

ALEXA LF & On-board Batteries

TECHNICAL INFORMATION

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Version History

Version	Author	Change Note
2018-07-27	Fred Merten, Marc Shipman-Mueller	First publication
2018-11-19	Fred Merten, Marc Shipman-Mueller	Updated disclaimer

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 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 LF SUP 3.0 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 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

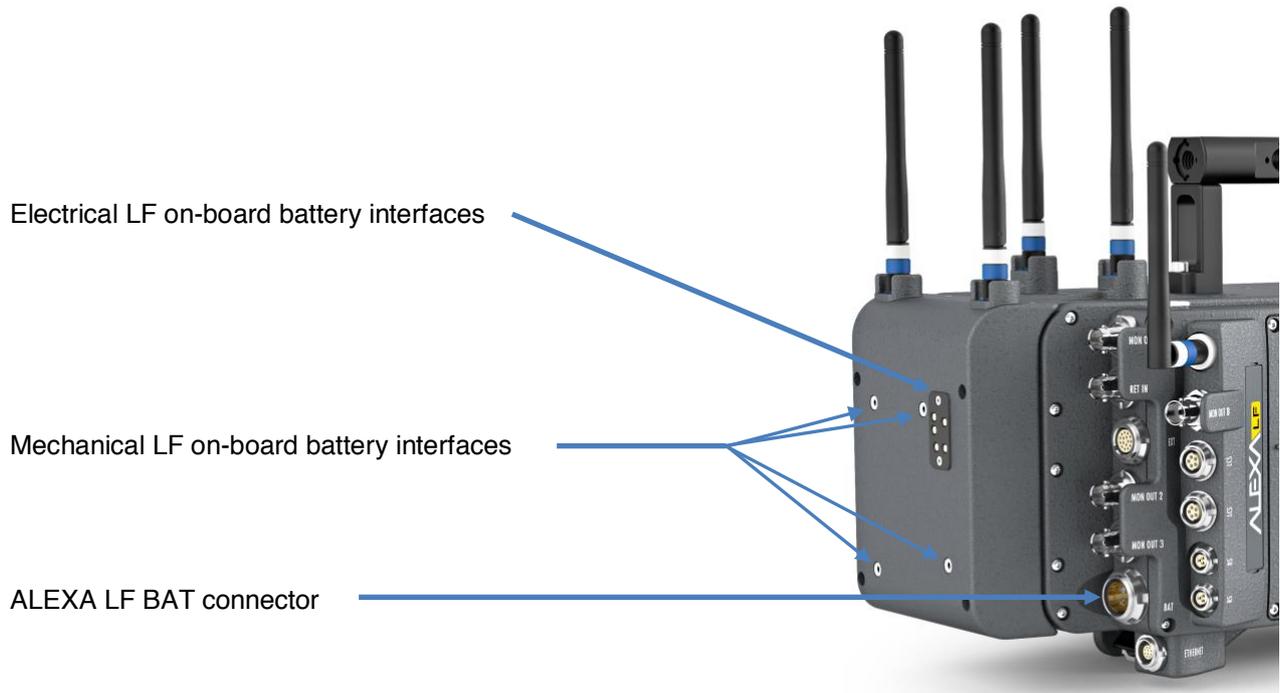
ALEXA LF on-board battery interface: automatic power down occurs < 18.5V and > 34.25V

Note 2:

The power input range of the ALEXA LF on-board battery interfaces with LF SUP 3.0 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

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.

We recommend using the Power Supply NG 12/26 R (K2.47351.0) to power the ALEXA LF. Unfortunately, it is not available for sale anymore, due to discontinued parts of the supplier. We are currently working on a replacement option.

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

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

Battery Adapters and On-board Batteries for ALEXA LF



Manufacturer	Battery adapter plate			On-board battery					Advantages	Disadvantages	Notes
	Model	Compatible with existing 14.4 V batteries on ALEXA LF	Voltage to camera	Model	Compatible with existing 14.4 V chargers	Native battery voltage	Available capacities	Communicates remaining capacity in % to camera			
Bebob	Battery Adapter Back Hi-load V Mount BAB-HV	✗	regulated 20 V	Bebob Hi-Load VCINE	✓	14.4 V	90 W/h 155 W/h 290 W/h	✓	<ul style="list-style-type: none"> Batteries are compatible with existing 14.4 V battery adapter plates Batteries are compatible with existing 14.4 V chargers Batteries and adapter plates have two extra proprietary High Load pins to safely deliver higher power loads 	<ul style="list-style-type: none"> Battery adapter plate is incompatible with existing 14.4 V batteries 	<ul style="list-style-type: none"> BAB-HV battery adapter plates are available through ARRI sales channels Batteries are available through Bebob sales channels Compatible with ALEXA LF from LF SUP 3.0 on Compatible with ALEXA 65 from 65 SUP 3.0 on Battery adapter plate is compatible with all other ALEXA cameras
Bebob	Battery Adapter Back Hi-load Gold Mount BAB-HG	✗	regulated 20 V	Bebob Hi-Load ACINE	✓	14.4 V	90 W/h 155 W/h 290 W/h	✓	<ul style="list-style-type: none"> Batteries are compatible with existing 14.4V battery adapter plates Batteries are compatible with existing 14.4 V chargers Batteries and adapter plates have two extra proprietary High Load pins to safely deliver higher power loads 	<ul style="list-style-type: none"> Battery adapter plate is incompatible with existing 14.4 V batteries 	<ul style="list-style-type: none"> BAB-HG battery adapter plates are available through ARRI sales channels Batteries are available through Bebob sales channels Compatible with ALEXA LF from LF SUP 3.0 on Compatible with ALEXA 65 from 65 SUP 3.0 on Battery adapter plate is compatible with all other ALEXA cameras
Blueshape	VMOUNT PLATE FOR ARRI ALEXA LF MVAL-LF	○	regulated 21 V	BV HDplus	✓	14.4 V	96 W/h 193 W/h 290 W/h	✓	<ul style="list-style-type: none"> Batteries are compatible with existing 14.4 V battery adapter plates Batteries are compatible with existing 14.4 V battery chargers Integrated WiFi to read charge status and other battery information with app Battery has function to set a defined working period and block the usability when the time expires 	<ul style="list-style-type: none"> Existing 14.4 V on-board batteries from other manufacturers are mechanically compatible with the MVAL-LF battery adapter plate, but 10 A battery pins and/or 10 A fuses of existing 14.4 V on-board batteries from other manufacturers may not withstand camera power requirements (max. 16 A) 	<ul style="list-style-type: none"> Battery adapter plates and batteries are available through Blueshape sales channels Battery adapter plate is compatible with all ALEXA cameras
Blueshape	3-STUD PLATE FOR ARRI ALEXA LF MGAL-LF	○	regulated 21 V	BG HDplus	✓	14.4 V	96 W/h 193 W/h 290 W/h	✓	<ul style="list-style-type: none"> Batteries compatible with existing 14.4 V battery adapter plates Batteries compatible with existing 14.4 V battery chargers Integrated WiFi to read charge and other battery info with app Battery has function to set a defined working period and block the usability when the time expires Battery BG HDplus works with most Anton Bauer chargers. Further charger compatibility can be provided through firmware upgrades. 	<ul style="list-style-type: none"> Existing 14.4 V on-board batteries from other manufacturers are mechanically compatible with the MGAL-LF battery adapter plate, but 10 A battery pins and/or 10 A fuses of existing 14.4 V on-board batteries from other manufacturers may not withstand camera power requirements (max. 16 A) 	<ul style="list-style-type: none"> Battery adapter plates and batteries are available through Blueshape sales channels Battery adapter plate is compatible with all ALEXA cameras "3-Stud" is Blueshape's product name for Gold Mount interfaces
Blockbattery	2F1-LF-Mount	✗	24-30 V	2F1-144HC	✗	14.4 V/ 28.8 V	144 W/h	✗	<ul style="list-style-type: none"> Travel friendly Nickel-Metal Hydride on-board battery unrestricted for air and ground transport 2F1 batteries provide 28.8 V or 14.4 V. Each 2F1 battery can be switched between the different voltage ranges by putting the battery on a different 2F1 mount. 	<ul style="list-style-type: none"> Battery adapter plate is incompatible with existing 14.4V batteries (adapter needed) Batteries are incompatible with existing 14.4 V battery adapter plates (adapter needed) Taking advantage of the 2F1 solution requires some thinking outside the box and outside of existing battery mounts 	<ul style="list-style-type: none"> The included LF-Y-Cable prohibits the 2F1-144HC on-board battery from powering the camera until the attached block battery drains to a certain voltage. This ensures that the 2F1-144HC on-board battery will be completely fresh and unused when the 2F1-LF-Mount seamlessly switches over from the block battery power input. Battery adapter plate is compatible with all ALEXA cameras
Hawk-Woods	Reel Power Camera Fitting ARRI RP-CFA1	✗	17-29.2 V	Hawk-Woods Reel Power	✗	26 V	100 W/h 150 W/h 200 W/h 250 W/h 350 W/h	✗	<ul style="list-style-type: none"> Many years positive experience in ARRI Rental with ALEXA 65 cameras Batteries with > 24 V batteries are most efficient with 24 V cameras 	<ul style="list-style-type: none"> Batteries are incompatible with existing 14.4 V battery adapter plates Batteries are incompatible with existing 14.4 V chargers Depending on block battery type and voltage, camera may discharge on-board battery and block battery simultaneously 	<ul style="list-style-type: none"> RF-CFA1 battery adapter plates are available through ARRI sales channels Batteries are available through Hawk-Wood sales channels Battery adapter plate is compatible with all ALEXA cameras
Wooden Camera	ARRI ALEXA LF 24V Sharkfin Battery Bracket V Mount	✓	regulated 21 V	Standard 14.4 V V Mount batteries	✓	14.4 V	all existing 14.4V V Mount batteries	✓	<ul style="list-style-type: none"> Standard 14.4 V batteries can be used Easy installation of adapter plate with thumb screws Takes smart battery information, combines it, and sends it to the camera Hot swapping between batteries when camera is idle 	<ul style="list-style-type: none"> Setup time Sharkfin has to be removed from camera for camera to fit in case since it adds length to the camera body 	<ul style="list-style-type: none"> Battery adapter plates are available through Wooden Camera and Anton Bauer sales channels Batteries do not have to match in age, capacity, or brand. Any battery pair can be used safely Battery adapter plate is compatible with all ALEXA cameras
Wooden Camera	ARRI ALEXA LF 24V Sharkfin Battery Bracket Gold Mount	✓	regulated 21 V	all standard 14.4 V Gold Mount batteries	✓	14.4 V	all existing 14.4 V Gold Mount batteries	✓	<ul style="list-style-type: none"> Standard 14.4 V batteries can be used Easy installation of adapter plate with thumb screws Takes smart battery information, combines it, and sends it to the camera Hot swapping between batteries when camera is idle 	<ul style="list-style-type: none"> Setup time Sharkfin has to be removed from camera for camera to fit in case since it adds length to the camera body 	<ul style="list-style-type: none"> Battery adapter plates are available through Wooden Camera and Anton Bauer sales channels Batteries do not have to match in age, capacity, or brand. Any battery pair can be used safely Battery adapter plate is compatible with all ALEXA cameras
SWIT	V-mount Plate for ALEXA KA-A20S	✗	20-33.6 V	SWIT Bi-voltage Heavy Duty Battery PB-H290S	✓	14.4 V/ 28.8 V	290 W/h	✗	<ul style="list-style-type: none"> Batteries are compatible with existing 14.4 V battery adapter plates Batteries are compatible with existing 14.4 V chargers Battery adapter plate is compatible with existing 14.4 V V Mount batteries SWIT Bi-voltage Heavy Duty Batteries provide 28.8 V or 14.4 V. Voltage is auto-switched to 28.8 V when the battery is attached to the battery adapter plate SWIT KA-A20S or to any other battery adapter plate with the SWIT 'Magic Sticker' attached 	<ul style="list-style-type: none"> No Gold Mount compatibility at this moment 	<ul style="list-style-type: none"> Battery adapter plates and batteries are available through SWIT sales channels Battery adapter plate is compatible with all ALEXA cameras