**
- Resting ECG report
- 12 leads(All leads) measurement report with interpretation
- 5 seconds ECG report

❖ **Settings**
- Hospital details
- Referring Doctor list
- Standard comment
- Simul-G system configuration
- Printing details configuration

❖ **Display**
- Resolution – 1024 X 768

*Due to our continuous product development program, the specification may change without prior notice.