

# Studio-side Equipment Use Guide for KKFI Remote Broadcasts

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Revision Date: 4/26/2017 (DRAFT 2)

## Introduction

The Comrex brand equipment is used for a remote live broadcast from a remote location. This procedure covers the use of the Comrex rack-mount equipment and full audio path in the KKFI studios as per the revision date listed above. The use of the Comrex remote equipment, sometimes known as the “BRIC”, is covered in a separate procedure but some recommendations and must-do’s are included in this procedure, as necessary.

It is encouraged to ensure a solid network connection from the remote broadcast equipment at the broadcast site through the internet, preferably by a quality network cable connection with reasonable network speed. A wireless connection can be used at the remote site as well, but is usually not as fast, nor as reliable.

The site source audio will usually include one or more microphone and other audio source, such as mixer board output through audio cables to the Comrex BRIC. The BRIC will mix the audio sources into one audio stream. This site source analog audio stream is transferred over the internet in packets and it gets converted back to analog audio when it goes through the Comrex rack-mount unit in the Engineering Room in the KKFI studios.

## Preparation Steps (others may apply at the beginning of other sections)

**Required Personnel for studio side of operation:** Two to start, one can leave at some point after getting a successful broadcast going as long as a qualified programmer can be on-air during the full broadcast. Each person should have a cell phone available to utilize for better communication. This may be likely a combination of text messaging and voice communications. It is recommended cell phones are used exclusively by all parties involved, and leave the KKFI on-air studio telephone for call-ins from listeners. This means all parties should share these phone numbers at least one hour before the planned start of the live broadcast (and earlier if possible).

A qualified on-air programmer must be available to run the main part of the studio-side of the live broadcast. They must be able to run the on-air board, provide personable input/hosting during breaks, and have music available to play between breaks in the live broadcast. In addition, the programmer likely will need to play scheduled spots at scheduled times during the hours of the broadcast. Prior discussion and planning should be performed between the operator of the remote equipment and the on-air programmer at least one hour before the show so an understanding of both sides needs can be met. The on-air programmer should read this guide and discuss any prior planning before the intended

live broadcast. Be aware in this role, you may have to fill in when things at the remote site have technical issues, such as the audio feed or stream going out, or program/performance issues occur which cause a quick-on-your-feet improv alternate program. A CD or other audio source should be ready to queue up or play, when things go unexpectedly.

A second person should be available to be able to man the Production Room audio board, and should be qualified enough to do basic operation of the board, and can access the Comrex rack equipment in the engineering room, if necessary. This role is also important in that they can address most pre-show issues independent of any programming going on in the on-air studio before the remote live broadcast program is scheduled to begin. They can listen for audio in the Production Room before it will be mixed into the broadcast program on the on-air studio audio board channel.

All personnel involved should show up at least one hour before the intended live broadcast time. Other plans and arrangements can be made as per the program's format and needs. Some sort of programming will be in progress while the remote broadcast program begins, so accommodations must occur with the programmer currently hosting a program.

It is recommended the remote Comrex equipment operator have a full internet connection by one hour before the intended live broadcast time. That way the path to the studio is already completed, then a focus on the stage or performance equipment and audio source connection can be worked on as those tend to take more time and have more tweaking and last-minute surprises.

For best results, all parties involved should follow some sort of pre-plan for personnel involved, weeks ahead of time, with a minimum of all roles pre-assigned/accounted for.

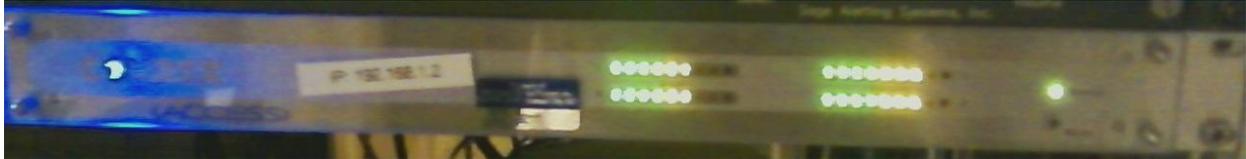
## Engineering Room

**Pre-Preparation:** The Engineering Room must be un-locked and/or available for access at least one hour before the intended live broadcast time.

The Comrex rack-mount unit is in the main broadcast equipment rack in the Engineering Room at the KKFI studio part of the office suite. It is a thin (about 2 inches) rack mount unit which shows the brand name "Comrex" in large letters as per the photo below:



*Comrex Rack-Mount Unit Face shown in normal static state without a link to the remote unit.*



*Comrex Rack-Mount Unit Face with a remote link: Note the green status LED on the far right side is now lit and the two pairs of VU meters, one L/R pair for Send and one L/R pair for Receive. Note the Receive side now shows the audio coming from the remote unit & what will play over the air.*

At least one hour before intended remote broadcast time start the Comrex unit must show the status light is green in color. If any other color is seen, the unit should be power-cycled.

If no live broadcasts have been done within a few weeks, or if the BRIC wasn't properly dis-connected from its last network connection, the Comrex unit may require a power cycle to recover to default configuration.

A power cycle on the Comrex unit can be completed by going to the back of the equipment rack and locating the AC power input plug on the left-rear side when facing the rear side of the unit. Carefully pull the plug at its collar and hold it while counting for 30 seconds wait time. After around 30 seconds has passed, re-insert the AC power plug into its socket in the back of the unit. Be sure to make it a tight connection without forcing it too much.

When the Comrex unit powers up, it will go through a self-test and initialization for 30 seconds or more. When it is fully ready for use, the status light will turn green.

If when around one hour before the intended remote broadcast time start, it is found the remote Comrex BRIC cannot get a connection to the Comrex studio rack-mount unit, but the BRIC can get internet access, it is possible the culprit is the Comrex rack-mount unit has lost its expected internet connection or the IP address has been changed. If this is the culprit, a simple power cycle of the Comrex rack-mount unit will usually solve this issue.

This is why it is recommended for more than one person be involved on the studio side; the second person can go back and forth between the Engineering and Production Rooms if necessary, including checking the operation of the Comrex rack-mount unit.

When the Comrex BRIC at the remote broadcast site has established a solid network connection (indicated on the BRIC itself) if any microphone input or other audio source is connected, audio signal should be able to be seen on the Comrex rack-mount unit Receive VU meters. If this is seen, then audio should be able to be heard over the monitor speakers or headphones in the Production Room, as well. This should all be done and be ready before any further action can be taken to have a successful remote live broadcast.

**Post-program Tasks:** When the remote live broadcast has completed, no particular wrap-up needs to occur in the Engineering Room, other than turning off the lights and locking it up if no other station

personnel are currently in need of being in there.

## Production Studio Room

**Pre-Preparation:** The Production Studio room must be reserved in advance during the hours of the planned remote broadcast. The sign-up calendar should be blocked out for the time needed, including one hour before planned broadcast time.

At the time of this revision, the main audio path from the remote broadcast equipment goes from the Comrex rack-mount unit in the Engineering Room to an input channel on the audio board in the Production Room. It is then routed to a channel on the audio board in the on-air studio.

A photo of the audio board in the Production Room follows:



*Full Shot - Production Room Audio Board: Setup shown during a successful typical single-channel remote live broadcast.*



*Close-up of Right Side - Production Room Audio Board: Setup shown during a successful typical single-channel remote live broadcast.*

The channel currently used on the Production Room audio board for the Comrex audio routing is on the far-right side & labeled “PHONE” on a sticker on the bottom, and a sticker on the top is labeled “A-PHONE” and “B-ACCESS”.

When setting up the board, unless another channel has a specific need, all other channels should be de-selected at the bottom with the Yellow LED illuminated. The live broadcast audio channel should be selected with the Red LED illuminated as shown in the photos. The source A/B selector at the top of the channel should be set to ‘B’ (illuminated). All other settings should be as shown in the photos.

The audio level slider should be set to mid-level at first, then adjusted up and down per audio quality and levels. You don’t want it to distort, and the person in the Production room is the person who will do first scrutiny of the audio quality, once it starts coming in, and let the on-site operator know if any audio quality issues are occurring, including bass, treble, distortion, or hiss. It is likely the first audio you may hear is ambient noise from the remote site, or test voice talking from the on-site equipment operator.

Once the remote live broadcast has successfully started, and has been going for at least 1 hour without

any issues, the second person manning the Production Room board may be able to leave and the on-air programmer can take over all functions. Usually most audio feed or network issues are known and occur within the first hour of the program. It is up to the situation for this judgement.

**Post-program Tasks:** When the remote live broadcast has completed, the board channel used for audio in the Production Room should be de-selected and its audio level slider set all the way down. The board should be set to a “neutral” configuration.

## **On-Air Studio**

**Pre-Preparation:** Other than pre-program coordination with the current on-air programmer before the scheduled remote show start, the main preparation step is to have music programming available which ideally fits the format of the programming being remote broadcast. For example, if the remote broadcast is a live blues program, it is recommended to bring in/have available some blues music to play during program breaks and unexpected circumstances.

The On-air Studio will typically be utilized like any typical shift-change from one programmer to the next. All respects to the current programmer must be paid so that there are minimal distractions from their program. Some coordination should occur at least a half-hour before the programmer is scheduled to leave, so they know what they need to complete their show with at the transition. There may be scheduled spots to play before the top of the hour, for example.

The on-air programmer must coordinate with the remote broadcast operator so there is as seamless of a transition possible. Usually the remote site program host will speak for a number of minutes before the actual program begins, and introduce the current act or program. There will be breaks and possible program segments. When a program segment is ready to start, the on-air programmer will be counted down to from the remote site host, when the remote program segment will begin. All prior program segment coordination should occur with the use of cell phones. The remote broadcast audio channel should be monitored by the on-air programmer, so as to know when it is ready to begin.

The audio board in the On-air studio will be fed the audio for the remote broadcast program using the board channel near the center of the board labeled at the top of “A-“ (no assignment) and “B-PRODUCTION” (the Production Room audio input channel). When the board is set up for a typical remote broadcast program currently in progress it may look like:



*On-air Studio Audio Board: Setup shown during a successful typical single-channel remote live broadcast, showing the B-PRODUCTION channel used, with the source A/B selector set to 'B'. There may be more enabled channels shown than may be necessary at any given time, depending on the current situation with the on-air programmer.*

Ideally, when all planning & execution went well and the audio is available from the remote broadcast site, the volume slider control for the B-PRODUCTION channel should be moved to the mid-position, then tweaked for optimal audio sound without overdriving or distortion when a program segment begins.

Periodic coordination with one or more persons at the remote broadcast site should be expected and encouraged. Part of the job is coordination, and another part of the job is listening. At some point an unexpected program or technical issue may occur, which will cause an immediate "Plan-B" fill-in until things normalize.

**Post-program Tasks:** When the remote broadcast program ends, be sure to coordinate with the next programmer who will turn down the level on the B-PRODUCTION and de-select the channel to Yellow.