beDSP

User Manual

ALM 5.1 LE

Loudness metering at your hand

Audio Loudness VST, AU and AAX plugin based on BS1770 (rev.3), EBU R128, ATSC A/85 and ARIB TR-B32. Now, you have a panoramic view of the main loudness descriptors anytime you need.

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1. ALM 5.1 LE - Loudness Meter

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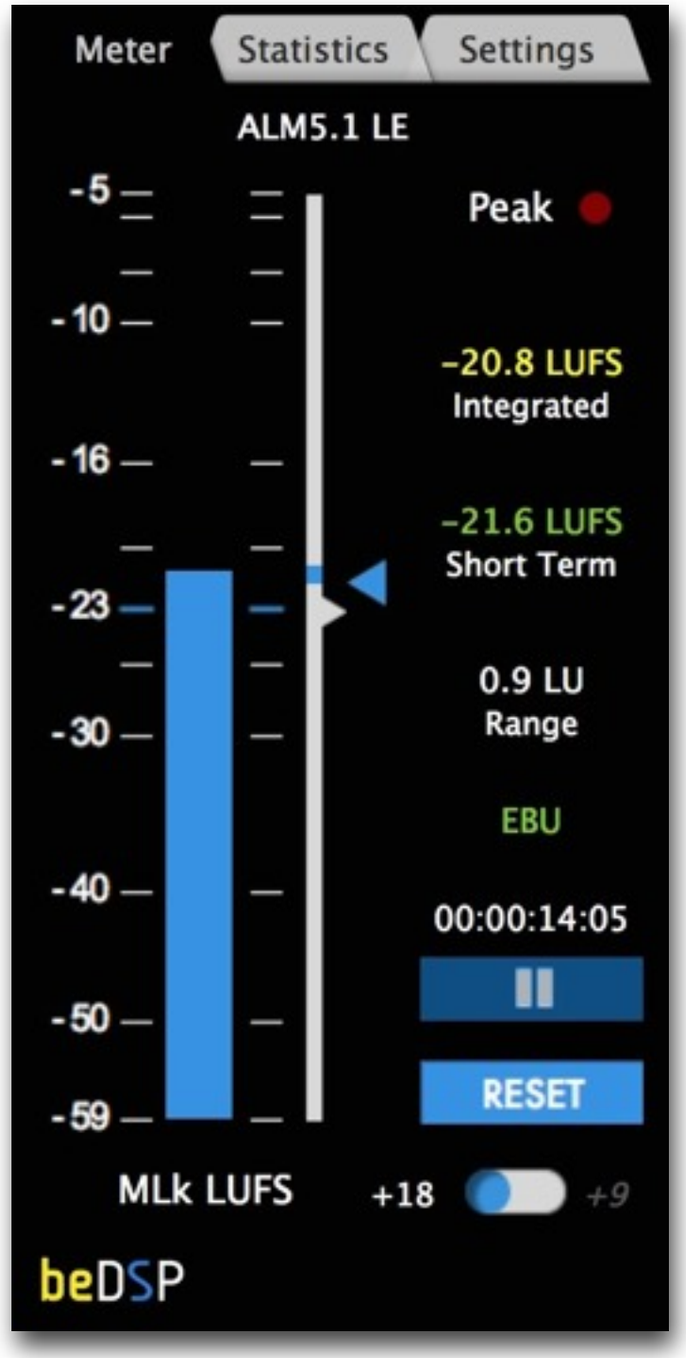
Loudness metering at your hand

In the past, the usual way of controlling the level of the broadcasted audio materials was by counting samples. Today, the focus switches to the listeners themselves, more precisely to the listener's audio perception and how loud they perceive the audio material.

Due to this change of perspective, a number of international broadcast standards have been developed (BS-1770, EBU R128, ATSC A/85, ARIB) based on research and perception tests. Everybody knows how annoying is to adjust the volume each time the program is changed or during commercial breaks. Now, we have a specific set of tools that helps us solve the loudness problem.

ALM 5.1 LE is a key component in your mixing workflow. Based on the ITU, EBU, ATSC and ARIB loudness standards, the software offers you full Loudness and True Peak Metering for Mono, Stereo and 5.1 channel formats featuring measurements for Momentary, Short Term and Integrated Loudness, with Loudness Range and Max True Peak Level.

For a higher resolution in the target zone you can use the +9 LU scale. For a higher dynamic range use the + 18 LU scale. Both a value and a bar indicator are available for Loudness Range, so you can decide if your audio needs more dynamic compression. ALM 5.1 LE follows the host transport and you can restart the measurements pressing the reset button.



Plugin Features

- Audio Loudness Meter VST, AU and AAX plugins;
- Channel Formats: mono, stereo and 5.1;
- Full compliance with Loudness standards : BS-1770 (rev.3), EBU R128, ATSC A/85 and ARIB specifications;
- Complete loudness measurements using universal descriptors: Integrated Loudness (Program Loudness), Momentary Loudness, Short Time Loudness, Loudness Range;
- Real-time metering for Momentary Loudness, Short Term Loudness and Loudness Range;
- Variable colors for loudness descriptors, according to the comfort zone;
- True Peak led indicator (calculated using inter-sample peaks that can be missed in quantization);
- Real time statistics for Program Loudness, Max Short Term Loudness, Max Momentary Loudness and Loudness Range;
- Correct measurements for all the usual sample rates: 44.1 kHz, 48 kHz and multiples;
- Low CPU usage due to the plugin optimization.

Loudness Descriptors

- **Integrated Loudness or Program Loudness** (in LUFS[1]) - describes the long-term integrated loudness of an audio material from 'start' to 'stop'. This is measured using the specifications of ITU-R BS.1770-3 (with gate at -10 LU[2]). The gate is used to not integrate in the loudness measurement the audio signal below -10 LU. This ensures that an audio material with long periods of silence will not be to loud after a possible loudness normalization.

- **Momentary Loudness** (in LUFS) - calculated with a time window of 400 ms;

- **Short Term Loudness** (in LUFS or LU) - calculated with a time window of 3 s;

- **Loudness Range** (in LU) – loudness dynamic range from 'start' to 'stop' that helps you decide if dynamic compression is necessary;

- **True Peak Max Level** (in dBTP[3]) - indicates the maximum value of the signal waveform in the continuous time domain (this value is calculated using inter-sample peaks that can be missed in quantization).

1. LUFS - Loudness, referenced to digital Full Scale
2. LKFS - Loudness, K-Weighting, referenced to digital Full Scale
3. LU - Loudness Units: 1 LU ≡ 1 dB
4. dBTP - deciBel referenced to digital Full Scale measured with a True Peak meter

2. Installation and Authentication

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Loudness metering at your hand

Minimum System Requirements

MAC:
Dual Core CPU (Intel or AMD) with SSE2 support
2GB RAM
OSX 10.6

PC:
Dual Core CPU(Intel or AMD) with SSE2 support
2GB RAM
Windows 7

Available Formats

MAC:
VST 2.4 universal binary
AU universal binary
AAX (64bits)

PC:
VST 2.4 universal binary
AAX (64bits)

Thank you for choosing ALM 5.1 LE!
Once you have the package **ALM51 LE** and you own a valid serial number, please follow the next steps for installation (for OSX or Windows) and authentication of your product.

OSX Installation

1. Double click on ALM51_LE_Bundle1.0.0.mpkg
   and an installation window will appear (see Figure 1). Press the **Continue** button to **start** the installation;

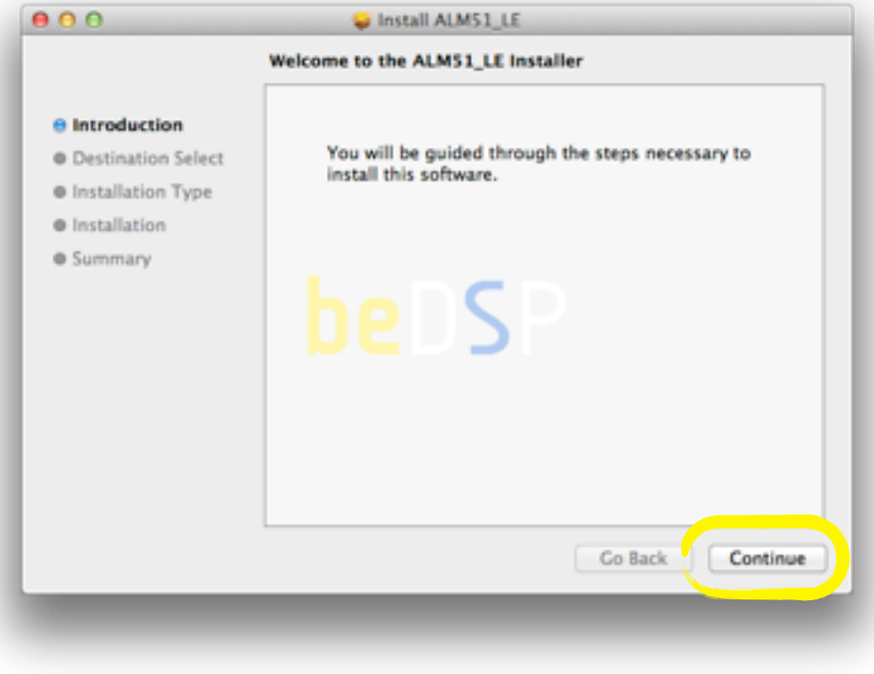

Figure 1: Installation window

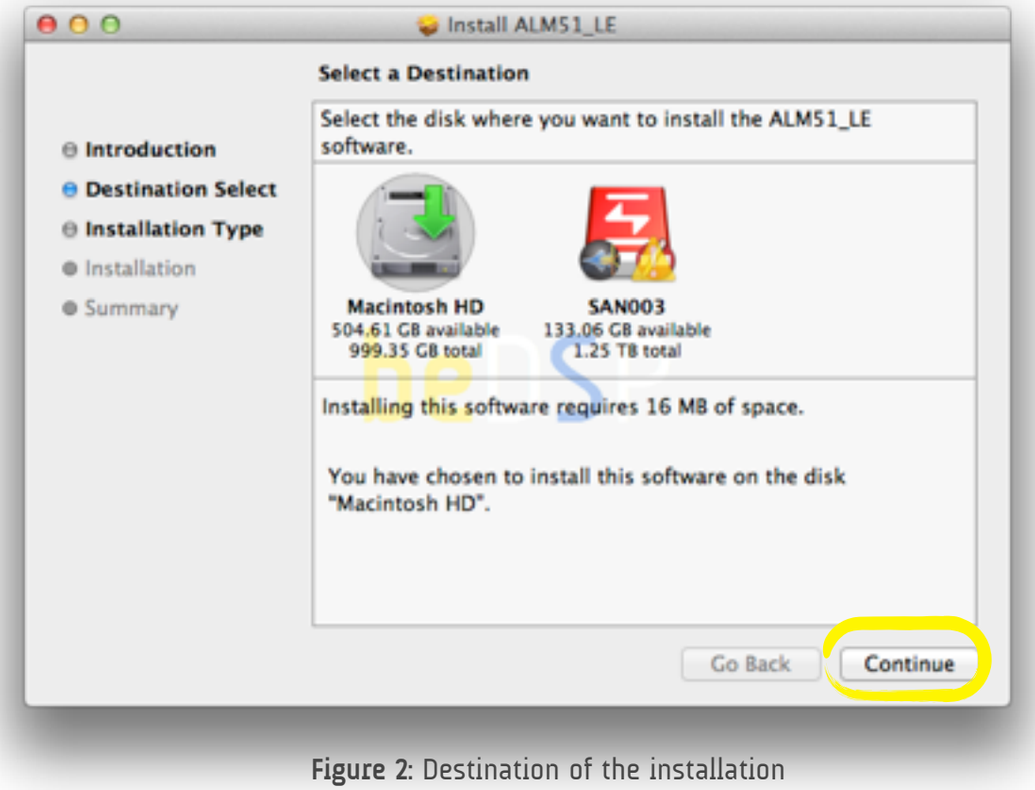

Figure 2: Destination of the installation

2. **Select a Destination** for the installation (see Figure 2) and then press the **Continue** button;

3. Select the **Installation type** you want and then press the **Continue** button (see Figure 3);

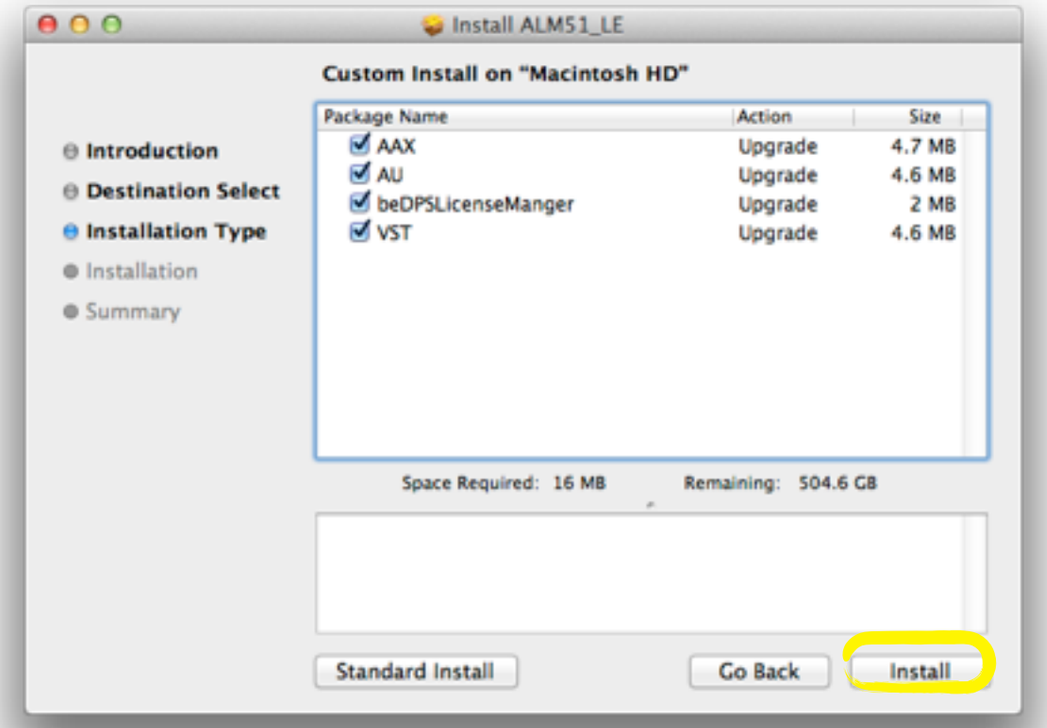

Figure 3: Installation Type

4. An information message will appear. Press the **Install** button if you have the necessary free **space** for a proper installation (see Figure 4);
5. Wait till the installation is completed and a confirmation window appears (see Figure 5). Press the **Close** button and pass to the **Authentication** part.

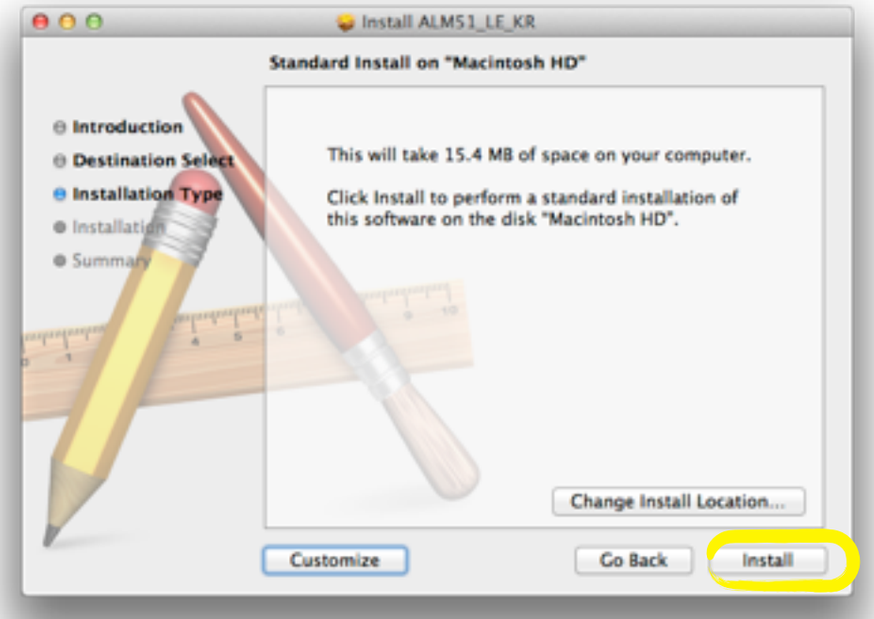

Figure 4: Free space necessary for the installation

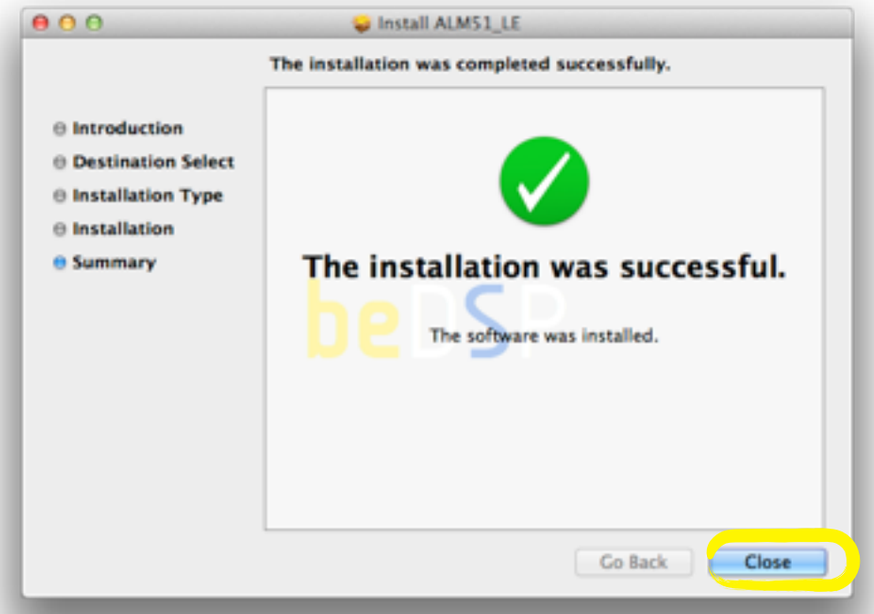

Figure 5: Installation completed

Windows Installation

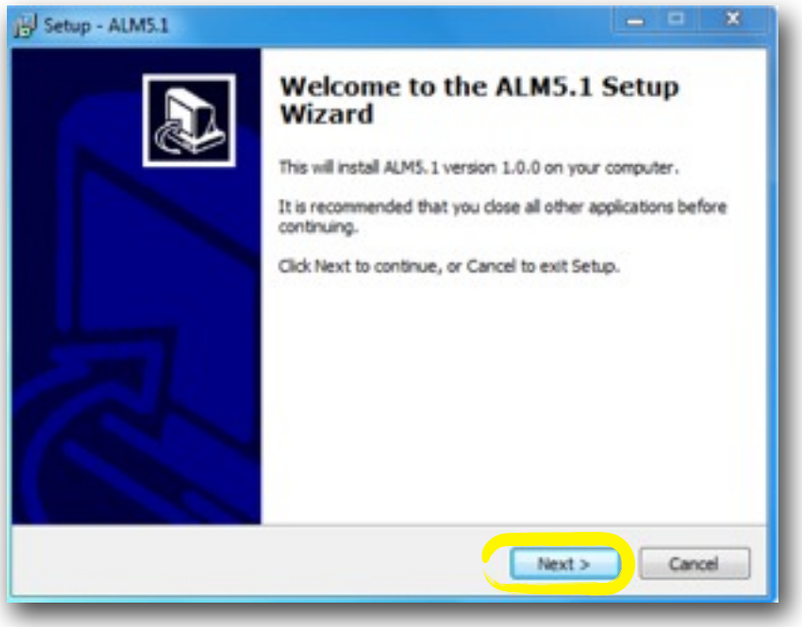

Figure 6: Setup window

1. Double click on the icon ALM51Bundle and a setup window will appear (see Figure 6). Press the **Next** button to **c**ontinue the setup;
2. When the setup is ready to begin installing ALM5.1 on your computer (see Figure 7), press the **Install** button.

3. Press the **Finish** button to exit the Setup. You have the possibility to automatically launch the ALM 5.1 application.

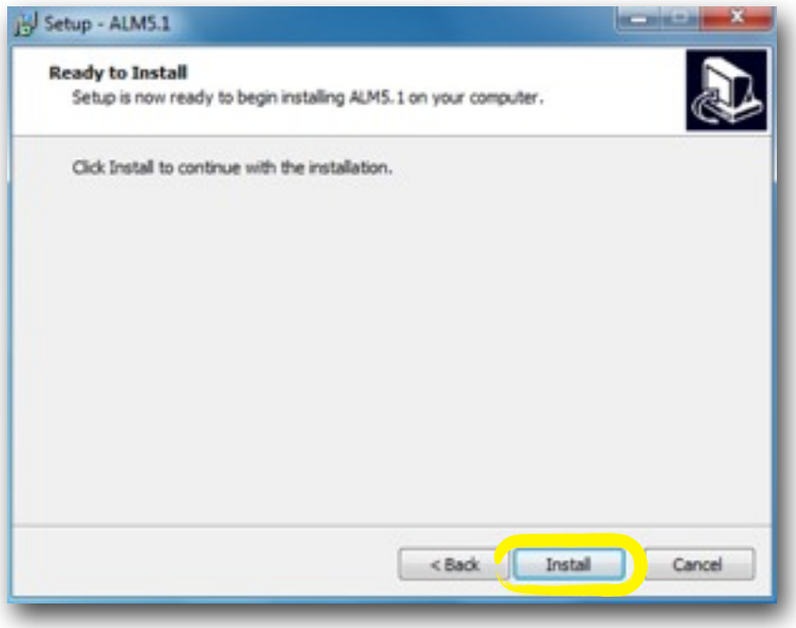

Figure 7: Installation start

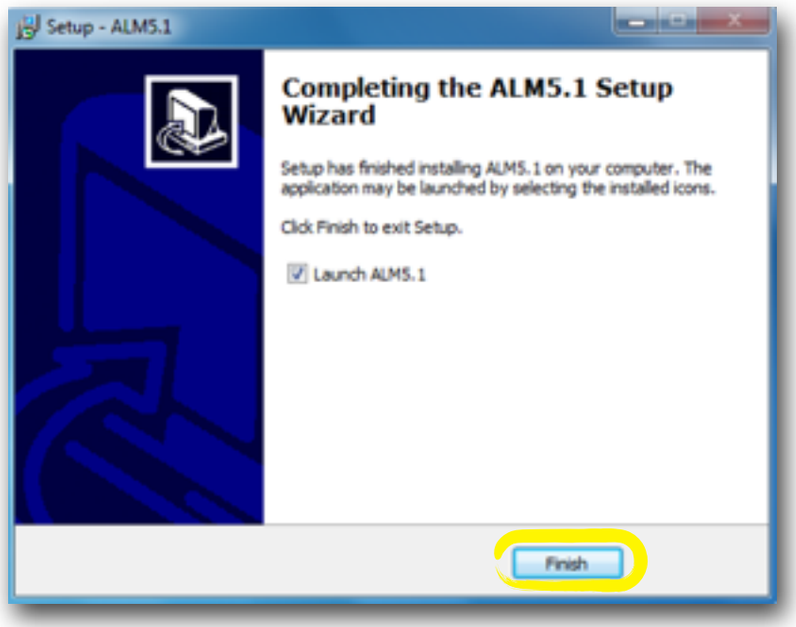

Figure 8: Installation start

Authentication

Go to the **Applications/ProgramFiles** where you will find the **beDSP** folder.
Double click on the beDPSLicenseManager icon and the main menu window will appear (see Figure 9) with three available options: **Online Activation**, **Offline Activation** and **Trial Request**. For any type of activation you must have a beDSP account.
If you don't have one, go to *www.bedsp.net/sign-up* and create your account.

Online Activation

1. If you have an internet connection, select **Online Activation**, otherwise you will have to select **Offline Activation** (see Figure 9).
2. If you want to activate the application on your computer, select **For this computer** (see Figure 10).

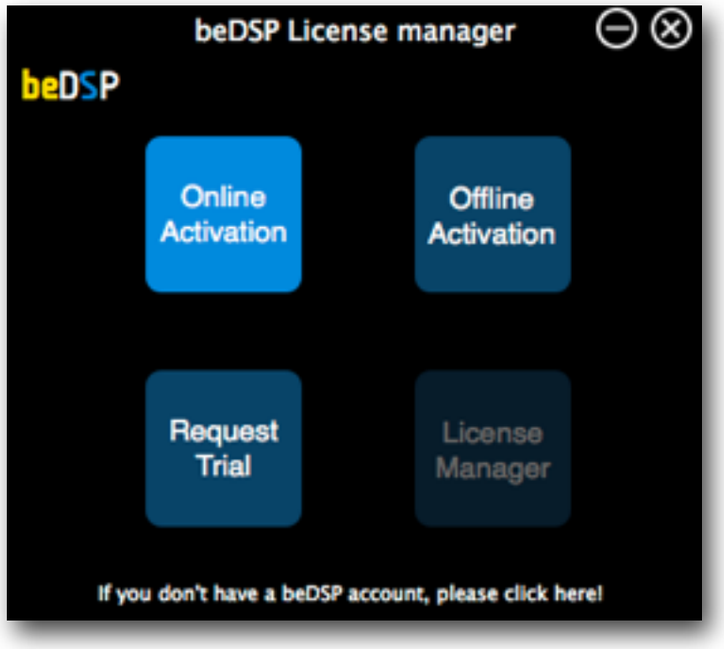

Figure 9: Main menu

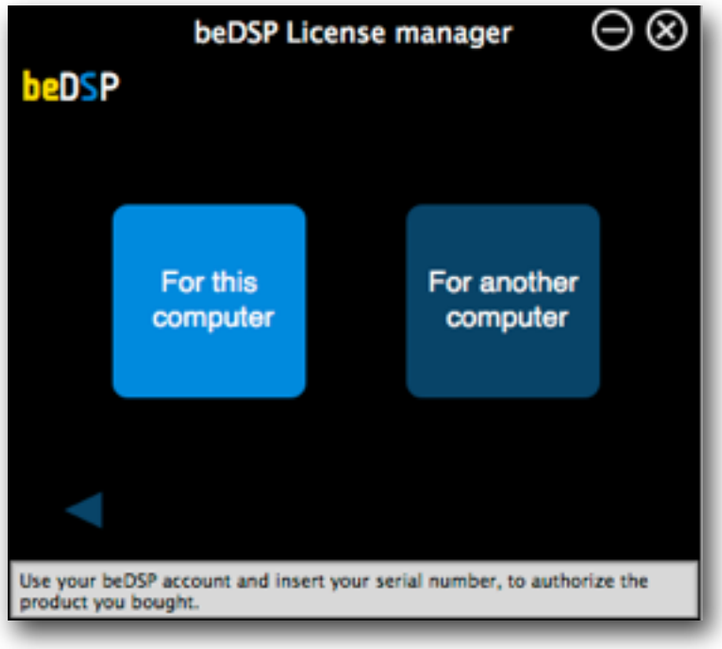

Figure 10: Online Activation options

3. An authentication window will appear (see Figure 11) .
Insert your beDSP username (same as your e-mail), password and serial number.

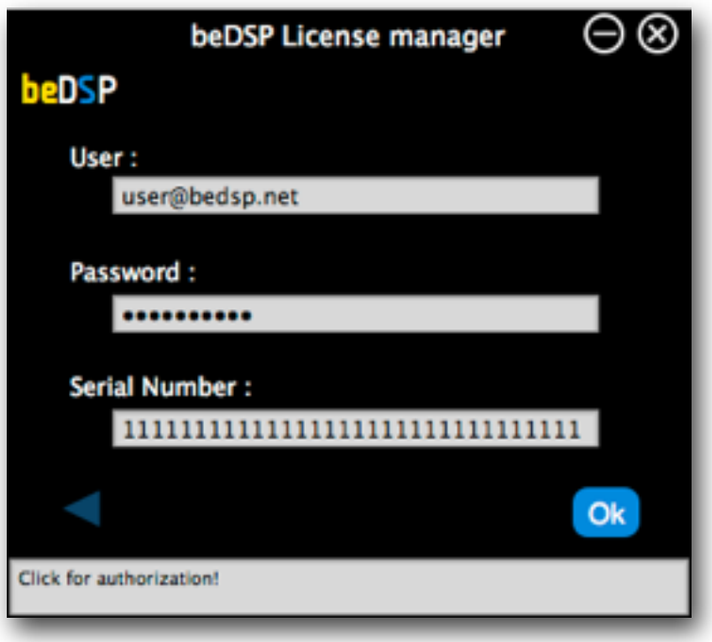

Figure 11: Authentication window

Figure 12: Confirmation window

4. A confirmation window will appear, that specifies the name of the product you have just activated and the type of license (see Figure 12).
Press **OK** and enjoy your product!

Offline Activation

If you don't have an internet connection, select **Offline Activation** from the main menu (see Figure 9), then **Generate Request** (see Figure 13).

1. Insert your serial number and select the folder where you want to save your license request.
2. After clicking ok, your license request will be saved. A window containing the license request will be revealed.
3. Copy your license request on a flash drive or any data storage device and move it on the online computer (this second computer must have the beDSP license manager installed and an internet connection so you can continue your activation).

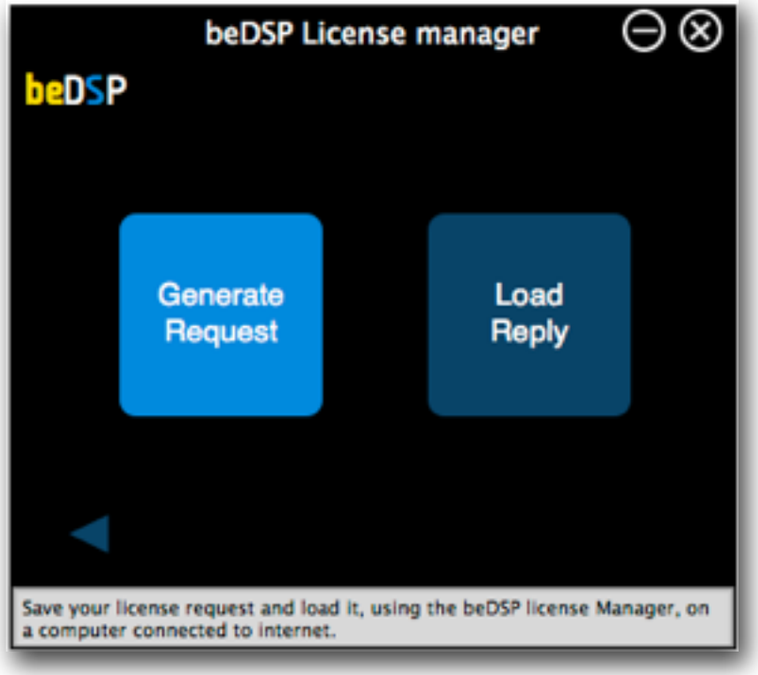

Figure 13: Offline Activation options

Figure 14: Generating the license request

4. From the **Online Activation** menu, pick **For Another Computer** (see Figure 10).

5. In the authentication window (see Figure 15), insert your beDSP username (same as your e-mail), password and load your license request. Click ok for authorization.

6. A folder with the license reply will be revealed, named “LicensesToMove”. This folder is saved in the same place you’ve copied your license request. Now move your license reply on the computer you wish to authorize.

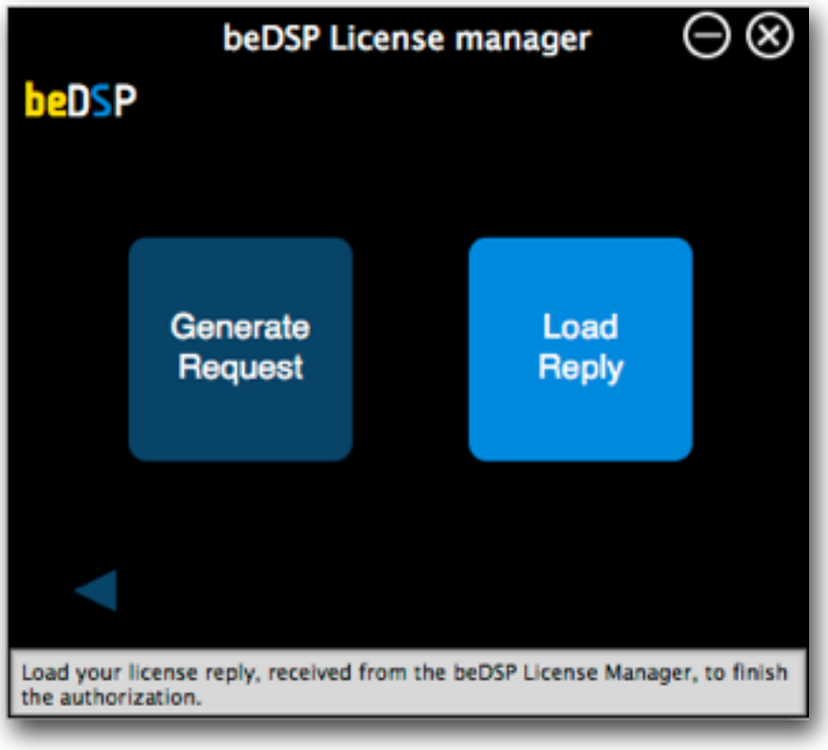

Figure 16: Loading your reply

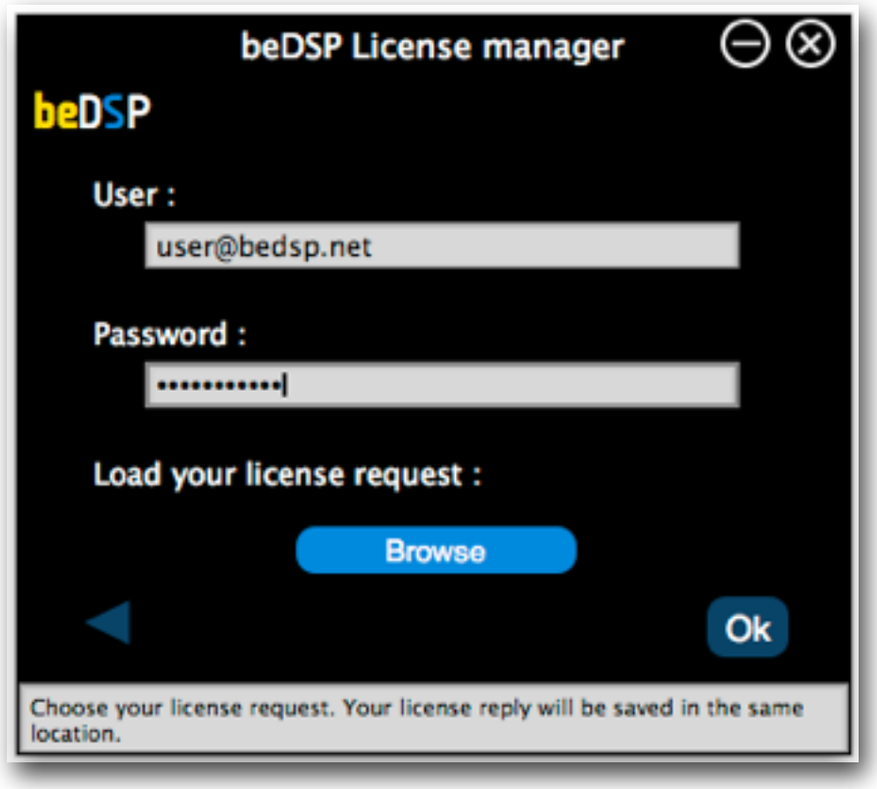

Figure 15: Authorizing your license request

7. Back on your computer, from the main menu (see Figure 9), pick **Offline Activation**, then choose **Load Reply** (see Figure 16).
   A browser window will open and you have to select your reply.

8. After loading your reply, a confirmation window will appear, like the one from Figure 12. Press **Ok** and enjoy your product!

3. How does it work?

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Loudness metering at your hand

The first step for a proper mix is to calibrate the monitors and set a preliminary level for each track. Next, you have to make sure that the Integrated Loudness Level is in accordance with the target level, by constantly monitoring the Momentary or Short Time Loudness level. Also, if the Maximum True Peak level is -1 dBTP, the phenomenon of 'hitting the wall' is less likely to occur.

ALM 5.1 LE has a simple structure, so it's easy to focus on the mixing process.

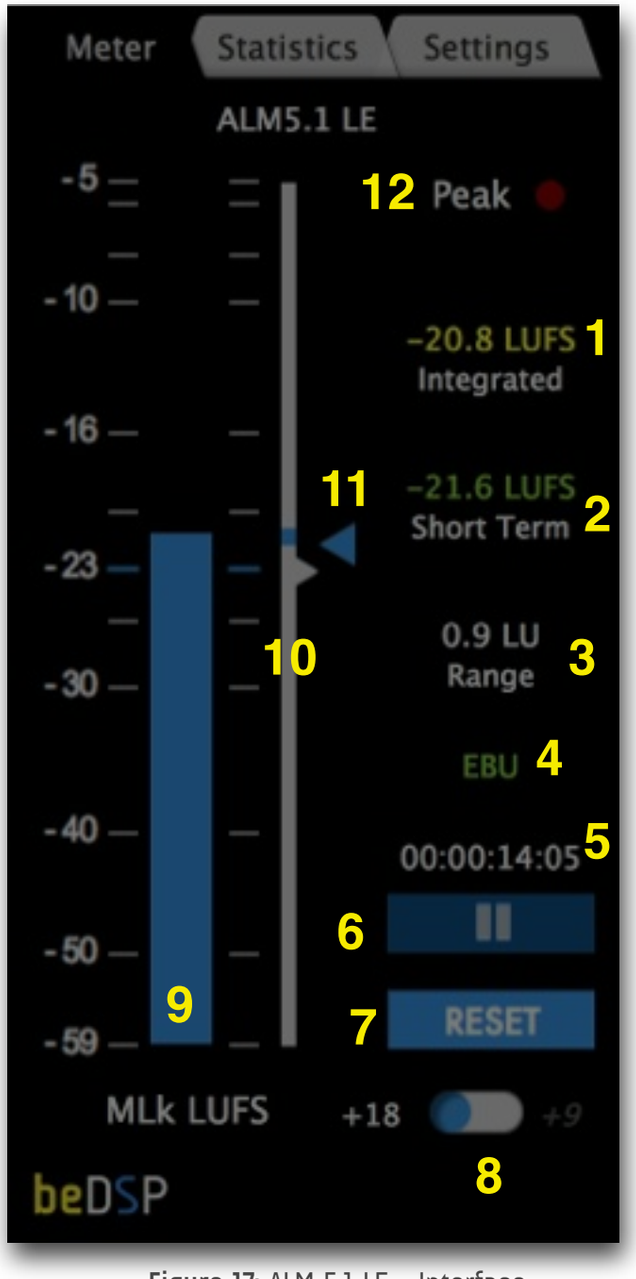


Figure 17: ALM 5.1 LE - Interface

Interface

1. **Integrated Loudness or Program Loudness** (in LUFS or LKFS);
2. **Short Term Loudness** (in LUFS or LKFS);
3. **Loudness Range** (in LU);
4. Measurements are done using **EBU**, **ATSC** or **ARIB** specifications (you can change it in the Settings tab);
5. **Time counter** for the duration of Integrated Loudness and Loudness Range measurement;
6. **Play/Stop** button - shows you if the plugin is measuring or not. In the LE, the plugin is always following the host's transport.
7. **RESET** all the measurements;
8. **+18** or **+9** Scale;
9. Real time **Moment Loudness Meter**;
10. **Loudness Range** bar Indicator;
11. **Short Term Loudness** indicator;
12. **Peak Led** indicator ().

Loudness Metering

ALM 5.1 LE not only calculates the values of most important descriptors specified by the standards **EBU**, **ATSC** and **ARIB** (Integrated Loudness -Program Loudness, Momentary Loudness, Short Time Loudness, Loudness Range), but offers you the possibility of choosing the scale for Momentary Loudness according to your needs. There are two options for each standard (see Figure 18):

- **+9 LU** for a good resolution in the reference level zone.
- **+18 LU** for a bigger dynamic range.

Figure 18: ALM 5.1 LE - Relative scales for +9 LU (left) and +18 LU (right)

EBU, ATSC and ARIB scales

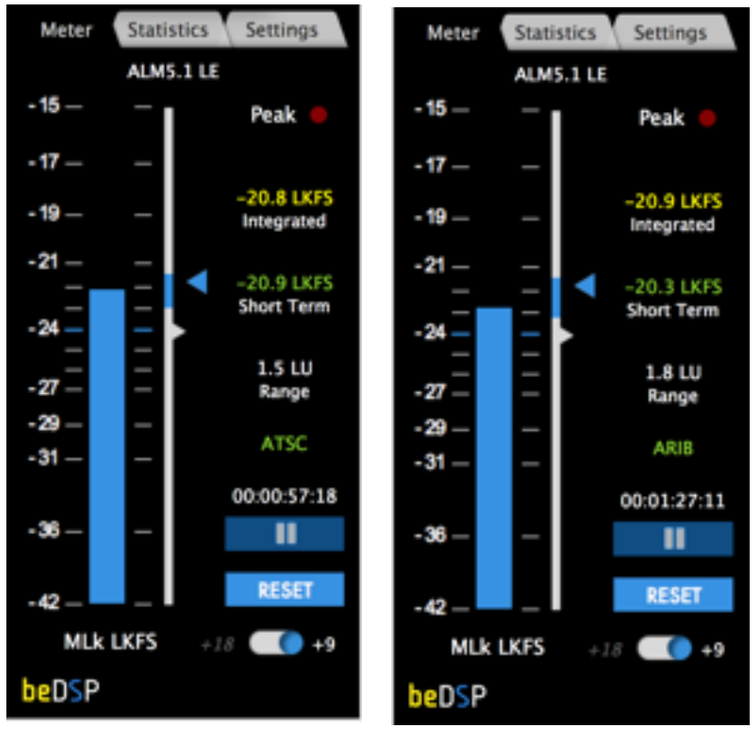


Figure 19: ALM 5.1 LE - Relative scales for +9 LU (left) and +18 LU (right)

Color Code

For the Integrated Loudness ALM 5.1 LE uses a color code. This way you will know where is your program situated according to the accepted tolerance of each standard.

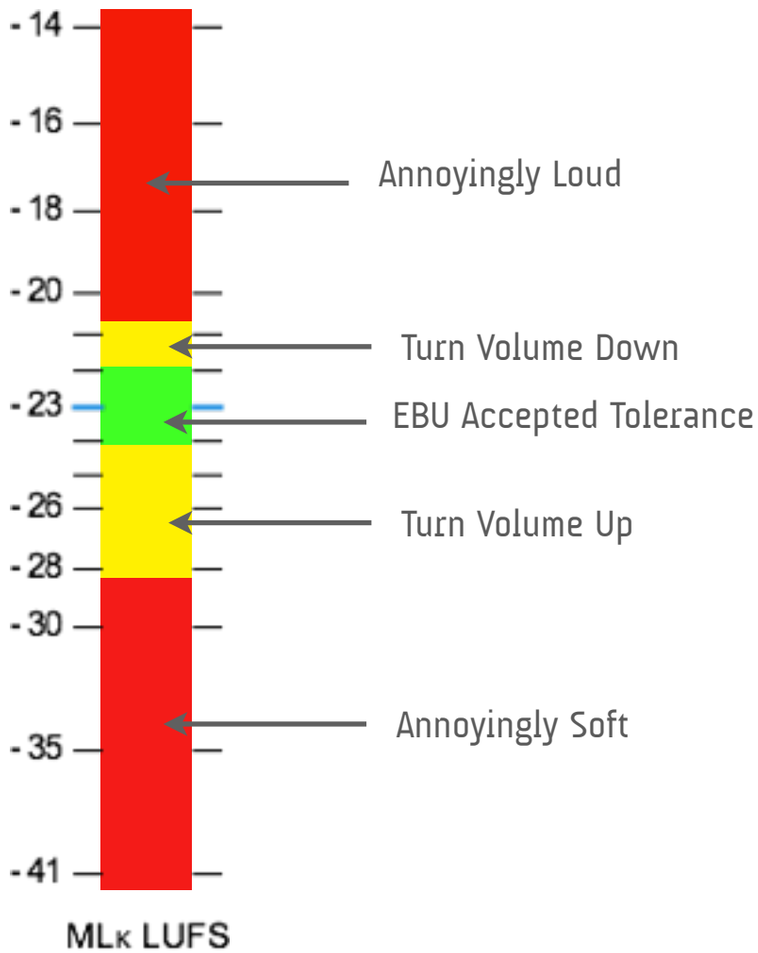
The accepted tolerance zone is basically the range of loudness that is comfortable to a listener. Note that the Integrated Loudness may not be constant through the program. It can vary according to the content requirements.

The color of Integrated Loudness parameter is:

- green, if the Integrated Loudness matches the standards specifications
- yellow, if it is around the standards specification, but you must turn the volume up/down
- red, if it is the material is annoyingly Loud/Soft

The **accepted tolerance zone** is basically the range of loudness that is comfortable to a listener. Note that the Integrated Loudness may not be constant through the program. It can vary within a zone according to the content requirements.

EBU:



ATSC and ARIB:

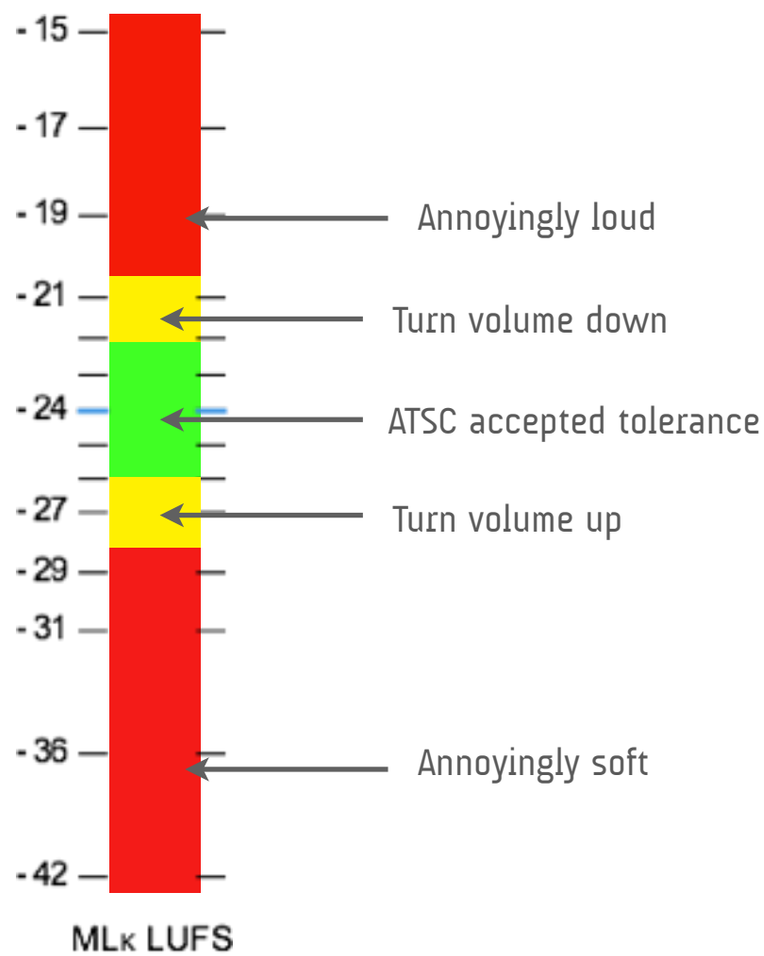


Figure 20: ALM 5.1 LE – Color Code

Statistics

The second window of ALM 5.1 offers real time values of main loudness descriptors of your program:

- Program Loudness
- Loudness Range
- Max. Short Term Loudness
- Max. Momentary Loudness

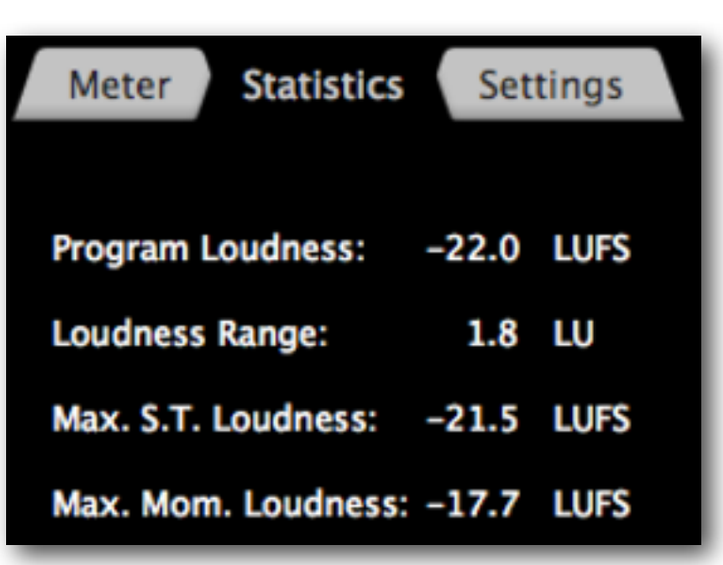


Figure 21: ALM 5.1 LE - Statistics Window

Settings

You can choose between Loudness Metering Modes (EBU, ATSC and ARIB) and set the True Peak Limit (-1, -2, -3, -4, -6, -9, -10, -12).

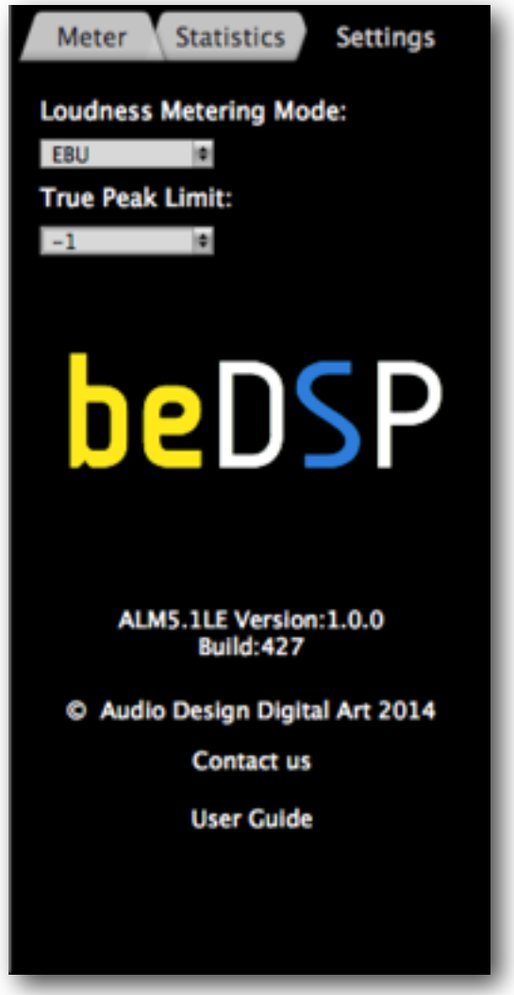


Figure 22: ALM 5.1 LE - Settings Window

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ALM 5.1 LE

Loudness and True Peak Meter
VST, AU and AAX plugin based
on BS1770 (rev.3), EBU R128,
ATSC and ARIB.

Contact
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