

DEDICA is an advanced stand-alone, Windows based Stress Test System. This system comprises of body level acquisition.

### Technical Specifications

#### 1. Environmental

Operating Temp	: -5 °C to +50 °C
Operating & Storage Humidity	: 0 to 95 % non-condensing

#### 2. Power supply

Input	: 230V AC+/- 10% @ 50Hz
Power consumption	: < 350 Watt

#### 3. Performance

Display	: 1024 x 768 pixels, 17" TFT (Touch screen optional)
Display area	: 320 mm x 240 mm
Language	: English
Alarm	: Audio alarms for HR and ST level at pre-configured Values
QRS Beep	: On each QRS

#### 4. Acquisition

Frequency response	: 0.05 Hz to 150 Hz with notch at 50Hz
Filter	: DSP
Input impedance	: 10 M ohm
Time constant	: > 3.2 sec
A/D conversion	: 12 bit
Noise	: < 20 $\mu$ V <sub>p-p</sub>
Leakage current	: < 10 $\mu$ A
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
Operation	: User friendly keyboard, Touchscreen
Other Models	: STWin-Standard, STWin-Basic, STWin-Deluxe, All Models available with blue tooth facility
Storage	: 12 lead unaveraged ECG, 10 second Rhythm strips

of 12 leads, Medians after every 8 sec along with HR, BP and fiducial points, full disclosure of entire test

Leads-Off detection	: Yes
Protocols	: Pre-programmed protocol including BRUCE, MODIFIED BRUCE, NAUGHTON, MODIFIED BALKE and user editable protocols
Printouts	: Automatic and manual online printing with grid On/off facility. Print colour reports.

## 5. Treadmill

Power	: 230V, 50Hz, 15A
Power consumption	: 1.5KVA
Incline Range	: 0-22%
Dimension	: L X W - 2055X 750 mm
Walking Area	: 1440 X 500mm
Weight	: 100Kg
Patient Weight	: Up to 250kg
Belt Speed	: Smooth, 0-15Kmph
In-House manufacturing	: Yes

### Detailed features

#### 1. Acquisition display modes

- a. **12 lead display**
  - i. Display 12 lead, 4 second ECG on First screen. Enlarged Medians next to each lead are displayed.
  - ii. Configurable zoom factor for enlarged median: 2, 3, 4 times.
  - iii. In exercise stage Basal Enlarged medians and current Medians are superimposed.
  - iv. Facility to move superimposed medians.
- b. **3 lead display**
  - i. 8 seconds display of 2 leads of ECG + 1 QRS detection Lead.
  - ii. Facility to configure 3 leads to any of the 12 ECG leads
  - iii. Display lead sets (I, II, III) OR (aVR, aVL, aVF) OR (V1, V2, V3) OR (V4, V5, V6)
  - iv. An enlarged Exercise median of the minimum ST level lead with fiducial points marked is displayed. (The enlarged median can be any of the 12 leads in Manual Mode. In Automatic mode, the lead having maximum ST Depression is displayed by the system.)
  - v. Along with enlarged median, basal median is displayed in exercise stage and peak exercise median is displayed in recovery for comparison
  - vi. Printer status check message

- c. **4 lead display**
  - i. 8 seconds display of 3 leads of ECG + 1 QRS detection Lead.
  - ii. Facility to configure 4 leads to any of the 12 ECG leads
  - iii. ST Integral display
  - iv. Enlarged median of the lead having minimum ST depression with fiducial points marked displayed along with basal or peak exercise median
- d. **Online display of following parameter in all display modes**
  - i. Sweep speed
  - ii. METS
  - iii. Heart rate is updated every 4 seconds with symbol and Target heart rate with percentage of completion target heart rate.
  - iv. BP in mmHg
  - v. ST measurement Mode (Manual / Auto)
  - vi. Current ST Level and ST Slope of enlarged median
  - vii. ECG gain with standardization pulse
  - viii. Test and Phase duration in hh:mm format
  - ix. Exercise protocol stage name
  - x. Detection of **Premature Ventricular Ectopic**
- e. **Online printouts**

Facility to print selected online reports

  - i. Linked Median report (12 linked medians with ST Levels of selected long lead)
  - ii. 12 lead Raw ECG report
- f. **Automatic Reports**

Facility to print selected stage reports automatically

  - i. Linked Median report (12 linked medians with ST Levels 1 long lead)
  - ii. 12 lead Unaveraged ECG report
  - iii. 12 lead Raw ECG report
  - iv. Rhythm report – 12 leads of 5 seconds or 6 leads of 10 seconds
  - v. Mixed Median report with one Median complex + 2.5 seconds ECG of each lead
  - vi. Advanced mixed median report.
  - vii. Extended Mixed Median Report - One Median complex + One Basal Median complex + 2.5 seconds ECG of each lead
  - viii. Selected median report
- g. **Stage reports configuration includes**
  - i. Reports at stage end
  - ii. At set interval in 'EXERCISE' and 'RECOVERY' stage
  - iii. Automatic 'PEAK EXERCISE' Linked Median printout
  - iv. 6 leads of 10 seconds OR 12 leads of 5 seconds selection for Rhythm Report
  - v. Automatic 'PEAK EXERCISE' Linked Median printout (10 seconds after Exercise is stopped).
  - vi. Grid On/Off
- h. **Acquisition settings**
  - i. Facility to enter BP 50 seconds before end of each exercise stage
  - ii. ECG sweep speed: 12.5, 25, 50 mm/sec
  - iii. Relearn the median template
  - iv. Facility to enter a stage comment in each phase
  - v. Change the QRS detection lead
  - vi. Automatic/Manual detection of fiducial points (E, J, Post J)

- vii. Hold/Release treadmill stage
- viii. QRS beep On/Off
- ix. NASAN filters ON/OFF

## **2. Review mode**

- a. Review data of selected patient
- b. Grid/Graph/No grid option on all review screens
- c. Facility to edit HR and BP of any stage
- d. Facility to send reports through mail
- e. Facility to edit Patient Details
- f. 12 medians screen
- g. 12 medians are displayed with ST-level and ST-Integral
- h. Mixed Median report with one Median complex + 2.5 seconds ECG of each lead
- i. Facility to zoom median of selected lead and edit fiducial points
- j. Trends
- k. Trends of HR, BP, ST Level, ST Slope, J Amplitude, R-Wave amplitude, METs, PVC per minute & RPP
- l. 8, 16, 32, 48, 56 seconds resolution.
- m. View and print rhythm strips marked during acquisition. Facility to select 12 leads of 5 sec. OR 6 leads of 10 seconds for each printout
- n. View unaveraged ECG
- o. Superimpose medians of any 2 stages in different colours.
- p. Full wave disclosure of 1 minute of any lead
- q. Edit and print Summary Report using standard edit options

## **3. Reports**

- a. 12 lead linked median (single / all stages)
- b. Mixed Median Report
- c. 6 lead Rhythm report of 10 seconds (single / all stages)
- d. 12 lead Unaveraged ECG report
- e. Extra Comments report
- f. Stage Report
- g. Brief Summary Report
- h. Trends Report (HR, BP, ST Levels / ST Slopes, J Amplitude of 3 configured leads, R-Wave amplitude, METs, PVC per minute & RPP
- i. Full wave disclosure of 1 minute of any lead
- j. Facility to print superimposed medians of any 2 stages in different colours
- k. Summary Report (Hospital Address and referring doctor designation to be printed in Summary reports)
- l. Advance Mixed Median Report
- m. ST-Levels & Slopes Table
- n. Extended Mixed Median Report
- o. Selected median report

## **❖ Configuration mode**

- i. Hospital details
- ii. Referring Doctor list
- iii. Standard Summary report option
- iv. ST-Win system configuration
- v. Treadmill protocol
- vi. Available standard protocols
  - 1. BRUCE
  - 2. MODIFIED BRUCE
  - 3. NAUGHTON
  - 4. MODIFIED BALKE
- vii. Printing details configuration
- viii. System configuration

1. Speed in km/hr or m/s
2. TM speed at exercise stop (slow-0 km/hr, Fast-0 km/hr, 1.2 km/hr)
3. ST Level lead in Summary
4. Long lead in reports
5. Screen Display leads (3)
6. 3 Leads in Trend Report
7. Stage Report Leads
8. Treadmill Support: Compact, Treadstar, XP, Trackmaster
9. COM Port Selection for amplifier and for treadmill.
10. Median update time is configurable to 1 to 8 sec.

❖ **Utilities**

- a. Test Treadmill
- b. Test acquisition unit
- c. Calibrate TM Speed
- d. Calibrate TM Grade
- e. Delete printout from printer queue

❖ **Hotkeys:**

Following hotkeys are provided for fast and easy operation

- ON/OFF
- Change display (Select display mode: 3 or 4 or 12 lead mode)
- Relearn template
- Amplify QRS
- Print Raw ECG report
- Print Linked Median report
- QRS Beep ON / OFF
- Enlarge median
- Stop Test
- Treadmill – Speed ↑↓ and Grade ↑↓

\* Due to our continuous product improvement programme, features can be enhanced.