



Mobile Master User Guide

V2.0
November 2022



CONTENTS

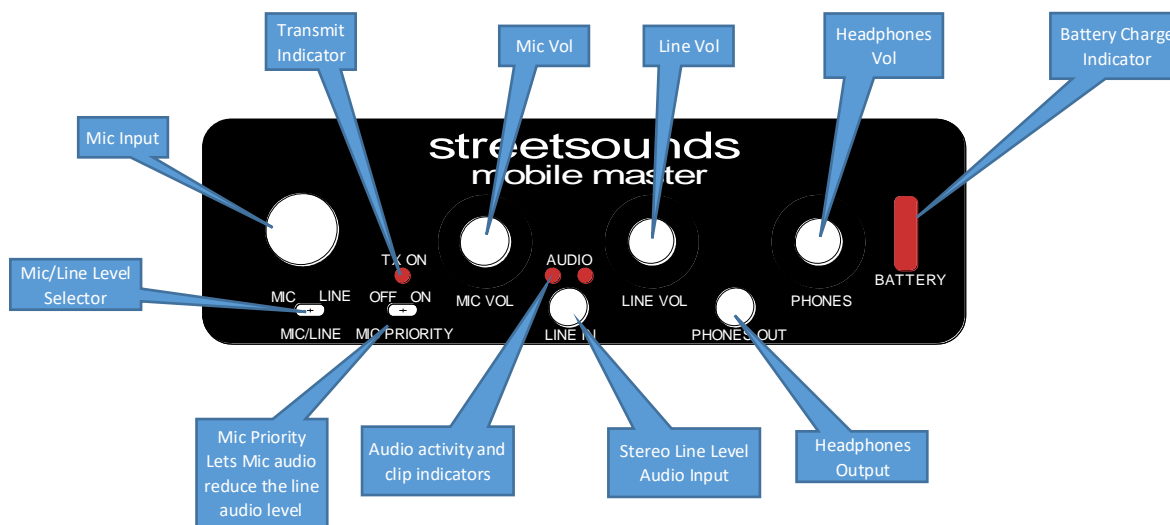
1	Introduction.....	3
1.1	Mobi Front Panel	3
1.1.1	Mic Input.....	3
1.1.2	Mic/Line Switch.....	4
1.1.3	Mic Priority Switch	4
1.1.4	Line In Connector	5
1.1.5	Phones Output Connector	5
1.1.6	Battery Charge Indicator	5
1.2	Mobi Rear Panel.....	6
1.2.1	Channel Pair	6
1.2.2	Antennas	6
1.2.3	USB Connector	6
1.3	Battery	6
1.3.1	DEAD BATTERY?	7
1.4	Operating the Mobi.....	7
2	Special Event mode.....	9
2.1	Overview.....	9
2.1.1	Daily Background Music	9
2.1.2	Special Event Mode	9
2.2	Pre-configuring the Primary Fixed Master Transmitter	9
2.3	Locating the Secondary Fixed Master Transmitter	11
2.4	Switching to Event Mode	11
2.5	Switching Back to Daily Background Music Mode	12
3	FCC Statements.....	13
3.1	Class B Devices:	13
3.2	RF Exposure and Safety Information	13
3.3	Modular Radio	13
4	Industry Canada Specific Statements:	14

1 INTRODUCTION

The Mobile Master (“Mobi”) is a mobile, battery-powered StreetSounds master transmitter that includes a two-channel audio mixer on its input. The mixer includes one input for Microphone-level audio, and a second input for line-level stereo audio input. Both have independent volume controls to allow mixing of the two audio signals for transmission to a StreetSounds® network.

1.1 MOBI FRONT PANEL

Below are the front panel controls for the Mobi.



1.1.1 Mic Input

The Mic input accepts either a “mic-level” signal (very low level), or a “line-level mono mix” (higher level). The input signal level is selectable by the Mic/Line switch (below).

The Mic level signal would come from a (customer-provided) dynamic microphone such as the Sennheiser e-835s shown below. The customer is responsible for providing the microphone and its associated microphone cable.

The Balanced Mono signal could come from a pro-audio mixer (i.e., DJ). This type of signal is much higher in level than a microphone and doesn’t require as much “gain”. Make sure to use the appropriate Mic/Line switch position (see below) when using this audio input connector.

1.1.2 Mic/Line Switch

The Mic/Line switch allows the Mic input to accept line-level balanced mono audio if a microphone is not being used. For example, if you are using an external mixer board (i.e. DJ), you can insert a “balanced mono” mix of the board’s output into this port.

BE CAREFUL THAT YOU HAVE CHANGED THE SWITCH POSITION TO “LINE” BEFORE TURNING UP THE VOLUME OF THIS INPUT. If the switch is in the “Mic” position, you will overload the remote StreetSounds audio amplifier potentially causing damage to the system.

1.1.3 Mic Priority Switch

The “Mic Priority” switch allows audio from the Mic input to automatically reduce the audio level of the Line input by ~20db (also called “ducking”) when someone is speaking into the mic. When you talk into the Mic, the line level audio temporarily drops, and the returns to its original level when you stop talking. This prevents you from having to manually turn the Line input down in order to more clearly hear the mic input. We recommend using a microphone with an On/Off switch so that you can silence the mic completely when not in use. This way the mic will not create any unwanted background sound that may cause a “false” audio signal to reduce the main line-level audio feed. We recommend a microphone such as the Sennheiser e-835s



You will also need a “TRS to XLR balanced” mic cable such as the one shown below. A six-foot cable is generally a good length.



1.1.4 Line In Connector

The Line Input connector accepts “line-level” STEREO audio from a smartphone, tablet, PC, or outboard audio mixer. The “Line Vol” knob adjusts the audio level of this input.

1.1.5 Phones Output Connector

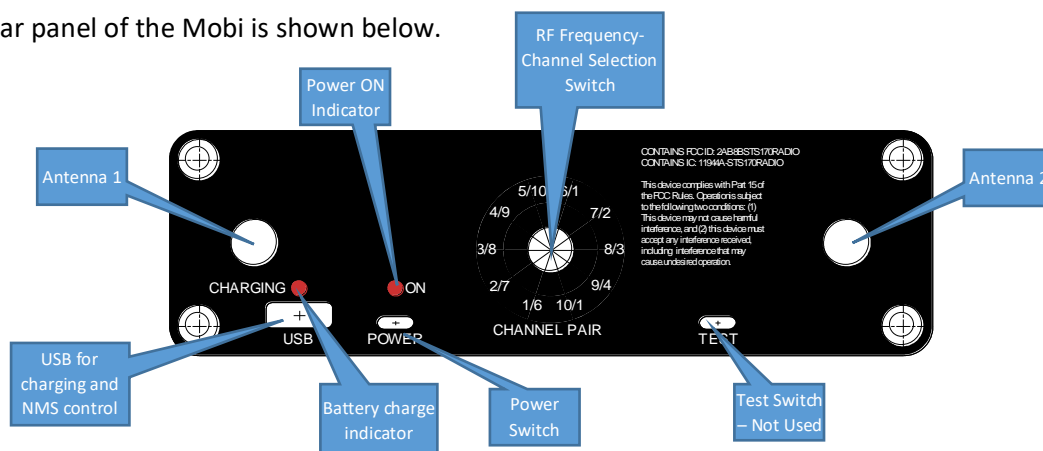
The “Phones Out” output connector and “Phones” volume control provides an output mix of both the Mic and Line audio inputs. This can be used to monitor the mix of audio being sent to the StreetSounds network.

1.1.6 Battery Charge Indicator

The Battery Charge Indicator lets you know how much charge is left in the battery. When the battery charge is almost depleted, the last LED (bottom) will begin to blink. It is advised that you recharge the battery before the last LED begins to blink.

1.2 MOBI REAR PANEL

The rear panel of the Mobi is shown below.



1.2.1 Channel Pair

The RF Frequency/Channel Selection Switch rotary switch allows you to select which channel pair is used for the Mobi transmission. The frequency spacing between the channel pairs is fixed (1&6, 2&7, 3&8, 4&9, 5&10). Most StreetSounds networks are configured to use channels 1&6 (but not always).

1.2.2 Antennas

Always make sure the BOTH antennas are attached to Mobi when transmitting. A missing antenna can cause problems with the range of the transmit signal.

1.2.3 USB Connector

The USB connector functions both as a battery charger, and as a control interface connector for the Network Management System (NMS) application running on a PC. The Mobi CAN operate without the NMS, but if you do this you have no visibility into the network for troubleshooting or control. It is recommended that you use a PC for your first few outdoor events until you get a better understanding of the functionality and reliability of the Mobi transmit range and coverage.

The Mobi kit includes a USB charger which can be used to charge the battery in lieu of a PC. Also a cellphone charger “battery pack” can be used to power and charge the Mobi.

1.3 BATTERY

The Mobi includes a Lithium Ion rechargeable battery that can last up to 10 hours when fully charged. Charging the battery takes approximately 3 hours IF THE POWER SWITCH IS TURNED OFF. If the power switch is left ON, the battery takes up to 3 additional hours to charge. It is important to fully charge the battery prior to any outdoor special event in which no charger is attached.

The USB interface is both a charger port for the battery, as well as a control interface for the Network Management System application. The Mobi can be left connected to a laptop USB port full-time if it is used as the primary “Master” transmitter for the StreetSounds network. It will not damage the battery. Charging the battery from the USB port takes approximately 3 hours if the Mobi is turned off.

Also, the Mobi can be charged by a “power pack” similar to what is used to charge a cellphone. The power pack can be connected to Mobi to extend the battery life during a long outdoor special event. There are many cost-effective power packs on the market.



1.3.1 DEAD BATTERY?

If you happen to leave the Mobi turned on too long and have no LEDs showing on the front or rear panel of the Mobi, TURN OFF THE POWER SWITCH AND LET THE BATTERY CHARGE FOR 1 HOUR. After about 1 hour the CHARGE LED should turn on. Once the charge LED is back on, turn the power switch back on and check the battery indicator on the front panel. One or more of the 4 LEDs should light up. If none of the LEDs light up, keep charging for another 30 minutes and check again. If after attempting to charge for 90 minutes there are no LEDs lighting up the battery has failed. Contact AirNetix for RMA procedures.

1.4 OPERATING THE MOBI

Make sure all volume controls are set to their minimum level before turning on the unit. Once the unit is powered, you can begin to slowly increase the volume setting. Be careful not to over drive the remote StreetSounds® units. If overdriven, the remote unit may self-protect causing a temporary loss of power. If this happens, turn down the audio level of the Mobi and monitor the level to prevent this from recurring.

Keep an eye on battery level. A freshly charged battery should last ~10 hours. It can take ~3 hours to completely recharge if the Mobi is turned off.

Connecting the Mobi via the USB interface to a laptop running the StreetSounds® Network Management System (NMS) application will give you full visibility and control of your entire network. Each remote can be monitored and controlled from the NMS interface. See the Network Management System (NMS) User Guide for more details. Using the NMS to control the Mobi is optional but gives a wide range of control and monitor points for the network.



NOTE: *If you do not have a microphone connected to the Mobi, make sure the Mic volume control is turned all the way down, otherwise you may experience noise and/or hum.*

2 SPECIAL EVENT MODE

The Mobile can be used as the primary transmitter for outdoor special events if properly configured ahead of time. This configuration varies based on your network layout and the location of your “Fixed Master Transmitter” if you have one in your network. The setup is actually quite simple, but can seem complex the first time you do it.

2.1 OVERVIEW

The StreetSounds system has two basic modes of operation:

2.1.1 Daily Background Music

In Daily Background Music mode the StreetSounds system uses the Primary Fixed Master Transmitter as the Master for the network. In this mode the Primary Fixed Master is optimized to communicate with all of the remotes, either directly or via repeaters.

2.1.2 Special Event Mode

In Special Event Mode the Primary Fixed Master is manually reconfigured to be a Repeater. It will listen for a transmission from a “Secondary Master Transmitter” (i.e. Mobi), then repeat this signal to all of the remote units that it normally communicates with during Daily Background Music mode. Thus, there is no reconfiguration required of the bulk of the network.

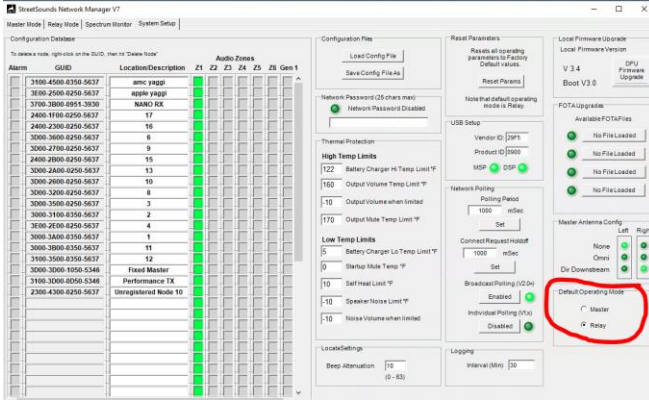
The Secondary Master Transmitter can be one of several different StreetSounds transmitters; 1) another Fixed Master Transmitter, 2) a Mobile Master Transmitter, or a NANO Transceiver.

2.2 PRE-CONFIGURING THE PRIMARY FIXED MASTER TRANSMITTER

In switching from Daily Background mode to Special Event Mode the Primary Fixed Master Transmitter must be pre-configured to listen to a certain channel that is being sent from the Secondary Master Transmitter. This pre-configuration needs only to be done once. After this is done, all that is required to switch modes is to select the “Relay” tab on the NMS that is connected to the Primary Fixed Master Transmitter.

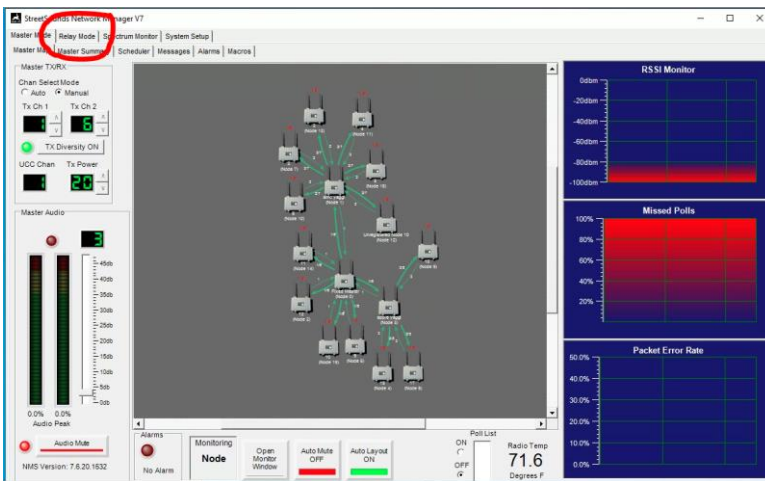
To pre-configure the Primary Fixed Master Transmitter you must have the Secondary Master Transmitter in close proximity to the Primary Fixed Master Transmitter. The following procedure should be followed:

1. While connected to the Primary Fixed Master, set the Default Operating Mode of the NMS to Relay.



The reason for this is that the Fixed Master, when in Relay mode, will self-reset after 30 seconds of not receiving a signal. When it does self-reset, it will go into the operating mode defined by this setting. Therefore, if the Secondary Fixed Master is not transmitting within the 30 second window, the Fixed Master will self-reset and return the Relay mode instead of trying to become the network Master transmitter again.

2. Select the "Relay" tab on the NMS while it is connected to the Fixed Master Transmitter.



This will switch the Primary Fixed Master into Relay mode. However, the Fixed Master must be manually configured to receive the specific channel that the Secondary Master Transmitter is transmitting on.



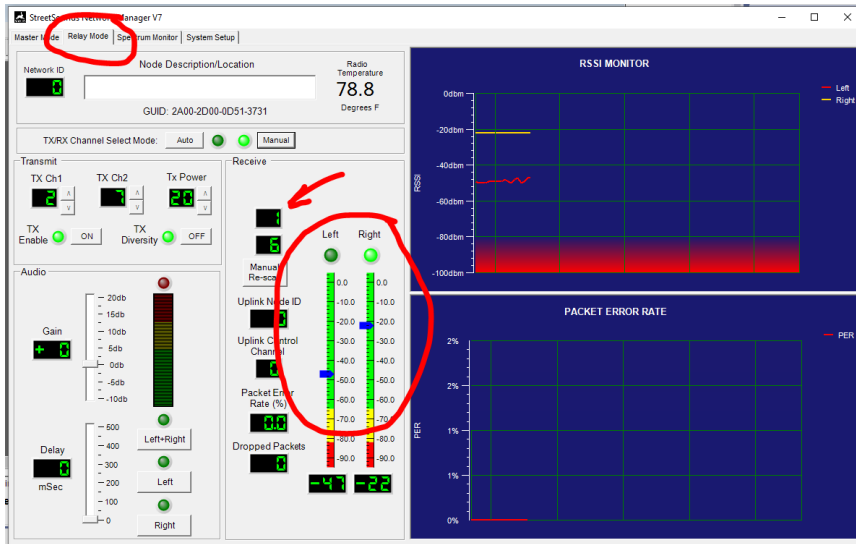
3. Turn on the Secondary Fixed Master Transmitter to the selected channel. To do this you may need to temporarily connect the NMS to the Secondary Master to properly configure its transmit channel.
4. Once the Secondary Master is transmitting, reconnect the NMS to the Primary Fixed Master. Temporarily set the Primary Fixed Master to “Auto” channel select mode. This will allow the Primary Fixed Master to receive the signal being transmitted by the Secondary Fixed Master.
5. When the signal is being received by the Primary Fixed Master, set the TXRX Channel Select Mode back to Manual. The Primary Fixed Master is now configured for Special Event Mode.

2.3 LOCATING THE SECONDARY FIXED MASTER TRANSMITTER

A critical part of the Special Event Mode re-configuration is to make sure the Secondary Master Transmitter is within “range” of the main Fixed Master Transmitter’s antennas. This “range” will depend upon not only distance from the Fixed Master antennas, but look-angle (ground to roof), obstructions (people, buildings, automotive traffic, and local interference). Normally the Secondary Fixed Master is directly below the roof-mounted Fixed Master Transmitter. In this case a simple switch of the NMS from “Master Mode” to “Relay Mode” is all that is required to switch from Daily Background Mode to Special Event Mode.

2.4 SWITCHING TO EVENT MODE

Once the pre-configuration of the Primary Fixed Master Transmitter has been done (see above), switch the Primary Fixed Master to Relay mode using the NMS connected to the Primary Fixed Master. If not already transmitting, set the Secondary Fixed Master to Master Mode (this can be done ahead of time using the NMS. This setting will be stored so that NMS is not required after the initial setup of the Secondary Fixed Master). Once the Secondary Fixed Master is transmitting, verify that the Primary Fixed Master is receiving its signal, has good margin, and is not dropping packets as shown below.



2.5 SWITCHING BACK TO DAILY BACKGROUND MUSIC MODE

All that is required to switch the Primary Master back to Daily Background Music Mode is to click on the Master Mode tab at the top of the NMS screen.

Don't forget to turn off the Secondary Master Transmitter if it is not being used.

3 FCC STATEMENTS

3.1 CLASS B DEVICES:

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

3.2 RF EXPOSURE AND SAFETY INFORMATION

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance **30cm** between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. Access to the internal module is reasonably restricted by the host packaging. ***The end-user has no manual instructions to remove or install the module.*** Questions or concerns regarding product safety should be referred to AirNetix, LLC, 2218 Edgartown Lane SE, Smyrna, GA 30080.

3.3 MODULAR RADIO

This host device contains a modular radio with FCC ID: 2AB8BSTS170RADIO and IC: 1944A-ST5170RADIO

4 INDUSTRY CANADA SPECIFIC STATEMENTS:

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

This radio transmitter **11944A-ST5170RADIO** has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio **11944A-ST5170RADIO** a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

- 2 dBi dipole
- 14 dbi Yagi
- 8 dbi Patch
- 8 dbi Omni directional antenna

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.