RemoteMix C+

Portable Mixer for
Remote Telephone Broadcasts

User Guide

JK Audio

Introduction

RemoteMix C+ is a professional audio mixer and headphone amplifier designed to interface with any standard analog telephone line. This telephone hybrid operates on batteries or AC power.

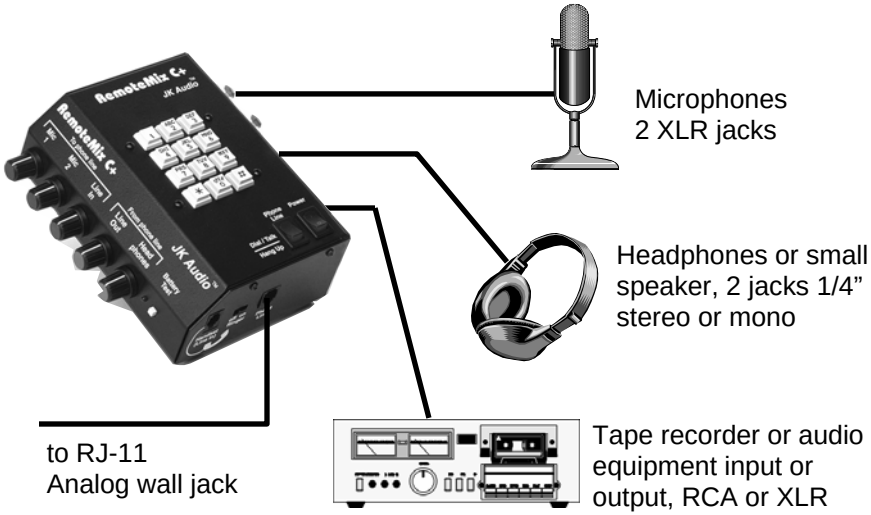
Simply plug your audio equipment into RemoteMix C+ and connect to a phone line. You can now put on headphones, plug in a microphone, and you are ready to broadcast the game or talk up a taped interview. The RCA type jacks on RemoteMix C+ are equivalent to the jacks found on most home tape recorders, CD players, and receiver/amplifiers. There are two balanced XLR microphone inputs and the first one can be switched for mic or line level input. The balanced line level XLR output jack provides a high quality connection to mixers and professional tape gear. The adjustable hybrid circuit provides control over the mix of transmit and receive audio at the output jacks.

Cellular Telephones

Use our Daptor One to connect the standard 3-conductor, 2.5 mm micro-jack on your digital wireless telephone to the RJ-11 phone jack on the RemoteMix C+. Then you will continue to use your wireless phone to dial or answer the call, but you will use the microphone and headphones plugged into your RemoteMix C+ during the call.

RemoteMix C+ was also designed to work well with a data interface (fax / modem adapter) connected to your older analog cellular telephone or bag phone. These are available through your cellular dealer. These adapters turn your cellular telephone into an RJ-11 equivalent jack which replaces the wall jack in this picture.

Connection



1. Connect your audio equipment, microphones and headphones to the input and output jacks on the RemoteMix C+.

2. Connect the jack marked "Phone Line" to any standard analog telephone line or to the Fax/Modem adapter on a cellular telephone.

3. Turn on the power switch, flip the "Phone Line" switch to "Dial/Talk" and dial your call. You are now ready to broadcast or record a telephone interview.

Operation

Send Side (To Phone Line)

There are separate volume controls for the two XLR microphone inputs and the RCA line input (*To Phone Line*) jack. You can use all three inputs at the same time. Mic 1 also has a Mic/Line level selector switch which lowers the gain on the Mic 1 XLR jack by 30 dB to allow a balanced line level input.

Receive Side (From Phone Line)

The receive side has separate controls for headphone output level and line output level. The *Line Out* control adjusts the signal going out the RCA and XLR jacks marked *From Phone Line*. This is a mix of both sides of the telephone call.

Headphones

The built-in headphone amplifier is strong enough to power two pair of headphones or a small desktop speaker. The left and right channels contain the same mono signal, but are powered by separate amplifier channels. These jacks will drive either two 1/4” stereo plugs or two 1/4" mono plugs.

Handset Jack

The handset jack on the side of RemoteMix C+ allows you to plug in a telephone handset and quickly set up a call before you connect your microphones and headphones. The handset microphone volume is adjusted using the *Line In* knob. The earpiece volume is adjusted using the *Headphone* level knob. All telephone handsets are different, so if yours is not compatible, try an AT&T, Sony, or Radio Shack residential phone handset.

Operation

Ringer

RemoteMix C+ has an audible internal ringer for incoming calls. This can be turned off using the switch on the side of the unit.

Phone Line

Connect this RJ-11 jack to the wall jack of a standard, single-line analog telephone line.

Keypad

The telephone keypad is for tone or pulse dialing. You may use the keypad at any time during a call but keep in mind that both transmit and receive audio are muted during a keypress.

Phone Line Switch

This switch acts as the switch-hook for the telephone line. The *Hang Up* position is the normal on-hook position when you are not using the line or you are waiting for a call. When you want to place a call, or when a call comes in, switch to the *Dial/Talk* position.

Tone / Pulse Dialing

RemoteMix C+ is equipped with a switch to select tone (DTMF) dialing or pulse dialing. The switch is located underneath the battery door. With the switch towards the volume control knobs, the unit is in the “pulse” mode. When in “pulse” mode the “*” key will set the unit to transmit digits as tones regardless of the switch position. To return to pulse dialing turn the power off and back on.

Operation

Power

RemoteMix C+ is powered by two 9 volt alkaline batteries located under the cover on the bottom of the unit. Under normal use, you should get at least 30 hours of continuous use from a fresh set of alkaline batteries. To test the batteries, simply press the *Battery Test* button on the front of the unit. If the LED lights, the batteries are still good. The unit may still function if the LED does not light, but there may be significant audio distortion and a loss of level as the batteries continue to discharge. It is important to replace both batteries at the same time with identical batteries. If two fresh batteries are not available, it is better to use only one good battery. Since the two battery fixtures are wired in parallel it does not matter which one gets the single battery.

We also provide a high quality, regulated AC to DC adapter to power RemoteMix C+ when AC power is available. Simply plug it into the back of RemoteMix C+ and plug the transformer into a 110 VAC wall outlet. When the power connector is inserted into the jack, the batteries are bypassed. The AC adapter does not charge the batteries.

Null Adjust (optional)

The RemoteMix C+ can be adjusted to control the amount of transmit audio that appears on the receive audio jacks. The recessed fine tuning control is adjusted by inserting a screwdriver into the back of the unit just below the words *Null Adj*. and turning left or right. This is a ten-turn potentiometer. The null circuit matches the characteristics of RemoteMix C+ with the characteristics of the telephone line. Although much of the transmit audio can be removed, this is not the equivalent of a mix-minus output.

The amount of transmit/receive isolation will depend on the quality of the telephone line. This circuit is factory set to give an equal mix on an average telephone line, and is therefore perfect for recording both sides of a telephone interview.

Null Adjust (optional)

To find the absolute null for any telephone line, follow this procedure:

1. Place a call to a quiet location.

2. Send a signal down the line at moderate levels. This can be prerecorded music or speech, or a test signal.

3. Connect the *From Phone* line output to a meter or scope, or listen to the receive signal over the headphones. Be sure to turn up the *Line Out* or *Headphones* volume control depending on which method you are using to monitor the receive signal.

4. On the back of RemoteMix C+, below the words *Null Adj*., there is a hole for a small flat blade screwdriver. This is a 10-turn potentiometer to allow for very sensitive adjustments. Try to remember the position of the blade, and the number of turns you are making as you first adjust clockwise, and then back to the original position, and then counterclockwise.

   The goal is to adjust the null signal until the receive signal contains a minimum amount of transmit audio. If, on the other hand, you want a good mix of transmit and receive signals, you must have someone on the far end speak or send audio down the line as you adjust for the proper balance.

5. **Factory Setting**: To reset to the factory setting, set the phone line switch to *On-Hook*, and adjust to find the null. We have installed a terminating resistor in the *On-Hook* position that simulates the average phone line connection and gives the right mix of transmit and receive audio.

The best tools for this task are 1) an oscilloscope connected to the *From Phone Line* output, and 2) a 1 kHz sine wave generator connected to the *To Phone Line* input jack. However, the above procedure will work with a little patience.

FAQs

? The output from Mic 1 is very low but the other mic is fine.

! Check the position of the Mic/Line switch near Mic 1. This first input can be switched to accept a line level signal from a mixer or other equipment.

? Can I wire a stereo mini output into the XLR input of a RemoteMix C+?

! Yes. You need to wire the tip to pin 2, the sleeve to pin 1, and leave the ring and pin 3 floating. You should use the mic 1 input since it is mic/line switchable, and use mic 2 for an additional microphone.

? I know that Daptor One allows Remote Mixers to connect to digital cell phones with a 2.5 mm headset jack, but what about older cellular phones?

! RemoteMix C+ is a standard telephone line interface. Electrically, it is similar to a telephone with a lot of audio jacks. A cellular telephone can be used like a portable wall jack if you purchase the proper adapter. Contact your cellular phone dealer and ask about a Fax / Modem adapter or Data Interface for your current cell phone. Do not mention remote audio broadcasting as it is guaranteed to confuse them. The Fax / Modem, or Data Interface is a little box that plugs into the bottom of the cell phone and converts it into an RJ-11 jack. You can then plug any "telephone" like device into this RJ-11 jack such as a fax machine, modem, or... get this... a JK Audio RemoteMix C+. Data interfaces run anywhere from $60 to $300, depending on the manufacturer and type of telephone. Our customers tell us the older analog bag type phones are the best, they have the strongest signal, longest battery duration, and typically sound better.

FAQs

? Can I use the RemoteMix C+ with a digital PBX phone system if there is no analog line available?

! No. If you need compatibility with digital PBX or ISDN phone systems you should step up to a RemoteMix 3 or RemoteMix Sport. These units will work virtually anywhere.

? Will RemoteMix C+ provide phantom power for my condenser microphone?

! No, this device will not provide phantom power. If you are connecting your microphone directly to a JK Audio Remote Mix C+, you should use a dynamic mic.

? I've lost the power supply for my RemoteMix C+ unit. I have another power supply that fits from a different product. Can I use this instead?

! NO! Never use a power supply other than the one that was supplied by your manufacturer. Power supplies are available in either AC or DC output with many combinations of voltage and available current. DC supplies carry either positive or negative center pin output and may or may not be "regulated". If you connect a negative center pin power supply to a positive center pin jack, it's just like hooking up the battery cables to your car backwards. Obviously you would not want to do this to your car or your expensive audio equipment. "Regulation" is the tolerance to the specified voltage of your DC power supply. All of our DC power supplies have a low noise 5% tolerance. This means that our 9V DC power supplies will always output 9 volts +/- 5%, whether you are using no power at all or applying a full load. Most consumer power supplies are not regulated. A non-regulated 9V, 800 mA power supply could actually output 16V until an 800 mA load is applied. This could invariably damage your equipment, and also create a great deal of noise. There is also no standard for the size of your power jack. This means that a 16V AC power supply and a 1.5V DC power supply could both have the same 2.1 mm jack.

Specifications

Inputs:

Unbalanced:	Connector	RCA phono jack
	Input Impedance	50 k ohms
	Level	250 mV RMS
Microphone:	Connector	(2) Female XLRs
	Input Impedance	1000 ohms
Mic/Line:	Line switch on Mic 1	-30 dB
Handset:	Modular 4pin/4wire handset jack Electret /dynamic microphone bias.	

Outputs:

Unbalanced:	Connector	RCA phono jack
	Output Impedance	50 ohms
	Level	250 mV RMS
Balanced:	Connector	Male XLR
	Output Impedance	200 ohms
	Level	500 mV RMS
Headphone:	Connector	1/4" stereo jacks
	Output Impedance	8 ohms
	Power	1 watt per channel

Phone Line:	Connector	RJ-11C
	Isolation	1500 volts
	Ringer (REN)	1.2B

Keypad: DTMF (Dual Tone Multi-Frequency) or Pulse Dialing

FCC Part 15 Compliance

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.

Changes or modifications not expressly approved by JK Audio can void the user's authority to operate the equipment.

FCC Registration

Your new JK Audio product has been registered with the Federal Communications Commission (FCC). This product complies with the standards in Part 68 of the FCC rules.

1. **Connection and use with the nationwide telephone network**
   The FCC requires that you connect this telephone equipment to the national telephone network through a USOC RJ-11C modular telephone jack.
   This equipment may not be used with Party Line Service or Coin Telephone Lines
   This equipment is hearing aid compatible.

2. **Information for the telephone company**
   Upon request from your local telephone company, you are required to provide the following information:
   a) The "line" to which you will connect the telephone equipment (that is, your telephone number), and
   b) The telephone equipment's FCC registration number. This can be found on the bottom of your telephone equipment, and,
   c) The ringer equivalence number (REN) for this equipment.
   The REN is used to determine the quantity of devices which will be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed 5.0. To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the local telephone company.

3. **Repair Instructions**
   If it is determined that your telephone equipment is malfunctioning, the FCC requires that it not be used and that it be unplugged from the modular outlet until the problem has been corrected. Repairs to this telephone equipment can only be made by the manufacturer or its authorized agents or by others who may be authorized by the FCC. For repair procedures, follow the instructions outlined under the warranty section of the manual.

4. **Rights of the telephone company**
   If telephone equipment is causing harm to the network, the telephone company may temporarily discontinue your telephone service. If possible, they'll notify you before they interrupt service. If advanced notice isn't practical, you'll be notified as soon as possible. You'll be given the opportunity to correct the problem, and you'll be informed of your right to file a complaint with the FCC.
   Your telephone company may make changes in its facilities, equipment, operations or procedures that could affect the proper functioning of your JK Audio product. If such changes are planned, you'll be notified by your telephone company.

Warranty

RemoteMix C+ is covered by a 2 year warranty to be free from defective workmanship and materials. In the event that the RemoteMix C+ needs repair, you must call us to get an authorization, and then carefully pack and ship it to us. You will pay for shipping to us and we will pay for return back to you, UPS ground. No free repairs will be made if the defect was caused by misuse, weather conditions, or other cause, except for defective workmanship or materials. THERE ARE NO EXPRESSED OR IMPLIED WARRANTIES WHICH EXTEND BEYOND THE WARRANTY HERE MADE.

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