WVT-1, WVR-1 & WVR-1s
Wireless Video Transmitter & Receiver

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Imprint

For Further Assistance

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Scope

This User Manual applies to the following product:

K2.0014051 WVT-1 with Software Update Packet 4.3.28

K2.0014053 WVR-1 with Software Update Packet 4.3.28

K2.0022606 WVR-1s with Software Update Packet 4.3.28

Revision history

Version	ID	Order #	Release	Date
01	10002495	K5.0015372	K09431	25.07.2017
02	10002495	K5.0015372	W01412	25.09.2018
03	10002495	K5.0015372	W01498	14.03.2019

Disclaimer

Before using the products described in this manual, be sure to read and understand all the respective instructions.

The ARRI Wireless Video Transmitter & Receiver WVT-1, WVR-1 & WVR-1s is/are only available to commercial customers. By utilization, the customer agrees that the WVT-1, WVR-1 & WVR-1s or other components of the system are deployed for commercial use only. Otherwise the customer must contact ARRI before utilization.

While ARRI endeavors to enhance the quality, reliability and safety of their products, customers agree and acknowledge that the possibility of defects thereof cannot be eliminated entirely. To minimize the risk of damage to property or injury (including death) to persons arising from defects in the products, customers must incorporate sufficient safety measures in their work with the system and heed the stated canonic use.

ARRI or its subsidiaries do not assume any responsibility for losses incurred due to improper handling or configuration of the WVT-1, WVR-1 & WVR-1s or other system components.

ARRI assumes no responsibility for any errors that may appear in this document. The information is subject to change without notice.

For product specification changes after this manual was published, refer to the latest published ARRI data sheets or release notes, etc., for the most up-to-date specifications. Not all products and/or types are available in every country. Please check with an ARRI sales representative for availability and additional information.

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Table of Contents

2   For Your Safety

Before use, please ensure that all users read, understand, and follow the instructions comprehensively in this document.

Risk Levels and Alert Symbols

Safety warnings, safety alert symbols, and signal words in these instructions indicate different risk levels:

⚠ DANGER!

DANGER indicates an imminent hazardous situation, which, if not avoided, **will result in** death or serious injury.

⚠ WARNING!

WARNING indicates a potentially hazardous situation, which, if not avoided, **may result in** death or serious injury.

⚠ CAUTION!

CAUTION indicates a potentially hazardous situation, which, if not avoided, **may result in** minor or moderate injury.

NOTICE

NOTICE explains practices not related to physical injury. No safety alert symbol appears with this signal word.

Note: Provides additional information to clarify or simplify a procedure.

Vital Precautions

⚠ DANGER!

Risk of electric shock and fire!

Short-circuits may entail lethal damage!

Before use, read and follow all valid instructions.

Use solely and exclusively as described in the instructions.

Never open. Never insert objects.

For operation, always use a power source as indicated in the instructions.

Always unplug the cable by gripping the plug, not the cable.

Never try to repair. All repair work should be done by a qualified ARRI Service Center.

Never remove or deactivate any safety equipment (incl. warning stickers or paint marked screws).

Always protect from moisture, cold, heat, dirt, vibration, shock, or aggressive substances.

General precautions

Use only the tools, materials and procedures recommended in this document. Unplug all cables during transport.

Do not store the WVT-1, WVR-1 & WVR-1s in places where it/ they may be subject to temperature extremes, direct sunlight, high humidity, severe vibration, or strong magnetic fields.

3 Audience and intended use

NOTICE

The product is solely and exclusively available for commercial customers and shall be used by skilled personnel only. Every user should be trained according to ARRI guidelines. Use the product only for the purpose described in this document. Always follow the valid instructions and system requirements for all equipment involved.

The WVT-1, WVR-1 & WVR-1s are solely and exclusively for use on professional camera setups.

Warranty

For scope of warranty, please ask your local ARRI Service Partner. ARRI is not liable for consequences from inadequate shipment, improper use, or third-party products.

How to use this manual

Connectors are all written in capital letters, for example, **LCS**.

Buttons are all written in capital letters, for example, **MENU** soft button.

Menus and screens are written in italic letters, for example *home screen*.

The appendix at the back of the manual contains useful reference material including radio frequencies, spare parts and additional accessories, connector pin-out diagrams and dimensional drawings.

4   Introduction

ARRI WVT-1 is a stand-alone Wireless Video Transmitter that transmits the video signal from any camera to the Wireless Video Receiver (WVR-1) or Transvideo Starlite ARRI-WVS monitor. It can transmit at 5GHz up to a distance of 600m with less than 1ms delay. The transmission is always secured by 128bit AES encryption and is uncompressed. One Transmitter can transmit to up to four receivers. The housing is spray and dust proof aluminum with built-in collars for antenna and BNC connectors and offers several professional mounting options.

The **ARRI WVR-1** is a stand-alone, long range Wireless Video Receiver that receives the signal from the integrated HD video transmitter of the ALEXA LF, ALEXA SXT W or the Wireless Video Transmitter WVT-1. The housing is spray and dust proof aluminum with built-in collars for antenna and BNC connectors and offers several professional mounting options. The WVR-1 has an interface for battery adapter plates and includes an external power out connector that makes powering external accessories possible.

The **ARRI WVR-1s** is a stand-alone Wireless Video Receiver that receives the signal from the integrated HD video transmitter of the ALEXA LF, ALEXA SXT W or the Wireless Video Transmitter WVT-1. The housing is spray and dust proof aluminum with built-in collars for the BNC connector. It offers several professional mounting options and is optimized for hand held users like focus pullers and directors. The WVR-1s has an interface for battery adapter plates and includes an external power out connector that makes powering external accessories possible.

Main features

- WVT-1 can be used with any camera with SDI OUT
- WVR-1 and WVR-1s receive the video from the integrated HD video transmitter of the ALEXA LF, ALEXA SXT W or the Wireless Video Transmitter WVT-1
- Professional built quality, power options and accessories
- High performance video transmission:

    - ▶ Robust link
    - ▶ Long range WVR-1 (600m, 2,000ft), WVR-1s (150m, 192ft)
    - ▶ Zero delay (< 1ms)
    - ▶ Secure (128bit AES encryption)
    - ▶ Uncompressed
    - ▶ Includes basic metadata: 2 channel audio, REC flag, timecode (VITC)

NOTICE

To tap the full potential of the device, have all connected units updated to the latest available firmware.

Visit www.arri.com/ru/camera/alexa/cameras/camera_details/alexa-sxt-w/subsection/wvs_components/ for up-to-date product information and software updates.

5   WVT-1 Layout

1	External Antennas
2	ON/OFF Power Switch
3	Status LED: network, video, power
4	PAIR Button
5	Passive cooling element

6	3G-SDI OUT (BNC 75 Ohm)
7	3G-SDI IN (BNC 75 Ohm)
8	PWR IN (10.5-34V)
9	M4 mounting point
10	1/4"-20 UNC mounting point
11	USB port

Interface	Description
Antennas	External antenna
PAIR Button	Starts pairing process
ON/OFF Power Switch	Switches the unit ON/OFF
PWR IN	connects to power source (10.5-34V)
3G-SDI IN	(BNC 75 Ohm) connector capable of carrying a 1920x1080 422 up to 3G-SDI signal
3G-SDI OUT	(BNC 75 Ohm) connector capable of carrying a 1920x1080 422 up to 3G-SDI signal
USB port	Protected by srew-mounted lid. Used for firmware updates
M4 mounting points	Mounting points for optional accessories
1/4"-20 UNC mounting point	Mounting point for optional accessories

6   WVR-1 Layout
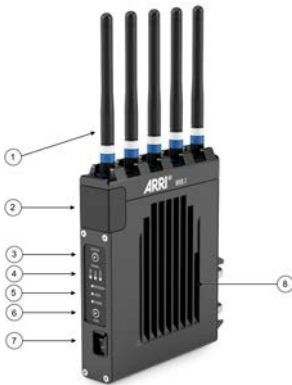
1	Extenal Antennas
2	DFS Antenna Window
3	STATUS Button
4	SIGNAL Quality Indicator
5	Status LED: network, video, power
6	PAIR Button
7	ON/OFF Power Switch
8	Passive cooling element

9	PWR IN (10.5-34V)
10	PWR OUT (12V)
11	3G-SDI output 2 (BNC 75 Ohm)
12	3G-SDI output 1 (BNC 75 Ohm)
13	Interface for WVR-1 Battery Adapter Plates
14	M4 mounting point
15	1/4"-20 UNC mounting point
16	USB port

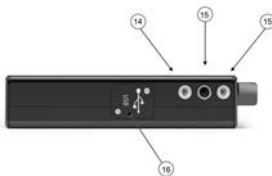| Interface	Description
Antennas	External antennas
STATUS Button	Disables and re-enables on screen display (OSD) information: signal strength, distance (D), resolution
PAIR Button	Starts pairing process
ON/OFF Power Switch	Switches the unit ON/OFF
PWR IN	Connects to power source (10.5-34V)
PWR OUT	12V power out to power monitors
3G-SDI OUT	(BNC 75 Ohm) connectors capable of carrying a 1920x1080 422 up to 3G-SDI signal
USB port	Protected by srew-mounted-lid. Used for firmware updates
M4 mounting points	Mounting points for optional accessories
1/4"-20 UNC mounting point	Mounting point for optional accessories

7   WVR-1s Layout

1	Internal Antennas
2	STATUS button
3	SIGNAL quality indicator
4	Status LED: network, video, power
5	PAIR button
6	Micro USB port

7	ON/OFF power switch
8	PWR IN (10.5 -34V)
9	M4 mounting point
10	1/4"-20 UNC mounting point
11	3G-SDI output (BNC 75 Ohm)
12	PWR OUT (12V)
13	Battery adapter plate mechanical interfaces
14	Battery adapter plate electronic interfaces

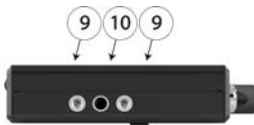| Interface	Description
Antennas	Internal antennas
STATUS Button	Disables and re-enables on screen display (OSD) information: signal strength, distance (D), resolution
PAIR Button	Starts pairing process
ON/OFF Power Switch	Switches the unit ON/OFF
PWR IN	Connects to power source (10.5-34V)
PWR OUT	12V power out to power monitors
3G-SDI OUT	(BNC 75 Ohm) connectors capable of carrying a 1920x1080 422 up to 3G-SDI signal
USB port	Protected by a silicon-lid. Used for firmware updates
M4 mounting points	Mounting points for optional accessories
1/4"-20 UNC mounting point	Mounting point for optional accessories

8   Getting started

8.1   Preparation

WVT-1

1. Screw two antennas on top of WVT-1 to the antenna connectors.
2. Connect WVT-1 (connector: PWR IN) to a power source, for example a camera, via power cable.
3. Connect the camera via a BNC cable with WVT-1 for a video signal.
4. Turn on WVT-1 and pair it to an ARRI WVS receiver.

WVR-1

WVR-1 must be set up depending on its intended use.

1. Screw five antennas on top of WVR-1 to the antenna connectors.
2. Attach a battery adapter plate and a battery or connect the Receiver Power Supply RPS-1 to the 3-Pin Fischer power-in connector.
3. Turn on WVR-1 and pair it to an ARRI WVS transmitter.

WVR-1s

WVR-1 must be set up depending on its intended use.

1. Attach a battery adapter plate and a battery.
2. Turn on WVR-1s and pair it to an ARRI WVS transmitter.

NOTICE

It is not recommended to use the WVT-1 or WVR-1 without antennas.

8.2 Operation

8.2.1 Pairing ALEXA LF or ALEXA SXT W to an ARRI WVS receiver

To transmit video content from an ALEXA LF or ALEXA SXT W to an ARRI WVS receiver it is necessary to pair the devices. Pairing describes the function of connecting a transmitter to a receiver. The pairing need to be confirmed at both devices by pushing the PAIR buttons. After pairing, the devices are assigned to each other persistently. A power cycle does not unpair the systems.

Unpairing is not necessary. Pairing the receiver with a different transmitter disconnects the previous pairing.

1 Select the Monitoring submenu in the camera menu and choose MON OUT 3 / Wireless video to switch the Wireless video power on.

MENU>MONITORING	
Electronic viewfinder	>
MON OUT 1	>
MON OUT 2	>
MON OUT 3 / Wireless video	>
Frame lines	>
Electronic horizon sensitivity	1x

MENU>MONITORING>MON OUT 3	
Wireless video power	Off
Frame rate	24 On
Scan format	p
Surround view	On
Frame lines + status info	>
Peaking	Off>
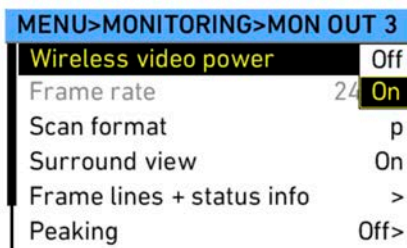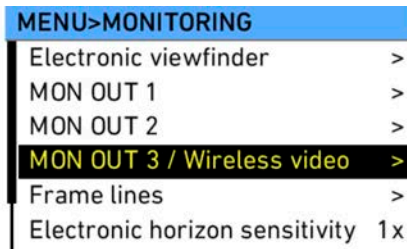
2 Make sure the transmitter and receivers you want to pair are at least 1 m apart.

3 Turn on receiver. Make sure no other transmitters and receivers are powered up.

4 Press PAIR on receiver until the NETWORK LED blinks.

5   Press PAIR on the ALEXA LF/ALEXA SXT W until the
    NETWORK LED blinks.

6   Pairing is complete when the NETWORK LEDs stop
    blinking.

7   Repeat procedure for each additional receiver.

8.2.2   Pairing WVT-1 to an ARRI WVS receiver

To transmit SDI-Signal from WVT-1 to a receiver it is necessary
to pair the devices. Pairing decribes the function of connecting a
transmitter to a receiver. The pairing need to be confirmed at both
devices by pushing the PAIR button.

1   Make sure the transmitter and
    receivers you want to pair are
    at least 1 m apart.

2   Turn on transmitter and re-
    ceiver. Make sure no other
    transmitters or receivers are
    powered up.

3   Press PAIR on the receiver
    until NETWORK LED blinks.

4   Press PAIR on the transmitter
    until NETWORK LED blinks.

5   Pairing is complete when
    NETWORK LEDs stop blink-
    ing.

6   Repeat procedure for each
    additional receiver.

8.2.3   Pairing notes

NOTE: If four receivers are paired to a transmitter, and another
receiver is paired, the first of the already paired receivers will
be unpaired and the new one will be added. The adding of new
receivers works in a cyclic first-in first-out order.

> NOTE: An inactive receiver is still paired to a transmitter. That implies that if a fifth receiver is added to a setup with one inactive and three active receivers, the new receiver does NOT replace the incative one. In this case there is no differentiation between active and inactive devices. The rules mentioned above still applies.

> NOTE: Before pairing two devices, make sure that there is at least 2 meters / 6.6 feet distance between the devices.

8.2.4 OSD messages

The OSD (On Screen Display) includes a display overlay with information about signal strength, distance of the devices and the currently transferred resolution and frame rate. Messages appear during the pairing process or if an error occurs.

The display overlay can be activated and deactivated by pressing STATUS on the receiver.

| 1 | SIGNAL quality indicator | 2 | D = Distance between transmitter and receiver in meters | 3 | Transmitted resolution and frame rate (fps) |

OSD messages	Description
Waiting for available channel	System is waiting for available channels for transmission
Connection to paired transmitter failed	Receiver cannot connect to transmitter
Unauthorized pairing	These devices are not compatible with each other
These units cannot be paired	These devices are not compatible with each other
Restart receiver and pair to transmitter	System requests restart of receiver before pairing is possible
Searching for transmitter	System requests restart of receiver before pairing is possible
Out of range	Receiver is searching for the transmitter unit
Video format not supported	Resolution or frame rate are not supported. Change video format to a supported resolution and frame rate
No video signal detected at transmitter	No video input found on transmitter
Approaching range limit	Devices are approaching range limit. Bring the transmitter and receiver closer together for better signal reception
Pairing in progress	Pairing is in progress. Wait until pairing is completed
Transmitter detected. Please press 'Pair' on receiver for pairing	Receiver detected a transmitter. System requests pressing PAIR to start pairing process

OSD messages	Description
Please press 'Pair' on transmitter	System requests pressing PAIR to pair devices
No transmitter found. Please try again	System could not find a transmitter to pair with
Receiver not paired to any transmitter. Please press 'Pair' on receiver for pairing	System requests pressing PAIR to start pairing process
Please update software	Make sure all WVS devices use the newest software

8.3   Status LEDs

LED	Status
Signal	• LOW = low link signal strength (instable link) • MID = medium link signal strength (stable link) • HIGH = high link signal strength (stable link)
Network	• Solid: Connection is established • Normal blinking: Device is in searching mode (receiver) or listen mode (transmitter) • Fast blinking: During link setup mode (very short period) • Fast blinking: During registration (Pairing button was pressed) • Very fast blinking: System Error
Video	• Solid: Video signal is established and locked in • Normal blinking: Video source is not supported • Very fast blinking: System error
Power	Shows if wireless video device is powered

8.4 Sample setups

The number of WVS systems in parallel depends on the number of channels available, which is different for each region, and the radio noise present. In general, four to six systems can work in parallel.

It is possible to pair one ALEXA LF, one ALEXA SXT W or one WVT-1 up to four receivers (either WVR-1, WVR-1s or Transvideo Starlite ARRI-WVS). See an example setup with four cameras and 16 receivers below.

WVS GROUP 1	WVS GROUP 2	WVS GROUP 3	WVS GROUP 4
ALEXA LF or ALEXA SXT W transmits to 2x WVR-1, 1x WVR-1s	ALEXA Mini with 1x WVT-1 transmits to 2x WVR-1 and 2x WVR-1s	AMIRA with 1x WVT-1 transmits to 2x WVR-1 and 2x WVR-1s	Third-party camera with 1x WVT-1 transmits to 2x WVR-1, 1x WVR-1s and 1x Starlite ARRI WVS
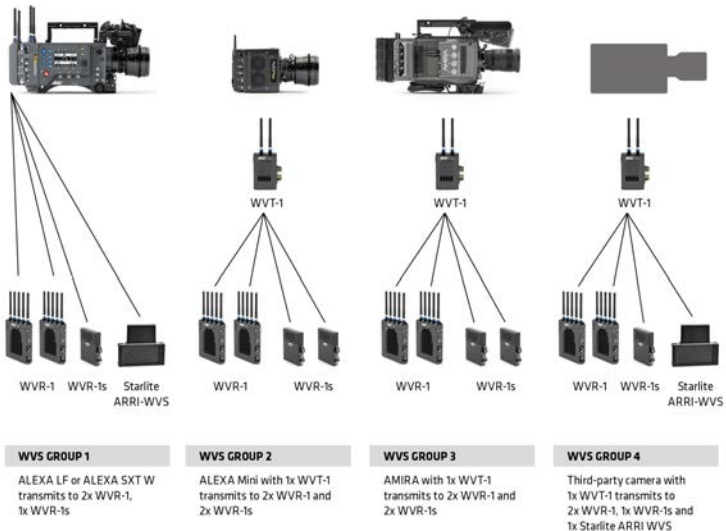
NOTICE

It is not possible to pair more than one ARRI WVS transmitter with one ARRI WVS receiver.

9   Supported resolutions

1080p	23.976, 24, 25, 29.97, 30, 50, 59.94, 60
1080i	48, 50, 60
1080psf	23.976 (displayed as 1080i48) 24 (displayed as 1080i48) 25 (displayed as 1080i50) 29.97 (displayed as 1080i60) 30 (displayed as 1080i60)

10 Supported frequencies

Frequency	US	Canada	EU	Thailand	Middle East	China	Korea	Japan	Australia
5190 MHz	✓	✓	✓	✗	✓	✓	✓	✓	✓
5230 MHz	✓	✓	✓	✓	✓	✓	✓	✓	✓
5270 MHz, DFS	✓	✓	✓	✗	✓	✓	✓	✓	✓
5310 MHz, DFS	✓	✓	✓	✗	✓	✓	✓	✓	✓
5510 MHz, DFS	✓	✓	✓	✓	✗	✗	✓	✓	✓
5550 MHz, DFS	✓	✓	✓	✓	✗	✗	✓	✓	✓
5590 MHz, DFS	✓	✗	✓	✓	✗	✗	✗	✓	✗
5630 MHz, DFS	✓	✗	✓	✓	✗	✗	✗	✓	✗
5670 MHz, DFS	✓	✓	✓	✓	✗	✗	✓	✓	✓
5755 MHz	✓	✓	✗	✗	✗	✓	✓	✗	✗
5795 MHz	✓	✓	✗	✗	✗	✓	✓	✗	✗

11   Software update

The software update can be performed by the customer. To do a firmware up- or downgrade it is necessary to connect the ARRI WVS device via USB to a Windows computer that runs the ARRI Wireless Video Upgrade software. It is necessary to have the current firmware installation file to perform the upgrade. The software guides the user through the process of up- or downgrading.

Use a USB Mini cable (K2.0014216) for ALEXA LF, ALEXA SXT W, Wireless Video Transmitter WVT-1 and Wireless Video Receiver WVR-1 devices.

Use a USB Micro cable (K2.0024039) for Wireless Video Receiver small WVR-1s devices.

⚠ **WARNING!**
Do not switch off power and do not remove the USB cable during the update as this may damage the devices!

12   Troubleshooting

Pairing
- Make sure both transmitter and receiver are powered on.
- Make sure the power cable is continuous.
- Make sure that pairing units are the only wireless video devices currently powered on.
- Bring the transmitter and receiver closer together but no closer than 1 meter.
- Keep the number of solid walls between the transmitter and receiver to a minimum.

No signal on monitor
- Make sure the receiver is powered on.
- Make sure the monitor is powered on.
- Make sure the receiver is properly connected to the monitor.
- Make sure the monitor is set to display video from the right source (HD-SDI1, HD-SDI2, HD-SDI3 etc.).
- Reboot the receiver.
- Unplug and then re-plug the HD-SDI cable between the receiver and the monitor.
- Replace the HD-SDI cable.
- Make sure the video resolution is supported by the monitor.

No video over the wireless link
- Make sure the transmitter is properly connected to the source.
- Make sure the source is powered on.
- Unplug and then re-plug the transmitter to the source.

Abnormal color or noise on the monitor

- Unplug and then re-plug the HD-SDI cable between the receiver and the monitor.
- Unplug and then re-plug the SDI cable between the transmitter and the source.
- Bring the transmitter and receiver closer together but no closer than 1 meter.
- Keep the number of solid walls between the transmitter and receiver to a minimum.
- Power cycle the system.

No audio

- Check the mute and audio volume settings on the monitor.
- Check if the audio format setting on the source is incompatible with system. Change the source to output PCM 2.0, DTS or Dolby Digital.
- Make sure the pin #2 on the DIP switch is down.

13 Appendix

13.1 Compatibility

The ALEXA LF camera, ALEXA SXT W camera and the Wireless Video Transmitter WVT-1 are compatible with the following products:

- Wireless Video Receiver WVR-1
- Wireless Video Receiver small WVR-1s
- Transvideo Starlite ARRI WVS

The Wireless Video Receiver WVR-1 is compatible with the following products:

- ARRI ALEXA LF
- ARRI ALEXA SXT W
- ARRI Wireless Video Transmitter (WVT-1)

The Wireless Video Receiver small WVR-1s is compatible

- ARRI ALEXA LF
- ARRI ALEXA SXT W
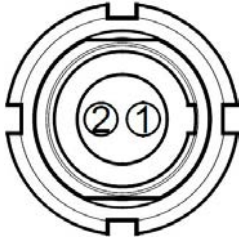- ARRI Wireless Video Transmitter (WVT-1)

NOTICE

Please note that only devices with the same region setting are compatible with each other.

NOTICE

The WVS is not compatible with all other wireless video transmission systems.

13.2 Pinouts

PWR OUT

1	GND	Ground
2	+V-BAT	12V max. 2.0A

PWR IN

1	GND	Ground
2	+V-BAT	10.5V to 34V DC IN
3	n.c.	

⚠ WARNING!
Requirement for the external power supply: Limited power source according to IEC60950-1 or PS2 classified IEC62368-1 and short-circuit current <8A.

13.3 Part Numbers

Mechanical accessories

K2.0014504	Battery Adapter Cage BAC-G
K2.0014454	Battery Adapter Cage BAC-V
K2.0014825	Rosette Adapter RA-4
K2.0014833	Lighting Spigot Adapter LSA-1
K2.0014827	Rod Mounting Bracket RMB-5
K2.0014829	Adjustable Monitor Mount AMM-1
K2.0014831	Monitor Adapter for Transvideo
K2.0014832	Monitor Adapter for Small HD
K2.0014323	Multi Interface Adapter MIA-1
K2.0014893	3/8" Thread Adapter
K2.0014954	Single Support Rods 340 mm (13.4 inch), Ø 19 mm
K2.0014960	Single Support Rods 540 mm, black (21.3 inch), Ø 19 mm
KK.0015183	DMS-1 Adjustable Mount set
KK.0015184	DMS-1 Transvideo set
KK.0015185	DMS-1 SmallHD set
KK.0015186	DMS-1 Duo Adjustable Mount set
KK.0015187	DMS-1 Duo Transvideo set
KK.0015188	DMS-1 Duo Small HD set
K2.0015006	Wireless Video System Case

13.4 Specifications WVT-1

Power:

Power supply	10.5V to 34V
Power consumption	7W

Video inputs & outputs:

Output resolutions	1920 x 1080
Frame rates (fps)	p: 23.98, 24, 25, 29.97, 30 psF: 23.98, 24, 25, 29.97, 30
Video signal input	via BNC Input (1.5 HD-SDI/3G-SDI)
Video signal output	unmodified (1.5 HD-SDI/3G-SDI)
HD-SDI ANC metadata	VITC timecode, REC flag

Video transmission:

Range	600m (2,000 ft) line of sight
Latency	< 1ms
Encryption	128bit AES

Others:

Operating temperature	-20 to +50°C -4 to +122°F
Sound level	< 20db(A) at any time
Audio	2 channels, 48KHz PCM embedded in SDI signal
Modulation process and other specifics	OFDM (Orthogonal Frequency-Division Multiplexing) Bandwidth 40MHz

NOTICE
Use only ARRI-recommended power supply solutions. WVT-1 accepts an input voltage range from 10.5 to 34 V DC. Do not supply power outside the specified voltage range as this may damage the device. The WVT-1 can be powered through the PWR IN connector.

13.5 Specifications WVR-1

Power:

Power supply	10.5V to 34V
Power consumption	7W
Power outputs	12V max. 2.0A

Video inputs & outputs:

Output resolutions	1920 x 1080
Frame rates (fps)	p: 23.98, 24, 25, 29.97, 30 psF: 23.98, 24, 25, 29.97, 30
Video signal outputs	via BNC (1.5 HD-SDI/3G-SDI)

Video transmission:

Range	600m (2,000ft) line of sight
Latency	< 1ms
Encryption	128bit AES

Others:

Operating temperature	-20 to +50°C -4 to +113°F
Sound level	< 20db(A) at any time
Audio	2 channels, 48KHz PCM

	embedded in SDI signal
Modulation process and other specifics	OFDM (Orthogonal Frequency-Division Multiplexing) Bandwidth 40MHz

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NOTICE

Use only ARRI-recommended power supply solutions. WVR-1 accepts an input voltage range from 10.5 to 34 V DC. Do not supply power outside the specified voltage range as this may damage the device. The WVR-1 can be powered through the PWR IN connector or battery adapters accepting V-Lock, Gold Mount or Sony L-Series batteries.

13.6 Specifications WVR-1s

Power:

Power supply	10.5V to 34V
Power consumption	7W
Power outputs	12V max. 2.0A

Video inputs & outputs:

Output resolutions	1920 x 1080
Frame rates (fps)	p: 23.98, 24, 25, 29.97, 30 psF: 23.98, 24, 25, 29.97, 30
Video signal outputs	via BNC (1.5 HD-SDI/3G-SDI)

Video transmission:

| Range	150m (5,00ft) line of sight
Latency	< 1ms
Encryption	128bit AES

Others:

Operating temperature	-20 to +50°C
	-4 to +113°F
Sound level	< 20db(A) at any time
Audio	2 channels, 48KHz PCM embedded in SDI signal
Modulation process and other specifics	OFDM (Orthogonal Frequency-Division Multiplexing) Bandwidth 40MHz

NOTICE

Use only ARRI-recommended power supply solutions. WVR-1s accepts an input voltage range from 10.5 to 34 V DC. Do not supply power outside the specified voltage range as this may damage the device. The WVR-1s can be powered through the PWR IN connector or battery adapters accepting V-Lock, Gold Mount or Sony L-Series batteries.
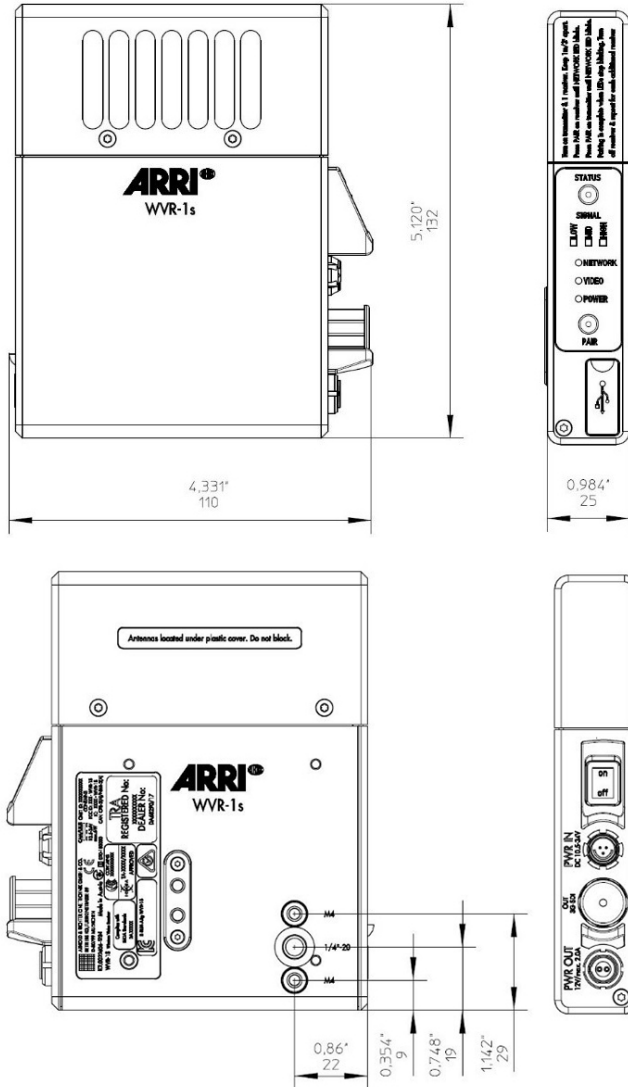
13.7 Dimensions and weight WVT-1
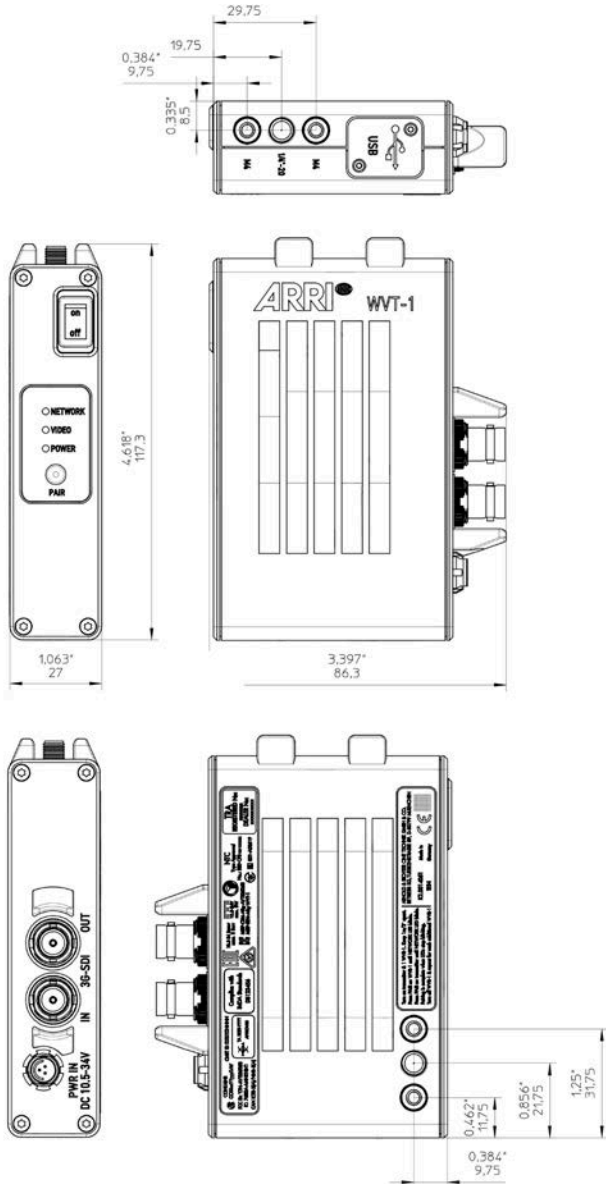
Weight (without antennas): 305g / 10.76oz.

13.8 Dimensions and weight WVR-1
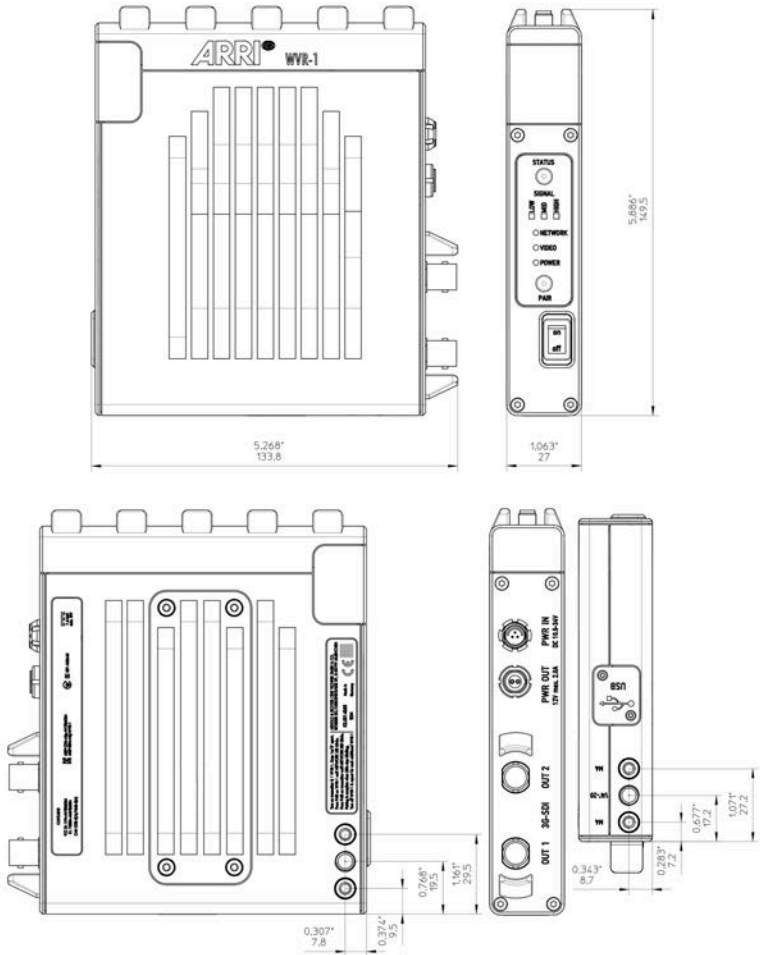
Weight (without antennas) : 583g / 20.56oz.

13.9 Dimensions and weight WVR-1s

Weight (without antennas) : 380g/ 13.40oz.

13.10 Radio system

13.10.1 Antenna connector

The radio connection is established via the antenna mounted to the antenna connector. The radio module inside could be damaged by electrostatic discharge via the open connector. We recommend using the originally supplied antenna only.

13.10.2 Color coding

ARRI WVS uses dual-band (2.4 and 5 GHz) high performance antennas that work with all three radios on the ALEXA LF and ALEXA SXT W.

WVT-1, WVR-1 and WVR-1s use the 5 GHz unlicensed frequency band.

The antennas can be attached to the wireless video (blue, 5 GHz), WiFi (white, 2.4 GHz) and ARRI ECS (white, 2.4 GHz) antenna connectors.

NOTICE

ARRI ECS antennas with no color coding will only work with the ARRI ECS radio, and should not be attached to the wireless video connectors.

13.10.3 Setting the region of the wireless video function

Setting the region of the wireless video modules can only be done by ARRI Service Centers. Please note that only devices with the same region setting are compatible with each other.

⚠ CAUTION!

Wireless region settings specify where the wireless function can be used in compliance with local regulations. It may be illegal to use the wireless function in a region other than specified in the setting. Please ensure that the region is configured correctly, e.g. when traveling.

13.11 Service Contacts

Munich, Germany
Arnold & Richter Cine Technik
+49 89 3809 2121
service@arri.de
Business hours:
Mo. - Fr. 9:00 - 17:00 (CET)

London, Great Britain
ARRI CT Limited
+44 1895 457 051
service@arri-ct.com
Business hours:
Mo. - Thu. 9:00 - 17:30
Fr. 9:00 - 17:00 (GMT)

Burbank, USA
ARRI Inc. West Coast
+1 877 565 2774
service@arri.com
Business hours:
Mo. - Fr. 8:15 - 17:00 (PST)

Mississauga, Canada
ARRI Canada Limited
+1 416 255 3335
service@arri.com
Business hours:
Mo. - Fr. 8:30 - 17:00 (EDT)

Beijing, China
ARRI China Co. Limited
+86 10 5900 9680
service@arrichina.com
Business hours:
Mo. - Fr. 9:00 - 18:00 (CST)

Vienna, Austria
ARRI Cine + Video Geräte
Ges.m.b.H.
+43 1 8920107 30
service@arri.at
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Mo. - Fr. 9:00 - 17:00 (CET)

Milan, Italy
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info@arri.it
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Mo. - Fr. 9:00 - 18:00 (CET)

New York, USA
ARRI Inc. East Coast
+1 877 565 2774
service@arri.com
Business hours:
Mo. - Fr. 8:00 - 17:30 (EST)

Hong Kong, China
ARRI Asia Limited
+852 2537 4266
service@arriasia.hk
Business hours:
Mo. - Fr. 10:00 - 18:30 (HKT)

Sydney, Australia
ARRI Australia Pty Ltd
+61 2 9855 4305
service@arri.com.au
Business hours:
Mo. - Fr. 8:00 - 18:00 (AEST)

13.12 International declarations

Approval Information

The products offered by ARRI are approved for use in a number of countries, including Canada, the European Union, Japan, and the USA. Product-specific information on approval can be found in the respective operating instruction manuals. Import and use in countries other than those mentioned in the respective operating instructions may be subject to legal, regulatory, or official requirements and regulations. Before the products are imported into these countries or used in these countries, compliance with the existing legal, regulatory, and administrative requirements and regulations must be ensured.

It is the importer's or the user's responsibility, prior to importation or use, to inform themselves of the applicable legal, regulatory, and administrative requirements and regulations and to ensure compliance with these requirements and regulations, including applying for and obtaining any necessary approvals or registrations. As far as reasonable and legally possible, ARRI will support requests in relation to such applications by providing technical documents or declarations.

As an importer or user, you confirm that you are familiar with and comply with the legal, regulatory, and administrative requirements and regulations that apply in the countries to which you ship or use the products. You further confirm that you will arrange for any necessary registrations, enrolments, or authorizations that are required in such countries.

You release ARRI from all obligations resulting from any legislative, regulatory, or administrative requirements regarding import or use of the products, except in countries where ARRI has obtained a registration or certification. You agree to indemnify, defend, and hold ARRI harmless from any and all claims, damages, losses, liabilities, costs, and expenses (including reasonable fees of attorneys and other professionals) that may arise out of a demand on ARRI in connection with your obligations mentioned above.

EU-Declaration of Conformity

The designated product conforms with the specifications of the following European directives:

- Directive 2014/53/EU of the European Parliament and the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment - OJ L 153, 22 May 2014, p. 62-106

- Directive 2011/65/EU of the European Parliament and the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment - OJ L 174, 1 July 2011, p. 88-110

The compliance with the requirements of the European Directives was proved by the application of the following standards:

Essential Requirements regarding No 1
- Art 3.1 a following 2014/35/EU
  o EN 62368-1:2014 + AC:2015

- Art 3.1 b following 2014/30/EU
  o EN 301 489-1 V2.1.1; EN 301 489-17 V3.1.1; EN 55032:2015; EN 55103-2:2009

- Art 3.2
  o o EN 301 893 V2.1.1

Essential Requirements regarding No 2
- EN 50581:2012

To evaluate the respective information we used:

http://ec.europa.eu/growth/single-market/european-standards/harmonised-standards/index_en.htm

CE

FCC Class A Statement

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable

protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

- Wireless video module WVT-1: FCC ID: Y7N-AVTS35253
- Wireless video module WVR-1: FCC ID: Y7N-AVTS36254
- Wireless video module WVR-1s: FCC ID: Y7N-AMNGIN01

Industry Canada Compliance Statement

Complies with the Canadian ICES-003 Class A specifications. Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada. This device complies with RSS 210 of Industry Canada. Cet appareil est conforme à CNR-210 d' Industrie Canada. This Class A device meets all the requirements of the Canadian interference-causing equipment regulations. Cet appareil numérique de la Classe A respecte toutes les exigences du Réglement sur le matériel brouilleur du Canada.

- Wireless video module WVT-1: IC: 7680A-AMNKHIN1
- Wireless video module WVR-1: IC: 7680A-AMN36254
- Wireless video module WVR-1s: IC: 7680A-AMNGIN01

China

- Wireless video device WVT-1 (Registration valid until: July 26th 2022):

本设备包含型号核准代码（分别）为：
CMIT ID: 2017AJ4695
... 的无线电发射模块。

- Wireless video device WVR-1 (Registration valid until: July 6th 2022):

本设备包含型号核准代码（分别）为：
CMIT ID: 2017AJ4691
... 的无线电发射模块。

- Wireless video device
  WVR-1s:

PENDING

Singapore

- Wireless video devices
  WVT-1, WVR-1, WVR-1s:
  Dealer's License No:
  DA103787
  (Registration valid until: July 31th 2022 for WVT-1 and
  WVR-1)
  (Registration valid until: January 31th 2024 for WVR-1s)

Complies with

IMDA Standards

DA103787
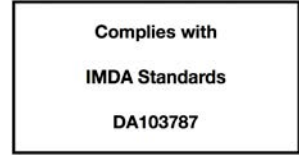
Japan

- Wireless video device WVT-1: MIC-ID: 001-A03519
- Wireless video device WVR-1: MIC-ID: 001-A02645
- Wireless video device WVR-1s: MIC-ID: 001-A03518

South Korea

Statements for 2.4 GHz Devices:	"해당무선설비는 운용 중 전파 혼신 가능성이 있음."
	Translation for reference only: This device has the possibility of radio interferencs

- Wireless video module WVT-1: Certification No: MSIP-CRM-ARg-AVTS35253

- Wireless video device WVT-1: Certification No: MSIP-REM-ARg-WVT-1

- Wireless video module WVR-1: Certification No: MSIP-CRM-ARg-AVTS36254

- Wireless video device WVR-1: Certification No: MSIP-REM-ARg-WVR-1

- Wireless video module WVR-1s: Certification No: MSIP-CRM-A1M-AMNMGIN01

- Wireless video device WVR-1s: Certification No: R-R-ARg-WVR-1s

United Arab Emirates

- Wireless video devices: Dealer No: DA68290/17 (Registration valid until: 28th Aug. 2022; brand registration: 5 years)

- Wireless video device WVT-1: Registered No: ER57661/17 (Registration valid until: August 29th 2020)

- Wireless video device WVR-1: Registered No: ER57660/17 (Registration valid until: August 29th 2020)

- Wireless video device WVR-1s: Registered No: ER70705/19 (Registration valid until: April 14th 2022)

Australia and New Zealand

- Wireless video devices WVT-1,
  WVR-1 & WVR-1s:

R-NZ

Philippines

- Wireless video device WVT-1:
  Type Approved No.: ESD-1715827C

- Wireless video device WVR-1:
  Type Approved No.: ESD-1715769C

- Wireless video device WVR-1s:
  Type Approved No.: ESD-1919460C

Egypt

- Wireless video device WVT-1:
  NTRA: TAC.0608186747

- Wireless video device WVR-1:
  NTRA: TAC.06081816746

Taiwan

- WVT-1 NCC: CCAH17LP4180T1
- WVR-1 NCC: CCAH17LP4210T7

India

- WVT-1: ETA-1307/2017/ERLO
- WVR-1: ETA-1307/2017/ERLO

South Africa

- Wireless video device WVT-1:
  ICASA: TA-2017/1394

- Wireless video device WVR-1:
  ICASA: TA-2017/1396

- Wireless video device WVR-1s:
  ICASA: TA-2019/3993