ALEXA LF & On-board Batteries

Date: October 27, 2020
Version History

<table>
<thead>
<tr>
<th>Version</th>
<th>Author</th>
<th>Change Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018-07-27</td>
<td>Fred Merten, Marc Shipman-Mueller</td>
<td>First publication</td>
</tr>
<tr>
<td>2018-11-19</td>
<td>Fred Merten, Marc Shipman-Mueller</td>
<td>Updated disclaimer</td>
</tr>
<tr>
<td>2020-10-27</td>
<td>Fred Merten, Marc Shipman-Mueller</td>
<td>Updated ALEXA LF SUP version, added availability of ARRI Power Supply Light 24 V (K2.0034493), added products to overview chart</td>
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</tbody>
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Disclaimer

This application note contains information about different on-board battery adapter plates and on-board batteries for the ALEXA LF camera. The information has been obtained from public sources with feedback from the respective manufacturers. Only the Bebob B-Mount Adapter BMM-24-ALEX, Bebob BAB-HV, Bebob BAB-HG and Hawk-Woods RP-CFA1 are being distributed and were tested by ARRI. All efforts have been made to ensure the accuracy of the information, but, as always, you should conduct your own tests before using any of these solutions in a production.
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**Introduction**

In order to provide ALEXA best image quality at higher pixel counts, ALEXA LF has a higher power draw than previous ALEXA cameras. Therefore, the current ALEXA Gold mount and V Lock battery adapters will not work with the ALEXA LF. Since the announcement of the ALEXA LF, on-board battery manufacturers have been busy, some providing backwards compatibility with existing on-board batteries and/or chargers while others have taken completely new and innovative approaches to provide sufficient on-board power for the ALEXA LF. This document provides an overview of on-board battery options for ALEXA LF.

**Power Draw**

In order to process the increased pixel count while still maintaining ALEXA best overall image quality, the ALEXA LF draws between 120W and 160W while recording, with EVF and wireless video transmitter on, but no further accessories attached. 120W have been measured while recording ProRes 4444 in LF 16:9 sensor mode at 24 fps onto SxS PRO+ 256 GB cards. 160W have been measured while recording ARRIRAW at 90 fps in LF Open Gate sensor mode onto SXR Capture Drives. Electronic accessories will increase power draw based on the accessories' draw.

**Block Batteries**

The power draw of the ALEXA LF is no problem for existing 24V block batteries that are attached with a cable to the ALEXA LF BAT connector (2-Pin Fischer), so the ALEXA LF can be powered with 24V block batteries.

Note:
The power input range of the ALEXA LF BAT connector with LF SUP 2.1 and later is:
ALEXA LF BAT connector: power up is possible from 19.5 - 34.0 V
ALEXA LF BAT connector: automatic power down occurs < 18.5V and > 34.25V

**Battery Adapters BAB-G, BAT-G, BAB-V and BAT-V**

The top end of the ALEXA LF power draw at 12V can generate currents that various components in the camera/battery-adapter/on-board-battery system are not rated for. Therefore, the power input of the ALEXA LF on-board battery interface with LF SUP 3.0 and later has been set to 18.5 - 34 V, which in turn means that the current ALEXA battery adapters for 12V Gold mount (BAB-G K2.72003.0) and 12V V Lock (BAB-V K2.72010.0) will not work with the ALEXA LF. Battery adapters that are top mounted (BAT-G K2.72006.0 and BAT-V K2.72011.0) are in general not compatible with ALEXA LF.

Note 1:
The power input range of the ALEXA LF on-board battery interfaces with LF SUP 2.1 is:
ALEXA LF on-board battery interface: power up is possible from 19.5 - 34 V
ALEXA LF on-board battery interface: automatic power down occurs < 18.5V and > 34.25V

Note 2:
The power input range of the ALEXA LF on-board battery interfaces with LF SUP 3.0 and later is:
ALEXA LF on-board battery interface: power up is possible from 18.5 - 34 V
ALEXA LF on-board battery interface: automatic power down occurs < 17.5V and > 34.25V
**AC Power Supplies**

Power supplies are connected with a cable (for example KC-20 or KC-29) to the ALEXA LF BAT connector.

We recommend using the ARRI Power Supply Light 24V (K2.0034493) or the Power Supply NG 12/26 R (K2.47351.0) to power the ALEXA LF. However, the Power Supply NG 12/26 R is not available for sale anymore, due to discontinued parts of the supplier.

Please note, that the AMIRA and ALEXA Power Supply Light (K2.0006876) is not suitable to power the ALEXA LF. While it works fine in low power demanding situations, it may not work in high power demanding settings. Do not use this power supply with the ALEXA LF.

**Battery Adapters and On-board Batteries for ALEXA LF**

The chart below gives an overview of all available options for powering the ALEXA LF with on-board batteries that we are aware of currently. Manufacturers are listed in alphabetical order.

**Contact**

In case you have questions or recommendations, please contact the Digital Workflow Solutions group within ARRI via email: digitalworkflow@arri.de
<table>
<thead>
<tr>
<th>Battery Adapter Plate</th>
<th>On-board Battery</th>
<th>Voltage to Camera</th>
<th>Compatibel with existing 14.4 V batteries with Gold Mount</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Babeb</td>
<td>B-Mount Adapter</td>
<td>20.3-36.6 V</td>
<td>✗</td>
<td>- Battery adapter plate is incompatible with existing 14.4 V batteries</td>
<td>- Battery adapter plates are available through ARRI sales channels</td>
<td>Babeb products will be available from various manufacturers in 2021. Newly developed open industry standard.</td>
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<tr>
<td>Babeb</td>
<td>Battery Adapter</td>
<td>regulated 20V</td>
<td>✗</td>
<td>- Battery adapter plate is incompatible with existing 14.4 V batteries</td>
<td>- Battery adapter plates are available through ARRI sales channels</td>
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<td>Babeb</td>
<td>Battery Adapter</td>
<td>regulated 20V</td>
<td>✗</td>
<td>- Battery adapter plate is incompatible with existing 14.4 V batteries</td>
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<td>Blanchea</td>
<td>E-MOUNT PLATE</td>
<td>regulated 21 V</td>
<td>✗</td>
<td>- Battery adapter plate is incompatible with existing 14.4 V batteries</td>
<td>- Battery adapter plates are available through ARRI sales channels</td>
<td>Babeb products will be available from various manufacturers in 2021. Newly developed open industry standard.</td>
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<tr>
<td>Blanchea</td>
<td>M-STUD PLATE</td>
<td>regulated 21 V</td>
<td>✗</td>
<td>- Battery adapter plate is incompatible with existing 14.4 V batteries</td>
<td>- Battery adapter plates are available through ARRI sales channels</td>
<td>Babeb products will be available from various manufacturers in 2021. Newly developed open industry standard.</td>
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<td>BlockBattery</td>
<td>2F1-LF-Mount</td>
<td>24-30 V</td>
<td>✗</td>
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<td>- Battery adapter plates are available through ARRI sales channels</td>
<td>Babeb products will be available from various manufacturers in 2021. Newly developed open industry standard.</td>
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<tr>
<td>GSN ENERGY</td>
<td>G-PS224E</td>
<td>23-28 V</td>
<td>✗</td>
<td>- Battery adapter plate is incompatible with existing 14.4 V batteries</td>
<td>- Battery adapter plates are available through ARRI sales channels</td>
<td>Babeb products will be available from various manufacturers in 2021. Newly developed open industry standard.</td>
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<tr>
<td>Hawk-Winds</td>
<td>Base Power Camera</td>
<td>26 V</td>
<td>✗</td>
<td>- Battery adapter plate is incompatible with existing 14.4 V batteries</td>
<td>- Battery adapter plates are available through ARRI sales channels</td>
<td>Babeb products will be available from various manufacturers in 2021. Newly developed open industry standard.</td>
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<td>Wooden Camera</td>
<td>ARRI-ALEXA U</td>
<td>regulated 25 V</td>
<td>✗</td>
<td>- Battery adapter plate is incompatible with existing 14.4 V batteries</td>
<td>- Battery adapter plates are available through ARRI sales channels</td>
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<td>SWIFT</td>
<td>V-mount Plate</td>
<td>20-33.5 V</td>
<td>✗</td>
<td>- Battery adapter plate is incompatible with existing 14.4 V batteries</td>
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