

# IC-2

## Interpreters Control Console

**MANUAL AND USER GUIDE**





# IC-2 Interpreters Control Console

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## Important Safety Instructions

**Read these instructions. Keep these instructions. Heed all warnings. Follow all instructions.**

### Safety Cautions

This product is designed to amplify sounds to a high volume level which could potentially cause hearing damage if used improperly. To protect your hearing and the hearing of others:

1. Make sure the volume is turned down before putting on the earphone or headphone and then adjusting the volume to a comfortable level.
2. Set the volume level at the minimum setting that you need to hear.
3. If you experience feedback (a squealing or howling sound), reduce the volume setting and move the microphone away from the earphone or headphone.

Do not allow children or other unauthorized persons to have access to this product.

### Safety Warnings

**WARNING To reduce the risk of fire or electric shock, do not expose the system to rain or moisture. Do not use this apparatus near water. The console shall not be exposed to dripping or splashing, and objects filled with liquids such as beverages shall not be placed on the console. Clean only with a dry cloth.**



### Servicing or attempting to service this device will void the warranty

Refer servicing to qualified personnel. Servicing is required when the console has been damaged in any way; if liquid has been spilled or objects have fallen into the console, it has been exposed to rain or moisture, does not operate normally, or has been dropped.

Do not block any ventilation openings. Install in accordance with manufacturer's instructions.

Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.

Use only attachments/accessories specified by the manufacturer.

Unplug the console during lightning storms or when unused for long periods of time.

Be advised that different operating voltages require the use of different types of line cord and attachment plugs. Check the voltage in your area and use the correct type.

Use only the power supply provided by the manufacturer of this device. Other power supplies may have similar specifications, but may not be equivalent in emissions ratings, in-rush current, etc. Use of an unapproved power supply may leave the device partially or completely inoperable, and will void the warranty.

This apparatus has been designed with class-1 construction and must be connected to a main socket outlet with a protective earthing connection ( the third grounding prong ).

Protect the power cord from being walked on or pinched, particularly at plugs, receptacles, and near the power jack on the console.

This apparatus must be earthed.

The MAINS plug or an appliance coupler is used as the disconnect device, so the disconnect device shall remain readily operable.

## For Customers in the United States

**WARNING:** Use a three wire grounding type line cord like the one supplied with the product. 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.

This equipment has been tested and found to comply with the limits for Class A digital device, pursuant to part 15 of the FCC rules.

## For Customers in Canada

This Class A digital device meets all requirements of the Canadian Interference-Causing Equipment Regulations.

*Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.*

## Recycling Instructions

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Help Williams AV protect the environment! Please take the time to dispose of your equipment properly.

### **Product Recycling for Customers in the European Union:**

Please do NOT dispose of your Williams AV equipment in the household trash. Please take the equipment to a electronics recycling center; OR return the product to the factory for proper disposal.



## Overview

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The IC-2 is an audio control console for simultaneous language interpretation. A single unit allows one or two interpreters to monitor floor or relay sources, activate microphone inputs, and route their interpretation to one of two audio output channels. The system is ideal for presentation-style conferences where all interpreters speak a common or "Relay" language. The IC-2 has many helpful, new features that simplify setup, improve audio quality and increase flexibility:

- CAT5 bus allows quicker setup with simplified cabling, easy cascading to support additional interpreters, and no external distribution amplifiers.
- Soft-touch buttons provide smoother, quieter operation.
- RCA jacks make recording the interpretation simple.
- Multiple microphone and headphone connection options for each interpreter make using your existing equipment a snap.
- Supports an array of hands-free headphones and microphone.
- Individual controls for each interpreter ensure optimal listening and output levels.
- Peak level indicator light allows technicians to easily ensure audio output levels are consistent.
- Automatic interlock of the relay channel.
- Selectable feedthrough ( automatic routing ) of the Floor signal onto unoccupied channels.

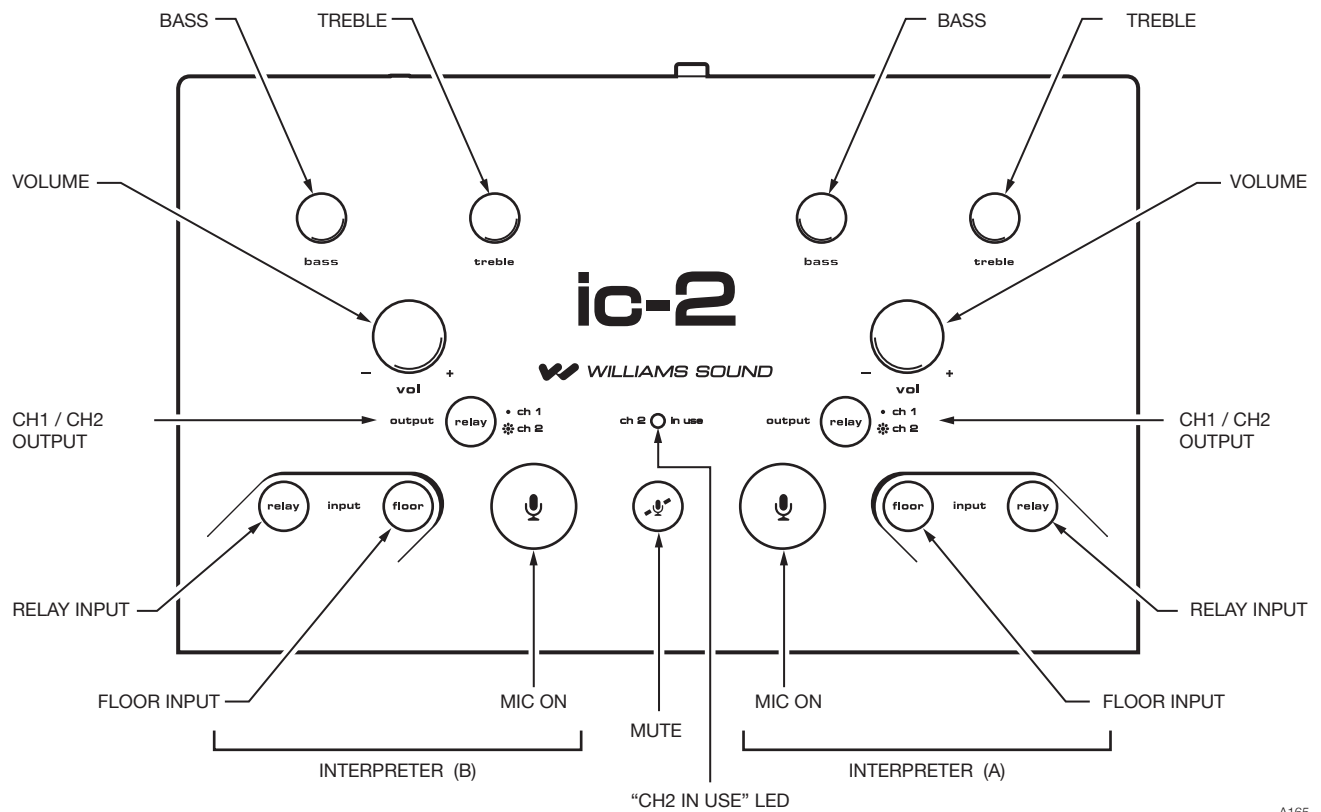
The IC-2 can be used with Williams AV FM, IR and Digi-Wave transmitters for portable installations. It is designed to meet international standards for interpretation consoles and is backed by a 5-year warranty. If you need assistance with this product, contact Williams AV Customer Service at 1.800.843.3544 or 952.943.2252.

### System Includes

- IC-2 Interpreter Control Console
- (1) 25 foot (7.6 meter) CAT5 patch cable, WCA 091
- 18VDC international desktop style power supply, TFP 044
- Operates on 100-240VAC, 50-60Hz
- Power supply line cord, WLC 004 (US), WLC 005 (EU), WLC 006 (UK), or WLC 007 (AU)
- 5-year Warranty Card, FRM 404
- Manual and user guide

## Top Panel Controls

Figure 2: Top Panel



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### Mode Selection Controls

#### Inputs

- Floor – headphone monitors Floor.
- Relay – headphone monitors Relay.

#### Outputs

- CH1/CH2 – Microphone audio output defaults to **ch 1** (light off). Press this button to switch microphone output to **ch 2** (light on), the shared “relay” channel.

### Microphone Controls

- Mic On – push and release to turn microphone on or off. Microphones are interlocking; you can only turn on your microphone if the other is off.
- Mute – “cough button” press and hold to mute microphone.

### Headphone Controls

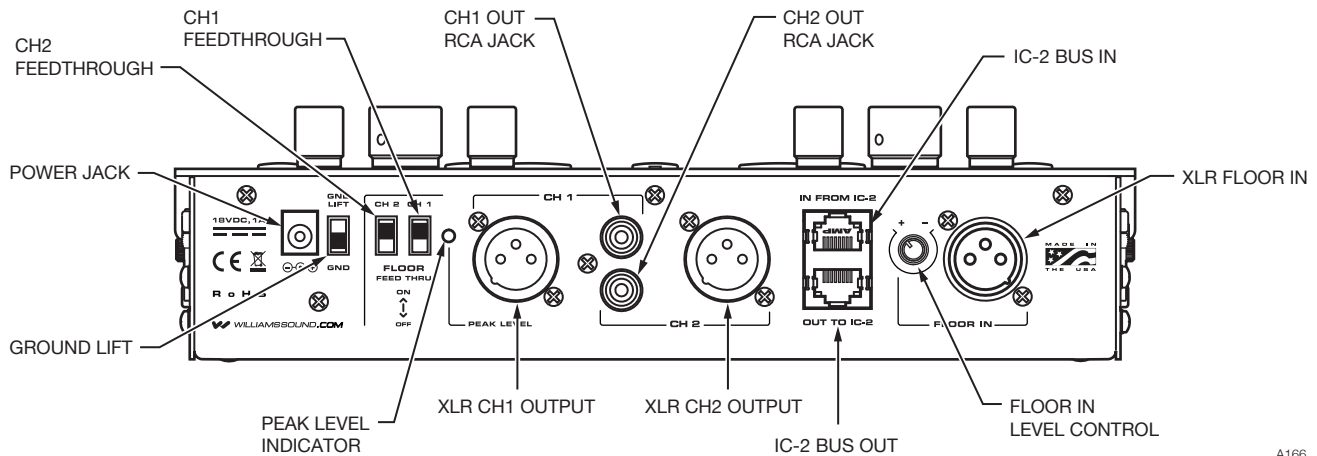
- Volume – adjusts headphone output level.
- Bass – boosts or cuts bass tone level to headphones.
- Treble – boosts or cuts treble tone level to headphones.

### Indicator

- “CH2 In Use” LED – indicates when shared channel CH2 output is in use.

## Back Panel Controls

Figure 3: Back Panel



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### Power

- 18VDC, 1A Power Jack – 2.5 mm ID barrel power jack connects to TFP 044.

### Switches

- CH1 Feedthrough –routes the audio from Floor onto CH1 when it is not in use.
- CH2 Feedthrough –routes the audio from the Floor onto CH2 when it is not in use.
- Ground Lift –safely breaks the connection between chassis and audio grounds internal to the IC-2 to help technicians debug tricky ground-loops that cause hum. Use only if needed for best audio performance.

### Indicator

- Peak level indicator – blinks to indicate optimal audio output level of active audio source.

### Adjustment

- Floor Level control – allows the technician to set the input level.

### Inputs

- Floor XLR Jack – balanced or unbalanced audio signal in from the PA system, mixer, or microphone.

**Note:** while the IC-2 will work with balanced or unbalanced audio on Floor In; balanced, line-level audio is desirable for best performance.

- IC-2 Bus In – CAT5 bus routes Floor and Relay signals between IC-2's.

**Note:** Does not accept 70v speaker line input

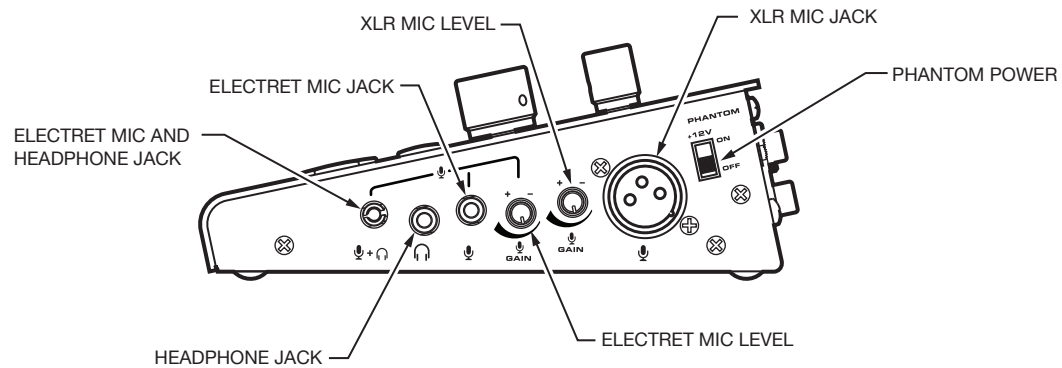
### Outputs

- CH1 Out XLR Jack – balanced, line level audio out to transmitter.
- CH1 Out RCA Jack – mono audio out to recording device or powered speaker.
- CH2 Out XLR Jack – balanced, line level audio out to transmitter.
- CH2 Out RCA Jack – mono audio out to recording device or powered speaker.
- IC-2 Bus Out – CAT5 bus routes Floor and CH2 signals between IC-2's.



## Side Panel Controls

Figure 4: Side Panel



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### Switches

- Phantom Power ( +12 V ) – enables 12VDC “phantom” power to XLR Microphone Input.

### Adjustments

- XLR Microphone Level Control – allows the technician to set the input level.
- Electret Microphone Level Control – allows the technician to set the input level of both the pink 3.5mm electret microphone and the 3.5mm TRRS microphone + headphone jack

### Inputs

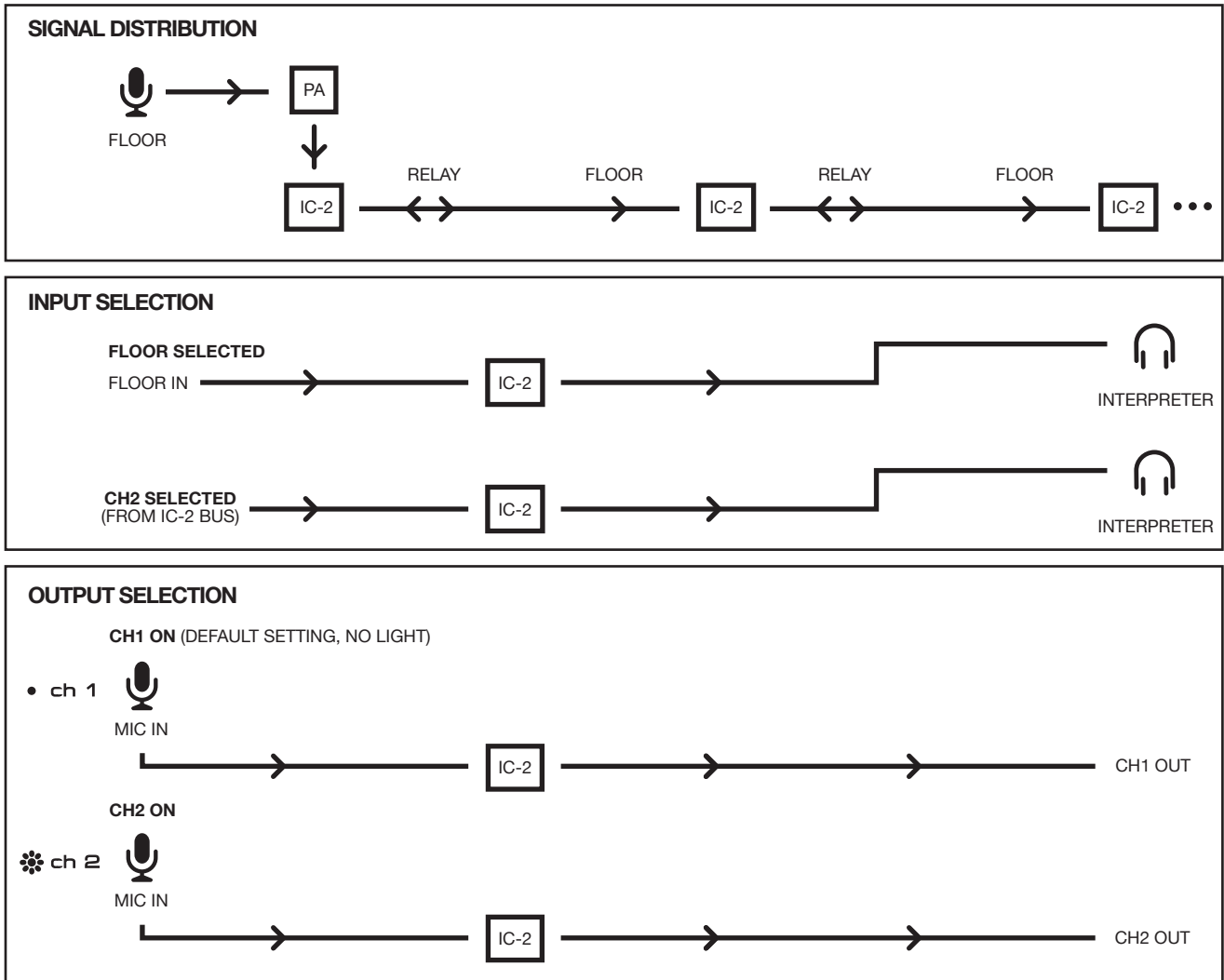
- XLR Microphone Jack – balanced microphone with optional phantom power.
- Electret Microphone Jack ( Pink ) – 3.5mm TRS “mini-plug” electret mono or stereo microphone.
- Microphone + Headphone Jack ( Black ) – 3.5mm TRRS “mini-plug” electret microphone.

### Outputs

- Headphone Jack ( Green ) – 3.5mm TRS “mini-plug” mono or stereo headphone jack.
- Microphone + Headphone Jack ( Black ) – 3.5mm TRRS “mini-plug” stereo headphone.

# Signal Setup

Figure 5: Signal schematics



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## Single Unit Setup

A single unit can be used for simple or bilingual situations. In a simple configuration, the majority of the audience speaks the language of the orator, and listens through the PA system. A minority of the audience is in need of language interpretation, but they all speak a common language.

In a bilingual configuration, the language spoken at the podium will switch between two languages over the course of the day. This leaves the entire audience in need of interpretation at some point. Each member of the audience is given a receiver set to the appropriate language channel.

**CAUTION:** If multiple units are being set up, power must be disconnected from all units before making the Cat5 Bus Cable connections. Failure to do so may result in damage to the unit(s). Perform the steps on page 15 before performing the steps below to set up multiple units.

### Simple Configuration Instructions

1. Plug the line cord into the TFP 044 power supply that comes with your IC-2. Connect the plug on the power supply to the DC power jack on the rear panel of the IC-2. Plug the line cord into an AC power outlet (100 to 240 V, 50-60Hz).
2. Plug a line level audio signal from the floor language source into the Floor In XLR Jack on the rear panel. Make sure there is audio coming from this source for testing purposes.
3. Set the CH1 and CH2 Feedthrough switches (See Figure 3) to the "ON" position and adjust the Floor In level control until the green peak level indicator LED by the CH1 Out XLR jack is blinking at natural peaks of speech in the audio.
4. Connect the CH1 Out XLR jack to the audio input of an IR Modulator or FM Transmitter. Turn on the modulator or transmitter and set it up according to its directions.
5. Turn the headphone volume control all the way down and plug in stereo or mono headphones.
6. Have the interpreter who will be using the console listen to the headphones and slowly turn up the volume until the Floor audio is at the lowest comfortable level.
7. Turn the level control associated with the microphone input the interpreter will be using all the way down (counter-clockwise).
8. Plug the interpreter's microphone in.
9. Turn the microphone on by pushing its Mic On button.
10. Have the interpreter sit comfortably and speak into the microphone at a natural level. Turn the level control for this microphone clockwise until the peak indicator on the back panel blinks at natural peaks in the interpreter's speech.
11. Ensure the audio indicator on the transmitter is flashing and you are able to hear the signal with a receiver. Adjust the transmitter input level control if necessary.
12. Feedthrough can be used to provide hearing assistance. Simply hook a transmitter up to CH2 Out and make sure CH2 Feedthrough is on. Provide audience members in need of sound amplification with receivers set to the CH2 transmitter's channel.

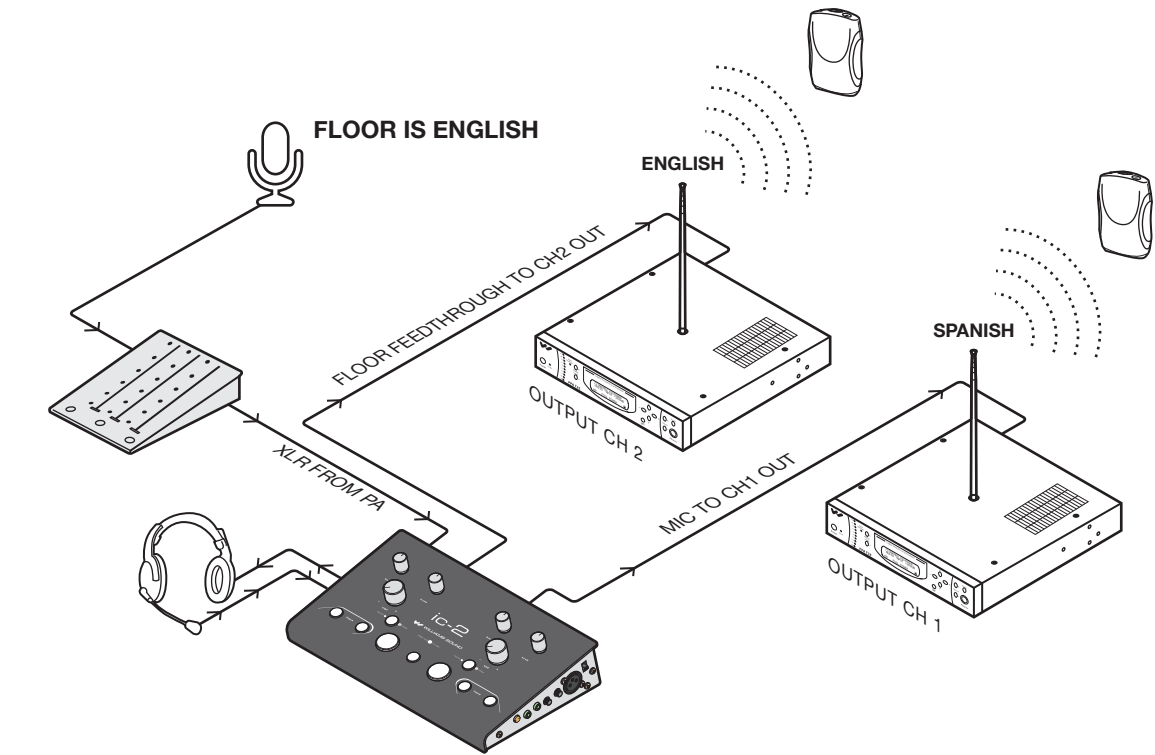
#### Note on Feedthrough:

With CH1 and CH2 Feedthrough switches on, the Floor channel is automatically routed to any unoccupied channel. This keeps language channels active at all times, allowing audience members to listen to their language channel all day and hear their language from either the presenter directly or an interpreter, as appropriate.

### Bilingual Configuration Instructions

Connect a transmitter to the CH2 Out XLR jack and set it up according to its instructions. Assign a language to each output channel. Example: CH1 Out is Spanish, and CH2 Out is English. Have the interpreters enable CH2 Output to interpret into English, and disable CH2 Output to interpret into Spanish.

**Figure 6: Bilingual Configuration A**

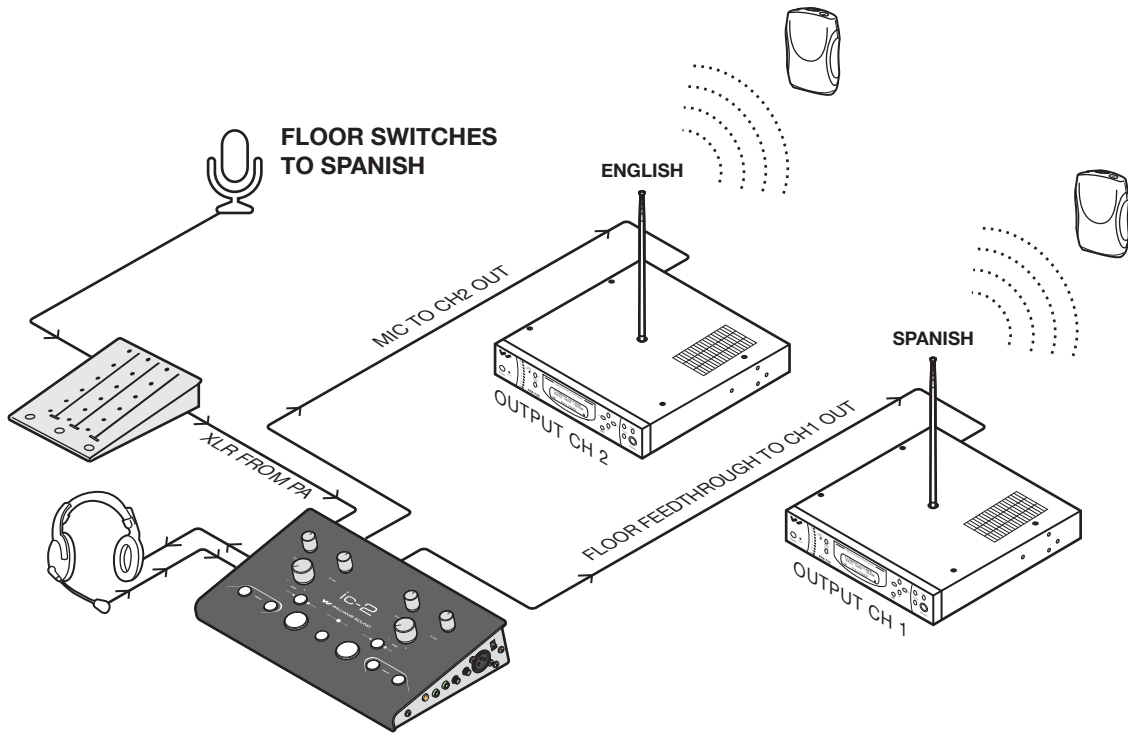


#### ENGLISH → SPANISH

- FLOOR INPUT SELECTED → INTERPRETER HEARS ENGLISH
- CH1 OUTPUT SELECTED (DEFAULT, LIGHT OFF) → INTERPRETER SPEAKS SPANISH
- FLOOR FEEDTHROUGH TO CH2 OUT (ENABLED) → ENGLISH FROM PA AUTOMATICALLY ROUTED TO UNUSED CHANNEL (CH2)

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Figure 7: Bilingual Configuration B



**ENGLISH → SPANISH**

FLOOR INPUT SELECTED → INTERPRETER HEARS SPANISH

CH2 OUTPUT SELECTED (LIGHT ON) → INTERPRETER SPEAKS ENGLISH

FLOOR FEEDTHROUGH TO CH1 OUT (ENABLED) → SPANISH FROM PA AUTOMATICALLY ROUTED TO UNUSED CHANNEL (CH1)

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## Multilingual (Multi-Unit) System Setup

In multilingual configuration, the audience needs to listen to interpretations of the presentation in multiple languages. When IC-2 interpreter consoles are set up as a system, CH2 audio is shared between them. Any interpreter can work on this interlocked bus, providing a relay for all others.

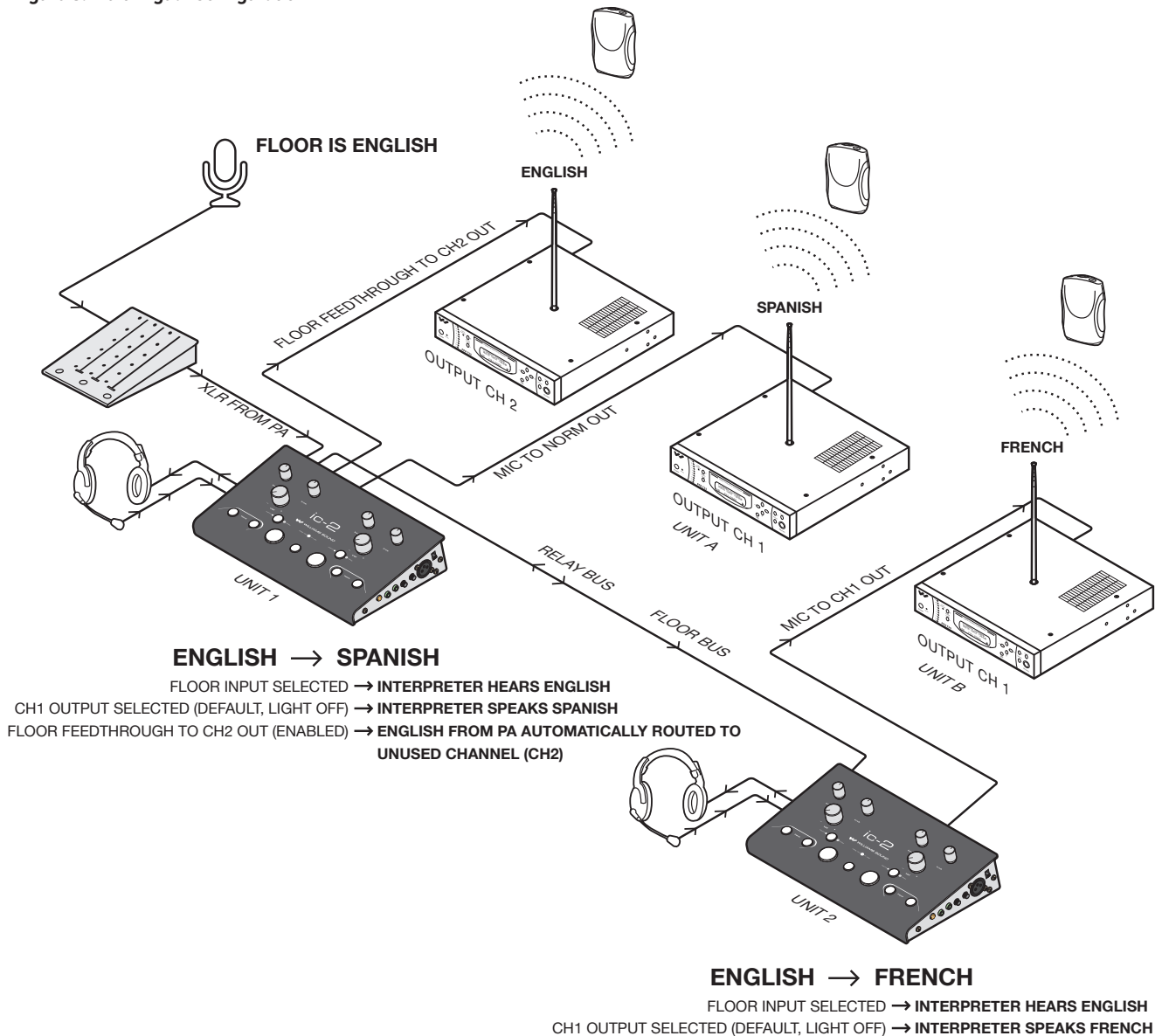
### There are three multilingual setups:

In a simple multilingual configuration, the language spoken at the podium will remain constant and is understood by all interpreters.

In a relay multilingual configuration, the language spoken at the podium will remain constant, but is not spoken by all interpreters. A simultaneous interpretation of a "Relay" language spoken by all interpreters is necessary. This interpretation is routed on CH2 via the CAT-5 bus to all other interpreters, who interpret sequentially.

In a switching relay multilingual configuration, the language spoken at the podium will change and is not spoken by all interpreters. A simultaneous interpretation of a "Relay" language spoken by all interpreters is necessary. Over the course of the day the interpreter who can provide this relay will change. A transmitter is needed for each interpreted language, including the shared CH2 language if it is being used.

Figure 8: Multilingual Configuration A



## Multilingual (Multi-Unit) Configuration Instructions

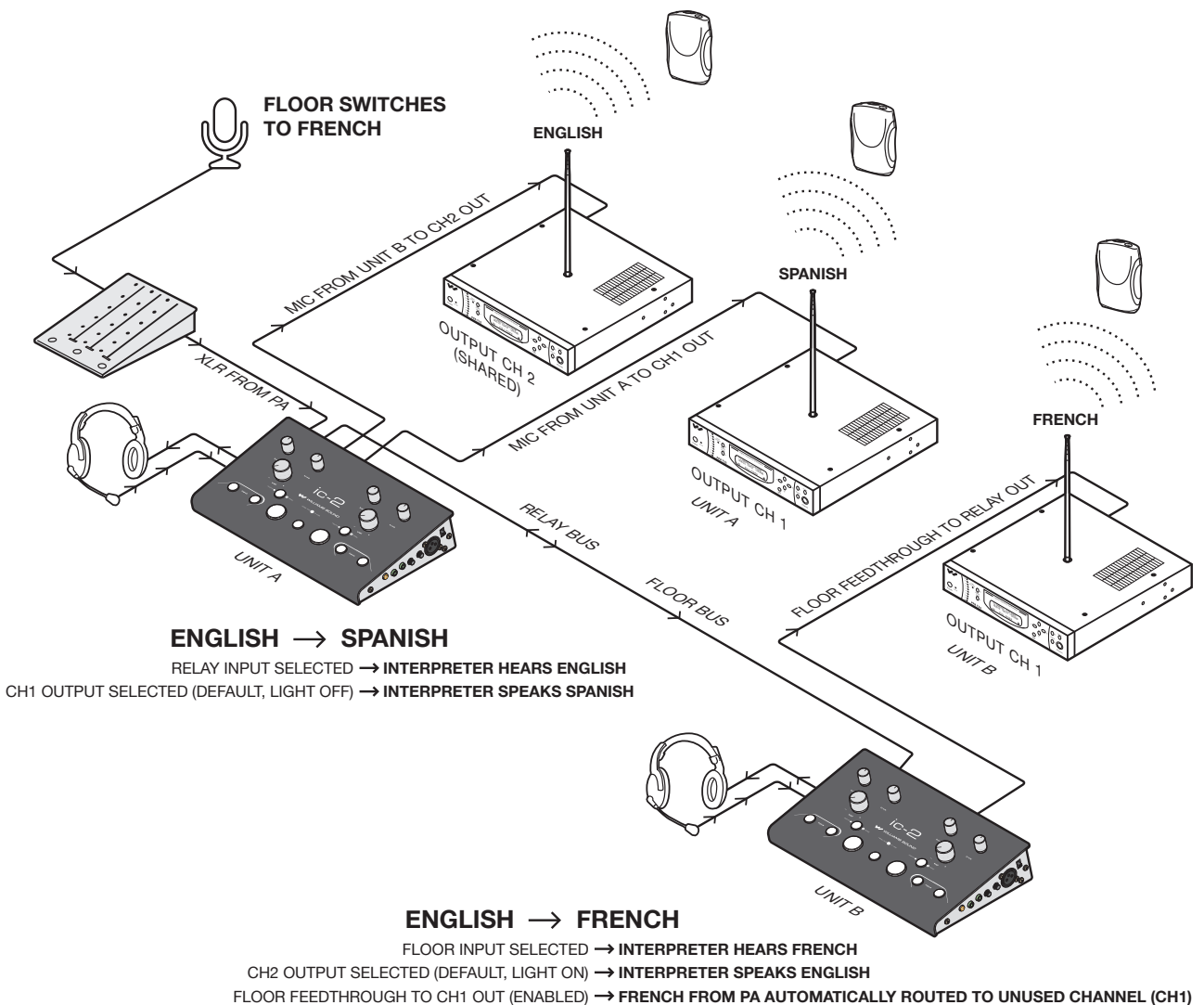
**CAUTION:** When setting up multiple units, remove power from all units and then perform the steps below. Failure to do this may result in damage to the unit(s).

1. Connect the audio signal from the PA system or mixer to the first unit in the system.
2. Connect the IC-2 Bus Out on this unit to the IC-2 Bus In on the second unit using the CAT-5 cable included with your system. Connect the IC-2 Bus Out on the second unit to the IC-2 Bus In on the third unit, and so forth.
3. Follow the Single Unit Setup instructions for each unit in the chain, plugging them in to power only after the bus connections have been made.
4. If CH2 will be used, connect a transmitter for the CH2 channel to any CH2 Out XLR jack in the chain. Turn on the transmitter and set it up according to its directions.

### Note on Proper Setup of the IC-2 Bus:

Be certain to follow steps 2 and 3 in order. The audio bus that carries the floor signal between units is unidirectional. The Floor audio **MUST** be connected to the Floor In XLR jack on the first unit in the daisy chain for the audio flow between units to work correctly. Be sure to connect all units via the CAT-5 bus **BEFORE** plugging them in to power.

Figure 9: Multilingual Configuration B



# Specifications

## IC-2 Interpreters Control Console

Dimensions/Weight/Color	10" (25.4cm) x 6.35" (16.1cm) x 2.45" (6.2cm) / 3.4 lbs (1.5 kg) / Black and Silver
Power	External Power Supply, 18VDC Desktop Style Switching Inverter, 110-240VAC, 50-60Hz, 1A
<b>INPUTS / OUTPUTS</b>	
Floor In	3-pin XLR female jack, balanced (or unbalanced) input with 24k $\Omega$ differential input impedance, max balanced input is +19dBu
IC-2 Bus In / Out	CAT5 8p8c RJ45 female receptacle, distributes balanced line level Floor and Relay audio to another IC-2
XLR Microphone Inputs	3-pin XLR female jack, balanced (or unbalanced) input. Switchable 12VDC simplex power. Variable gain of 58 dB, 2.4k $\Omega$ balanced input impedance, maximum balanced input is +19 dBu
3.5mm Microphone Inputs	Stereo 3.5 mm TRS phone jack, pink, and stereo 3.5mm TRRS phone jack, black, unbalanced (r,s) for electret condenser mics, variable gain of 40dB. Bias is 3.7VDC through 2.7k $\Omega$
3.5mm TRRS Headphone Output	3.5mm TRRS phone jack, Tip = Left, Ring 1 = Right, Ring 2 = GND, Sleeve = Mic. 40mW max power into 32 $\Omega$ stereo headset.
3.5mm Headphone Output	3.5mm TRS phone jack, mono or stereo headphone, 8 $\Omega$ minimum. 190mW max power into 32 $\Omega$ stereo headset.
CH1 Out, CH2 Out	3-pin XLR male jack, balanced output. Max output is +19dBu into 600 $\Omega$ balanced load impedance.
RCA Jacks	Red: RCA jack for recording and CH1 audio, Interpreter audio only, no feedthrough. White: RCA jack for recording CH2 audio.
<b>CONTROLS</b>	
Volume	Left and Right rotary, controls headphone volume
Bass and Treble Tone	Left and right rotary with center detent, controls headphone bass and treble tone levels.
Mute	Push button, backlit red, mutes left and right mics while pressed.
Mic On	Push button, backlit bright red, activates microphone. Right and left Mic On buttons are interlocked; mic can only be turned on if the other is off.
Floor Input, Relay Input	Push buttons, backlit blue, select listening language group. Listening modes are either/or: turning one on disables the other.
CH2 Output	Push button, backlit yellow, selects microphone output language group: light on = CH2 Out, light off = CH1 Out.
Gain Adjust	Rotary gain pots control level of microphone and Floor audio.
Phantom Power	Slide switch enables 12VDC Simplex power to XLR microphone.
CH1 Feedthrough	Slide switch enables Floor feedthrough to Norm Out XLR jack.
CH2 Feedthrough	Slide switch enables Floor feedthrough to Relay Out XLR jack.
Ground Lift	Slide switch disconnects Chassis and Audio Grounds internal to the console.
<b>INDICATOR</b>	
Peak Level Indicator	Green LED on back panel indicates optimal audio output level on Norm Out XLR when blinking.
CH2 Output in Use Indicator	Yellow LED on front panel indicates when CH2 is in use.
<b>AUDIO OUTPUT</b>	
Frequency Response	45Hz to 20kHz, +0/-3dB re: 1kHz with flat bass/treble
Distortion at 1kHz	<0.5% THD @ full power
Signal to Noise Ratio	>82dB @ 1kHz
Crosstalk Attenuation	>63dB @ 1kHz
Tone Controls	Bass: +12dB Boost or -12dB Cut @ 100Hz Treble: +12dB Boost or -12dB Cut @ 10kHz
Approvals and Declarations	CE, FCC, Industry Canada, RoHS, C-Tick, CB
Warranty	5 years, parts and labor (90 days on accessories)



## FAQs

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**Q: Should I use shielded or unshielded CAT5 cable?**

A: We supply unshielded CAT5 because of the tendency of the shielding to create ground loops that cause hum in audio systems. Depending on your setup, in areas of high electromagnetic interference, shielded cable may be beneficial. Find the cable that optimizes sound quality in your system setup.

**Q: When should I use the Ground Lift Switch?**

A: Audio systems frequently have multiple components plugged into the same electric circuit and share a ground. This can create a ground loop that introduces 50 or 60 cycle hum into the audio. Many distribution amplifiers have a ground lift switch to help prevent this problem by “breaking the loop”. Since the IC-2 is used without need for a distribution amplifier, we added a ground lift switch to help technicians troubleshoot this common problem.

**Q: What can I do when having trouble getting a consistent audio output level?**

A: Optimizing audio output levels so that the audience doesn't have to constantly adjust the volume of their receivers has always been one of a technician's biggest challenges. The PA system doesn't have the same audio input level as the interpreters' microphones. The interpreters, for that matter, frequently have different microphones and speak at different levels. This creates a broad range of input signal strength for technicians to balance. To help level the signal strength without sacrificing audio quality, we've included level controls to adjust every audio source that can be output to a transmitter from the IC-2. The peak level indicator will blink more often the higher the output amplitude. To use it most effectively, make sure to set up the actual individuals and microphones that are going to be in use. Have your interpreters get comfortable before you test – slumping away from their microphone as they relax during the day will decrease their volume level. Turn the pots until the light blinks at peaks of speech for each input source. If your transmitter has compression, gain, or other adjustments, experiment with the system as a whole ahead of time to get a feel for which settings produce the best, most consistent output for the audience.

**Q: Some of the units in my system are not getting the Floor signal. Why doesn't it work?**

A: The Floor signal only travels along the bus between units in one direction. You have to plug the Floor audio into the first unit in the “daisy chain” for it to be correctly transferred to all units. You can identify this unit by the fact that there is nothing plugged into its IC-2 Bus In jack

**Q: The speaker at the podium's voice is not coming out on the relay language transmitter when he is speaking the relay language. What should I do?**

A: Make sure to turn on the CH2 Feedthrough switch on the unit the CH2 transmitter is connected to.

**Q: The headphone on one side of my console became intermittent and then both headphones shut down. Why did the audio cut out?**

A: The IC-2 has a protection circuit built in that will shut down the headphone circuitry if a bad headset is plugged in (one that would damage circuitry). If you experience intermittent audio on one or both sides of the console, or both headphones turn off, it's probably thermal shutdown feature kicking in. If the problem is on one side of the console only, that headphone is likely the culprit. The thermal shutdown can be reset, simply:

- Replace the suspect headset with a known good headset.
- Unplug the IC-2's power and plug it back in (this will reset the audio chip and turn it back on after the shutdown).
- Check to see if the problem has gone away. If not, repeat with the other headset.

## Limited Warranty

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Williams AV products are engineered, designed, and manufactured under carefully controlled conditions to provide you with many years of reliable service. Williams AV warrants the Interpreter Console against defects in materials and workmanship for FIVE (5) years. During the first five years from the purchase date, we will promptly repair or replace the Interpreter Console.

*Microphones, earphones, headphones, batteries, chargers, cables, carry cases, and all other accessory products carry a 90-day warranty.*

Williams AV HAS NO CONTROL OVER THE CONDITIONS UNDER WHICH THIS PRODUCT IS USED. Williams AV, THEREFORE, DISCLAIMS ALL WARRANTIES NOT SET FORTH ABOVE, BOTH EXPRESS AND IMPLIED, WITH RESPECT TO THE INTERPRETER CONSOLE, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Williams AV SHALL NOT BE LIABLE TO ANY PERSON OR ENTITY FOR ANY MEDICAL EXPENSES OR ANY DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES CAUSED BY ANY USE, DEFECT, FAILURE OR MALFUNCTIONING OF THE PRODUCT, WHETHER A CLAIM FOR SUCH DAMAGES IS BASED UPON WARRANTY, CONTRACT, TORT OR OTHERWISE, THE SOLE REMEDY FOR ANY DEFECT, FAILURE OR MALFUNCTION OF THE PRODUCTS REPLACEMENT OF THE PRODUCT. NO PERSON HAS ANY AUTHORITY TO BIND Williams AV TO ANY REPRESENTATION OR WARRANTY WITH RESPECT TO THE INTERPRETER CONSOLE. UNAUTHORIZED REPAIRS OR MODIFICATIONS WILL VOID THE WARRANTY.

The exclusions and limitations set out above are not intended to, and should not be construed so as to contravene mandatory provisions of applicable law. If any part or term of this Disclaimer of Warranty is held to be illegal, unenforceable, or in conflict with applicable law by a court of competent jurisdiction, the validity of the remaining portions of this Disclaimer of Warranty shall not be affected, and all rights and obligations shall be construed and enforced as if this Limited Warranty did not contain the particular part or term held to be invalid.

If you experience difficulty with your system, call Toll-Free for Customer Assistance:

**1.800.328.6190**

If it is necessary to return the system for service, your Customer Service Representative will give you a Return Authorization Number (RA) and shipping instruction.

Pack the system carefully and send it to:

**Williams AV, LLC**

**Attn: Repair Dept.**

**10300 Valley View Road**

**Eden Prairie, MN 55344 USA**

Your warranty becomes effective the date you purchase your system. Your returned warranty card is our way of knowing when your warranty begins. Please take a moment to fill it out and mail the enclosed card. You may also register your product online:

*<http://www.williamsav.com/Warranty-registration>*

This information will help us serve you better in the future. Thank you!



**WILLIAMS AV**

info@williamsav.com / www.williamsav.com  
800-843-3544 / INTL: +1-952-943-2252