



# **CAPS RADIO KPPQ-LP 104.1 FM**

## **Technical Curriculum**

## Introduction:

Welcome to KPPQ-LP 104.1 FM! KPPQ-LP is a non-commercial, community based Low Power FM station for Ventura, offered by CAPS Media. Training for CAPS Media members wishing to produce a program for radio will be divided into two parts:

- The “Content” section, where you will be taught about F.C.C. and streaming rules for your program, how to do station I.D.s, underwriting, copyrighted music, event promotion, content logging and so forth.
- The “Technical” requirements will be covered in this section, where we will discuss the nuts and bolts of the equipment, and it’s correct operation. Let’s get started!

## Basic Workflow:

Whether your show is pre-recorded or live, you will need to record it for later replay, and for log keeping purposes. Even if your show is a live, one time event, it MUST be recorded as well.

The main recorder for our studio is the Zoom recorder shown in Fig.1. It records the program feed from the console (Fig.2) using SDHC memory cards. Your show is recorded to the memory card, which generates files that can be edited, submitted for playback, or copied into your own laptop or other device in order for you to have a copy to take away with you.

For editing your program, we use Audacity, which is a free download from <http://www.audacityteam.org>. It is available for Mac and PC. It is recommended that you download this program to your home computer and spend some time familiarizing yourself with it. There are numerous tutorials on Audacity’s website to help you learn this excellent program.

Depending on the format of your show, it is definitely possible to do your entire program on a “live to tape” basis, which will reduce or eliminate the need for editing later.

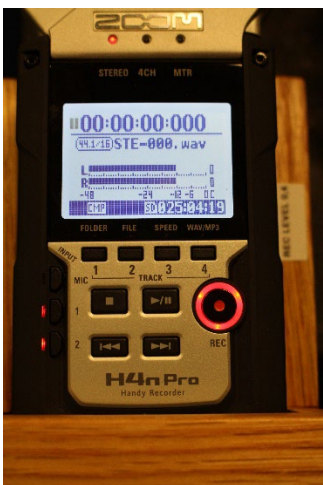


Fig. 1 Zoom H4N recorder



Fig. 2 Arrakis ARC 15 main console

The technical specifications and accepted file types will be covered later in this curriculum.

Types of content devices available to the console:

For talk and live interview segments, 3 microphones are provided for the host plus two guests. Two additional microphone inputs are available as needed for additional guests or other live sources such as musical instruments and so forth. Please arrange additional microphones in advance of your session with CAPS Media staff.

Music or other pre-recorded segments may be brought into the console in several ways:

-Two CD players are available, which also allows 'cross fading' on the console between songs or other CD based content, including Station I.D.s provided by CAPS for use during your program. See below.

-A turntable is available for records in either 33 or 45 rpm formats.

-Two standard 3.5mm cables are provided, which can be plugged into the headphone jack of many devices including laptops, I-Pods or MP3 players.

This is an excellent way to prepare all the content for your show at home. For example, in a music show, you can have your playlist of songs prepared ahead of time, using I-Tunes or Windows Media Player. In this way, you can bring your laptop or mp3 player with you, plug it into the console, and play back your songs, while using the provided microphones for voice and interview segments.

-Please note: All music tracks played on KPPQ-LP MUST be accurately logged in the Spinitron program, for purposes of copyright management. How to do this will be covered in the content guidelines.

-Phone calls: The main console supports a Bluetooth link to most types of cell phones. At this time, CAPS Media does not provide dedicated phone lines to the radio console. However, your own cellphone can be "paired" to the console using Bluetooth, which will allow you to take phone calls as part of your program. Please be sure to follow the content guidelines carefully when doing so.

Please note: Do not use your phone and Bluetooth to play music tracks or other content. Although many phones support playing back mp3's or other music files, the quality of Bluetooth links is unacceptable for this purpose. Also, the software in the console is intended to 'latch' to your phone when a call is received, and may not connect to your phone if it is used solely as a player.

## Big Red Buttons!

Arrakis console switches:

Each fader on the console corresponds to a “source”. Currently, the main sources you will use are:

Input 1: Host /DJ microphone. This input is different from the rest in several major ways, which we’ll discuss in a moment.

Inputs 2 & 3: Guest microphones.

Inputs 6 & 7: CD players

Input 8: Turntable

Input 10: Laptop/MP3, corresponds to the 3.5mm cable available to plug into the headset jack on your own laptop, I-pod or other player.

Input 15: Bluetooth link for cell phone calls to air.

In order to use any source during your program, both the green “PGM” light **and** the big red button at the bottom of the fader must be lit, as shown in Fig. 5. In this example, mic 1 is on-air, mics 2&3 are ready for air. The red “talk” button on input 1 is not used.



Fig. 5

Notice that each strip also has an “AUD” and a “CUE” button. The “AUD” button stands for “audition”, and can be used to set levels on a source before taking it to air. Turn the “PGM” light **off** and the “AUD” light **on**, and you can set levels using the VU meters on the right side of the console. The yellow “CUE” button is just that: it brings that source to a small cue speaker built in to the console, and is handy for finding the right track on a CD or LP. Speaker, headphone & cue speaker volumes are controlled by the knobs, and individual headphone volumes can be adjusted further using the additional headphone controls shown in Fig. 7

What you hear on the speakers and headsets is selected by the buttons shown in Fig. 6. Please note: the “AIR” button is not currently used. Please note that a “CUE” button lit on any strip will override “PGM” and “AUD” on the headphones. Speakers function normally.



Fig. 6 Monitor Control



Fig. 7 Individual Headphone control

INPUT 1 is different!:

All strips on the Arrakis console work identically **EXCEPT** input 1, the Host DJ Mic. In order to prevent feedback on-air, as soon as the big red button at the bottom of input 1 is lit, the following things happen:

The speakers are muted. The cue speaker is muted. The ON-AIR light outside the studio turns on. All headphones remain active, and thus, the Host and Guests should all be wearing headphones. The speakers are fine during long breaks or songs, but as mentioned, all speakers mute when the red button to activate Mic 1 is selected.

There is no “CUE” button on the HOST/DJ microphone. The red “talk” button is not currently used.



Fig. 8 VU Meters

Levels: The Program VU meters on the left are the main meters for your show (Fig. 8). **DO NOT** let any source go “into the red” or distortion (over modulation) will be heard. As you speak, the meter should peak below zero. Keep an eye on music tracks, frequently levels are lower at the beginning or intro phase of the song, and will climb with the main chorus. Avoid “setting and forgetting”. Watch your levels at all times!

The ZOOM Recorder:

This device is the main recorder for your show. As such, it is important to keep an eye on what it's doing, to insure correct playback later (Fig. 9).



Fig. 9 Zoom Recorder

-Power Switch: Slide the switch down to power the unit.

-The input indicators should show 1 & 2 lit, with the stereo indicator on as in Fig. 9. This indicates that you are recording the line inputs from the console, and not ambient noise from the top mounted microphones.

-Record level: This is an up/down rocker switch. Double check the record level is set according to the label by the record level switch, so that the levels are matched correctly to the console.

When recording, the levels should be peaking at between -12 and -6 db.

-Menu Controls: Avoid changing settings in the menus accidentally. Be careful to avoid pressing menu buttons when checking the record levels. Staff will assist you with formatting cards as needed.

-Card slot: Make sure the recorder is loaded with a properly formatted SDHC card before your show!

**Important Note:** When you press the “record” button initially, it will be flashing, indicating a “Paused” condition. You can check the record levels at this point (peaking -12db), but the unit is **NOT ACTUALLY RECORDING** until you press the play/pause button. Then, the red light around the record button will be lit steady, and the counter will be running, indicating the unit is recording.

Stop and start the record between “takes”, which will result in separate files for each take. This will make editing much easier later on.

Using the TASCAM CD-400U CD PLAYERS

-Insert **CD**

It is set to view: **R** for Time remaining – this will tell you the length of the song, counting backwards. It's a good way to know when to transition to another song or voice.

The track will stop at the end of the song and the CD will not continue to play.

-Turn **KNOB** on right side to select track and press in or hit play to PLAY.

-Eject CD and repeat.

You may also use the USB drive or SD slot. The files must be in MP3 or WAV format. You must select/change the source if you choose to use varied mediums.

Master On-Air Switch: DO NOT TOUCH

The Henry Engineering switch (figs. 3 & 4) is the main switch controlling what feeds the transmitter.



Fig.3 On-Air switch, normal operation, automation on-line, studio pre-recording shows



Fig.4 On-Air Switch (red button lit), studio LIVE TO AIR