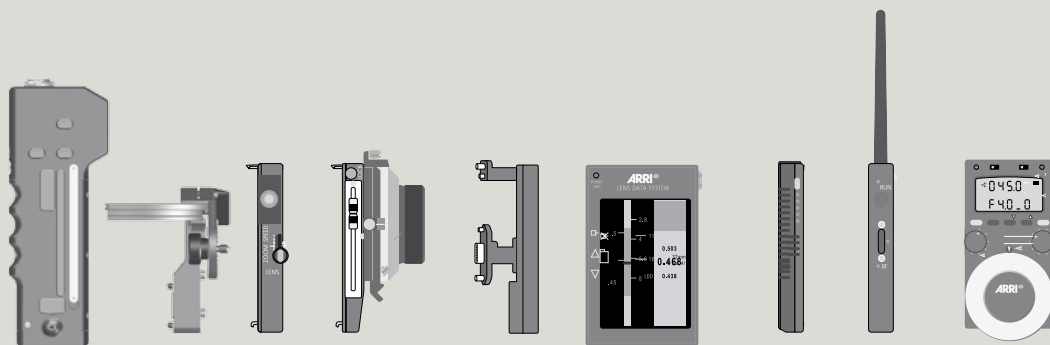


WRS_ WIRELESS REMOTE SYSTEM

SYSTEM GUIDE 04/2006



DEAR FRIENDS

Working on a film set is a hectic business, and the equipment must meet high standards so you can perform your job as efficiently as possible. In designing this new generation of components for the Wireless Remote System we have carefully looked at the needs of the assistants and talked to many of you about existing lens and camera remote systems. In addition we have talked to many rental houses about their needs. As a result these new components are substantially smaller and lighter than before, while at the same time having longer battery life and a more robust radio transmission.

No shoot is like the other, and a fast Steadicam chase requires a different wireless setup than a camera on a crane for a music video with speed ramps. To make sure that you can quickly assemble a wireless system for any type of shoot, the new system is modular to the core. It is as easy to assemble a minimal configuration that controls just focus and camera as it is to add wireless control for complex ramps or the Lens Data Display for an accurate display of lens rings and camera status. This system has the flexibility to provide just the right tool for the job, while offering an unrivaled list of features.

Our new Wireless Remote System can control almost all camera and lens functions for ARRI cameras, including tight integration with ARRICAMs and the 435 Xtreme, and all lens functions for many other cameras. We have simplified some procedures, like setting limits, and made sure the old components still fit the new gear.

It has been fun to develop this system, and we hope that it helps you on your next job.

Regards

Walter Trauningger
Head of Business Unit Camera

Marc Shipman-Mueller
Product Manager Camera



Walter Trauningger | Head of business Unit Camera



Marc Shipman-Mueller | Product Manager Camera

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INTRODUCTION

A lens and camera control system as modular and flexible as the ARRI Wireless Remote System necessarily consists of many individual parts. This guide is designed so you can easily navigate those parts and get an overview of what is available and how the system can be configured. For clarity's sake, we have divided the individual parts of the system into the following categories. Please note that many of the smaller accessories are not listed separately on this page. A full listing can be found in the Compatibility Table at the end of this guide.



Hand Radios

These are held in the hand of the assistant and are responsible for creating the radio link to the camera radio. The technical name for the hand radios is “Wireless Main Units”. The Wireless Remote System includes the Wireless Main Units WMU-1, WMU-2 and WMU-3.

Handgrip Attachments

Handgrip attachments can be used instead of hand radios when a cable connection is preferred. The Wireless Remote System includes the Wired Handgrip Attachments WHA-1, WHA-2 and WHA-3.

Hand Controllers

These attach to the hand radios or handgrip attachments, and control or display aspects of the lens and camera. They may control focus, zoom or iris, they may control speed ramps or display lens information. Hand controllers for lens control include the Wireless Focus Units WFU-1 and WFU-2, plus the Wireless Zoom Units WZU-1 and WZU-3. You can also control the zoom with the ZMU-3. The Wireless Remote Control WRC-1 is a hand controller for complete camera remote control, and the Lens Data Display for Focus Puller LDD-FP can accurately display lens and camera status.

Camera Radios

Camera radios are attached to the camera and communicate with the hand radios. Camera radios include the Universal Radio Module URM-1, URM-2 and URM-3. Camera radios are also part of the Lens Data Boxes LDB and LDB-2 for ARRICAM Studio and Lite.

Motor Controllers

Motor controllers contain the electronics to drive the lens motors. In the case of the ARRICAM Lens Data Boxes, both motor controller and camera radio are combined into one unit. Motor controllers include the Universal Motor Controller UMC-1 and UMC-3, the Functional Expansion Module FEM-2, plus the Lens Data Boxes LDB and LDB-2 for ARRICAM Studio and Lite.

Lens Motors

Lens Motors connect to the motor controllers, and physically move the lens rings. The Wireless Remote System includes the Controlled Lens Motors CLM-1 and CLM-2.

NOTES



WMU-3 with green washer. Released after 2005



WMU-3 with blue washer. Released before 2005

New Radio Modem

The radio modem provided with the WMU-3, Arricam Studio LDB-2, Arricam Lite LDB-2, UMC-3 and URM-3 offers several advantages over previous units, including smaller size, less power consumption and improved transmission. Due to these improvements, it cannot cross-communicate with the previous radio modems originally used in the WMU-1, original Arricam Studio LDB, original Arricam Lite LDB or Radio Modem URM-1.

However, all of these units can be upgraded via installation of the new radio modem.

In order to maintain discrete designations for all WRS units, a naming convention was adopted as follows:

First generation unit with first generation radio modem:	XXX-1
First generation unit with second generation radio modem:	XXX-2
Second generation unit with second generation radio modem:	XXX-3,

where „XXX“ denotes the actual unit referred to: for example, „WMU-3“ would be the Wireless Main Unit, second generation with second generation radio modem.

To denote presence of the second generation radio modem, a colored washer has been added to the antenna port. The color of this washer was originally blue. However, with advances in video transmitter technology, a software change was necessary to minimize interference. To denote the software change, a green washer replaces the blue washer. It is important to note that units with green washers cannot communicate with units with blue washers.

Using Cables Instead of Radio Transmission

There are two ways to connect the hand controllers with cables to the cameras: First, the Wired Handgrip Attachments WHA-2 or WHA-3 connect with cables to the cameras, and the hand controllers can be attached to them. Use cables LC-M1, LC-Z1 or LC-Z2 to connect to the LCS port of a 435 Xtreme, ARRICAM, 416 Plus, or UMC-3; use cable KC-70 to connect to the CAC port of an ARRICAM. The Wired Handgrip Attachment WHA-1 connects the Wireless Remote Control WRC-1 with cable WC-W1 to the CCU port of the ARRIFLEX 435, 535 and 16 SR 3 or to the remote port of the ARRIFLEX 235.

Second, it is possible to connect a cable between the antenna connector of the hand radios and the camera radios. Cable WC-A3 can be used to connect the WMU-1 antenna connector to the antenna connector of URM-1, Studio LDB or Lite LDB. The same cable is also used to connect the WMU-2 or WMU-3 to the antenna connector of URM-2, URM-3, Studio LDB-2 or Lite LDB-2. You can also use the WC-A3 cable to connect the WMU-3 to the UMC-3. Don't use cable WC-A1. Authorized ARRI Service Centers can upgrade cable WC-A1 to WC-A3.

Please note that with or without cable, compatibility between units is dictated by radio modem compatibility as described in „New Radio Modem“ above.

Cable WC-A2 can be used for extending the antenna away from a radio unit.

What About the Wired Lens Control System?

Most parts of the wired Lens Control System can still be used with some minor limitations. Below is a short run down of compatibilities. Details can be found in the Lens Control System manual.

The Zoom Main Unit (ZMU-1 or ZMU-2) can be connected with a cable to the UMC-1, Studio LDB, Studio LDB-2, Lite LDB, Lite LDB-2 or FEM-2 to control zoom. It is also possible to connect the Zoom Main Unit directly to the CLM-1 motors, which in turn must be connected to a UMC-1, LDB, LDB-2, FEM-2 or external power supply.

For wireless use, the ZMU-3 becomes now part of the ARRI Wireless Remote System. Via the Wireless Zoom Bracket WZB-3 it attaches to the Wireless Main Unit WMU-3. It is also possible to use the ZMU-3 in wired mode, connected with a cable to the the UMC-3, Studio & Lite LDB-2, FEM-2 or the UMC-1 in combination with URM-2 or URM-3.

Having multiple zoom controllers connected (like a ZMU and a WZU, for instance) is not a problem, even though one of them will be the master and the other one will not function.

One or two Focus Iris Units (FIU-1) can be connected to a ZMU-1 or ZMU-2. From ARRICAM Software packet 03E on this configuration will also work with the ARRICAM system. When using the FIU-1 with the ARRICAM system, it is recommended to not use a Wireless Main Unit or WHA-2 at the same time.

Additional Literature

Wireless Remote System Brochure	Ident. No. K5.58511.0 (English)
Lens Control System Instruction Manual	Ident. No. K5.52423.0 (English)
Lens Control System Bedienungsanleitung	Ident. No. K5.52422.0 (German)
Wireless Remote Control (WRC-1) Instruction Manual	Ident. No. K5.43668.0 (English)
Wireless Remote Control (WRC-1) Bedienungsanleitung	Ident. No. K5.43660.0 (German)

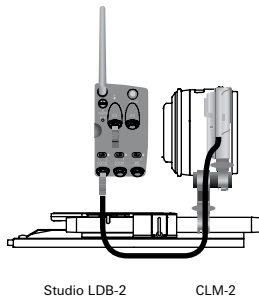
Typical Configuration for ARRI Cameras: Focus only

Hand Controllers



WBU-3	Wireless Battery Unit 3	K2.52238.0
WBU-4	Wireless Battery Unit 4	K2.65001.0
WMU-3	Wireless Main Unit 3	K2.52240.0
WFU-3	Wireless Focus Unit 3	K2.52268.0

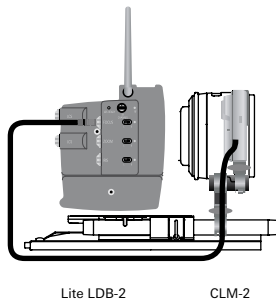
with ARRICAM Studio



Studio LDB-2	Studio Lens Data Box 2	K2.54194.0
CLM-2	Controlled Lens Motor 2	K2.52036.0

It is also possible to use CLM-1 motors instead of CLM-2 motors.

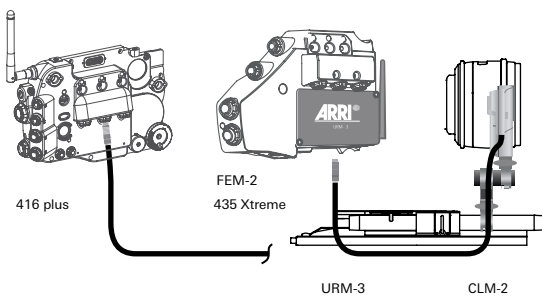
or ARRICAM Lite



Lite LDB-2	Lite Lens Data Box 2	K2.54195.0
CLM-2	Controlled Lens Motor 2	K2.52036.0

It is also possible to use CLM-1 motors instead of CLM-2 motors.

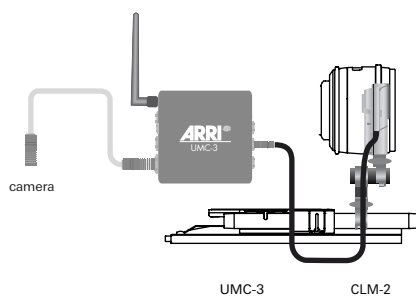
or ARRIFLEX 416 plus or 435 Xtreme



URM-3	Universal Radio Module 3 only for use with 435 Xtreme	K2.52262.0
CLM-2	Controlled Lens Motor 2	K2.52036.0

It is also possible to use CLM-1 motors instead of CLM-2 motors.

or all other models of ARRIFLEX cameras, Moviecam, Aaton XTR 16, selected Video- & ENG-Lenses



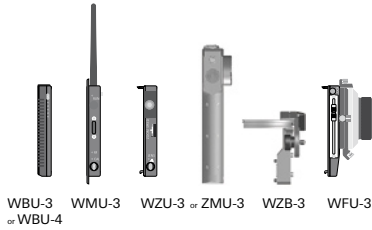
UMC-3	Universal Motor Controller 3	K2.65000.0
CLM-2	Controlled Lens Motor 2	K2.52036.0

It is also possible to use CLM-1 motors instead of CLM-2 motors.

When using video lenses with built-in motors, no CLM motors are required. Please see Cable Overview for suitable cables.

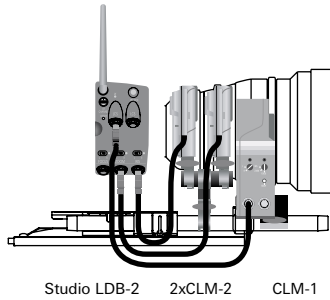
Typical Configuration for ARRI Cameras: Focus, Zoom, Iris

Hand Controllers



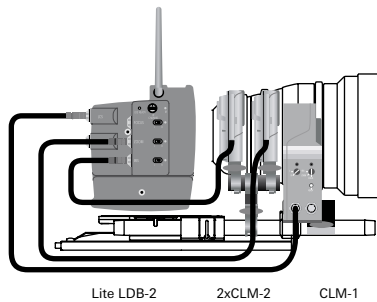
WBU-3	Wireless Battery Unit 3	K2.52238.0
WBU-4	Wireless Battery Unit 4	K2.65001.0
WMU-3	Wireless Main Unit 3	K2.52240.0
WZU-3	Wireless Zoom Unit 3	K2.52267.0
ZMU-3	Zoom Main Unit 3	K2.65003.0
WZB-3	Wireless Zoom Bracket 3	K2.65017.0
WFU-3	Wireless Focus Unit 3	K2.52268.0

with ARRICAM Studio



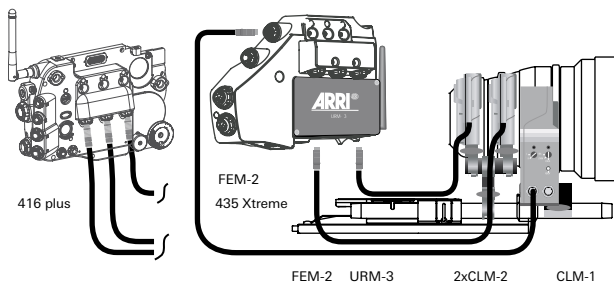
Studio LDB-2	Studio Lens Data Box 2	K2.54194.0
CLM-2	Controlled Lens Motor 2	K2.52036.0
CLM-1	Controlled Lens Motor 1	K2.41378.0
or CLM-1 and CLM-2 in any combination		

or ARRICAM Lite



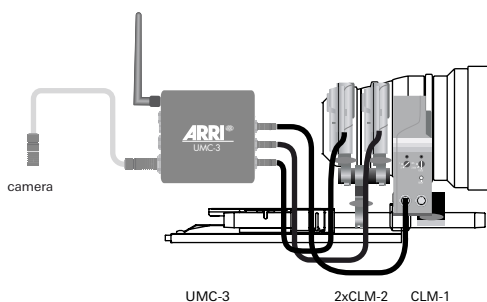
Lite LDB-2	Lite Lens Data Box 2	K2.54195.0
CLM-2	Controlled Lens Motor 2	K2.52036.0
CLM-1	Controlled Lens Motor 1	K2.41378.0
or CLM-1 and CLM-2 in any combination		

or ARRIFLEX 416 plus or 435 Xtreme



URM-3	Universal Radio Module 3 only for use with 435 Xtreme	K2.52262.0
CLM-2	Controlled Lens Motor 2	K2.52036.0
CLM-1	Controlled Lens Motor 1	K2.41378.0
or CLM-1 and CLM-2 in any combination		

or all other models of ARRIFLEX cameras, Moviecam, Aaton XTR 16, selected Video- & ENG-Lenses



UMC-3	Universal Motor Controller 3	K2.65000.0
CLM-2	Controlled Lens Motor 2	K2.52036.0
CLM-1	Controlled Lens Motor 1	K2.41378.0
or CLM-1 and CLM-2 in any combination		

When using video lenses with built-in motors, no CLM motors are required. Please see Cable Overview for suitable cables.

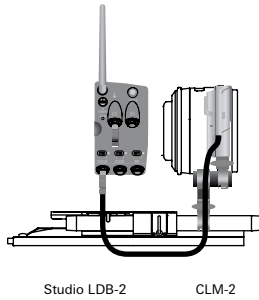
Typical Configuration for ARRI Cameras: Focus & Camera Control

Hand Controllers



WBU-3	Wireless Battery Unit 3	K2.52238.0
WBU-4	Wireless Battery Unit 4	K2.65001.0
WMU-3	Wireless Main Unit 3	K2.52240.0
WRC-1	Wireless Remote Control 1	K2.52087.0
WEB-3	Wireless Extension Bracket 3	K2.52241.0
WFU-3	Wireless Focus Unit 3	K2.52268.0

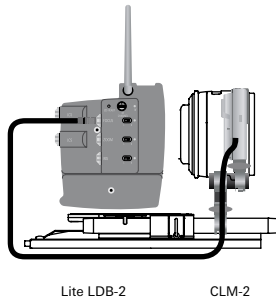
with ARRICAM Studio



Studio LDB-2	Studio Lens Data Box 2	K2.54194.0
CLM-2	Controlled Lens Motor 2	K2.52036.0

It is also possible to use CLM-1 motors instead of CLM-2 motors.

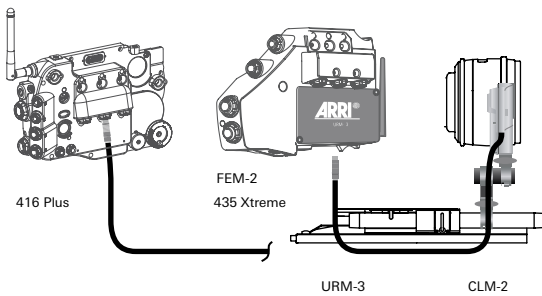
or ARRICAM Lite



Lite LDB-2	Lite Lens Data Box 2	K2.54195.0
CLM-2	Controlled Lens Motor 2	K2.52036.0

It is also possible to use CLM-1 motors instead of CLM-2 motors.

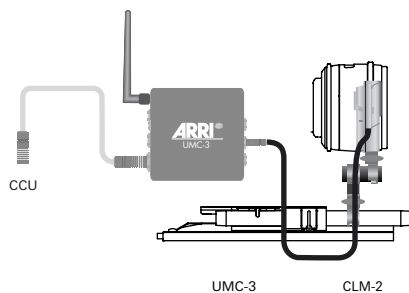
or ARRIFLEX 416 Plus or 435 Xtreme



URM-3	Universal Radio Module 3 only for use with 435 Xtreme	
CLM-2	Controlled Lens Motor 2	

It is also possible to use CLM-1 motors instead of CLM-2 motors.

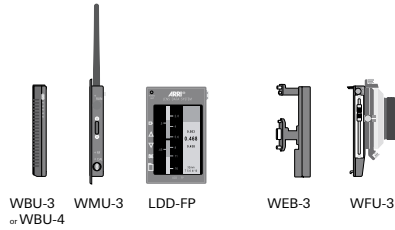
or all other models of ARRIFLEX cameras



UMC-3	Universal Motor Controller 3	K2.65000.0
CLM-2	Controlled Lens Motor 2	K2.52036.0

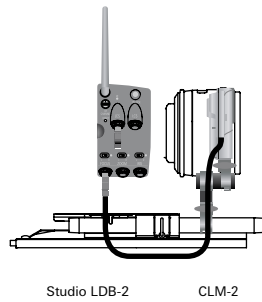
Typical Configuration for ARRI Cameras: Focus & LDS

Hand Controllers



WBU-3	Wireless Battery Unit 3	K2.52238.0
WBU-4	Wireless Battery Unit 4	K2.65001.0
WMU-3	Wireless Main Unit 3	K2.52240.0
LDD-FP	Lens Data Display for Focus Puller	K2.54163.0
WEB-3	Wireless Extension Bracket 3	K2.52241.0
WFU-3	Wireless Focus Unit 3	K2.52268.0

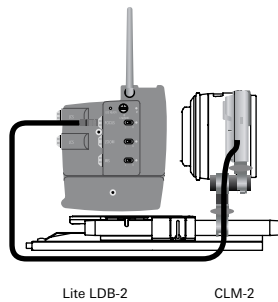
with ARRICAM Studio



Studio LDB-2	Studio Lens Data Box 2	K2.54194.0
CLM-2	Controlled Lens Motor 2	K2.52036.0

LDS Lens or lens with Lens Data Mount or all lenses that are stored in the Lens Table in the LDD-FP

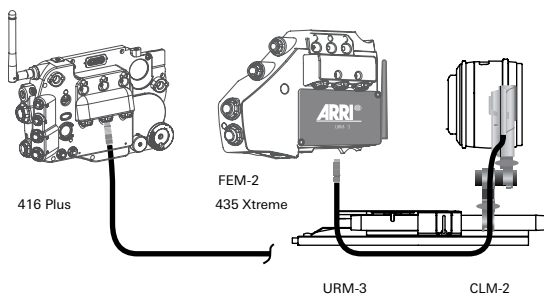
or ARRICAM Lite



Lite LDB-2	Lite Lens Data Box 2	K2.54195.0
CLM-2	Controlled Lens Motor 2	K2.52036.0

LDS Lens or lens with Lens Data Mount or all lenses that are stored in the Lens Table in the LDD-FP

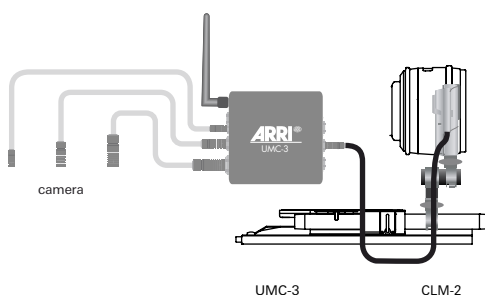
or ARRIFLEX 416 Plus or 435 Xtreme



URM-3	Universal Radio Module 3 <small>only for use with 435 Xtreme</small>	K2.52262.0
CLM-2	Controlled Lens Motor 2	K2.52036.0

LDS Lens or lens with Lens Data Mount or all lenses that are stored in the Lens Table in the LDD-FP

or all other models of ARRIFLEX cameras, Moviecam, Aaton XTR 16, selected Video- & ENG-Lenses



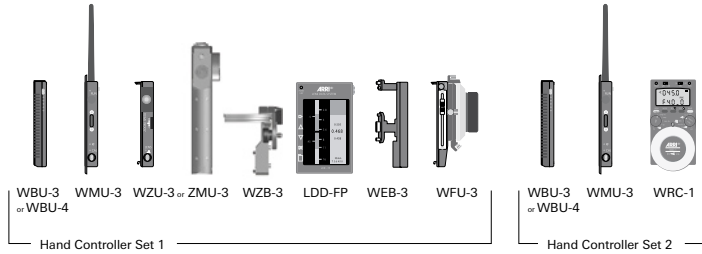
UMC-3	Universal Motor Controller 3	K2.65000.0
CLM-2	Controlled Lens Motor 2	K2.52036.0

Lenses that are stored in the Lens Table in the LDD-FP

When using video lenses with built-in motors, no CLM motors are required. Please see Cable Overview for suitable cables.

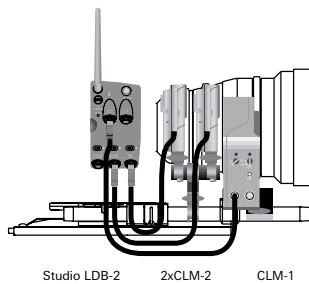
Typical Configuration for ARRI Cameras: Focus, Zoom, Iris, LDS, Camera Control

Hand Controllers



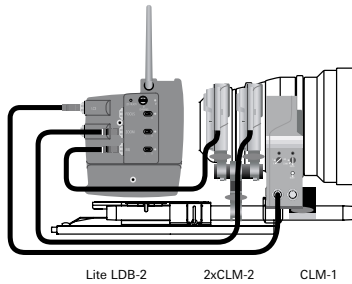
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WBU-4	Wireless Battery Unit 4	K2.65001.0
WMU-3	Wireless Main Unit 3	K2.52240.0
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ZMU-3	Zoom Main Unit 3	K2.65003.0
WZB-3	Wireless Zoom Bracket 3	K2.65017.0
WFU-3	Wireless Focus Unit 3	K2.52268.0
WEB-3	Wireless Extension Bracket 3	K2.52241.0
WBU-3	Wireless Battery Unit 3	K2.52238.0
WRC-1	Wireless Remote Control 1	K2.52087.0
LDD-FP	Lens Data Display for Focus Puller	K2.54163.0

with ARRICAM Studio



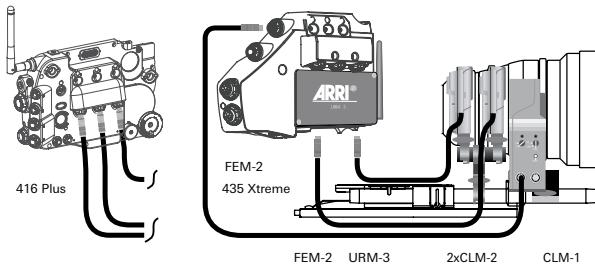
Studio LDB-2	Studio Lens Data Box 2	K2.54194.0
CLM-2	Controlled Lens Motor 2	K2.52036.0
CLM-1	Controlled Lens Motor 1	K2.41378.0
or CLM-1 and CLM-2 in any combination		

or ARRICAM Lite



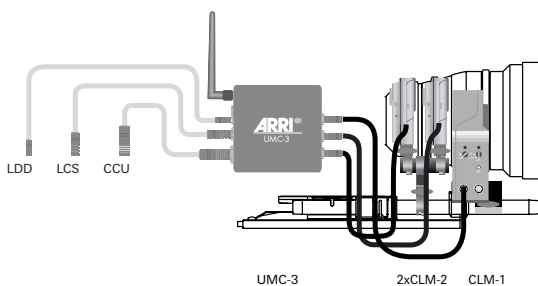
Lite LDB-2	Lite Lens Data Box 2	K2.54195.0
CLM-2	Controlled Lens Motor 2	K2.52036.0
CLM-1	Controlled Lens Motor 1	K2.41378.0
or CLM-1 and CLM-2 in any combination		

or ARRIFLEX 416 Plus or 435 Xtreme



URM-3	Universal Radio Module 3 <small>only for use with 435 Xtreme</small>	K2.52262.0
CLM-2	Controlled Lens Motor 2	K2.52036.0
CLM-1	Controlled Lens Motor 1	K2.41378.0
or CLM-1 and CLM-2 in any combination		

or all other models of ARRIFLEX cameras



UMC-3	Universal Motor Controller 3	K2.65000.0
CLM-2	Controlled Lens Motor 2	K2.52036.0
CLM-1	Controlled Lens Motor 1	K2.41378.0
or CLM-1 and CLM-2 in any combination		

WRS COMPONENTS

Wireless Main Unit 3 (WMU-3)

The Wireless Main Unit is the heart of the ARRI Wireless Remote System. It accepts the hand controllers for focus and iris (WFU-1, WFU-3), zoom (WZU-1, WZU-3), camera remote control (WRC-1), the Lens Data Display for Focus Puller (LDD-FP) and it communicates with the camera. Up to three Wireless Main Units can talk to one camera at the same time.

The WMU-3 is small in size and lightweight, making it easy to hold for long periods of time. In addition, the new radio modem has a more robust transmission and less power consumption than its predecessor. An ergonomic hand strap assures that the whole unit stays safely in the assistant's hand. With the new software version (green washer) the transmission is reenanced.

Unique to the WMU-3 are the abilities to accept the Lens Data Display for Focus Puller (LDD-FP) and to accept two control units at once using the Wireless Expansion Bracket (WEB-3). It is possible, for instance, to use the Lens Data Display for Focus Puller (LDD-FP) together with a Wireless Focus Unit (WFU-1 or WFU-3). Another possible combination is the Wireless Remote Control (WRC-1) with a Wireless Focus Unit (WFU-1 or WFU-3). By employing two Wireless Main Units WMU-3, it is possible to have focus, zoom, iris, camera remote control and the LDDFP all at the same time.

Compatibility: The WMU-3 communicates with UMC-3, URM-2, URM-3, Studio LDB-2 and Lite LDB-2. As power supply the Wireless Battery Unit WBU-3 has to be used; WBU-1 and WBU-2 cannot be used. The WRC-1 needs to run at least software version 1.08. When using the WMU-3 with the Wireless Remote Control (WRC-1) or the Lens Data Display for Focus Puller (LDD-FP), neither WZU-1 nor WZU-3 should be attached between the units. LDD-FP and WRC-1 cannot be used on one WMU-3 at the same time. Neither can two WRC-1 or two LDD-FP units.

K2.52240.0 Wireless Main Unit 3

Wireless Focus Unit 3 (WFU-3)

The WFU-3 is used to control focus and/or iris. Focus and iris can be assigned freely to hand wheel and slider, and electronic lens and knob limits can be easily set. In addition it is possible to set mechanical knob limits.

The WFU-3 is similar to the WFU-1 except that it is lighter than the WFU-1 and the index marker can be rotated 180° for better viewing. This movable index marker is especially useful when the WFU-3 is mounted on the WMU-3, WHA-2 or WHA-3, since the resulting remote control is so small that it can easily be swapped between the left and the right hand and can be held at many different angles.

Compatibility: The WFU-3 can be attached to any Wireless Main Unit (WMU-1, WMU-2 or WMU-3) for wireless operation with any camera or to the Wired Handgrip Attachments WHA-2 or WHA-3 for wired operation with ARRICAM, 416 Plus or 435 Xtreme.

K2.52268.0 Wireless Focus Unit 3



Wireless Main Unit 3 (WMU-3) | front



Wireless Main Unit 3 (WMU-3) | back



Wireless Focus Unit 3 (WFU-3)

WRS COMPONENTS



Wireless Zoom Unit 3 (WZU-3)



Zoom Main Unit 3 (ZMU-3)



Wireless Expansion Bracket 3 (WEB-3)



Wireless Zoom Bracket 3 (WZB-3)

Wireless Zoom Unit 3 (WZU-3)

The WZU-3 is used to control zoom. Zoom speed can be adjusted and zoom limits can be easily set. The WZU-3 is similar to the WZU-1 except that it is lighter than the WZU-1 and the position of zoom knob and the LENS limit controls are reversed. The reversed zoom knob is in the perfect ergonomic position for the assistant's thumb when the WZU-3 is used on WMU-3, WHA-2 or WHA-3.

Compatibility: For wireless operation, the WZU-3 was especially intended for use with the WMU-3, although it can be used with other main units. For wired operation with ARRICAM, 435 Xtreme or 416 Plus, WZU-3 can be used with Wired Handgrip Attachments WHA-2 or WHA-3. The WZU-3 can be placed between the Wireless Focus Unit and a Wireless Main Unit or Wired Handgrip Attachment, so focus, iris and zoom controls are together on one small and lightweight controller. The WZU-3 should not be placed between LDD-FP or WRC-1 and a Wireless Main Unit.

K2.52267.0 Wireless Zoom Unit 3

Zoom Main Unit 3 (ZMU-3)

For wireless use, the ZMU-3 becomes part of the ARRI Wireless Remote System. Via the Wireless Zoom Bracket WZB-3 it attaches to the Wireless Main Unit WMU-3.

Compatibility: Studio & Lite LDB-2, WEM-3, UMC-3, UMC-1 & URM-2/3. Works wired with any camera that has a 24V Fisher 3 Pin outlet or with an external 12V/24V battery and selected video lenses. Works with CLM-1 or CLM-2.

K2.65003.0 Zoom Main Unit 3

Wireless Expansion Bracket 3 (WEB-3)

With this bracket the WMU-3 can accept two hand controllers simultaneously, for example WFU and LDD-FP, or WFU and WRC-1.

Compatibility: For use with the Wireless Main Unit 3 (WMU-3) only. It is not possible to operate the WRC-1 and the Lens Data Display for Focus Puller (LDD-FP) on the same Wireless Main Unit. For wireless operation of WRC-1 and LDD-FP at the same time, two Wireless Main Units must be used. The same is true for two WRC-1 and LDD-FP units.

K2.52241.0 Wireless Expansion Bracket 3

Wireless Zoom Bracket 3 (WZB-3)

For wireless use, the ZMU-3 becomes part of the ARRI Wireless Remote System. Via the Wireless Zoom Bracket WZB-3 it attaches to the Wireless Main Unit WMU-3. The special shape of this bracket allows the assistant to position the ZMU-3 in relation to the WMU-3 to suit his/her personal preference.

K2.65017.0 WZB-3

WRS COMPONENTS

Wireless Remote Control 1 (WRC-1)

The Wireless Remote Control WRC-1 allows for remote operation of all current ARRI-CAM and ARRIFLEX cameras. Its basic application includes the use as an extension of the camera display in setups where the camera is difficult to access. More sophisticated features are manual or programmed speed, shutter or iris ramps, speed change with exposure compensation through shutter and/or iris, and shutter changes with exposure compensation through iris (or vice versa) for a shift in depth-of-field. The WRC-1 can be operated wirelessly on the Wireless Main Units (WMU-1, WMU-2, WMU-3) or hardwired with the Wired Handgrip Attachment (WHA-1, WHA-2, WHA-3).

Compatibility: For use on a Wireless Main Unit with the new radio modem WMU-2 or WMU-3, the WRC-1 should always have the latest software version. Otherwise some functions will not work. To work the WRC-1 together with the 235, SW-Version 1.22 is needed. It is not possible to operate the WRC-1 and the Lens Data Display for Focus Puller (LDD-FP) on the same Wireless Main Unit. For wireless operation of WRC-1 and LDD-FP at the same time, two Wireless Main Units must be used. The same is true for two WRC-1 and LDD-FP units.

K2.52087.0 Wireless Remote Control 1

Lens Data Display for Focus Puller (LDD-FP)

The LDD-FP is a small and lightweight display showing critical lens information and camera status. It can be configured to show focus scale, zoom scale, iris scale and camera status in any combination. Because of its small size it can be mounted in many ways, allowing the assistant to see precise lens and camera information while keeping an eye on the action. The screen of the LDD-FP is a high contrast Advanced TFT color screen with adjustable brightness.

Compatibility: It is possible to use the LDD-FP together with the Cinematography Electronics Cine Tape Measure. The CTM calculates the distance between the filmgate and the focus target. This distance is marked with a little arrow in the focus scale of the LDD-FP, as long as you hold a button on LDD-FP or WMA-3. The Lens Data Display for Focus Puller (LDD-FP) can be operated wirelessly with the Wireless Main Unit 3 (WMU-3). To use the LDD-FP on the WMU-3, compatible software is required for the LDD-FP, Studio Lens Data Box LDB-2, Lite Lens Data Box LDB-2, UMC-3 and FEM-2. The LDD-FP is not compatible with WMU-1, WMU-2, WHA-1, WHA-2 or WHA-3. It is not possible to operate the WRC-1 and the Lens Data Display for Focus Puller (LDD-FP) on the same Wireless Main Unit. For wireless operation of WRC-1 and LDD-FP at the same time, two Wireless Main Units must be used. The same is true for two WRC-1 and LDD-FP units.

K2.54163.0 Lens Data Display for the Focus Puller



Wireless Remote Control 1 (WRC-1)



Lens Data Display for Focus Puller (LDD-FP)

WRS COMPONENTS



Wireless Extension Unit 1 (WEU-1)



Wired Handgrip Attachment 1 (WHA-1)



Wired Handgrip Attachment 2 (WHA-2)

Wireless Extension Unit 1 (WEU-1)

With this unit it is possible to connect the hand controllers to a Wireless Main Unit with a cable. It consists of the Wireless Main Attachment WMA-1, which mounts on the WMU, and the Wired Handgrip Attachment WHA-1, which accepts the hand controllers. Cable WC-E1 connects WMA-1 and WHA-1. The Wired Handgrip Attachment 1 can be used separately to connect the WRC-1 with cable WC-W1 to all models of ARRIFLEX 416 Plus, 235, 435, 535 or 16 SR 3.

Compatibility: When the WHA-1 is used to connect the WRC-1 to the CCU port of a 435 Xtreme, fast ramps and the minimum speed of 0.1fps are not accessible. The WHA-2 must be connected to the LCS port to access these features.

K2.52056.0 Wireless Extension Unit 1

Wired Handgrip Attachment 1 (WHA-1)

This handgrip attachment can be used to connect the Wireless Remote Control (WRC1) with cable WC-W1 to all models of ARRIFLEX 416 Plus, 235, 435, 535 or 16 SR 3.

Compatibility: When the WHA-1 is used to connect the WRC-1 to the CCU port of a 435 Xtreme, fast ramps and the minimum speed of 0.1fps are not accessible. The WHA-2 must be connected to the LCS port to access these features.

K2.52070.0 Wired Handgrip Attachment 1

Wired Handgrip Attachment 2 (WHA-2)

With this handgrip attachment the hand controllers WFU-1, WFU-3 and/or WZU-1, WZU-3 or the Wireless Remote Control (WRC-1) can be operated hardwired.

Compatibility: The WHA-2 works with the ARRICAM Studio, the ARRICAM Lite, the ARRIFLEX 416 Plus and 435 Xtreme. It can be connected to the LCS socket of an ARRICAM Lens Data Box, 416 Plus, 435 Xtreme or to a UMC-3 with cable LC-M1, LC-M2, LC-Z1 or LC-Z2. Alternatively it can be connected to the CAC connector of Studio or Lite using cable KC-70 (3m/9ft). For lens control on an ARRICAM, a Lens Data Box must be present. The Lens Data Display for Focus Puller (LDD-FP) cannot be attached to the WHA-2. The WHA-2 can be mounted on the camera with the Rod Bracket or with the Rosette Bracket.

K2.54079.0 Wired Handgrip Attachment 2

WRS COMPONENTS

Wired Handgrip Attachment 3 (WHA-3)

The WHA-3, just like the WHA-2, allows all hand controllers except the LDD-FP to be connected with a cable to an ARRICAM, 435 Xtreme or to a UMC-3. In addition the WHA-3 has a button on the left side for focus tracking. Focus tracking based on measured distances is available when using an ARRICAM, 435 Xtreme, 416 Plus or to a UMC-3 with the Lens Data Display for Focus Puller (LDD-FP) and a compatible distance measuring device (currently the Cinematography Electronics Cine Tape Measure).

Compatibility: The WHA-3 works with the ARRICAM Studio, the ARRICAM Lite, the ARRIFLEX 416 Plus and 435 Xtreme. It can be connected to the LCS socket of an ARRICAM Lens Data Box, 416 Plus, 435 Xtreme or to a UMC-3 with cable LC-M1, LC-M2, LC-Z1 or LC-Z2. Alternatively it can be connected to the CAC connector of Studio or Lite using cable KC-70 (3m/9ft). For lens control on an ARRICAM, a Lens Data Box must be present. The Lens Data Display for Focus Puller (LDD-FP) cannot be attached to the WHA-3. For focus tracking to work with the WHA-3, the ARRICAM, 435 or to a UMC-3 must have at least software packets 03E or later installed. The WHA-3 can be mounted on the camera with the Rod Bracket or with the Rosette Bracket.

K2.52264.0 Wired Handgrip Attachment 3

Wireless Battery Unit 3 (WBU-3)

This Lithium-ion battery for the WMU-3 provides long running time and a battery capacity display. If the WMU-3 is used solely with a WFU-1 or WFU-3, the battery will last up to 16 hours.

Compatibility: This battery is not compatible with the WMU-1 or WMU-2, and should be charged only with the Wireless Accumulator Charger 3 (WAC-3).

K2.52238.0 Wireless Battery Unit 3

Wireless Battery Unit 4 (WBU-4)

The WBU-4 has a longer capacity than the WBU-3, approximately as twice as long as the WBU-3.

K2.65001.0 Wireless Battery Unit 4

Wireless Accumulator Charger 3 (WAC-3)

Battery charger for the WBU-3 and WBU-4 Lithium-ion battery.

Compatibility: For use with WBU-3 or WBU-4 only.

K2.52266.0 Wireless Accumulator Charger 3



Wired Handgrip Attachment 3 (WHA-3)



Wireless Battery Unit 3 (WBU-3)



Wireless Battery Unit 4 (WBU-4)



Wireless Accumulator Charger 3 (WAC-3)

WRS COMPONENTS

WHA-2 Rod Bracket

This bracket is used to mount the WHA-2, WHA-3 or the UMC-3 with a 3/8" Quick Lock Adapter onto support rods. It connects to the Wired Handgrip Attachment with a quick release dovetail mechanism. Two articulated hinges allow for flexible positioning of the Wired Handgrip Attachment and attached controller.

Compatibility: Fits on 19mm and 15mm support rods.

K2.52150.0 WHA-2 Rod Bracket



WHA-2 Rod Bracket

WHA-2 Rosette Bracket

This bracket is used to mount the WHA-2 and WHA-3 onto an ARRIHEAD. It connects to the Wired Handgrip Attachment with a quick release dovetail mechanism. This dovetail clamps onto a 15mm rod, which can be swiveled out for flexible positioning of the Wired Handgrip Attachment and attached controller. A 5mm hex key is needed for mounting the bracket onto the ARRIHEAD rosette.

K2.52153.0 WHA-2 Rosette Bracket



WHA-2 Rosette Bracket

WRS COMPONENTS

Universal Motor Controller 3 (UMC-3)

Works with all ARRI Cameras, Moviemcam, Aaton XTR 16 and selected video lenses (run/stop CLM motors). Up to three CLM-1 or CLM-2 lens motors can be attached to the UMC-3, while it communicates either with the Wireless Main Unit WMU-2 or WMU-3. Optionally the WHA-2, WHA-3 or any ZMU can be used for cabled operation. The external connector of the Cooke S4i lenses can be connected to the UMC-3, and the Lens Data Display for Focus Puller (LDD-FP) can display lens rings, a depth of field bar graph and electronic focus marks. New software improves ramping performance when the UMC-3 is used with WRC-1 and the ARRIFLEX 416 Plus, 235, 535A, 535B, 435, 435ES, 435 Advanced or any model of 16SR3.

Compatibility: WMU-3, WMU-2 and the CTM for wireless operation.

K2.65000.0 Universal Motor Controller 3

Universal Radio Module 3 (URM-3)

The Universal Radio Module 3 mounts on the UMC-1 or FEM-2 to allow the camera to communicate with the WMU-2 or WMU-3. It has the new radio modem installed, is thinner than the UMC-2, and has a shape that conforms to the camera outline when attached to a 435 Xtreme.

Compatibility: Can be used with Wireless Main Unit 2 or 3 (WMU-2, WMU-3).

Does not work with WMU-1.

K2.52262.0 Universal Radio Module 3



Universal Motor Controller 3 (UMC-3)



Universal Radio Module 3 (URM-3)

WRS COMPONENTS



Functional Expansion Module 2 (FEM-2)

Functional Expansion Module 2 (FEM-2)

The Functional Expansion Module 2 is part of the 435 Xtreme. It provides extra functionality, including Lens Data System features, electronics to drive the Controlled Lens Motors CLM-1 or CLM-2, improved ramping and a cut-out to accept a Universal Radio Module (URM-1, URM-2 or URM-3) for wireless camera and lens control.

Compatibility: Can be used with ARRIFLEX 435 Advanced with software version 2.73 and firmware version 2.65. Does not work with ARRIFLEX 435 and 435 ES.

K2.52226.0 Functional Expansion Module 2



Studio Lens Data Box 2 (Studio LDB-2)

Studio Lens Data Box 2 (Studio LDB-2)

The Studio Lens Data Box 2 (Studio LDB-2) is the central processing point for the signals from the Lens Control System (LCS) and from the Lens Data System (LDS). It controls lens motors, supplies the Lens Data Displays and IVS with information and manages the connection to the LCS hand units for focus, zoom, iris and to the WRC -1 for camera control, either hardwired through WHA-2 or WHA-3 or wirelessly.

Compatibility: The Studio Lens Data Box 2 can be mounted to the ARRICAM Studio or to the Studio LDB Adapter. It can be attached without the use of tools. With the exception of the WMU-1 it is compatible to all hand units and the Controlled Lens Motors CLM-1 and CLM-2.

K2.54194.0 Studio Lens Data Box 2



Studio LDB Adapter

Studio LDB Adapter

The Studio LDB Adapter allows the mounting of the Studio Lens Data Box 1m/3ft away from the camera body. This is preferable under some circumstances, most notably when using the ARRICAM Studio on a Steadicam.

Compatibility: The Studio LDB Adapter works only on the ARRICAM Studio with Studio Lens Data Box or Studio Lens Data Box 2.

K2.54144.0 Studio LDB Adapter



Lite Lens Data Box 2 (Lite LDB-2)

Lite Lens Data Box 2 (Lite LDB-2)

The Lite Lens Data Box 2 (Lite LDB-2) is the central processing point for the signals from the Lens Control System (LCS) and from the Lens Data System (LDS). It controls lens motors, supplies the Lens Data Displays and IVS with information and manages the connection to the LCS hand units for focus, zoom, iris and to the WRC-1 for camera control, either hardwired through WHA-2 or WHA-3 or wirelessly.

Compatibility: The Lite Lens Data Box 2 can only be mounted on the ARRICAM Lite. It can be attached with a 3 mm hex key. With the exception of the WMU-1 it is compatible to all hand units and the Controlled Lens Motors CLM-1 and CLM-2.

K2.54195.0 Lite Lens Data Box 2

WRS COMPONENTS

416 Extended Electronics

The 416 Extended Electronics Module is part of the ARRIFLEX 416 Plus camera. It provides an extremely compact and light solution for use with ARRI Controlled Lens Motors in wireless and wired configurations.

Controlled Lens Motor 1 (CLM-1)

Due to its high torque this lens motor is particularly suited for operation with stiff lenses or in cold weather.

Compatibility: To operate the CLM-1 motor, the Universal Motor Controller, a Lens Data Box or Functional Expansion Module (FEM-2) is necessary. The CLM-1 can be mounted to 19mm support systems. A bracket for 15mm support rods and an offset bracket for 19mm and 15mm are available.

K2.41378.0 Controlled Lens Motor 1

Controlled Lens Motor 2 (CLM-2)

This small and lightweight motor is particularly suited to applications for which weight and size are decisive factors, e.g. Steadicam shots, when using 16mm or video cameras, or with sensitive lenses.

Compatibility: To operate a CLM-2 motor, the Universal Motor Controller (UMC-1), or a Lens Data Box or Functional Expansion Module 2 (FEM-2) is necessary. A system of inserts makes mounting to 19mm or 15mm support systems possible.

The Console for CLM-2 Motor (K2.52035.0) is an extension bracket allowing for various flexible mounting options.

K2.52036.0 Controlled Lens Motor 2



416 Extended Electronics



Controlled Lens Motor 1 (CLM-1)



Controlled Lens Motor 2 (CLM-2)

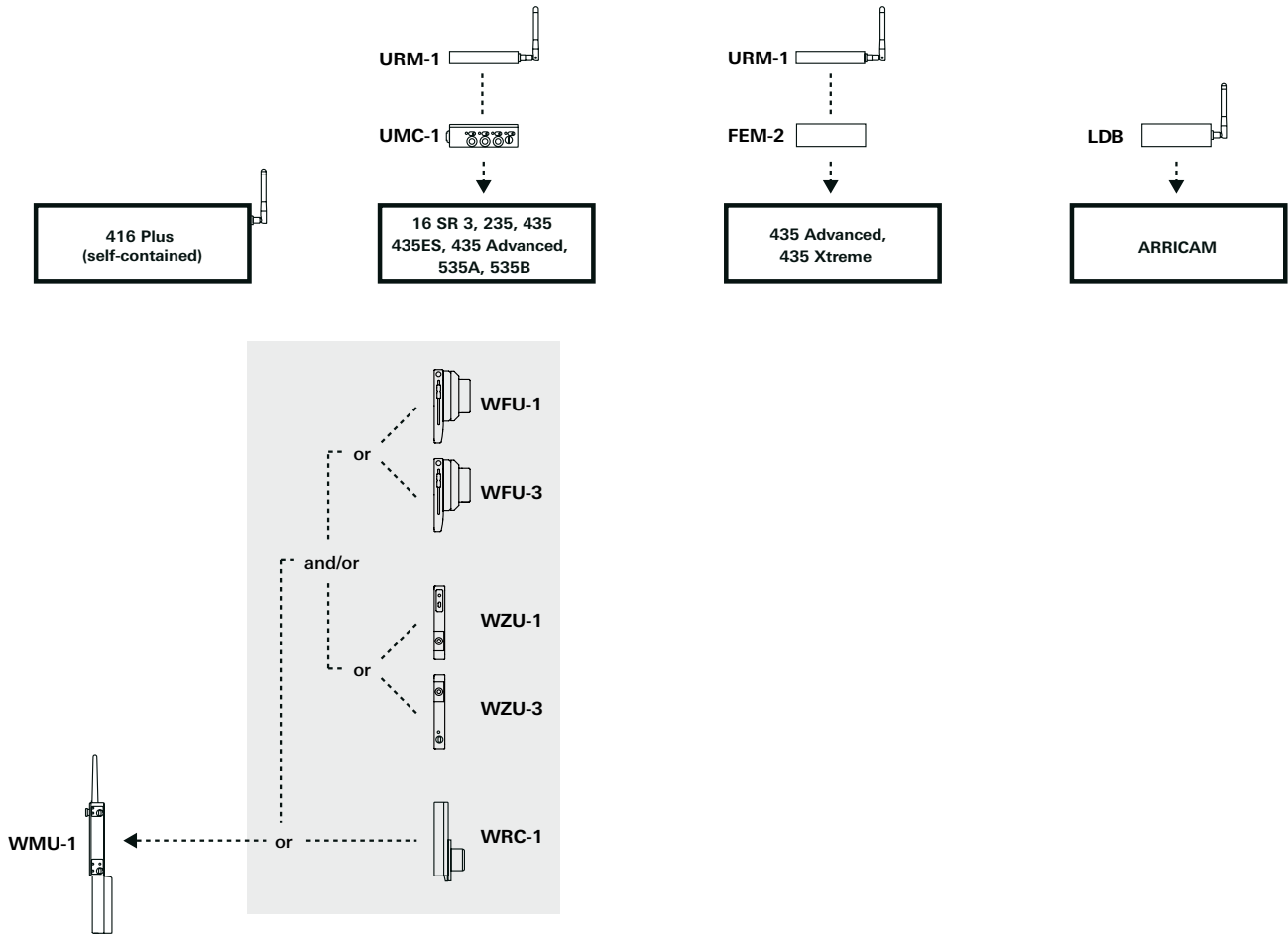


COMPATIBILITY OVERVIEWS

These overviews show the compatibility for all possible configurations. Since the most important factor determining compatibility is the main hand unit, there are five diagrams showing what is possible when using the WMU-1, WMU-2, WMU-3, WHA-1 or WHA-2/WHA-3.

COMPATIBILITY OVERVIEWS

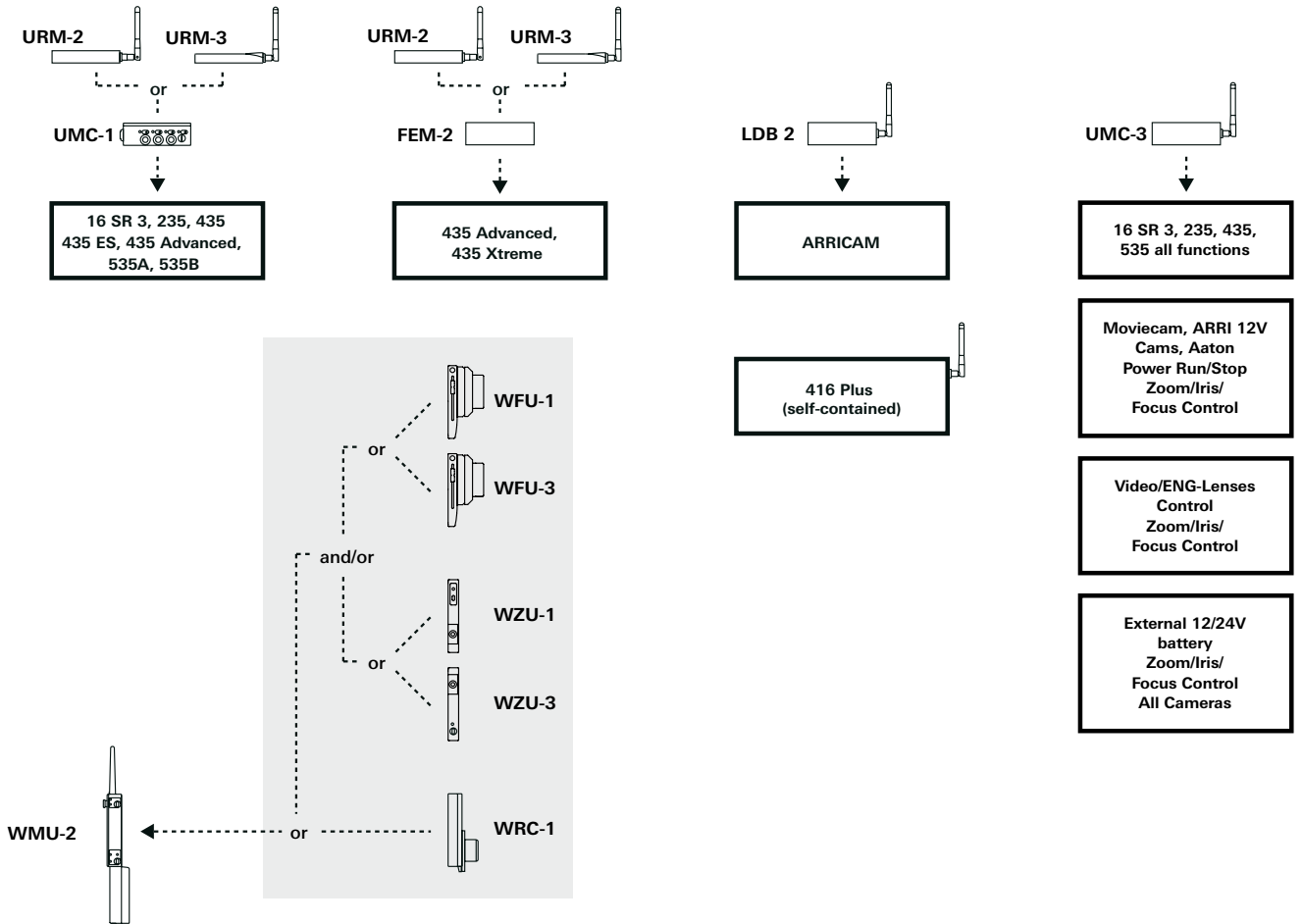
WMU-1 (old radio modem)



- Neither WZU-1 nor WZU-3 should be attached between the Wireless Remote Controller (WRC-1) and the Wireless Main Unit.
- When the 435, 435ES or 435 Advanced is used with the UMC-1, wireless lens control and camera RUN is possible. To use features like wireless fps and shutter changes or ramps, the camera needs a FEM-1.
- A UMC-1 is not needed on a 435 Xtreme, since UMC functions are integrated into the FEM-2 of the 435 Xtreme. The FEM-2 provides LDS functions, speed/iris and shutter/iris ramps plus improved ramping features. A UMC-1 is also not needed on the ARRICAM system, since UMC functions are integrated into the Lens Data Boxes.
- The zoom knob on the WZU-1 is in a better position for use on the WMU-1 than the WZU-3 zoom knob.

COMPATIBILITY OVERVIEWS

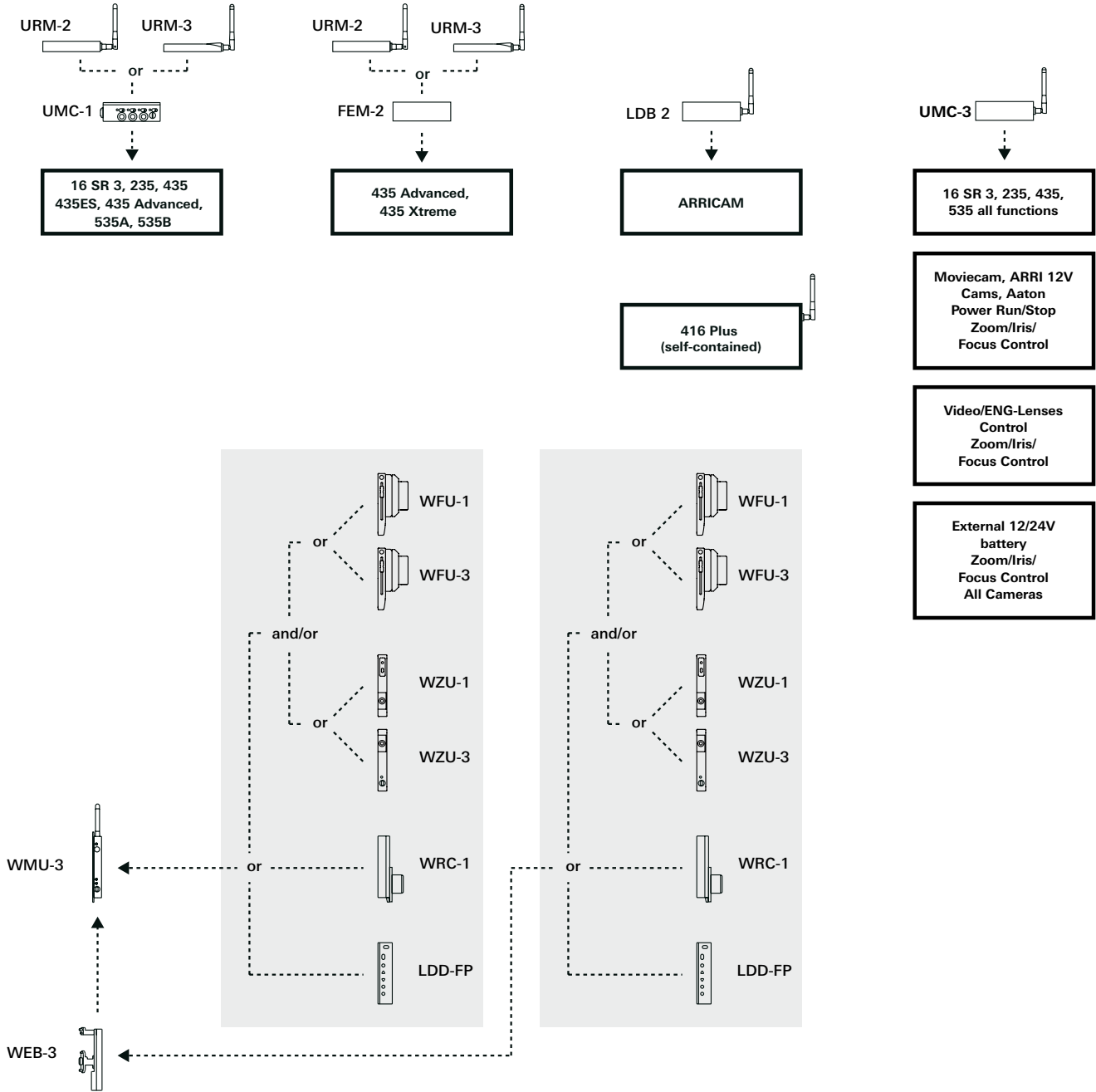
WMU-2 (new radio modem)



- Neither WZU-1 nor WZU-3 should be attached between the Wireless Remote Controller (WRC-1) and the Wireless Main Unit. When the 435, 435ES or 435 Advanced is used with the UMC-1, wireless lens control and camera RUN is possible. To use features like wireless fps and shutter changes or ramps, the camera needs a FEM-1.
- A UMC-1 is not needed on a 435 Xtreme, since UMC functions are integrated into the FEM-2 of the 435 Xtreme. The FEM-2 provides LDS functions, speed/iris and shutter/iris ramps plus improved ramping features. A UMC-1 is also not needed on the ARRICAM system, since UMC functions are integrated into the Lens Data Boxes.
- The zoom knob on the WZU-1 is in a better position for use on the WMU-2 than the WZU-3 zoom knob.

COMPATIBILITY OVERVIEWS

WMU-3 (new radio modem)

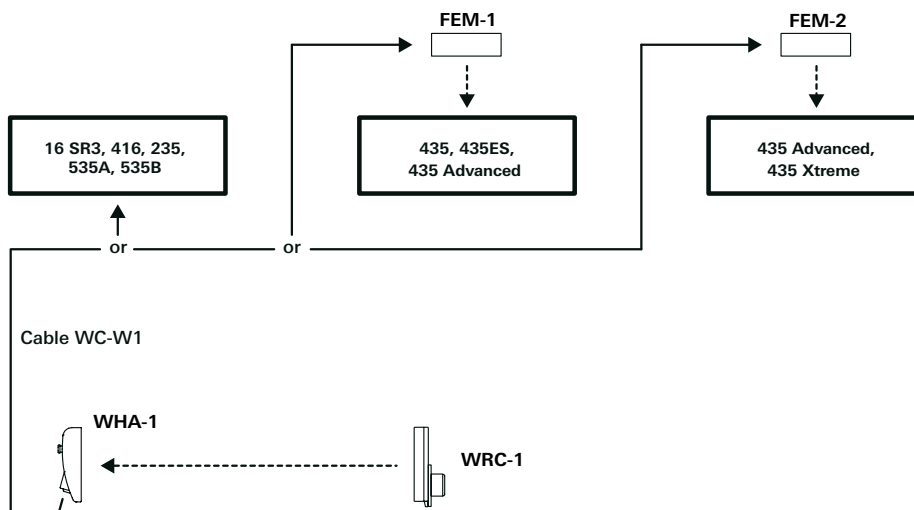


* For technical notes, please look at the next page.

Notes for WMU-3 (new radio modem):

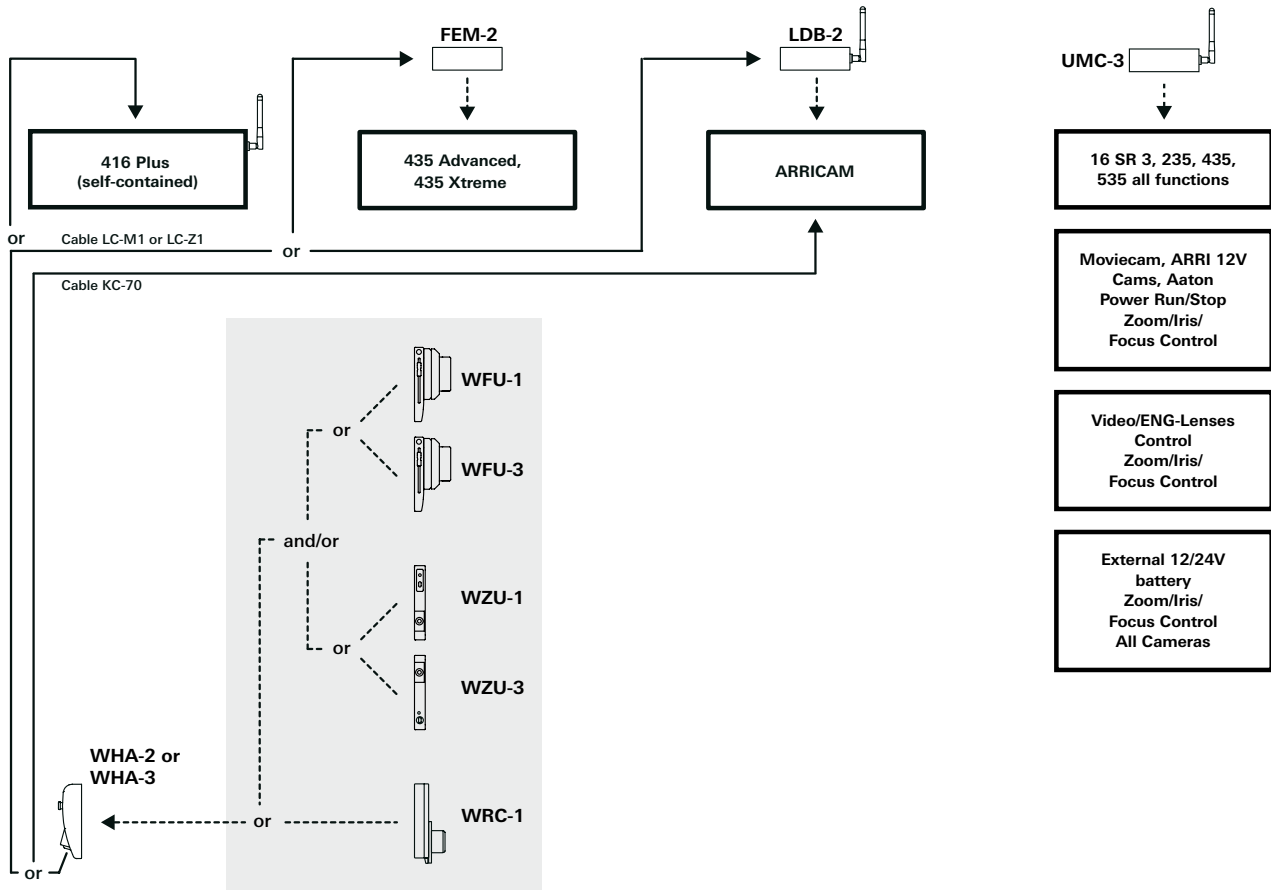
- Except for the WFU, the same two hand controllers cannot be attached to the WMU-3. When two WFUs are attached, the FOCUS/IRIS switch must be switched up for one unit, and down for the other before the WMU is turned on. This will assign focus to the hand wheel of one unit and iris to the hand wheel of the other.
- Don't attach the WRC-1 and the LDD-FP to the same WMU-3. To operate a WRC-1 and LDD-FP simultaneously, two WMU-3 units must be used. The same is true for two WRC-1 and LDD-FP units.
- Neither WZU-1 nor WZU-3 should be placed between LDD-FP or WRC-1 and the Wireless Main Unit.
- When the 435, 435ES or 435 Advanced is used with the UMC-1, wireless lens control and camera RUN is possible. To use features like wireless fps and shutter changes or ramps, the camera needs a FEM-1.
- A UMC-1 is not needed on a 435 Xtreme, since UMC functions are integrated into the FEM-2 of the 435 Xtreme. The FEM-2 provides LDS functions, speed/iris and shutter/iris ramps plus improved ramping features. A UMC-1 is also not needed on the ARRICAM system, since UMC functions are integrated into the Lens Data Boxes.
- The zoom knob on the WZU-3 is in a better position for use on the WMU-3 than the WZU-1 zoom knob.

WHA-1 (cable)



COMPATIBILITY OVERVIEWS

WHA-2/WHA-3 (cable)



- The zoom knob on the WZU-3 is in a better position for use on the WHA-2 or WHA-3 than the WZU-1 zoom knob.
- WHA-2 and WHA-3 are identical except that WHA-3 has a focus tracking button added.

CABLE OVERVIEW FOR ARRI CAMERA SYSTEMS

Cables for Hand Controllers

Unit	Description	Length	Connects...	Ident. #
WC-E1	WEU Cable	1m/3ft	WMA-1 to WHA-1, WHA-2, WHA-3	K4.52336.0
WC-E2	Extension cable for WEU-1	3m/10ft		K2.52084.0
KC92-S	ZMU-3 to LCS Short Cable	0,8m/2,5ft	ZMU-3 to LCS connector on UMC-1, UMC-3, ARRICAM Lens Data Box or 435 FEM-2	K2.65009.0
KC105-S	ZUM-3 to WRS Cable	0,3m/1ft	For wireless operation on WMU-3	K2.65036.0

Cables for Camera Modules

Unit	Description	Length	Connects...	Ident. #
UC-C1	UMC Power Cable 24Volt	1m/3ft	UMC-1 to 235, 435, 535, 16 SR 3	K2.52046.0
UC-R1	Camera Control Cable	80 cm/32 inches	UMC-1 to 235, 435, 535, 16 SR 3	K2.52079.0
KC-97-S	UMC-3 to 235 Cable	0,4m/1,2ft	UMC-3 to 235	K2.65013.0
KC-99-S	UMC-3 to CAM Cable	1m/3ft	UMC-3 to 435, 535, 16 SR 3	K2.65015.0
KC-75-S	LDB Adapter Cable	1m/3ft	Studio Body Plate to Studio LDB Plate	K2.54150.0
WC-A2	Antenna Cable extends antenna of camera radio module	3m/9ft	LCS-antenna to UMC-1, FEM-2, Studio LDB, Studio LDB-2, Lite LDB, Lite LDB-2, WMU-1, WMU-2, WMU-3	K2.52096.0

Cables for Hardwired Operation

Unit	Description	Length	Connects...	Ident. #
WC-A3	WMU Cable	15m/45ft	WMU to URM, FEM-2, Studio LDB, Studio LDB-2, Lite LDB, Lite LDB-2, UMC-3	K2.52263.0
KC-70-S	WHA Cable to CAC	3m/9ft	WHA-2, WHA-3 to ARRICAM Studio, ARRICAM Lite	K2.54135.0
WC-W1	Connects WHA-1 to camera	2,3m/7,5ft	WRC-1 on WHA-1 to 235, 435, 535, 16 SR 3	K2.52089.0
LC-M1-SP-S	WHA LCS Cable Connects WHA-2 or WHA-3 to ARRICAM, 435 Advanced or 435 Xtreme or UMC-3	1m/3ft (coiled)	WHA-2, WHA-3 to Studio LDB, Lite LDB, FEM-2, UMC-3 CLM-1 to Studio LDB, Lite LDB, CLM-1 to ICU-1	K4.41397.0
LC-Z1-S	WHA LCS Cable Connects WHA-2 or WHA-3 to ARRICAM, 435 Advanced or 435 Xtreme or UMC-3	3m/9ft	WHA-2, WHA-3 to Studio LDB, Studio LDB-2, UMC-3, Lite LDB, Lite LDB-2, FEM-2 CLM-1 to ICU-1	K2.52263.0
LC-E1	Cable Drum to extend LC-Z1, LC-Z2	75m/250ft		K2.41389.0
LC-Z2-S	WHA LCS Cable Connects WHA-2 or WHA-3 to ARRICAM, 435 Advanced or 435 Xtreme or UMC-3	7m/23ft	WHA-2, WHA-3 to Studio LDB, Studio LDB-2, UMC-3, Lite LDB, Lite LDB-2, FEM-2	K4.41396.0

Additional Cables

Unit	Description	Length	Connects...	Ident. #
LC-M2	Motor Cable	0.2m/0.7ft	CML-1 to CLM-1	K2.43871.0
CC-M2	Long Cable for CLM-2 (necessary when used with ARRIMOTION)	0.8m/2.6ft	CLM-2 to UMC-1, FEM-2, Studio LDB, Lite LDB, ARRIMOTION	K2.52224.0
K-CAC-CTM	CTM Cable for ARRICAM	0,3m/1ft	ARRICAM to Cine Tape Measure	K2.52265.0
K-CCU-CTM	CTM Cable for 435	0,3m/1ft	435 to Cine Tape Measure	K2.52273.0

COMPATIBILITY TABLE

Items marked in yellow (light grey on b/w prints) are equipped with the old radio modem and are compatible only with other yellow items. Blue marked items (dark grey on b/w prints) are equipped with the new radio modem and are only compatible with other blue items. Items without a color do not care which radio modem is used. In the “Compatible with” column we have only listed items that can be directly attached and/or connected to each other.

Camera Radios & Motor Controllers

Camera radios communicate on the camera side with the hand radios. Motor controllers contain the electronics to drive the lens motors. In the case of the Lens Data Box, both are contained in one unit.

Unit	Description	Compatible with....	Ident. #
URM-1	Universal Radio Module 1	WMU-1, UMC-1, FEM-2, CLM-1, CLM-2	K2.52048.0
Studio LDB	Studio Lens Data Box	ARRICAM Studio, WMU-1, WHA-2, WHA-3	K2.54014.0
Lite LDB	Lite Lens Data Box	ARRICAM Lite, WMU-1, WHA-2, WHA-3	K2.54025.0
URM-2	Universal Radio Module 2	WMU-2, WMU-3, UMC-1, FEM-2	K2.52237.0
URM-3	Universal Radio Module 3	WMU-2, WMU-3, UMC-1, FEM-2	K2.52262.0
Studio LDB-2	Studio Lens Data Box 2	ARRICAM Studio, WMU-2, WMU-3, WHA-2, WHA-3, CLM-1, CLM-2	K2.54194.0
Lite LDB-2	Lite Lens Data Box 2	ARRICAM Lite, WMU-2, WMU-3, WHA-2, WHA-3, CLM-1, CLM-2	K2.54195.0
UMC-1	Universal Motor Controller 1	URM-1, URM-2, URM-3	K2.52040.0
FEM-2	Functional Expansion Module 2	435 Advanced, URM-1, 435 Xtreme, URM-2, URM-3, WHA-1, WHA-2, WHA-3	K2.52226.0
UMC-3	Universal Motor Controller 3	WMU-2, WMU-3	K2.65000.0

Camera Radios & Motor Controllers Accessories

Unit	Description	Compatible with....	Ident. #
	Studio LDB Adapter	ARRICAM Studio, Studio LDB, Studio LDB-2	K2.54144.0
	Quick Change Adapter 3/8"	UMC-1, all models of ARRIFLEX 416, 235, 435, 535, 16 SR 3	K2.52080.0

Camera Radios & Motor Controllers Accessories

Unit	Description	Compatible with....	Ident. #
CLM-1	Controlled Lens Motor 1	UMC-3, UMC-1, Studio LDB, Studio LDB-2, Lite LDB, Lite LDB-2, FEM-2	K2.54144.0
CLM-2	Controlled Lens Motor 2	UMC-3, UMC-1, Studio LDB, Studio LDB-2, Lite LDB, Lite LDB-2, FEM-2	K2.52080.0

Lens Motor Accessories

Unit	Description	Compatible with....	Ident. #
	Extension Bracket 15mm/19mm	CLM-2	K2.52035.0
	Bracket 15mm	CLM-1	K2.41379.0
	Offset-Bracket 19mm	CLM-1	K2.41381.0
	Offset-Bracket 15mm	CLM-1	K2.41380.0
	Movable Iris Drive	CLM-1, CLM-2	K2.41388.0
	Iris Gear 65 teeth	CLM-1, CLM-2	K2.52050.0
	Video Iris Gear large	CLM-1, CLM-2	K2.52049.0
	Video Iris Gear small	CLM-1, CLM-2	K2.52051.0
	Long Cable for CLM-2	CLM-2	K2.52224.0

Hand Radios

These so called “Wireless Main Units” are held in the hand, and communicate with the camera radios.

Unit	Description	Compatible with....	Ident. #
WMU-1	Wireless Main Unit 1	WBU-2, WFU-1, WFU-3, WZU-1, WZU-3, WRC-1, URM-1, Studio LDB, Lite LDB	K2.52052.0
WMU-2	Wireless Main Unit 2	WMU-3, WBU-2, WFU-1, WFU-3, WZU-1, WZU-3, WRC-1, URM-2, URM-3, Studio LDB-2, Lite LDB-2, UMC-3	K2.52236.0
WMU-3	Wireless Main Unit 3	WMU-2, WEB-3, WBU-3, WFU-1, WFU-3, WZU-1, WZU-3, WRC-1, LDD-FP, URM-2, URM-3, Studio LDB-2, Lite LDB-2, UMC-3, ZMU-3	K2.52240.0

Hand Controllers

These attach to the hand radios or handgrip attachments and control or display aspects of the lens and camera, like focus, zoom, iris, start/stop and ramps.

Unit	Description	Compatible with....	Ident. #
WFU-1	Wireless Focus Unit 1	WMU-1, WMU-2, WMU-3, WEB-3, WHA-2, WHA-3, WZU-1, WZU-3	K2.52055.0
WFU-3	Wireless Focus Unit 3	WMU-1, WMU-2, WMU-3, WEB-3, WHA-2, WHA-3, WZU-1, WZU-3	K2.52268.0
WZU-1	Wireless Zoom Unit 1	WMU-1, WMU-2, WMU-3, WEB-3, WHA-2, WHA-3, WZU-1, WZU-3	K2.52054.0
WZU-3	Wireless Zoom Unit 3	WMU-1, WMU-2, WMU-3, WEB-3, WHA-2, WHA-3, WZU-1, WZU-3	K2.52267.0
WRC-1	Wireless Remote Control 1	WMU-1, WMU-2, WMU-3, WEB-3, WHA-1, WHA-2, WHA-3	K2.52087.0
LDD-FP	Lens Data Display for Focus Puller	WMU-3, WEB-3	K2.54163.0
ZMU-3	Zoom Main Unit 3	WMU-3, UMC-3	K2.65003.0

Handgrip Attachments

Can be used instead of the hand radios when a cable connection is preferred.

Unit	Description	Compatible with....	Ident. #
WHA-1	Wired Handgrip Attachment 1	WRC-1, 416, 235, 435, 435 ES, 435 Advanced, 435 Xtreme, 535, 16 SR 3	K2.52070.0
WHA-2	Wired Handgrip Attachment 2	WFU-1, WFU-3, WZU-1, WZU-3, WRC-1, Studio LDB, Studio LDB-2, Lite LDB, Lite LDB-2, FEM-2, UMC-3	K2.54079.0
WHA-2	Wired Handgrip Attachment 3	WFU-1, WFU-3, WZU-1, WZU-3, WRC-1, Studio LDB, Studio LDB-2, Lite LDB, Lite LDB-2, FEM-2, UMC-3	K2.52264.0

Handgrip Attachments

Unit	Description	Compatible with....	Ident. #
WEB-3	Wireless Expansion Bracket 3	WMU-3, WFU-1, WFU-3, WZU-1, WZU-3, WRC-1, LDD-FP	K2.52241.0
WBU-1	Wireless Battery Unit 1	WMU-1, WMU-2, WAC-1	discontinued
WBU-2	Wireless Battery Unit 2	WMU-1, WMU-2, WAC-1	K2.52088.0
WBU-3	Wireless Battery Unit 3	WMU-3, WAC-3	K2.52238.0
WBU-4	Wireless Battery Unit 4	WMU-3, WAC-3	K2.65001.0
WAC-1	Wireless Accumulator Charger 1	WBU-1, WBU-2	K2.52072.0
WAC-3	Wireless Accumulator Charger 3	WBU-3	K2.52266.0
WEU-1	Wireless Extension Unit	WMU-1, WMU-2, WMU-3, WEB-3, WFU-1, WFU-3, WZU-1, WZU-3, WRC-1, LDD-FP	K2.52056.0
	WHA-2 Rod Bracket	WHA-2, WHA-3, 19mm support rod	K2.52150.0
	WHA-2 Rosette Bracket	WHA-2, WHA-3, ARRIHEAD	K2.52153.0

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