DG Visualizer

User Guide

Document version: 4.0(en)

Last update: August 8, 2019

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Application overview

DG Visualizer is an Android application, spectrum visualizer. It is developed and supported by DualGlad.

On the Main application screen it shows the dependence of the amplitude of output device sound on its frequency. The visualization is done in realtime and does not depend on using audio application.

The key features of this application are:

- Independence from music player or any other audio application – this application uses the output audio without having to interact with the source of the signal;
- Free and clean – the application is free and does not include any kind of advertising or in-app purchases;
- Fast and handy – the application has fast, simple and user friendly interface;
- Small application size – the installation package is about 100 KB only;
- Wide Android versions support – the application is designed to be compatible with Android 2.3, where the system support of such kind visualization was introduced, and all newer versions. Application is optimized for best performance on the user system.

Installation and setup

DG Visualizer is officially distributed via Google Play. It can be downloaded using application page (link).

The latest and the only currently supported version of this application is available at Google Play. Users are always advised to update the application to the latest version. Previous application versions become outdated as soon as newer version is available. Updates may include new features as well as important bug fixes, performance and stability improvements, security patches.

After installation of the application it is important to apply “Microphone” Android permission, which is required by Android API to visualize audio. Device microphone is not used by the application. Read more about application permissions and user data usage in Privacy Policy section of this document.

If the application terminates immediately after start with message “Grant MICROPHONE permission to visualize audio.”, the “Microphone” permission should be granted manually. The exact location of this setting may vary by device, but usually it is located in device settings, applications section.

In extreme cases the application may detect critical system error and be shouted down with “System error occurred, exit.” message. In case of further attempts to launch the application are not successful, the following actions could be performed in order to resolve the problem: restart the device; reinstall the application; avoid using multiple applications with the same purpose (simultaneously launched visualization applications may conflict).

At the first launch the Information screen will be shown. This screen contains the main information about the application. Using the Main button (contains stylized “::”) on the Main application screen you can access Main menu (long press activates Menu; click turns visualization on and off). It includes Settings item, which calls the Settings menu (being described in the “Settings” section of this document), and Information item, which calls the Information screen.

Settings

Application settings allow to customize application appearance and behavior. All setting are divided into categories: “Appearance” controls general view of the visualization; “Mechanics” changes visualization behavior, “System” category includes parameters of application interaction with device system. Below is the list with brief description:

- **Appearance**
  - **Number of bands** – amount of bars being displayed. Increasing number of bands imply increasing sensitivity of visualization. Allowed values (number) are between 1 and 128, default is 32.
  - **Space between bands** – size of separator between bars. Allowed values (pixels) are between 0 and 2, default is 1.

- **Mechanics**
  - **Update frequency** – speed of redrawing the visualization view. Visualization with higher update frequency looks smoother. Allowed values (frames per second) are between 30 and 60, default is 60.
  - **Rate of fall** – parameter controls the speed of clearing the screen in case of dropping the amplitude on the bar. High values will result in sharp and quickly changing of visualization picture – suitable for fast music. Zero value will freeze the visualization, remain the maximum of amplitudes on the screen. Allowed values (percent of the screen being cleared in a second) are between 0 and 500, default is 150.
  - **Linear amplitude** – enables visualization of linear amplitude, but not logarithmic. Disabled by default.
  - **Show average amplitude** – second band row shows average amplitude of the last second. Enabled by default.
  - **Show max amplitude** – the maximum of the amplitude of the last second will be marked on the screen. Enabled by default.
  - **Noise reduction level** – raises zero amplitude threshold, that removes visualization of the noise around zero amplitude. Higher value sets higher minimal threshold of visualization. Allowed values (threshold level) are between 0 and 2, default is 1.
  - **Apply amplitude averaging** – enables smoothing of visualization via calculating average amplitude over the update period. Enabling this option slightly increases CPU load and power consumption, while providing much smoother visualization. Enabled by default.
  - **Front smoothing factor** – on the bar rise or fall, the new amplitude value is set based on the previous value, hiding sharp changes and making visualization much more smoother, without small oscillations. Higher values make visualization smoother. Allowed values (threshold level) are between 0 and 300, default is 100.
- **System**
  - **Use OpenGL rendering** – visualization is drawn using high performance OpenGL ES 2.0 API. This option could speedup visualization, however device needs to support this API. Disabled by default.
  - **Keep screen on** – prevents screen locking and shading in case of visible Main application screen. Enabled by default.

Limitations

This section describes features which are not supported and which implementation is not expected due to reasons described below.

- This application is not a media player. Application is used as an addition to your favorite media application in order to do not limit its functionality.

- This application is not aimed to interact with media player. To not harm user privacy DG Visualizer application is not allowed to control media applications, as well as parse information of playing media. Read more in Privacy Policy.

Privacy Policy

This Privacy Policy (“Policy”) is applied to “DG Visualizer” (“Application”), the Android application with package name “ru.dualglad.dgvisualizer” developed by DualGlad. The Policy describes which User information is used by the Application and how the Application treats it.

The Application does not collect any personal or sensitive information, does not send it to any other third parties.

The Application captures audio data from media player (or output mix of the device). This data is used only for realtime audio visualization, not for any other purposes. Captured audio data consists of audio signal spectrum, and is displayed on the main screen of the device.

The Application requires Android application permissions: “RECORD_AUDIO” (“MICROPHONE”) and “MODIFY_AUDIO_SETTINGS”. Both permissions are used to capture audio data playing by media player (or output mix of the device) for visualization purpose. The Application uses Android API (“Visualizer”), which requires accepting this permission to work with audio data.

Useful links

- DG Visualizer page on Google Play
- DualGlad page on Google Play
- Github repository with documentation