Equipment Purchases for SoundJack at Prep/Continuing Ed. Jazz at New England Conservatory

THIS DOCUMENT WILL TELL YOU WHAT EQUIPMENT YOU NEED TO BUY TO USE SOUNDJACK, AND A PRICE RANGE FOR THE EQUIPMENT NEEDED.

SOUNDJACK TECHNOLOGY FOR ENSEMBLES AND PRIVATE LESSONS

All Jazz Ensembles (except Youth Jazz Orchestra) for students who live within 500 miles of their teacher will use *NEW* technology called SoundJack to rehearse <u>*live in real time*</u> with up to five computers online. Students may opt to not use SoundJack for private lessons and only use Zoom, but since most jazz private lesson students play in jazz ensembles, they will be set up for SoundJack anyways.

This technology, which requires an ethernet cable connection from your computer to your router, transmits low latency sound, which refers to sound transmitted at high speed over the internet. This faster speed allows small ensembles to rehearse and perform music together in real time, in separate locations, without sound delays. Zoom does not transmit low latency audio, which is why we are excited to have found this new technology to use.

ZOOM FOR CLASSES AND PRIVATE LESSONS

In addition to the main ethernet connected computer used purely for low latency sound, **for Private Jazz Lessons, students will use a <u>second device</u> using WIFI such as a phone, tablet, iPad, or second computer for visual technology like Zoom (with the sound being muted).**
Jazz classroom courses such as Jazz Styles, Jazz History, Jazz Ear Training and Jazz Theory will use Zoom only.

LOOK FOR SPECIFIC LINKS BELOW THAT CAN HELP YOU SHOP FOR BOTH COMPUTER GEAR AND HOME SITUATION/INSTRUMENT SPECIFIC AUDIO GEAR THAT HAVE A RANGE OF PRICES.

<u>Most Jazz students have some of the equipment listed below, but perhaps not all of it, in which case you will need to buy the following equipment as well.</u>
For students that have NONE of the gear listed below, at the final section of this document, we have created three example packages with price totals. **However, you should check if you already have some of this equipment before making unnecessary purchases.**

COMPUTER GEAR EVERYONE **MUST** HAVE FOR USING SOUNDJACK (Audio Gear is listed separately) - links to buying options are in blue at the end of this document

1. **CAT 6 ethernet cable to get from your router to the computer that runs Soundjack.** It is totally fine to use a long ethernet cable. You must measure the distance between your router and where you can play music. Depending on the **length** of CAT 6 ethernet cable you need, this will be an **$8-$60** investment.
2. Computers will need an **ethernet to USB (PC)** adapter or **USBC adapter (Mac)** adapter which is **$15-$24** to buy.

AUDIO GEAR NEEDED FOR SOUNDJACK FOR ALL JAZZ STUDENTS - **links are BLUE**

There are 5 Audio Products that you will need for SoundJack.

1. AUDIO INTERFACE - you will need ONE of the following options

- **For Mac or PC** a **PreSonus AudioBox** **costs $100**. If you buy the Audiobox interface and you have a 2016 or later Mac that has only USBC inputs, you will need a $10 adapter from USB to USBC in addition to the Ethernet adapter.
- **Mac only fastest option**
- **$110 Focusrite Scarlett Solo which works for most students, OR ...**
- **$160 Focurite Scarlett 2i2 for acoustic drums, acoustic pianists who also sing, acoustic bassists in a noisy space using a mic instead of a pickup, or two housemates playing in the same band using one computer.**

Focusrite products WILL NOT work for Soundjack on a PC!

If you have a Mac made after 2019 that only has two USBC ports, you will need an ethernet and USBC adapter for $24 if you buy a Focusrite audio interface.

At the end of this document we will list more approved audio Interfaces that we know will work with Soundjack, but the interfaces above are cheapest, fastest, high quality and easy to get.

2. XLR Microphone (NOT USB), which can be a **$13-$200** investment depending on if voice is the primary instrument quality you want to go.

3. A 15-25 foot XLR Microphone Cable is an **$8-$16** investment.

4. Boom Mic stand is a **$24** investment.

5. WIRED Headphones with a **¼ inch output** cost **$13-$100.**

DO NOT USE Wireless Headphones, Earbuds, or Noise Cancelling Headphones with Soundjack. If you already have nice 1/8 inch (3.55mm) wired headphones, an **1/8 inch to ¼ inch adapter** costs **$8**. You must plug your headphones into the audio interface to use Soundjack, and the interface will have a ¼ inch output.

RECOMMENDED INTERNET SERVICES

Fiber-optic networks like Verizon FIOS is the optimum network for Soundjack, so if it's available in your area and you were thinking about upgrading your internet service provider, now is the time to do that. Cable internet service providers like RCN and Comcast will still work for Soundjack, but upgrading your internet speed is highly recommended.

IMPORTANT THINGS TO KEEP IN MIND

- WIRING a computer to your internet *router* with an <u>ethernet cable</u> is mandatory for Soundjack, because the COMPUTER that is using Soundjack MUST HAVE ITS WIFI TURNED OFF.
- For Soundjack you will need a computer with at least a quad-core processor. Most computers built anytime since 2015 will work. But **if your computer has a duo-core processor, that will not work for Soundjack**. For example, a 2011 MacBook Air with a duo core processor will not work for Soundjack. **Soundjack will not work on a Chromebook. There is a $170 solution for students with older computers ...**
- In the rare case that your computer has a processor with less than 4 cores, then assistant jazz department chair **Jamie Stewardson will build you a $170 (plus shipping) microcomputer that can take the place of your old computer for Soundjack called a FastMusic Box (FMB)**. The FMB works with either of the audio interfaces mentioned above and has an ethernet input, so it does not require buying an adapter for ethernet, but **if you buy the Focusrite Scarlett Solo or 2i2 for the FMB, you will need an adapter for $6 from USB to USBC**. FMB can use a phone as the visual controller for Soundjack, or you can monitor Soundjack from the FMB on a browser on any device connected to the FMB network including your older computer.
- **Macs will require an operating system 10.13 or higher (Mac OS High Sierra or later).** *If you have an older Mac, this system upgrade must occur before your SoundJack installation appointment.*

WHAT HAPPENS NEXT?

Students will need to have received the above computer and audio gear before their **45-60-minute setup appointment with our Soundjack setup team**, to make sure everything is working. **The Soundack Setup team will read your Tech Questionnaire responses and contact you regarding your equipment and setup.**

We really need our returning students to get their equipment in August and make these appointments as soon as possible, in order to accommodate the setup time for our new students that will be coming at the beginning of September.

GEAR NEEDED TO RECORD AUDIO FOR LESSONS AND ENSEMBLES USING SOUNDJACK

As always, jazz teachers encourage students to record all lessons and ensembles. There are two ways to record audio using Soundjack. Both of these recording solutions require a cable like this: **Stereo 1/8" TRS to Two Mono 1/4" TS Cable, 3 Foot, CMP153** **which costs $8.** This gets the sound out of the Left and Right main outputs from the audio interface and combines them into an 1/8" stereo cable. This cable is attached to Recording device option 1 or 2 below.

Recording device option 1.
If you have a phone, IPad or tablet free that you are not using for Zoom or Soundjack, the cheapest option would be to get a Stereo 1/8th inch to lightning (old iPhone, iPad) or USBC (new iPhone, iPad or Android) for $9 and record with that device.

- Lightning to 3.5 mm Headphone Jack Adapter for older iPhones, iPads
- USB-C to 3.5 mm Headphone Jack Adapter for newer phones, iPads, tablets

Recording device option 2.
Tascam DR05 Audio Recorder **for $90** if you will not have a spare device to record on. **Simply plug the 1/8 inch cable into this.**

SPECIFIC INSTRUMENT AUDIO GEAR GUIDELINES:

Anyone playing in a nice quiet space can just get a good condenser mic, XLR cable and stand to hear their voice and instrument. XLR cables and stands apply to any mic recommendation. However, if you are playing in noisy rooms, or have housemates to consider, below are specific instrument guidelines and links to audio gear specific to that setup.
Anyone that wants some EQ and reverb/effects may want to use this $99 Alesis MultiMix 4 USB FX mixer *before* their audio interface (DO NOT USE THE USB INTERFACE on this MIXER for Soundjack). Microphone(s) and instruments would be plugged into this mixer and phantom power would only be used for condenser mics at the mixer, not the audio interface. If you use this, you will also need to get something like this $11 Hosa CSS-202 Stereo Interconnect Dual 1/4" TRS Male Cable - 6.6' to connect this mixer to the inputs of the audio interface.
Electric Guitarists and Electric Bassists that need to be quiet or have a lot of background noise should just get a cheap dynamic microphone for their voice in channel 1 of the audio interface and then use a processor like this $200 Boss GT-1 (guitar) or this $220 Boss GT-1B (bass) in channel 2.
Pianists that play a keyboard instead of an acoustic piano will just need a cheap mic for talking into channel 1 of the audio interface and the L/Mono out of their keyboard into channel 2.
Drummers playing on an electric kit will need a condenser mic in channel 1 of their audio interface for snare drum brush playing and talking, and just a L/Mono ¼ inch patch cable into channel 2 of their audio interface.

The four situations below will need an audio interface with two mic preamps, like the $100 **PreSonus AudioBox** **for Mac or PC** or the **Mac-only** $160 **Focurite Scarlett 2i2**.

1. Vocalists that play acoustic piano will want a condenser mic for the piano, and another mic for their voice, and a stand and XLR cable for each microphone.
2. Acoustic drummers will want this $19 K&M 23550 Adjustable Microphone Bar (so they just need one mic stand), Rode M5 Matched Pair (Small diaphragm condenser microphones for drum overheads) $200 for the pair, and two XLR cables. One condenser mic and a cheap mic for talking can do the job if this is not affordable.)
3. Acoustic bassists in a noisy environment with a microphone on their bass will want to put their bass in channel one of the audio interface and then a cheap microphone for talking in channel 2 of the interface.
4. Two housemates that are using the same computer to play into two different mics in the same band need a $7.45 cable to attach from the stereo ¼ inch outputs of the audio interface into a headphone amp, a $50 headphone amp, and two sets of headphones. If the housemates are going to have private lessons or ensembles with two different teachers at the same time, they will each need their own Soundjack setup with a computer, audio interface, microphone, headphones and wired ethernet cable to a router (but they do not need an individual router, one router will do).

LINKS TO GEAR

COMPUTER GEAR - not previously listed/linked because these items have many options:

CAT6 ETHERNET CABLE:
- Buy online at bestbuy.com: 25 ft. ($8), 50 ft. ($8), ft. ($13), 150 ft. ($55)
- Buy in person at MicroCenter in Cambridge, MA: 25 ft. ($23), 50 ft. ($25), 100 ft. ($69)

USB (older Mac and PC) AND USBC (newer Mac) TO ETHERNET ADAPTERS:
- Inland USB 3.1 Type-C Gigabit Ethernet Adapter $25 (for Macs with new USBC ports to connect to ethernet cables-online, requires delivery time)***
- Inland USB 3.0 to Gigabit Ethernet Adapter $25 (for PC or older Macs that have a USB interface to connect to ethernet cables-picked up at Microcenter)***
- TP-LINK UE300 USB 3.0 To Gigabit Ethernet Network Adapter $13 (for PC or older Macs that have a USB interface to connect to ethernet cables-online only)***
- Rocstor USB 3.1 Gen 1 Type-C Female to Type-A Male Adapter $6 (for Focusrite audio interfaces with USBC cables plugging into older Macs with a USB input or multi-adapter that includes a USB slot)
- USB C Ethernet USB Adapter,3 in 1 USB C to USB and RJ45 LAN Ethernet Adapter with Charing Port Compatible with MacBook iPad Pro Google Pixel 2/2XL/3/3XL $24 (Ideal for Newer Macs with USBC, has a slot for USB like the PreSonus AudioBox output, an ethernet slot, as well as an additional USBC all in one)
- Insignia™ - USB Type-C-to-A Adapter $10 (a single adapter useful for PreSonus AudioBox attaching to a newer Mac USBC port)

***Fast Music Box users do need this item because it has an ethernet port built in.

Soundjack.eu Info continues after blank page 6 below

Soundjack.eu info continues after this blank page (p.6)

AUDIO GEAR - not previously listed/linked that have a range of prices:

RECOMMENDED MICROPHONES: (4 grades, cheap, inexpensive, medium and pricey) In most cases the inexpensive option will do the job just fine. Price range can be $13-$200 for Soundjack depending on need.)

<u>**LARGE DIAPHRAGM CONDENSER MICS:**</u> (For voice, wind instruments, acoustic stringed instruments, piano and percussion-catches everything in one mic in a quiet room)

- [Tascam TM-80 Large-Diaphragm Condenser Microphone](#) $69
- [AKG P220 Project Studio Condenser Microphone](#) $149
- [Blue Spark SL Large-Diaphragm Studio Condenser Microphone](#) $200

RECOMMENDED DYNAMIC MICROPHONES: (Wide range of possible applications including voice performance, voice where there is a lot of background sound in the performance space, guitar amps or wind instruments)

- [Nady SP1 Dynamic Cardioid Handheld Microphone](#) $13 (recommended for talking only for electric guitarists, electric bassists or keyboardists, not recommended as a main instrument mic or for singers or amplifiers)
- [Sennheiser XS 1 Wired Dynamic Microphone](#) $50 ea. (inexpensive solution for singers, horns, amplifiers)
- [Shure SM 58, Dynamic vocal microphone](#) $104 ea. (Shure SM57 and SM58 are basically indestructible, the gold standard of live performance dynamic microphones. Same Microphone but the SM58 has a wind screen for voice)
- [Sennheiser e935 Handheld Cardioid Dynamic Microphone](#) $180 ea. (higher priced dynamic vocal microphones typically sound a bit brighter and clearer with less tubby midrange, Sennheiser has a whole selection at various prices and makes great microphones)

MICROPHONE CABLES: (XLR MALE - XLR FEMALE)

- [Hot Wires Economy Microphone Cable, 20 Foot](#) $8
- [25ft Premier Series XLR Male to XLR Female 16AWG Cable](#) $16
- [ProCo 25 ft. XLR Mic cable](#) $16

RECOMMENDED MICROPHONE STANDS:

- [Auray 5230 T Stand](#) $30 ea.
- [K&M 21070 Tripod Microphone Stand with 32" Boom (Black)](#) $50 ea.
- [K&M 210/9 Tripod Microphone Stand with Telescoping Boom (Black)](#) $90 ea.

RECOMMENDED ¼ inch Cable: (for plugging in a keyboard, or for plugging a guitar or bass processor into an audio Interface)

[Audio-Technica AT8390 Premium Instrument Guitar Cable, 10 Foot](#) $9

RECOMMENDED HEADPHONES:
- [Cheapest Headphones but will still work](#) $13 (included quarter inch adapter)
- [Medium quality AKG K52 headphones](#) $50
- [High Quality AKG K361 headphones](#) $99

ACCESSORIES: (Audio adapters for plugging in 1/8" headphone male into audio interface ¼" female, for people that already own 1/8" headphones.)
- [D'Addario PW-P047E 1/4" Male Stereo to 1/8" Female Stereo Adapter](#) $6.29

WHERE TO BUY GEAR FROM - in case above buying options don't work out

In general, **the computer gear** and adapters can be found at (*=physical store in New England Area):
[www.bestbuy.com](#)*, [www.microcenter.com](#)*, [www.staples.com](#)*, [www.amazon.com](#),
[www.monoprice.com](#), [www.newegg.com](#), [www.youdoitelectronics.com](#)* and [www.adorama.com](#).
The audio gear can be found at: [www.zzounds.com](#), [www.guitarcenter.com](#)*,
[www.musiciansfriend.com](#), [www.sweetwater.com](#), [www.bandhphoto.com](#), [www.adorama.com](#), and
[www.amazon.com](#).

Besides the previously recommended PreSonus Audio Box, Focusrite Scarlett Solo, Focusrite Scarlett 2i2,
more expensive and/or slower audio interfaces tested to work with Soundjack are:
Audient iD44, MOTU2, Audient id14, Audient Evo4, PreSonus 24c-These work for Mac or PC.
RME Babyface Pro-This works for Mac, unknown on PC.
For the few students using a FastMusic Box (FMB) instead of Mac or PC these additional interfaces
work: PreSonus 24c, Audient iD44 (Requires Wall Power), Audient id14 (Requires Wall Power), Audient
Evo4 (Requires Powered USB Hub).

3 EXAMPLE PACKAGES FOR STUDENTS THAT HAVE NO PREVIOUSLY MENTIONED AUDIO and COMPUTER GEAR (Tax and Shipping not included in prices).

(For those with computers (Mac or PC) with 4 cores or more. Computers with less than 4 cores need to add Fast Music Box $170 to the totals below and subtract the Ethernet Adapter Cost)

1. **MOST INEXPENSIVE PRICE PACKAGE**

(Mac $234 or PC $222)
- For Mac or PC a **[PreSonus AudioBox](#)** $100
- [Sennheiser XS 1 Wired Dynamic Microphone](#) $50
- [Hot Wires Economy Microphone Cable, 20 Foot](#) $8
- [Auray 5230 T Stand](#) $30
- [Cheapest Headphones but will still work](#) $13
- Cat 6 Ethernet Cable [25 ft.](#) $8
- [Ethernet to USBC adapter](#)(Mac) $25 or [Ethernet to USB adapter](#)(PC) $13

2. MIDDLE PRICE RANGE PACKAGE

(4 different Totals Depend on Audio Interface)

(Mac w/AudioBox $318, Mac w/Scarlett Solo $328, Mac w/Scarlett 2i2 $378, PC $256)

- **Focurite Scarlett Solo** Mac ONLY $110 or **Focurite Scarlett 2i2** Mac ONLY $160

or Mac or PC **PreSonus AudioBox** $100

- Medium quality AKG K52 headphones $50
- ProCo 25 ft. XLR Mic cable $16
- K&M 21070 Tripod Microphone Stand with 32" Boom (Black) $50
- Tascam TM-80 Large-Diaphragm Condenser Microphone $69
- Cat 6 Ethernet Cable 25 ft. $8
- Ethernet to USBC adapter(Mac) $25 or Ethernet to USB adapter(PC) $13

3. MORE EXPENSIVE PRICE RANGE PACKAGE

(4 different Totals Depend on Audio Interface)

(Mac w/AudioBox $543, Mac w/Scarlett Solo $553, Mac w/ Scarlett 2i2 $603, PC $534)

- **Focurite Scarlett Solo** Mac ONLY $110 or **Focurite Scarlett 2i2** Mac ONLY $160

or Mac or PC **PreSonus AudioBox** $100

- High Quality AKG K361 headphones $99
- K&M 210/9 Tripod Microphone Stand with Telescoping Boom (Black) $90
- Blue Spark SL Large-Diaphragm Studio Condenser Microphone $200
- ProCo 25 ft. XLR Mic cable $16
- Cat 6 Ethernet Cable 100 ft. $13
- Ethernet to USBC adapter(Mac) $25 or Ethernet to USB adapter(PC) $13