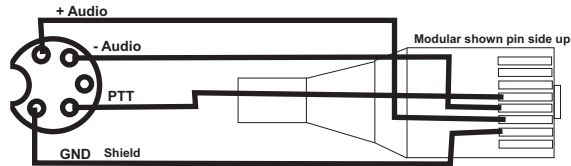


# AUDIO OUT CABLE WIRING

## ICOM 8 Pin Modular

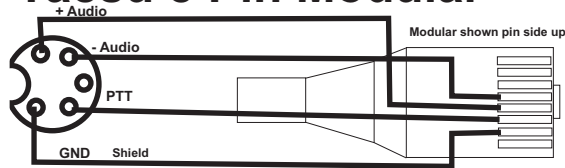
ICOM  
IC207H/208H  
IC 706  
IC2720  
IC7000  
ICV8000



DIN connectors shown on the side to be soldered  
DO NOT SOLDER TO SHIELD OF DIN

## Yaesu 8 Pin Modular

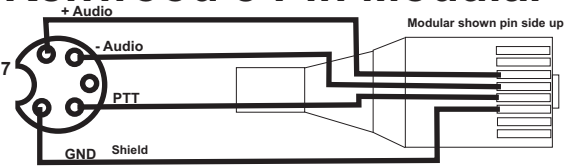
Yaesu  
FT450  
FT817  
FT857/FT897  
FT900



DIN connectors shown on the side to be soldered  
DO NOT SOLDER TO SHIELD OF DIN

## Kenwood 8 Pin Modular

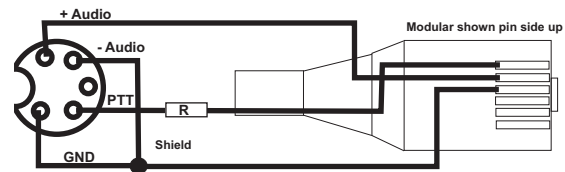
Kenwood  
TS480  
TM-G707/V7FT817



DIN connectors shown on the side to be soldered  
DO NOT SOLDER TO SHIELD OF DIN

## Yaesu 6 Pin Modular

Yaesu  
FT90  
FT100/FT100D  
FT2600/ 2900  
FT3000  
FT7100/7900  
FT8000/8100  
FT8800/8900



DIN connectors shown on the side to be soldered  
DO NOT SOLDER TO SHIELD OF DIN

### PTT SERIES RESISTOR COMPONENT VALUES

0K Resistor	2K Resistor	15K Resistor	27K Resistor
FT2600	FT3000	FT7100	FT90/FT100
FT2800		FT8800	FT7900/8000
FT2900		FT8900	FT8100

# iPlus

## VARIABLE ATTENUATOR AND INTERFACE BOX

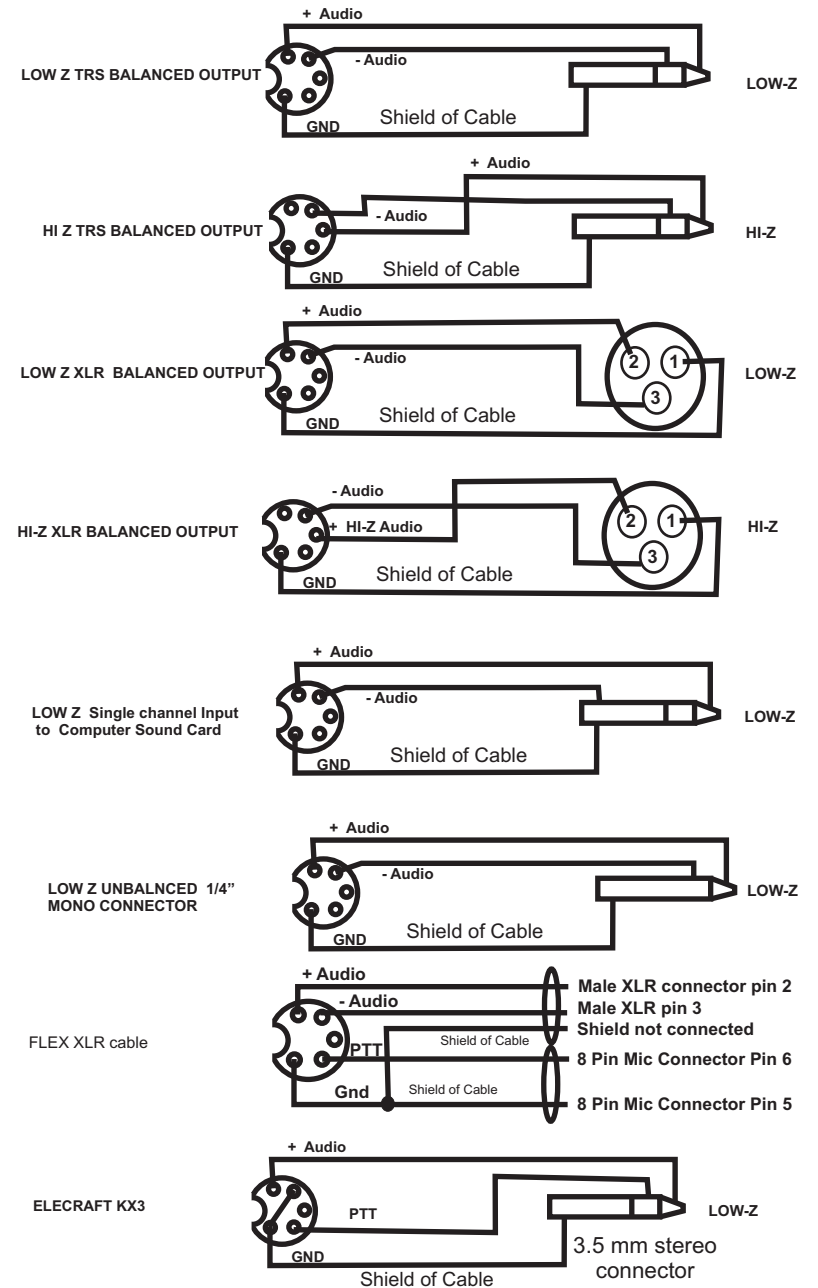


## OPERATING MANUAL

# TABLE OF CONTENTS

INTRODUCTION.....3  
 FRONT PANEL CONTROLS .....4  
 REAR PANEL CONTROLS .....5-6  
 QUICK START TUTORIAL .....7-8  
 CONFIGURATION FOR 5 RADIOS .....9-10  
 AUDIO INPUT CABLE WIRING .....11  
 AUDIO OUT CABLE WIRING .....12-16

# AUDIO OUT CABLE WIRING



DIN connectors shown on the side to be soldered  
 DO NOT SOLDER TO SHIELD OF DIN

October 2007



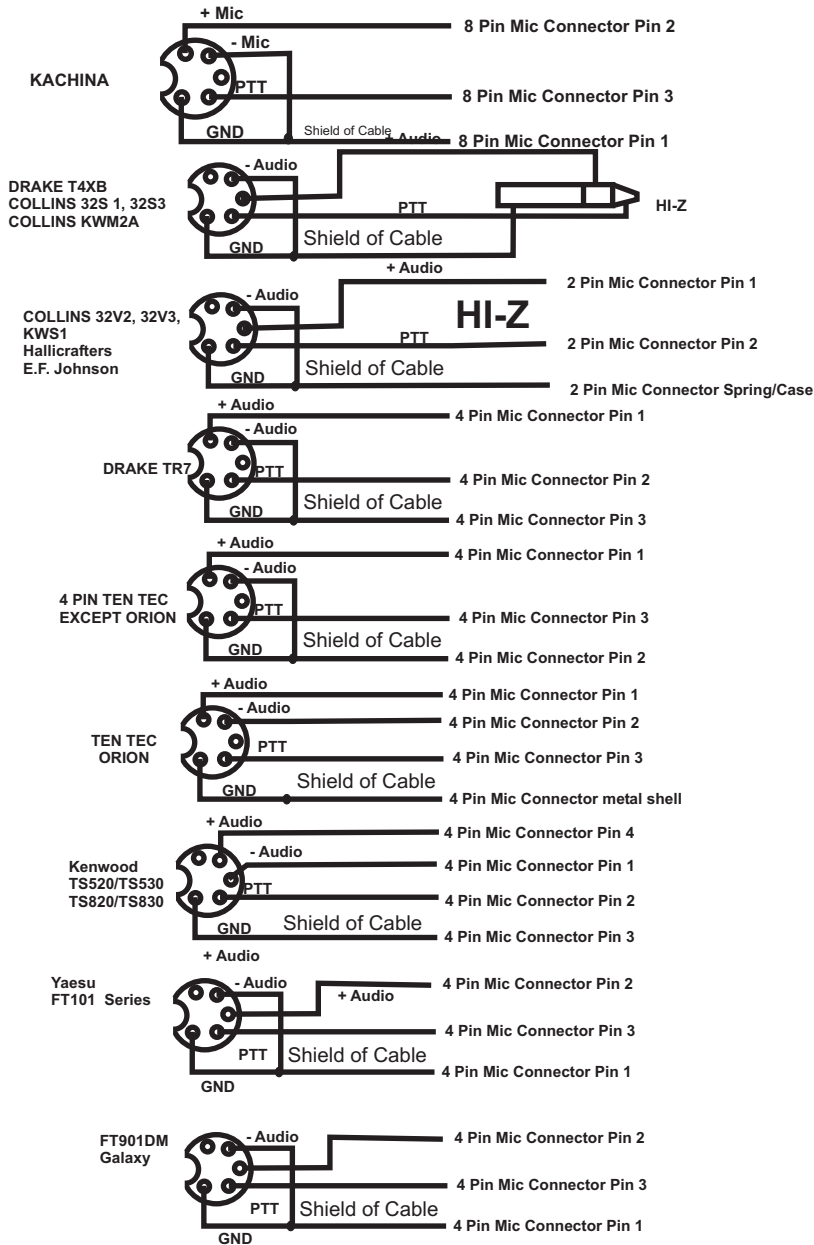
**Julius D. Jones**  
 19 Vanessa Lane  
 Staatsburg, N.Y. (12580)  
 (845) 889-4253

E-mail: Julius@W2IHY.COM

Home Page: [http:// www.w2ihy.com](http://www.w2ihy.com)

© 2007 W2IHY, ALL RIGHTS RESERVED

# AUDIO OUT CABLE WIRING



DIN connectors shown on the side to be soldered  
DO NOT SOLDER TO SHIELD OF DIN

# INTRODUCTION

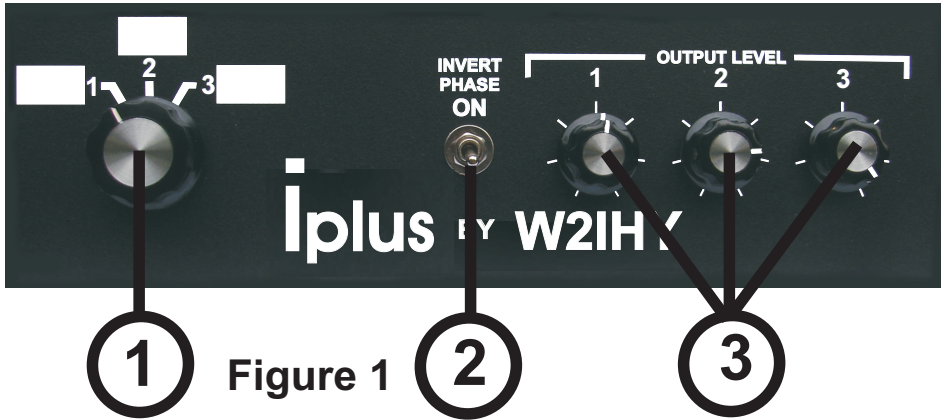
## iPlus by W2IHY

You asked for it, we listened, and here it is! The iPlus from W2IHY. How many times have you wanted to send your rack or W2IHY audio to more than just one radio with the ease of simply turning a big switch in front of you? You know the hassles involved. You must disconnect your rack's output to the radio that you normally use, then re-connect it to a different radio and if you are fortunate, the input connector on the other radio will be the same. More often than not, the other radio will use a different connector.

### NOW THERE IS AN EASIER WAY!

If you hate the scenario above, then the iPlus was designed just for you! No more plugging and unplugging cables to send your rack audio to more than one radio. Once you connect your cables from the iPlus to your existing radios (up to 3) and connect the PTT, amplifier and speaker cables, you're done. Imagine simply turning a switch to send your rack audio to one of three radios, and at the same time having the PTT, amplifier and speaker connections all ready to go. Connect it all up once and then forget it. The iPlus has extensive RFI and ground loop protection built in for a clean, no hum experience. The iPlus is built with a rugged steel chassis and very easy to use front-panel controls with clearly marked rear-panel connections. Existing EQplus, 8 or Dual Band Equalizer and iBox cables are compatible with iPlus cables. We feel so confident that you will be delighted with the iPlus that we offer a 30 day money back, no questions asked guarantee. The iPlus represents the new reference point for easy to use amateur radio audio equipment.

# iPlus FRONT PANEL CONTROLS



## (1) OUTPUT SELECT

This three position rotary switch directs audio and PTT from a single source to one of three five pin DIN outputs. (Audio output 1, Audio Output 2 and Audio 3.) This switch also directs the selected radio's amplifier keying to the connected amplifier and the radios selected external speaker audio to the connected speaker system.

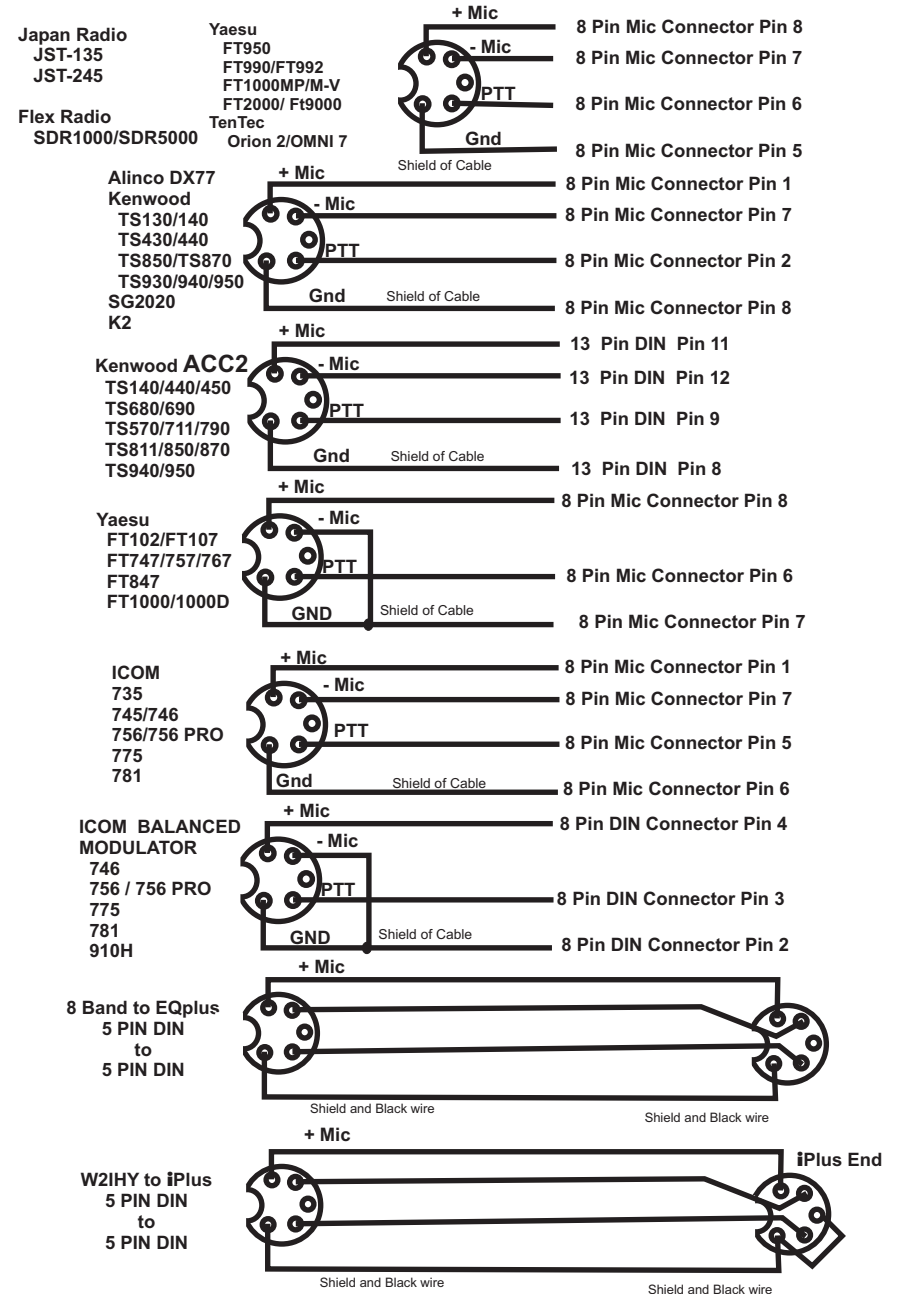
## (2) Invert Phase Switch

This switch reverses the phase of the audio output 180 degrees for proper AM modulation asymmetry.

## (3) Output Level

These potentiometers adjust the audio output of the iPlus. Output Level Pot. 1 adjusts the level of Audio Output 1. Output Level Pot. 2 adjusts the level of Audio Output 2. Output Level Pot, 3 adjusts the level of Audio Output 3. Turning a potentiometer (pot.) fully counterclockwise will reduce its audio output signal about 40 dB less than the input signal. Turning a pot. clockwise will increase its signal level at its audio output.

# AUDIO OUT CABLE WIRING



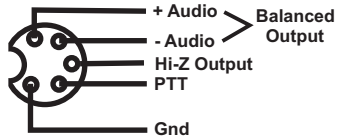
DIN connectors shown on the side to be soldered  
DO NOT SOLDER TO SHIELD OF DIN

# AUDIO OUT CABLE WIRING

## 5 PIN DIN AUDIO OUTPUT CONNECTION

AUDIO OUT 1/2/3  
5 Pin Male DIN

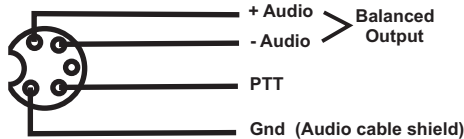
Din connectors shown  
on side to be soldered



### Low Impedance Balanced Output to Low Impedance Radio

AUDIO OUT 1/2/3  
5 Pin Male DIN

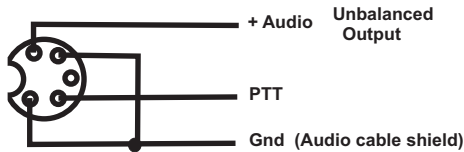
Din connectors shown  
on side to be soldered



### Low Impedance Unbalanced Output to Low Impedance Radio

AUDIO OUT 1/2/3  
5 Pin Male DIN

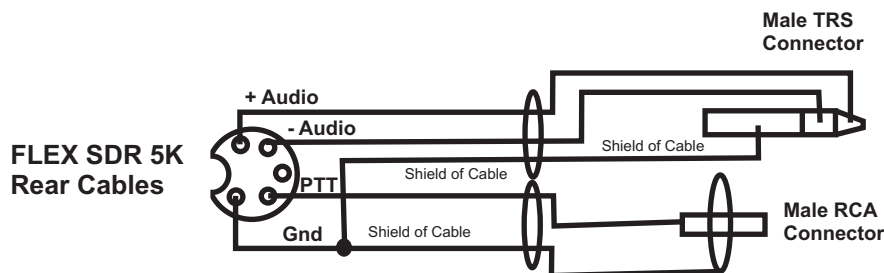
Din connectors shown  
on side to be soldered



### High Impedance Unbalanced Output to High Impedance Radio

AUDIO OUT 1/2/3  
5 Pin Male DIN

Din connectors shown  
on side to be soldered



DIN connectors shown on the side to be soldered  
DO NOT SOLDER TO SHIELD OF DIN

# iPlus REAR PANEL CONTROLS

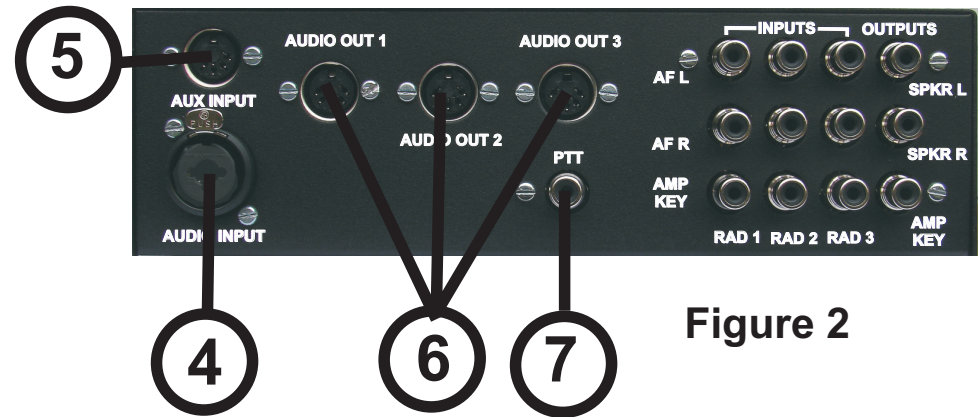


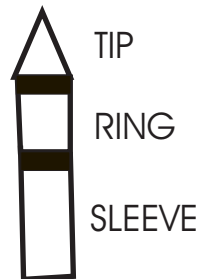
Figure 2

## (4) Audio Input (XLR and TRS)

This connector is used to bring audio into the iPlus. This connector contains a 3 pin XLR connector as well as a 1/4" stereo connector. Stereo connectors are also known as TRS connectors (Tip-Ring-Sleeve).

<== Audio Plug from Source to attenuator ==>

AUDIO CONFIGURATION	TIP XLR PIN 2	RING XLR PIN 3	SLEEVE XLR PIN 1
Source: Balanced Output iPlus Audio Input: Balanced	+MIC	-MIC	Ground
Source: Balanced Output iPlus Audio Input: unbalanced	+MIC	-MIC and Ground	-MIC and Ground
Source: Unbalanced Output iPlus Audio Input: unbalanced	+MIC	Ground	Ground

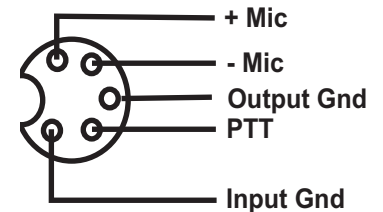


## (5) AUXiliary Audio Input

This 5 Pin Din connector allows audio and PTT to be brought into the iPlus from an external device such as one of the W2IHY audio products or some other device.

AUX Input  
5 Pin Male DIN

Din connectors shown  
on side to be soldered





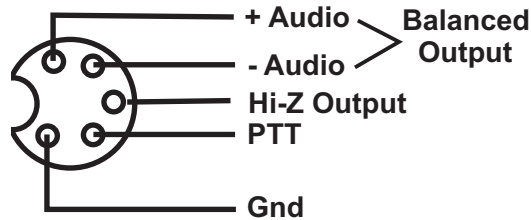
# iPlus REAR PANEL CONTROLS

## (6) AUDIO OUTPUTS 1,2 and 3

When the Output Select rotary switch (1) is in the "1" position, audio and push to talk (PTT) is active at Audio Output 1. When the Output Select switch (1) is in the "2" position, audio and PTT is active at Audio Output 2. When the Output Select switch (1) is in the "3" position, audio and PTT is active at Audio Output 3. The diagram below shows the configuration of each of the 3 outputs.

### AUDIO OUT 1/2/3 5 Pin Male DIN

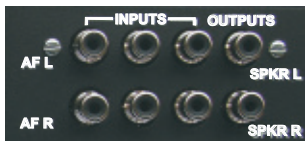
Din connectors shown on side to be soldered



## (7) PTT INPUT

This female RCA connector is for push to talk control of the radio selected by the Output Select rotary switch(1). A foot switch or other device may be connected. Joining the center of the connector to output ground activates the push to talk line at the selected audio output.

### Speaker Audio (AFL/AFR)



These RCA inputs accept mono or stereo inputs from up to 3 radios (and other audio sources) and sends the Output Selected (1) radio's audio to the 2 output RCA connectors (SPKR I/SPKR R). The

outputs may be connected to a single mono or stereo speaker system or recording device.

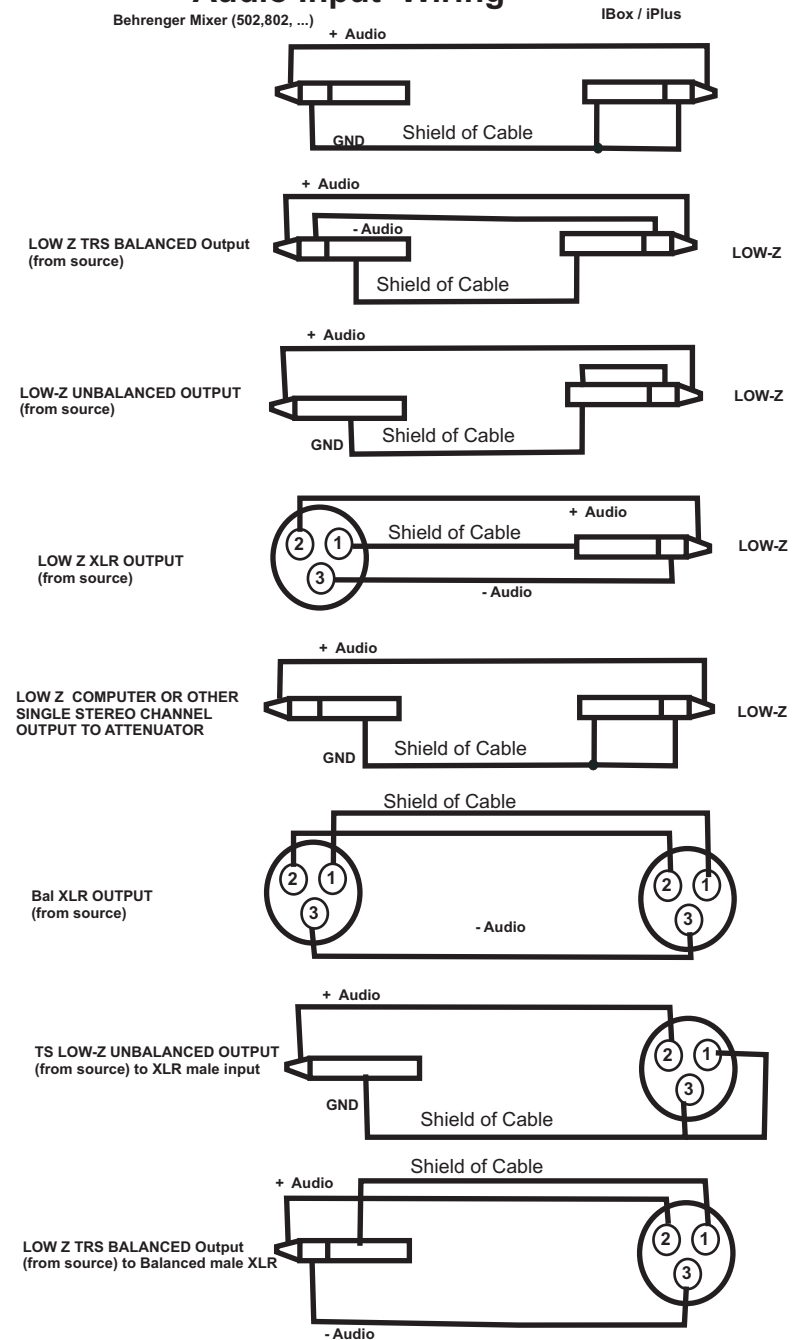
### Linear Amplifier Keying



These RCA inputs accept linear amplifier keying lines from up to 3 radios and sends the Output Selected (1) radio's keying line to the output to key the connected linear amplifier.

# AUDIO INPUT CABLE WIRING

## Audio Input Wiring



# iPlus CONFIGURATION FOR 5 RADIOS

Figure 4 shows how to cascade 2 iPluses to control 5 radios. **If a foot switch is used it must be connected to the input of iPlus 1.**

Tables 1 and 2 show which radios are selected as a function of the position of the Output Select (1) rotary switches. Figure 5 shows how the Output Select (1) switches may be labeled to indicate which radio is being selected.

Output Select iPlus 1	Output Select iPlus 2	Radio Selected
1	1	1
1	2	1
1	3	1
2	1	2
2	2	2
2	3	2
3	1	3
3	2	4
3	3	5

Table 1

Table 2 is a simplified version of table 1. Table 2 shows the position the Output Select (1) switches must be in to select a particular radio.

Output Select iPlus 1	Output Select iPlus 2	Radio Selected
1	1	1
2	1	2
3	1	3
3	2	4
3	3	5

Table 2

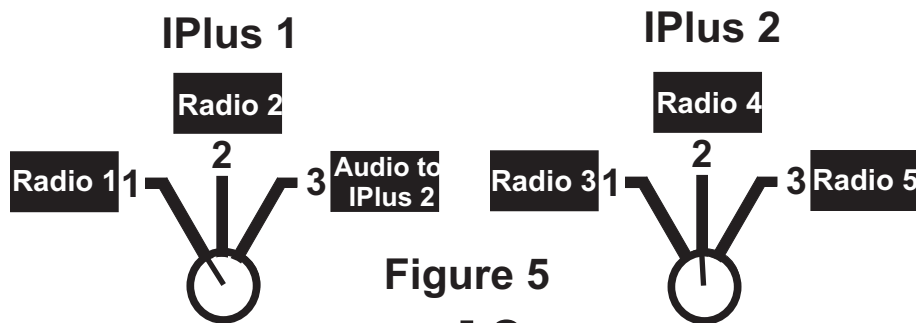


Figure 5

# QUICK START TUTORIAL

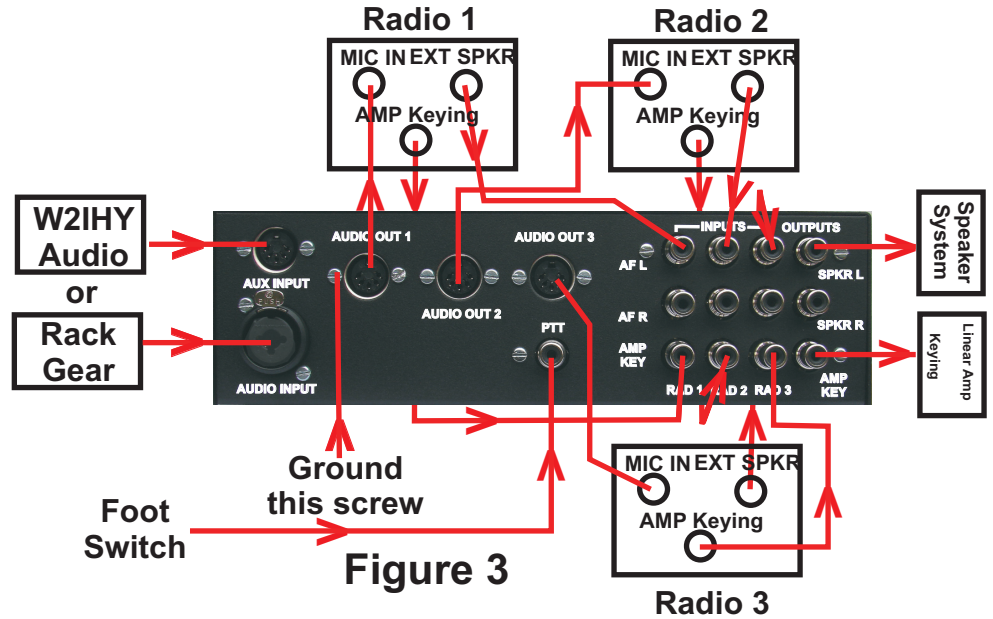


Figure 3

1. Turn the three **Output Level Control** potentiometers fully counter clockwise. (See figure 1)
2. Connect an audio source into the **Audio Input** connector. If you are using rack gear use the XLR/TRS connector. If you are using W2IHY audio equipment then use the Aux Input 5 PIN DIN connector(see figure 1). Page 11 (Audio Input Cable Wiring) shows some possible cable configurations. If you are using a TRS connector to connect into the iPlus make sure the sleeve of the 1/4" stereo plug is connected to the ground of the audio source. If you are using an XLR connector to connect into the iPlus make sure that XLR pin 1 is connected to the ground of the audio source.
3. Connect the **Audio Outputs** (Audio Output 1, 2 and or 3) to the radios or devices you would like to use with the iPlus. See pages 10-16 for possible cabling configurations. Make sure that the ground pin in the cable DIN is connected to the ground of what is being driven.
4. Connect the external speaker outputs from the radio's you want to interface to the iPlus. Using figure 3 as a guide connect the radio's external speaker output to its corresponding iPlus RCA **AFL/AFR Inputs**.

## QUICK START TUTORIAL

5. Connect your speaker system to the **iPlus Output Speaker L (SPKR L) and Speaker R (SPKR R) connectors.**
6. Connect your radio's linear amplifier keying lines, to the **iPlus**, for those radios you wish to operate with your linear amplifier. The Radio connected to Audio Output 1 should be connected to the **Input Amp Key connector** for Radio 1 if you want it to operate this radio with your amplifier. (See figure 3) The Radio connected to Audio Output 2 should be connected to the **Input Amp Key connector** for Radio 2 if you want it to operate this radio with your amplifier. The Radio connected to Audio Output 3 should be connected to the **Input Amp Key connector** for Radio 3 if you want it to operate this radio with your amplifier.
7. Connect a cable between the **iPlus Output Amp Key connector** and your linear amplifier. **PLEASE NOTE ONLY RADIO AMPLIFIER KEYING LINES SHOULD USE THE AMP KEY RCA's. DAMAGE MAY OCCUR IF OTHER TYPES OF SIGNALS ARE CONNECTED TO THIS INTERFACE.**
8. If you will be using a foot switch or other device to key your transmitter connect it into the **PTT connector** (see figure 3).
9. Prior to applying an audio signal to the input of the **iPlus** **turn all the Output Level Controls fully counter clockwise.** (See figure 1).
10. **Increase the output of the audio unit driving the iPlus.**
11. Turn the Output Select (1) to the radio you would like to use with the **iPlus**. Apply an audio signal to the input of the **iPlus**. Turn the **Output Level Control** clockwise associated with the radio you would like to use until the proper audio level for the device being driven is obtained.
12. Repeat step 10 to set the level of all other radio's connected to the **iPlus**.

**Connect a ground to the screw on Audio Output 1. This will minimize or eliminate the chances of 60 Hz./50Hz. hum on the output of the iPlus**

## iPlus CONFIGURATION FOR 5 RADIOS

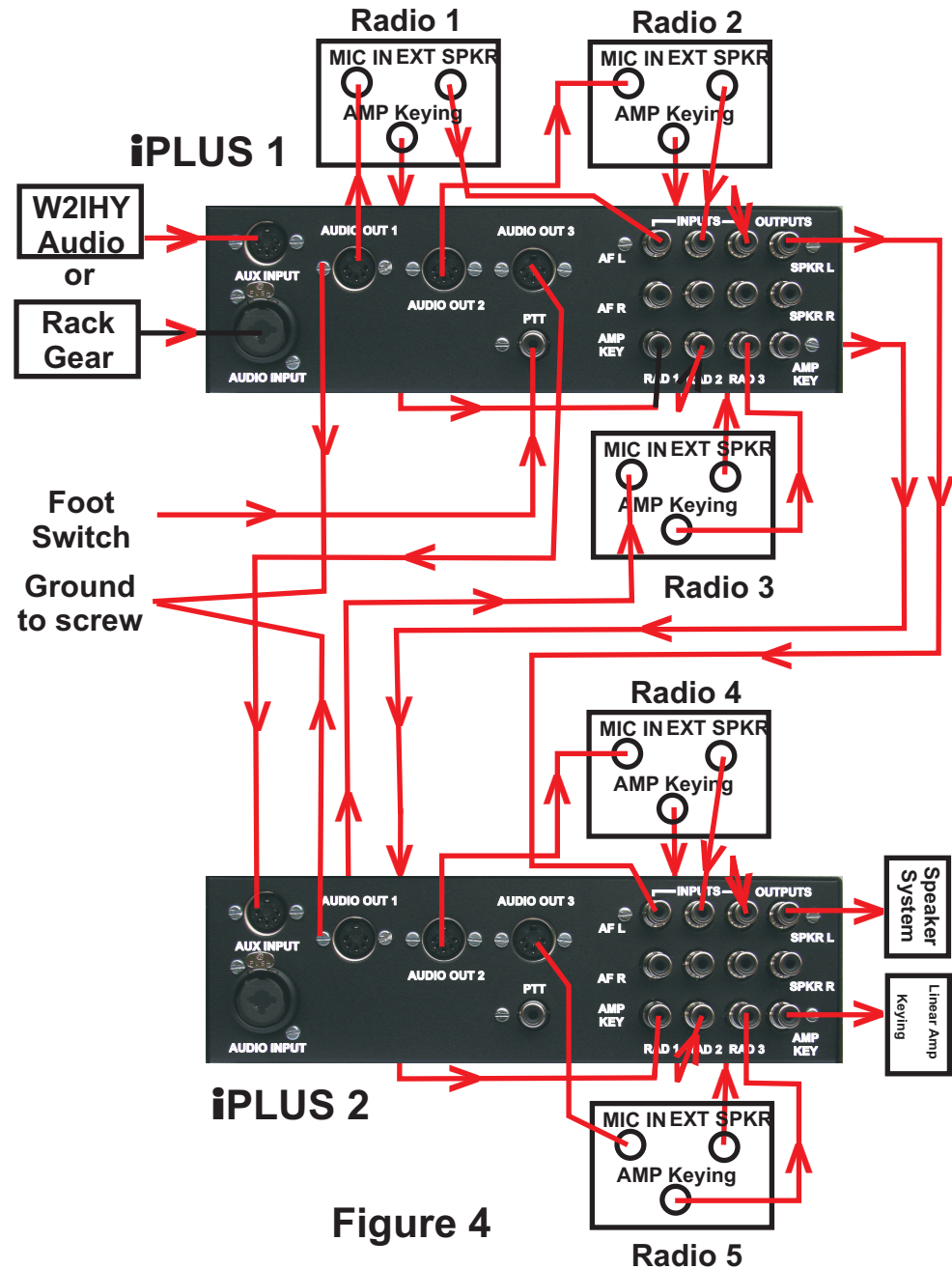


Figure 4