

beatWISE
Holler

Connected Cardiac Monitoring
& Diagnostics



Cardiac
Design
Labs

www.cardiacdesignlabs.com

Key Features

- Detachable 12 leads/ limb leads
- Storage: 14 days on device
- Works on AAA battery
- Patient triggered ECG recording
- Retrospective analysis using MIRCAM analysis software
- Works in offline & online (event monitoring) mode



Smart Connected Event Monitoring



- Auto event detection
- Long term data recording
- Transmit ECG events to the cloud for remote review and reporting
- Smart alerts & notifications
- Automated reports



Monitoring Segments

Cardiac Diagnostics

Secondary/ Tertiary Monitoring

- Holter
- Cardiac Events

Primary Care

- Tele-ECG



Ward, Stepdown ICU Monitoring

- Automated Monitoring
- Central Monitoring
- Remote Access

General Health Monitoring

- Personal health monitoring
- Workout monitoring
- Sports

Extended Emergency Care

- Geriatric
- Post operative care
- Disease recovery

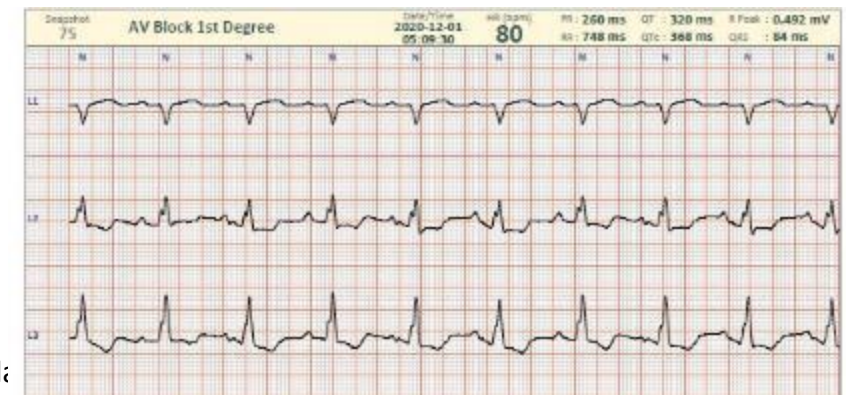
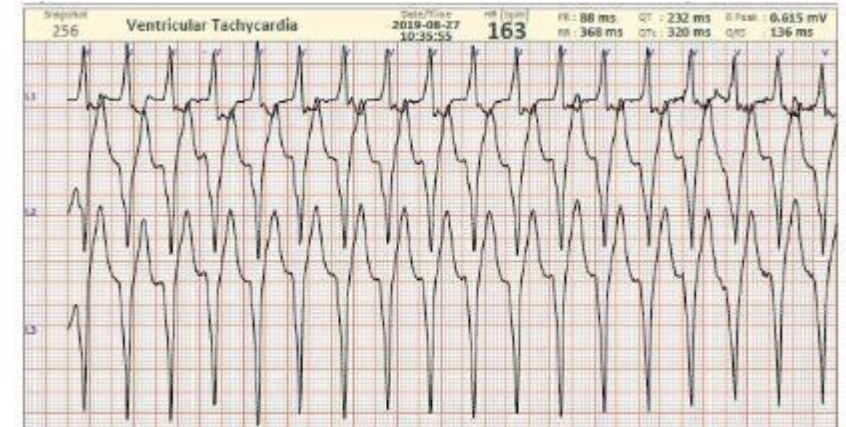
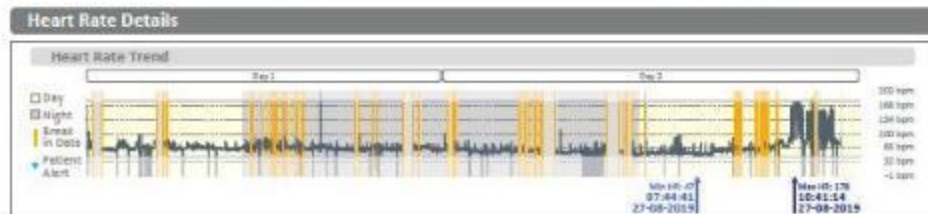
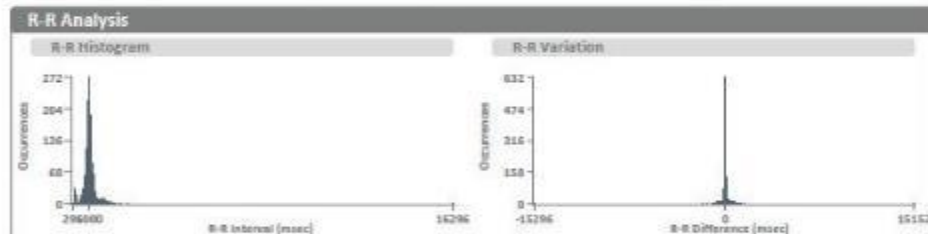
Trends and ECG snapshots of arrhythmias from the system

Diagnostic Findings	
General	
66642	Total QRS complexes
12449	Ventricular ectopics ($\approx 14\%$)
267	Supraventricular ectopics ($< 1\%$)
19	Atrial ectopics ($< 0\%$)
1096	Pulsion beats ($< 2\%$)
0	Aberrant SVTs ($< 0\%$)
< 8	% of total time classified as noise
Heart Rate Details	
47 bpm	Min HR @ 2019-08-27 07:44:41
65 bpm	Average HR
178 bpm	Max HR @ 2019-08-27 10:41:14
1.424 sec	Max R-R @ 2019-08-27 07:53:27

Test Summary/Conclusion

23 hours, 26 mins holter monitoring revealed a maximum heart rate of 178 bpm and minimum heart rate of 47 bpm. There were frequent episodes of VPC's, Couplets, Triplets noted. Many episodes of sustained Ventricular Tachycardia noted, longest was 3 minutes 50 seconds at 27/08/2019, 10:30:56. There were no Pause or AF observed during the study.

*** CORRELATE CLINICALLY ***



Holter/Event Monitoring



Home Care



Clinics



Hospitals



Tele-ECG



Clinics

6/12 lead ECG

ECG TEST



Test data and ECG-episodes

Test data and ECGs

Vitals and ECG episodes

MIRCaM Cloud Platform

Remote access to data

MIRCaM Cloud Platform

- Secure and Protected Access
- Dashboard
- Data Analytics
- Event Reporting
- Administration and Control



Nurses

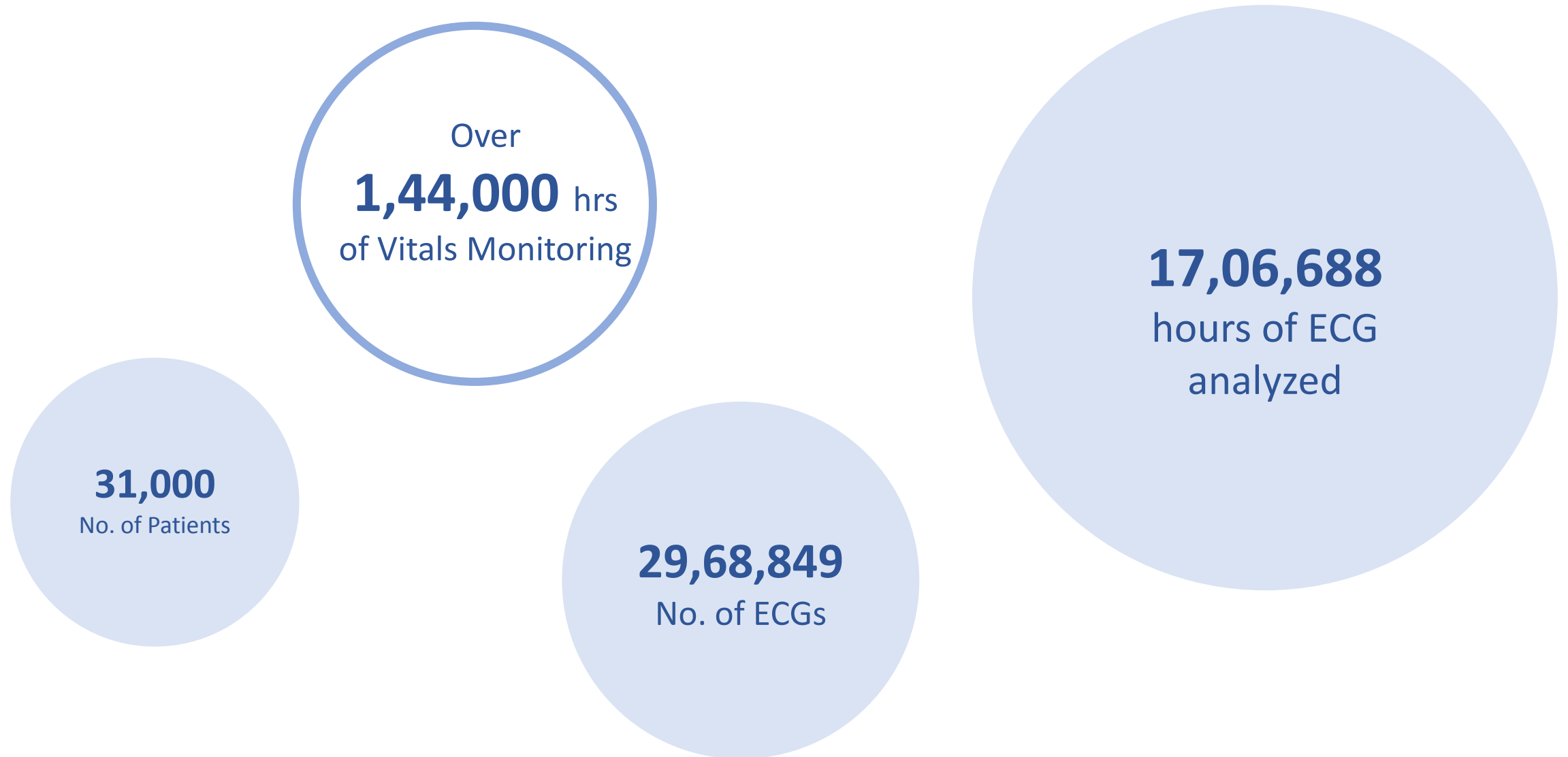


Doctors



ECG Technicians

Lives Impacted by our products so far



Algorithm Highlights

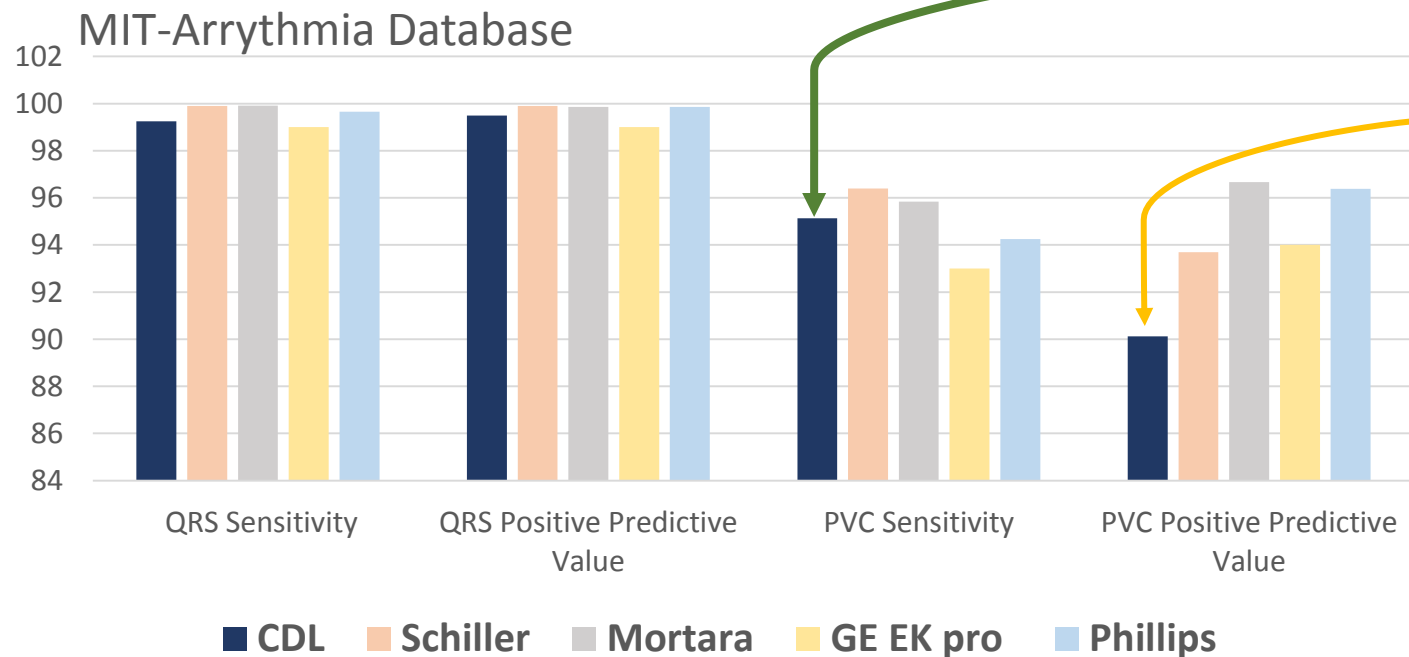


- Analyses test data with 12 leads or reduced differential leads
- Supports both offline and active mode tests
- Detects up to 48 arrhythmias including AFib, AV Blocks, Pauses, VT etc.,
- Detects ST segment changes on 12 lead tests
- Fine baseline analysis and correction with automatic analysis across multiple leads
- Tested across multiple test data sets such as MIT, AHA etc.,
- Validated on tests over 10000+ patients

Product Performance

Interpretation Engine Performance

– ECG



95.13%
Best in class PVC Sensitivity

90.12%
PVC Positive Predictive Value approaching high accuracy

A significant component of the system is the Algorithm results benchmarked on the reference databases against some of the global players. The table below shows the results for the ambulatory ECG and the resting ECG. It also shows results on the field trial done. The QRS sensitivity is very good, but it important to note **the PVC sensitivity** in the MIT arrhythmia database in the first table, it shows a **95.13 %**.

12-Lead Diagnostic CSE Database 105 patient records	Sensitivity	Specificity	Positive Predictive value
	91.67	78.95	78.57
CDL Rhythm Detection On 251 streams	Sensitivity	Specificity	Positive Predictive Value
	95.45	96.42	79.23

CDL's growing footprint

Padma Vitals

Telemetric Patient Monitoring

- Narayana Health, Bangalore



- Jayadeva Institute of Research and Cardiovascular Sciences



- Wipro – Government COVID Hospital, Pune



- Rajah Muthiah Medical College Hospital, Chidambaram.

- Asian Institute of Gastroenterology, Hyderabad

- Government Medical College Thoothukudi

Holter & ECG



Hospitals in which Cardiologists/EPs are indirect users





ECG TYPE AND CHARACTERISTICS

ECG Channels	12-Lead/Variable
Recording	Upto 4 weeks

USABILITY CHARACTERISTICS

Test Types Supported	Ambulatory
Remote Review and Reporting	ECG monitored remotely to generate precise reports after automated analysis
Work Flow Software	Event based and patient triggers accesible on mobile and desktop
Analysis Software	Powered by CDL's intelligent algorithms engine for beat-by-beat analysis

ELECTRICAL CHARACTERISTICS

Frequency Response	0.05-250 Hz 0.05-125Hz
Sampling Frequency	500 sps 250 sps
Common Mode Rejection	105 dB
Resolution	16 bit

PHYSICAL CHARACTERISTICS

Dimensions	83 X 76 X 17.5 mm
Weight	50g + Cables

POWER AND USAGE

Battery Type	AAA
Life	2 Days

Golden Bird Trading Est. 

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