CONCERT 88
C A M E R A

OWNER'S MANUAL

SAMSON®

R&TTE Declaration of Conformity

In accordance with EN ISO 17050:2005

We, Samson Technologies Corporation, located at 45 Gilpin Ave, Hauppauge, NY 11788 USA declare under our own responsibility that the products:

Product Name: Concert 88 Camera Wireless Microphone
Trade Name: Samson
Type or Model: CR88V (Receiver), CH88 (Handheld Transmitter), CB88 (Belt Pack Transmitter)

are in conformity with the essential requirements of the following EC Directive(s) when installed in accordance with the installation instructions contained in the product documentation:
2006/95/EC - LVD Directive
2004/108/EC - EMC Directive
1999/5/EC - R&TTE Directive

The product is in conformity with the following standards and/or other normative documents:

EN60065:2014	Audio, video and similar electronic apparatus - Safety requirements
EN301 489-1 V1.9.2	Common technical requirements.
EN301 489-9 V1.4.1	Specific conditions for wireless microphones, similar Radio Frequency (RF) audio link equipment, cordless audio and in-ear monitoring.
EN300 422-1 V1.5.1	Technical characteristics and methods.
EN300 422-2 V1.4.1	Harmonized EN covering essential requirements of article 3.2 of the R&TTE directive
EN62479:2010	Harmonized EN covering essential requirements of article 3.1a of the R&TTE directive

Year of CE Marking (Low Voltage Directive): 2015
Identification Mark: **0197** (Notified body number)
This equipment will also carry the Class 2 equipment identifier:

Signed on behalf of the manufacturer:
Authorized Representative: Douglas Bryant
Position: Vice President Engineering
Date: 12/5/2015

$C\epsilon$ **0197** ⚠

Hereby, Samson Technologies Corp., declares that this CR88V, CH88, CB88 is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. The declaration of conformity may be consulted at:
www.samsontech.com/samson/products/wireless-systems/concert-88/concert88camera-hh/#downloads-and-manuals-tab

Specifications

System

Working Range	300' (100m) line of sight
Audio Frequency Response	50Hz - 15kHz
T.H.D. (Overall)	<1% (@AF 1kHz, RF 46dBu)
Dynamic Range	>100dB A-weighted
Signal to Noise	>90dB
Operating Temperature	−10°C (14°F) to +60°C (+140°F)
Tone Key Frequency	32.768kHz

CB88 Belt pack Transmitter

Input Connector	Mini-XLR (P3)
Input Impedance	1MΩ
Input Gain Range	38 B
RF Power	10mW EIRP
Power Requirements	Two AA (LR6) alkaline batteries
Battery Life	8 hours
Dimensions (HxLxD)	3.75" x 2.44" x 0.75"
	96mm x 62mm x 18.5mm
Weight	0.2lb / 93g

CH88 Handheld Transmitter

Microphone Element	Dynamic
Input Gain Range	28dB
RF Power	10mW EIRP
Power Requirements	Two AA (LR6) alkaline batteries
Battery Life	8 hours
Dimensions (HxØ)	10.23" x 2.1"
	260mm x 54mm
Weight	0.48lb / 218g

CR88V Receiver

Output Connector	1/8" Locking
Audio Output Level	+9dBu
Audio Output Impedance	1kΩ
Headphone Connector	1/8"
Headphone Output Impedance	16Ω
Sensitivity	-100dBm / 30dB sinad
Image Rejection	>50dB
Operating Voltage	3.7VDC
Current Consumption	120mA
Battery	3.7V / 1050mAh Lithium Ion
Dimensions (LxWxH)	4.33" x 2.55" x 0.86"
	110mm x 65mm x 22mm
Weight	0.92lb / 92g

At Samson, we are continually improving our products, therefore specifications and images are subject to change without notice.

Important Safety Information

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and at the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug the apparatus during lightening storms, or when unused for long periods of time.
14. Refer all servicing to qualified personnel. Service is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. This appliance shall not be exposed to dripping or splashing water and that no object filled with liquid such as vases shall be placed on the apparatus.
16. Caution-to prevent electrical shock, match wide blade plug wide slot fully insert.
17. Please keep a good ventilation environment around the entire unit.
18. The direct plug-in adapter is used as disconnect device, the disconnect device shall remain readily operable.
19. Batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

ATTENTION: RISQUE D'ÉLECTROCUTION! NE PAS OUVRIR!

This lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of non-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the appliance.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD. DO NOT USE THIS PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE. TO PREVENT FIRE OR SHOCK HAZARD. DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. TO PREVENT ELECTRICAL SHOCK, MATCH WIDE BLADE PLUG TO WIDE SLOT AND FULLY INSERT.

Important Safety Information

<u>FCC Rules and Regulations</u>

Samson wireless receivers are certified under FCC Rules part 15 and transmitters are certified under FCC Rules part 74.

Licensing of Samson equipment is the user's responsibility and licensability depends on the user's classification, application and frequency selected.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced Radio/TV technician for help.

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:
   (1) this device may not cause harmful interference and
   (2) this device must accept any interference received, including interference that may cause undesired operation.

WARNING: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with RSS-210 of Industry & Science Canada. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference and

(2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment is intended for use in wireless microphone applications.

Equipment is intended for sale in: AT, BE, CH, CY, CZ*, DK, EE, FI*, FR*, DE*, GR*, HU, IE, IS, IT, LV, LT*, LU, MT*, NL, NO*, PL* PT, RO, SK, SI, ES, SE, UK

*Subject to license. Please contact your national frequency authority for information on available legal use in your area. Any changes or modifications not expressly approved by Samson Technologies Corp. could void your authority to operate the equipment.

If you want to dispose this product, do not mix it with general household waste. There is a separate collection system for used electronic products in accordance with legislation that requires proper treatment, recovery and recycling.

   Private household in the 28 member states of the EU, in Switzerland and Norway may return their used electronic products free of charge to designated collection facilities or to a retailer (if you purchase a similar new one).

For Countries not mentioned above, please contact your local authorities for a correct method of disposal.

By doing so you will ensure that your disposed product undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health.

Troubleshooting

Issue	Solutions
No audio	Make sure that the transmitter and receiver are both powered on.
	Ensure the transmitter's batteries are installed correctly.
	Check that the transmitter is not muted.
	Confirm that the CR88V battery is charged and installed correctly.
	Make sure the audio output cables are securely connected to the CR88V receiver.
	Ensure that the receiver and transmitter are in line of sight with one another.
	Check the receiver and audio input device level controls.
	Ensure that the transmitter and receiver are set to the same operating channel. If unsure, reset the channel by performing an IR set.
Distorted audio	The receiver output level or audio input device level may be too high.
	Check the transmitters batteries, and replace if low.
	The input gain on the transmitter or audio source level may be too high.
Audio dropout	The transmitter may be too far away from the receiver. Move it closer to the receiver, or reposition the antennas.
	Remove any sources that may cause RF interference such as cell phones, cordless phones, lighting equipment, computers, metal structures, etc.
	Move receiver to the top space of the equipment rack or place on top of equipment to ensure there are no obstructions blocking line of site from the transmitter.
Receiver will not power on	Check the adaptor to ensure it is properly connected and plugged into an outlet providing power.
Transmitter will not power on	Replace the transmitter batteries.
Unwanted noise or interference	If using multiple systems, make sure none of the systems are operating on the same channel. If the problem persists, change one or all of the systems channels.
	If using multiple systems, set all receivers to the same Group. Perform a channel scan within the Group to select the optimum Channels.

Channel Plans

Group K 470-494 MHz		Group D 542-566 MHz		Group F* 606-630 MHz		Group G* 863-865 MHz		Group L* 823-832 MHz	
Ch	Freq	Ch	Freq	Ch	Freq	Ch	Freq	Ch	Freq
0	470.125	0	542.125	0	606.125	0	863.050	0	823.125
1	471.625	1	543.625	1	607.625	1	863.250	1	823.425
2	473.050	2	545.05	2	609.05	2	863.550	2	823.875
3	474.425	3	546.425	3	610.425	3	863.750	3	824.475
4	474.900	4	546.900	4	610.900	4	864.050	4	825.575
5	477.525	5	549.525	5	613.525	5	864.250	5	825.275
6	479.100	6	551.100	6	615.100	6	864.550	6	826.325
7	480.475	7	552.475	7	616.475	7	864.750	7	827.250
8	482.000	8	554.000	8	618.000	8	864.950	8	827.500
9	484.075	9	556.075	9	620.075			9	827.750
A	486.975	A	558.975	A	622.975			A	828.050
B	487.975	B	559.975	B	623.975			B	828.500
C	489.050	C	561.050	C	625.050			C	829.100
D	490.975	D	562.975	D	626.975			D	829.900
E	492.425	E	564.425	E	628.425			E	830.950
F	493.975	F	565.975	F	629.975			F	831.875

* Not for use in the USA and Canada. For questions regarding available channels in your area contact your local Samson distributor.

Introduction

Congratulations on purchasing the Samson Concert 88 Camera wireless system. The Concert 88 Camera system is the ideal solution for the electronic news gathering (ENG), broadcast, and videography applications. Featuring simple operation, with 16 available channels and infrared set for the transmitter channel, the Concert 88 Camera system can quickly be up and running out of the box. The CR88V receiver uses a lithium ion rechargeable battery and can be mounted directly to a camera's shoe mount.

In these pages, you'll find a detailed description of the features of the Concert 88 Camera wireless system, step-by-step instructions for its setup and use, and full specifications. If your wireless system was purchased in the United States, you'll also find a warranty card enclosed—don't forget to follow the instructions so that you can receive technical support and so that we can send you updated information about this and other Samson products in the future. Also, be sure to check out our website (www.samsontech.com) for complete information about our full product line.

We recommend you keep the following records for reference, as well as a copy of your sales receipt.

Transmitter & Receiver Serial number: _____
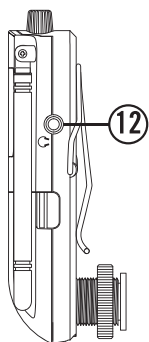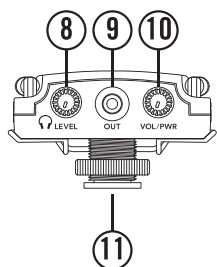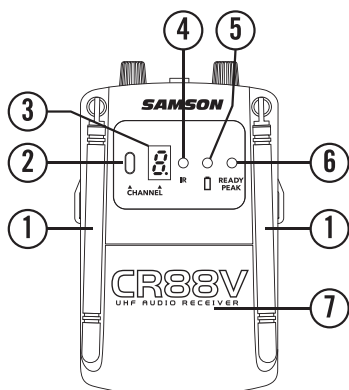
Date of purchase: _____

With proper care and maintenance, your Concert 88 Camera wireless system will operate trouble-free for many years. Should your wireless system ever require servicing, a Return Authorization (RA) number must be obtained before shipping your unit to Samson. Without this number, the unit will not be accepted. Please call Samson at 1-800-3SAMSON (1-800-372-6766) for an RA number prior to shipping your unit. Please retain the original packing materials and, if possible, return the unit in its original carton. If your Concert 88 system was purchased outside of the United States, contact your local distributor for warranty details and service information.

System Features

- Professional wireless system optimized for use in ENG and video applications.
- Compatible with HD camcorders and DSLR cameras
- Up to eight simultaneous systems per frequency band (region dependent)
- True diversity technology maximizes active range (up to 300 feet) and reduces potential interference
- 16 available channels operating in the UHF band designed for maximum system compatibility in the same location without interference
- The receiver can be used freestanding or mounted to a camera using the integral shoe mount adapter
- Tone-key and auto-mute ensures clear, interruption-free performance allowing only the transmitter's audio to pass through the receiver, and mutes the output if there is any interference
- Up to 12 hours of battery life, using included lithium ion battery
- Up to 300-foot range (line-of-sight)

CR88V Receiver - Front Callouts

1. **Antennas -** The antenna mountings allow full rotation for optimum placement. In normal operation, both antennas should be placed in a vertical position. Both antennas can be folded inward for convenience when transporting the CR88V.

2. **CHANNEL Button -** *Press* this button to cycle through the receiver's operating channels. *Press and hold* this button to send the channel information to the transmitter via infrared transmission.

3. **LED Display -** The 7-segment LED display shows the receiver's current operating channel. The CR88V channels are indicated by 0-9 and A-F.

4. **IR Transmitter -** During "IR SET" an infrared light is used to set the transmitter channel.

5. **Battery Level Indicator -** This indicator lights green when the battery is charged and ligths red when the battery is low.

6. **READY/PEAK Indicator -** This indicator lights green when the CR88V is receiving RF signal and the system is ready to use, and lights red when the transmitted audio signal is overloaded.

7. **Battery Door -** Push in both sides and pull back to open the CB88V battery cover. Insert the included lithium rechargeable batteries. For more information, please read the section on the Rechargeable Battery on page 9.

8. **Headphone LEVEL control -** This knob sets the level of the audio signal being sent to the headphones output.

9. **OUT Jack -** Use this 1/8" (3.5 mm) locking mini-phone jack when connecting the CR88V to your video camera or audio device.

10. **VOL/PWR Control -** This rotary knob controls the level of the receiver output and powers the CR88V on and off. Turn the control clockwise to turn the system on. Turn the knob counterclockwise until it clicks to turn the system off.

11. **Shoe Mount Adapter -** Use this locking shoe mount adapter to fix the CR88V to a hot or cold shoe mount.

12. **Headphone Output -** Connect a stereo headphone to this standard 1/8" (3.5 mm) mini-phone jack in order to monitor the signal being output by the CR88V. We recommend the use of 30 ohm headphones. The level of the headphone signal can be set by adjusting the Headphone LEVEL control.
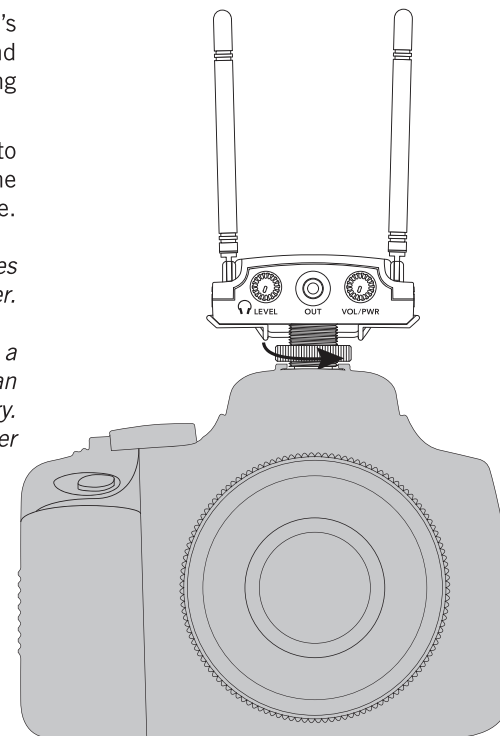
Mounting the CR88V to a Carmera

Follow these steps to mount the AR2 onto a camera:

1. Slide the CR88V into the camera's standard shoe mounting point, and lock the receiver in place by tightening the knurled washer.

2. Connect the CR88V audio output to the camera's audio input using the supplied 1/8" (3.5mm) or XLR cable.

   Note: The shoe mount adapter does not pass power to the CR88V receiver.
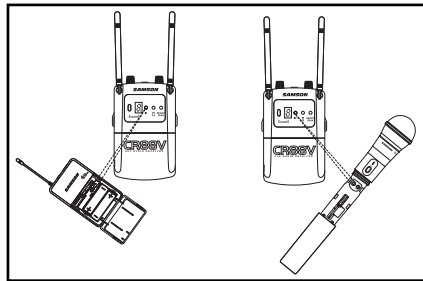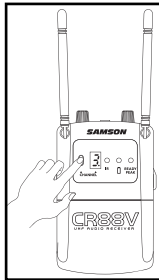
   Note: If your camera does not have a standard hot shoe mounting point, an additional adapter may be necessary. Please refer to your camera's user guide.

Quick Start

In order for your wireless system to work correctly, both the receiver and transmitter must be set to the same channel. Follow this basic procedure for setting up and using your Concert 88 Camera wireless system:

1. Mount the CR88V receiver where it will be used, and extend the antennas vertically. The general rule of thumb is to maintain "line of sight" between the receiver and transmitter so that the person using or wearing the transmitter can see the receiver.

2. With the CR88V powered off, insert the battery. Turn the CR88V on momentarily to confirm that the unit is receiving power. Then turn the CR88V power off.

3. With your camera off connect the CR88V receiver output jack to the audio input of the camera using the receiver's 1/8" output. Turn the VOL/PWR knob on the CR88V counterclockwise to turn its power on.

4. With the transmitter powered off, install two fresh AA batteries into the CB88 belt pack or CH88 handheld transmitter. Leave the battery compartment open.

5. Turn on the power to the transmitter by pressing and holding Power switch; the indicator LED will light green.

6. Press and hold the CR88V CHANNEL button to execute an IR Set which synchronizes the transmitter to the same channel as the receiver via infrared transmission.

7. Position the transmitter about 6"-12" (15cm-30cm) from the front of the CR88V with the transmitter's IR window facing the IR transmitter on the front panel of the CR88V receiver.

8. When the transmission is complete, the CR88V will receive RF signal and the tone key from the transmitter. The RF meter on the CR88V will light indicating that it is receiving wireless signal from the transmitter.

9. Turn on your connected camera, but keep the volume all the way down. Set the Volume knob on the CR88V fully clockwise. This is unity gain.

10. Speak or sing into the microphone while slowly raising the volume of your camera until the desired level is reached.

11. Walk around the performance area to ensure the coverage is consistent throughout. If you find the system has noticeable dropouts, reduced overall working range, or unexpected noise bursts, change the operating channel of the system using the steps above.
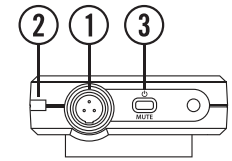
CB88 Belt Pack Transmitter - Callouts

1. **Input Connector -** Connect the input device via the mini-XLR connector. The CB88 is supplied with a lavalier microphone.

2. **Status Indicator -** This LED displays the operation mode:

GREEN	Normal Operation
RED	Mute
Flashing GREEN	Low Battery

3. **Power/Mute Switch -** Press and hold to turn the unit on or off. Press and release to mute or unmute the transmitter.

4. **Belt Clip -** Use this clip to fasten the CB88 transmitter to a belt or guitar strap.

5. **Battery Cover Release -** Push in both sides and pull back to open the CB88 battery cover.

6. **Antenna -** This permanently attached transmitter antenna should be fully extended during normal operation.

7. **Input GAIN Control -** This control adjusts the transmitter input sensitivity to work with microphone and instruments inputs. For optimal performance, using the included screwdriver, set the input GAIN control to where you see the CR88V Audio Meter maximum indicator start to light under high levels, then turn down slowly until the maximum indicator stops lighting.

8. **Battery Holder -** Insert two standard AA (LR6) batteries here, being sure to observe the plus and minus polarity markings shown. Although rechargeable Ni-Cad batteries can be used, they do not supply adequate current for more than four hours. **WARNING:** Do not insert the batteries backwards; doing so can cause severe damage to the CB88 and will void your warranty.

9. **IR Lens -** This window is used to capture the infrared signal sent from the CR88V during the IR SET to channelize the transmitter.

10. **Plastic Screwdriver -** Designed for use in adjusting the CB88 input GAIN (#7) control.

CH88 Handheld Transmitter - Callouts

1. **Status Indicator -** This LED displays the operation mode:

GREEN	Normal Operation
RED	Mute
Flashing GREEN	Low Battery

2. **Power/Mute Switch -** Press and hold to turn the unit on or off. Press and release to mute or unmute the transmitter.
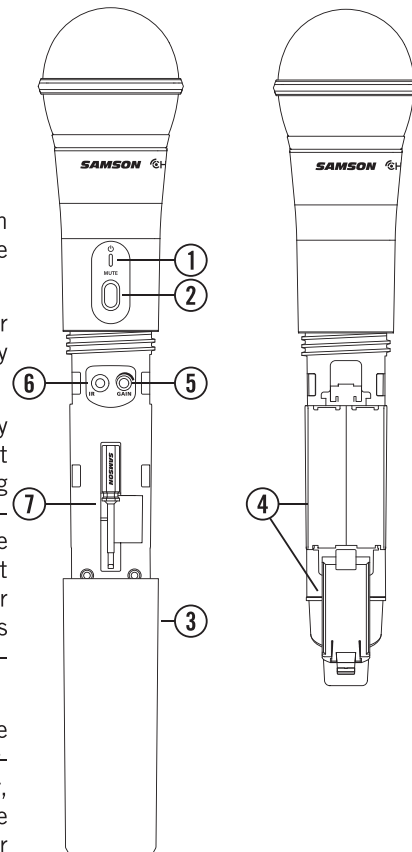
3. **Battery Cover -** Unscrew the battery cover and slide down to open the CH88 battery compartment.

4. **Battery Holder -** Open the battery holder by pressing the tab and lifting the cover. Insert two standard AA (LR6) batteries here, being sure to observe the plus and minus polarity markings shown. Although rechargeable Ni-Cad batteries can be used, they do not supply adequate current for more than four hours. WARNING: Do not insert the batteries backwards; doing so can cause severe damage to the CH88 and will void your warranty.

5. **Input GAIN Control -** This control adjusts the transmitter input sensitivity. For optimal performance, using the included screwdriver, set the input GAIN control to where you see the CR88V Audio Meter maximum indicator start to light under high levels, then turn down slowly until the maximum indicator stops lighting.
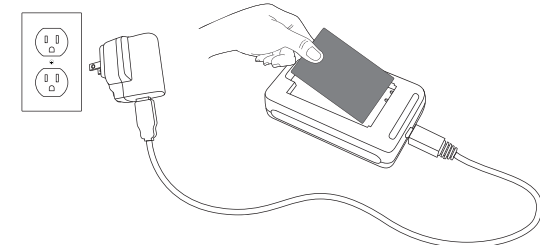
6. **IR Lens -** This window is used to capture the infrared signal sent from the CR88V during the IR SET to channelize the transmitter. The battery cover must be open and the IR Lens facing towards the receiver to load the selected channel.

7. **Plastic Screwdriver -** Designed for use in adjusting the CB88 input GAIN control (See #5 Input GAIN Control HH).

Rechargeable Battery

1. Slide the battery into the charger and make sure it is securely attached.

2. Plug the included USB cable into the battery charger and AC Adapter.

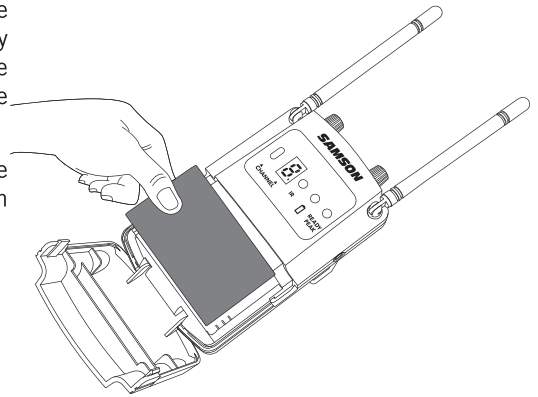3. Plug the AC adapter into an outlet.

4. The battery will start charging and the status lamp will blink.

5. When the battery is fully charged the indicator light will stay lit.

6. To install the battery into the CR88V receiver, open the battery compartment by pushing in the latches on either side of the battery door.

7. Insert the battery pack. Please observe the correct polarity when inserting the battery.

8. Close the battery compartment.

Getting the most out of the rechargeable battery:

• Completely charge the batteries before first use

• Fully charge the battery before it will be used.

• After the battery is charged, unplug the charger from the outlet or remove the battery from the charger.

• The optimal temperature range for using and storing the battery is 50°F - 86°F (30°C - 50°C). The battery performance and operation may decrease in temperatures below 50°F (30°F).

• To extend the battery life, remove the battery from the CR88V when not in use.

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