

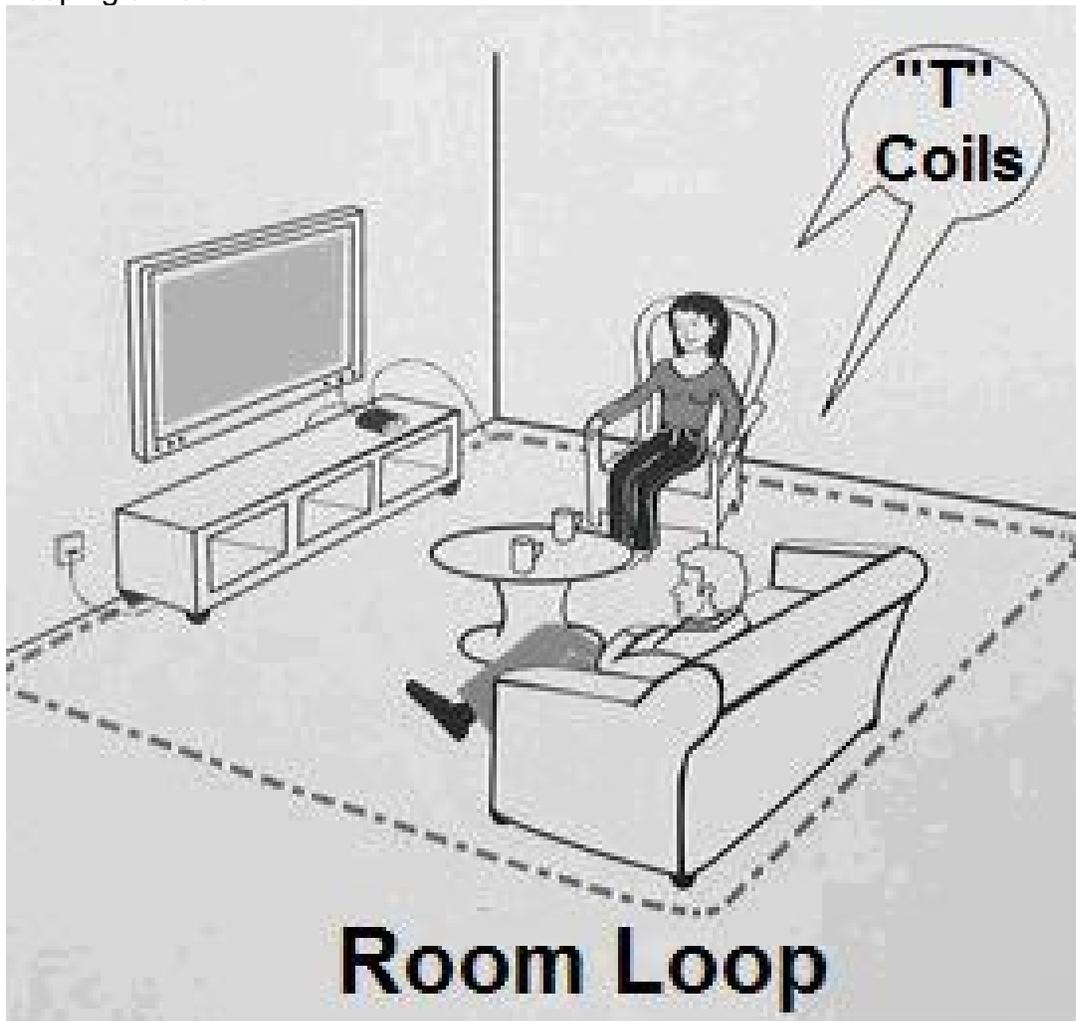
## HOME LOOP INSTALLATION 101

Instructor  
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### What is an Induction (or Hearing) Loop?

The “loop” is a wire routed around a room. Anyone within the “Loop” will hear what is transmitted by the loop amplifier if they are wearing a telecoil equipped hearing aid. The telecoil converts this electromagnetic /induction energy into audible sound.

Looping a Room



Looping a Room

**Steps in the looping process**

**Survey the room:**

- Shape
- Size (Dimensions)
- Electro Magnetic Interference(EMI)
- Placement of the loop
- Location of amplifier
-

## Tools

- Flashlight,
- Wire cutter
- Staple gun (“stick-on” or “nail-on” wire clamps can be used instead)
- Small wire ties
- Step stool or ladder if mounting the wire near the ceiling
- Wire twister, channel lock or standard pliers

## Equipment

- Television and/or a microphone (hard wire or wireless),
- Loop amplifier
- Power supply (A/C or D/C),
- Loop of wire(color of choice),
- RCA patch cords and/or in some situations, a
- Digital Optical cable and convertor to connect the amplifier to the TV.

## How will the loop be used

- Use with Television?
- Use with audio/sound system
- Use with microphone (Hard or wireless)
- Multiple use (Any combination of above)

## Type of loop amplifier to use

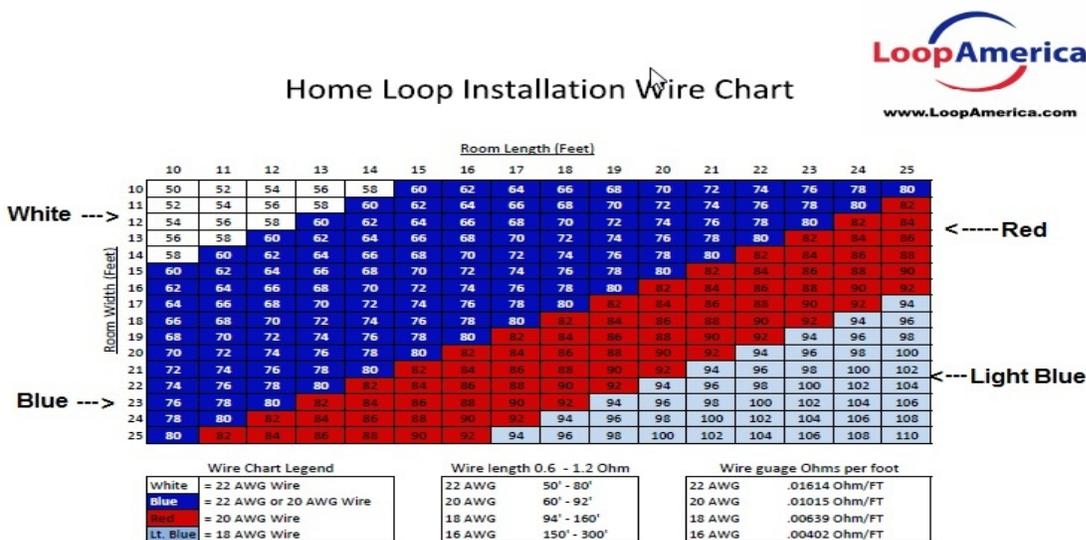
- Popular amplifiers are current and voltage
- Most stereo and PA amplifiers are voltage type amplifiers. They can be used as a loop amplifier but the high frequency sounds may not be as crisp.
- Amplifiers designed for loops are current amplifiers

## What wire size to use

### (Use the manufacturers recommendations)

- For a room under 200 sf :-- AWG 22 gauge wire
- For a room up to 400 sf :-- AWG 20 gauge wire
- Between 400 and 600 sf:-- AWG 18 gauge wire

## Wire Gauge Chart



\*This chart is based on single turn loops with a 5 ft lead from the amplifier to the loop.

\*If you are installing a double turn loop, refer only to the wire length guide

## Installation of wire

### 1. How high above the floor should a loop wire be located?

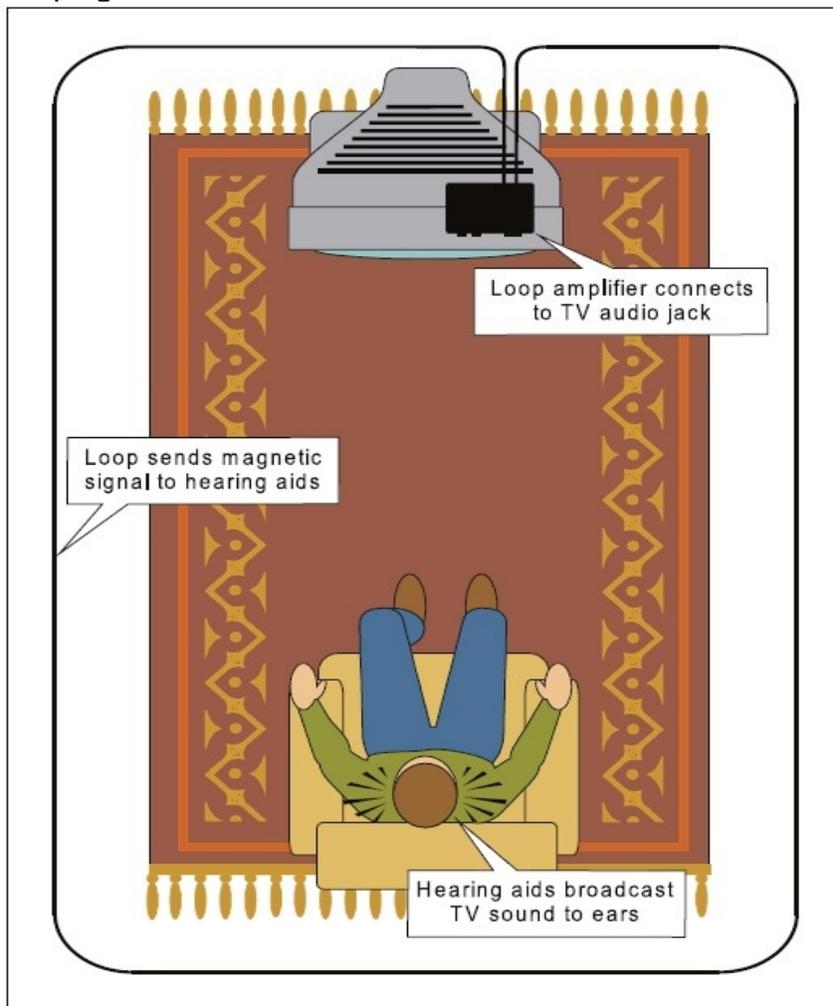
It is recommended that loop wires be installed no higher than 8' to 10' above the floor. Any higher than 8' and a drop in signal strength may be noticed. The wire should always be maintained at the same height around the room to keep signal strength uniform throughout the room.

### Installation of wire (cont'd)

### 2. What different ways can a loop wire be installed?

- The loop wire can be run overhead attached to the ceiling or wall at the joint line.
- It can be run around the baseboard and routed up over doorways or under carpet if installed.
- Placed in the ceiling of the floor below
- Placed under an area rug. In any installation the wire will complete a loop before being attached to the amplifier.

### Looping a Room



**A room loop enables people, without wearing special equipment, to have the television broadcast by their hearing aids.**

## **Installation of wire (cont'd)**

### **Note:**

It is recommended that where the wire meets, it should be twisted into a pigtail from that point to the amplifier. The pigtail serves two purposes. It makes the wire cosmetically attractive, and it neutralizes any signal that might be emitted. If the adjacent wall is hollow, the pigtail can be run down the inside out of sight then brought out near the amplifier.

## **Installation of wire (cont'd)**

### **3. How do I run the loop wire around the baseboard?**

- The loop wire can be run above the baseboard or tucked under it.
- At doorways you can route the wire up and over the door frame. If the floor is carpeted, you can use a box knife to cut a 1" slit in the carpet and run the wire under the carpet to the other side of the doorway (fish tape, or a coat hanger straightened out with a loop on each end can be used as a needle.)

## **Installation of wire (cont'd)**

### **4. I have vaulted ceilings. How do I route my loop wire?**

- If you have a skill saw, you can set the blade to a depth of about 1/8" to 3/16" and cut a small groove in the wall at about the 8' level.
- Then, run the wire across the wall, inserting it into the groove.
- About every 18" to 20" insert a BB size portion of Plumbers Putty into the groove to hold the wire in place.
- When the wire has been completely routed, fill the groove with Spackle paste, smoothing it out.
- After the Spackle has dried, sand lightly as needed and repaint to match the wall. A damp sponge works well.

## **Installation of wire (cont'd)**

### **5. Will lamp cords cause interference?**

- It is permissible to cross over electrical cords/coaxial cables and such but do not run parallel to them.
- Try to maintain a 4" to 6" separation between the wires or you may end up with a buzz/humming sound in your loop (called 60-cycle hum).
- Also, never run a loop wire near or against a metal object for more than a few feet as metal can suck up some of the loop signal strength.

## **Installation of wire (cont'd)**

### **6. Can I paint my loop wire?**

- Many people have painted the loop wire to match their wall color. This does not harm the wire or affect the quality of your signal strength.
- Loop wire comes in about six basic colors with white being the favorite of most people.

## **Installation of wire (cont'd)**

### **7. Things to avoid**

- To avoid EMI it is okay to cross over, but do not run parallel to lamp cords.
- Avoid contact with metal structure as it can suck up loop signal and reduce strength.

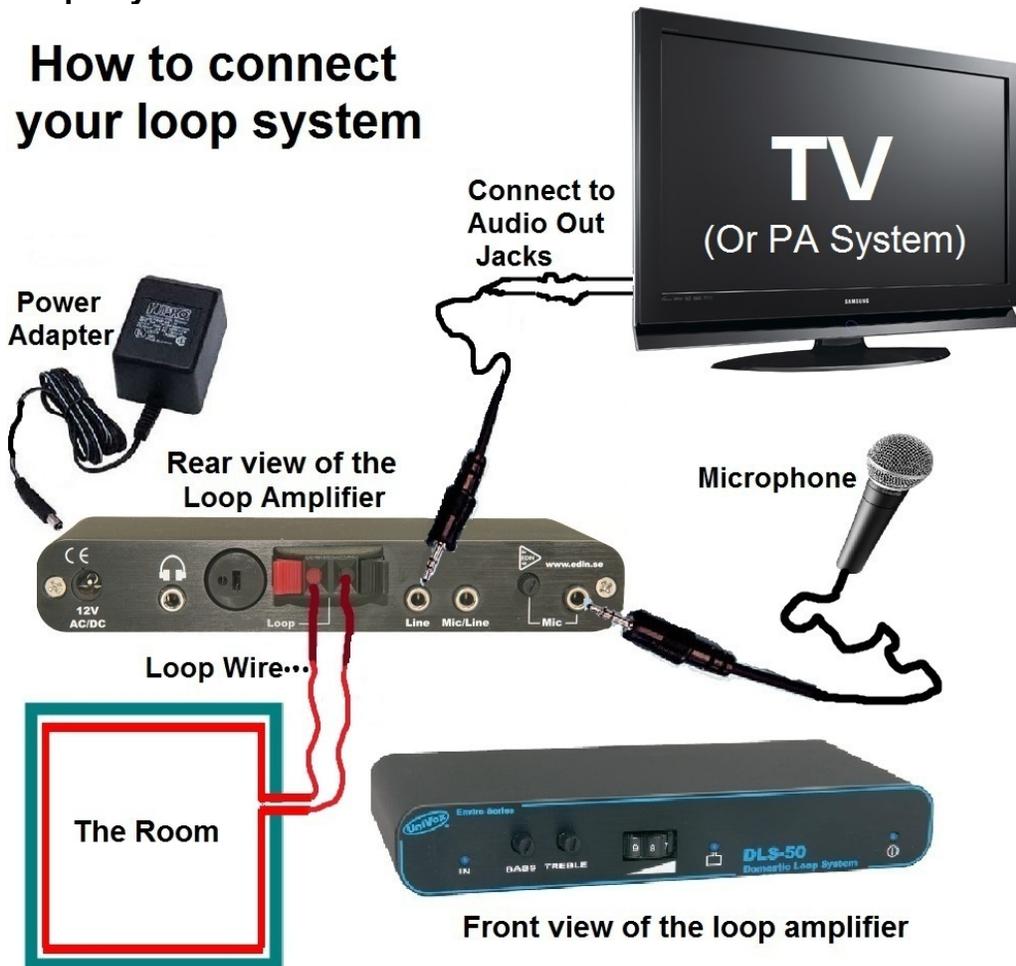
## **Connecting/hook up of system**

- Twisting of (pigtail) and soldering wire leads.

- Connecting to audio source
- Use of splitters, boosters, attenuators, microphones and Digital-Optical Convertors

## Loop Layout

# How to connect your loop system



### For additional information contact:

**Lou Touchette**  
 Telephone: (520) 444-9877  
 email: loutouchette@cox.net

### Non-standard connections

#### TV's without RCA "Audio Out" jacks.

- Attach flat-round microphone to the front of the TV speaker grill. Plug into the microphone jack on the loop amplifier.
- If using a cable box, satellite receiver, TIVO or DVR, use the RCA "Audio Out" jacks
- If the TV has an earphone jack, you can use it, but it will mute the sound from the TV's speakers.

- Some newer HDTV's require use of Digital-Audio convertors  
**Digital Optical to Analog Converters**



**Optical Cable**

### **Adjusting the loop signal strength**

- Use a Field Strength Meter (FSM) to adjust loop volume (optional)
- Have homeowner/user sit in usual chair then adjust loop volume to a comfortable level.
- For best sound (Highs, mid range and bass) a pleasant blend of loop and TV volume should be obtained.
- If you are connected to the TV with RCA patch cords, muting the TV will have no effect on your sound coming from the loop.

Field Strength Meter (FSM)



#### Accessories/Optional items

- Telelink adapter (for telephone)
- Microphone (hard or wireless connection)
- Loop Pads
- Loop Receivers
- Radio
- Headphones

Loop Pad



### **Common questions**

#### **1. I can hear the loop when I'm in an adjacent room. Why is this?**

What you are experiencing is referred to as "Spillover." The range can vary but it is rare that you'll notice this beyond about 4 to 6 feet outside of the loop. There are rare instances where someone may hear the TV 20 or more feet away in a far room or garage. Occasionally house wiring will pick up the sound and carry it some distance.

### **Common questions**

#### **2. I have to cock my head up or down to hear the loop. Why is this?**

Hearing aid manufacturers install telecoils in any open space they can find within the hearing aid. The orientation of your telecoil may be tilted and is most likely causing this to happen. Have your hearing professional send the aid(s) back to the manufacturer and have them reposition the telecoil.

### **Common questions**

#### **3. I have my home loop set at a comfortable level but when I go to different looped public locations, the volume is always too low. Why the difference?**

Public places are required to have the loop volume set to an international standard of

zero plus or minus 3 decibels. In newer digital hearing aids the telecoil volume can be adjusted. Have your hearing professional set your telecoil so that you hear in those public places. Then readjust your home loop again to where it is comfortable for you.

#### **Common questions**

#### **4. Can I take my loop system with me when I travel?**

Absolutely! Some loop amplifiers have optional "Loop Pads" that have a 20' to 35' cord on them. You can take your amplifier with you and use it in motel rooms for example. Uncoil the loop pad and place under your pillow on the bed then connect the RCA patch cord or use a microphone to hear the TV. Some amplifiers have an earphone jack where you can insert a headphone or neckloop. Of course, you'd want to buy a 12' or longer extension cord so you don't have to sit on top of the TV.

#### **Common questions**

#### **5. I often have company and have a hard time hearing them. Can I somehow use my loop to hear them when they are speaking?**

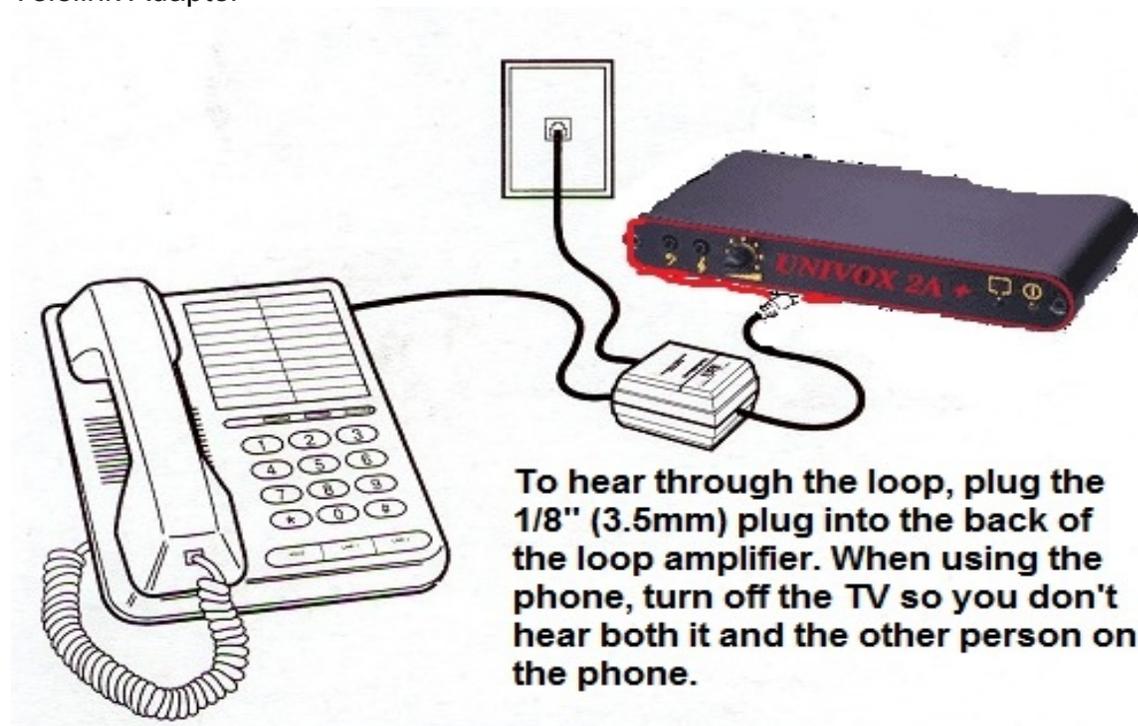
There are both lapel and wireless microphones that can be plugged into most loop amplifiers. Simply have your guest(s) speak into the microphone and you'll be able to hear them through the loop.

#### **Common questions**

#### **6. Can I connect my telephone to the loop system?**

Yes, there are several types of Telelink Adapters available that will work well with the loop. This is an excellent invention. There's also a suction cup microphone that can be suctioned to the handset and connected to the amplifier.

Telelink Adapter



**To hear through the loop, plug the 1/8" (3.5mm) plug into the back of the loop amplifier. When using the phone, turn off the TV so you don't hear both it and the other person on the phone.**

## Common questions

### 7. Can I use my loop system in my Recreation Vehicle (RV) or automobile?

Many folks have installed loop amplifiers in both RV's and automobiles. Some amplifiers have optional DC adapters you can buy that simply plug into a cigarette lighter receptacle. You don't need multiple loop amplifiers. Just move one from the house to the RV or automobile as needed. Bear in mind that some vehicle electronics might create a hum in the loop. You may wish to use a neckloop in an automobile.

## Common questions

### 8. The audio signal from my TV is weak. How can I increase the signal strength?

Some Satellite receivers and/or TV's pass through a weak audio signal. Even at full volume the loop receiver may not have enough output power to give an acceptable signal through the loop. In such case an in-line **signal booster** might be installed between the TV and the loop receiver. If too strong of a signal, use an **attenuator**.  
Weak or Too Strong Signal

