

AliveX

Alive Heart Monitor sample application and source code for Android™
July-2014

AliveX is a sample application that connects to the Alive Heart Monitor over a Bluetooth connection to display ECG and acceleration signals. It includes all source code and an Eclipse project. The application is written in Java and should be helpful in creating your own Android application.

AliveX supports Android 4.0 or later phones and tablets.

Requirements

- Device running Android 4.0 or later
- Device with Classic Bluetooth support.



Build Requirements

- Eclipse with Google Plugin for Eclipse and Android Developer Toolkit.
<http://developer.android.com/sdk>

Building AliveX

1. Make sure you have an up-to-date version of the Eclipse IDT for Java, with both the Google Plugin for Eclipse and Android Developer Toolkit installed.
2. Extract the contents of the AliveXAndroidAppSource.zip file to your PC (keep the folder names).
3. Import the unzipped Android project into Eclipse by selecting **File > Import > Android > Existing Android Code Into Workspace** and then supplying the directory you unzipped the client project.
4. Ensure your new project is configured for a Google API target.
5. Click Save to save your changes and build the project.

Source Files

Main source components include:

File	Description
MainActivity.java	Main application activity.
AliveHeartMonitor.java	Runs a thread that manages the Bluetooth connection to the heart monitor and reading the incoming data stream.
AliveService.java	Android service that runs in the background allowing the user to change screen orientation, exit the app, or switch to another app, while still maintaining connection to the heart monitor.

AlivePacket.java	Parses the data stream from the Heart Monitor into packets.
EcgView.java	Manages drawing of the ECG waveform and heart rate.
AccView.java	Manages drawing of the acceleration signals.
BTDeviceListActivity.java	Activity used to search for Bluetooth devices and to select the heart monitor to connect to.
QrsDet.java	Modified version of the LGPL QRS detector from EP Limited www.eplimited.com/software.htm , used for beat detection.
HrDet.java	Calculates heart rate from the beat detections.
MainsFilter.java	Simple averaging filter used to remove any 50/60Hz mains interference from the ECG signal.
AppPreferences.java	Manages access and storage of application preferences.