Prodigy: Connecting to Your Piano and Speakers

PianoDisc Prodigy includes built-in technology that gives you the flexibility to connect to your piano and speakers in many different ways. How you connect depends on your needs and environment—but don't worry. Prodigy makes connection easy, and rarely requires extra adapters or dongles.

Before deciding how to connect, it's important to have a basic understanding of the options and technology. Your PianoDisc system communicates with the piano and speakers using two basic signals: Audio and MIDI.

Audio

The PianoDisc system uses audio for background audio, such as instrumentals or vocals. It also can use audio to send piano performance data to the piano. If you play a PianoDisc song using a standard audio player (or listen to it through the speakers on your phone or iPad), you may hear a high-pitched squeal (like a FAX machine). That's the data signal used to drive the piano, and should not be audible when everything is connected correctly.

Prodigy includes three standard audio interfaces. The audio input switch on the CPU must be set to match the audio input method you're using.

Bluetooth: A Bluetooth audio receiver is built-in to every Prodigy. Devices such as mobile phones and tablets that support Bluetooth audio (A2DP) can directly connect and play your piano. The range is highly dependent on wireless interference and environmental conditions, but is typically 30 ft. Your experience may vary depending on where you have it installed and what devices are operating nearby. Bluetooth audio shares its bandwidth with Bluetooth MIDI. For best results, we recommend using either a Bluetooth audio or MIDI connection, but not both.

Analog: The analog input can be used to connect Prodigy to the output of your music player device. A wired connection is always more stable and reliable than wireless. The analog port can also be used to connect an alternative wireless receiver. Bluetooth, AirPlay, and DLNA receivers are widely available, and generally compatible.

TOSLINK: The TOSLINK input port allows for digital connection to special equipment, such as Blu-ray players. TOSLINK uses a digital protocol that does not allow for volume adjustment. Volume should be pre-set to a suitable level using the PianoDisc Calibrate App. When using a TOSLINK connection, the Automatic Volume setting in the Calibrate App should be disabled.

MIDI

MIDI is used to play the piano itself. It is a digital signal that controls what keys play and at what velocity. While MIDI can be sent over audio, a direct MIDI connection is often more accurate and flexible.

Prodigy includes three methods of connecting MIDI to your piano. While it's not necessary to select which MIDI type you're using, it's important to only connect one MIDI device using one connection. If multiple MIDI devices are connected simultaneously, they will interfere with each other.

In addition to using MIDI to play the piano, it can also be used to record a performance. Record functionality is only available when you've installed an optional ProRecord or ProScan sensor system. When a record system is installed, use the Prodigy's MIDI interface to connect to external devices, not the record system's.

Legacy Interface (5-Pin DIN): Used for decades to connect musical instruments to computers and other instruments, the legacy interface allows connection flexibility for recording studios and customers with advanced MIDI equipment.

USB MIDI: For quickly connection to a computer or iPad, a wired USB connection is both convenient and reliable. iPad connection requires a "Lightning to USB Camera Adapter", which is sold separately by Apple.

Bluetooth MIDI: The latest versions of iOS (and many computers) now support sending and receiving MIDI over a wireless Bluetooth connection. While very reliable, wireless connections may be subject to interference from other devices, and environmental conditions may further limit range. Typically, you can expect a range of 30 ft. Bluetooth MIDI shares its bandwidth with Bluetooth audio. For best results, we recommend using either a Bluetooth audio or MIDI connection, but not both.

Standard Mode

We recommend using the iQ App in standard mode for most users. In standard mode, the app connects directly to Prodigy using one of the audio interfaces, and all features work normally.

When using the app in standard mode, it's still possible to connect to Prodigy via MIDI for record and playback functionality. In order to continue using standard mode when connected to a Prodigy using MIDI, simply turn on the "Disable Professional Mode" switch in Settings.

Professional Mode

The PianoDisc iQ App includes a "Professional Mode" for owners looking for the maximum performance from their PianoDisc systems. In professional mode, the iPad has a direct MIDI connection to your PianoDisc system.

Audio for accompaniment can be routed through Prodigy, or directly to external speakers. When external speakers are used, PianoDisc music in the iPod Library will not play the piano, nor will the PD Radio play. That's because these two music types require an audio connection to Prodigy in order to play the piano.

There are several advantages to Professional Mode:

1. A direct MIDI connection to the Prodigy CPU is more accurate than sending the MIDI as audio and then decoding it in the CPU.
2. You can synchronize playback of a standard stereo audio file along with a matching MIDI file, thus achieving true stereo accompaniment.
3. Accompaniment audio quality can be increased by connecting directly to wireless speakers (or to speakers connected to an AirPlay or Bluetooth adapter)—bypassing Prodigy altogether.

There are also some disadvantages:

1. Bluetooth MIDI does not connect automatically--and must be manually connected. Wired MIDI connections do not have this limitation.
2. If you have PianoDisc music stored in the iPod Library, it will not play when using external speakers. However, if your PianoDisc music is moved to the "My Music" library instead, it will play normally, even with external speakers.
3. PianoDisc Radio will not play correctly when using external speakers.
4. Calibration should be done in the PD Calibrate App as usual, but the iQ playback calibration must be set in the iQ App. If you're not using the external speaker feature, the iQ playback calibration should also be done in the PianoDisc Calibrate app. The iQ App calibration is for the "software" iQ, while the Calibrate app adjusts the "hardware" iQ.

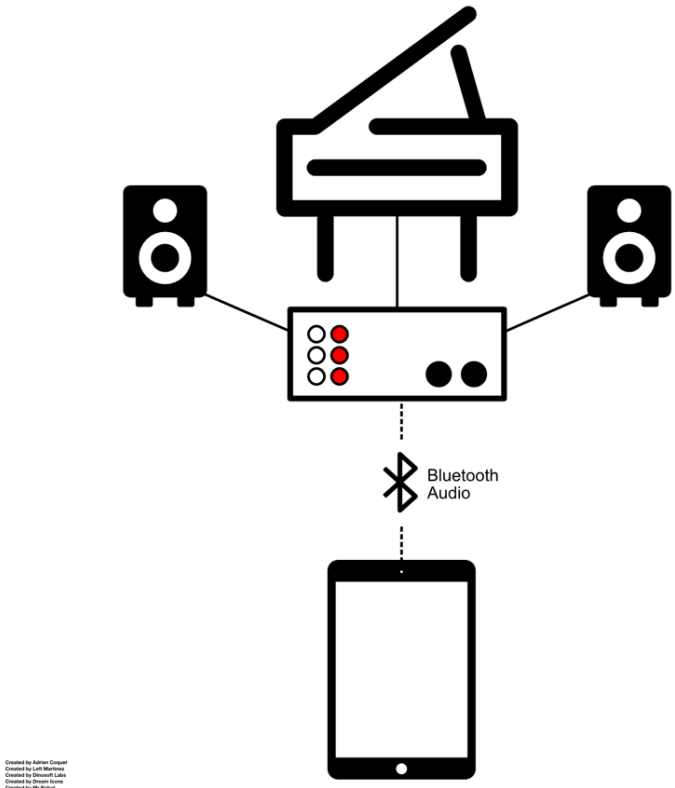
Connection Diagrams

The following diagrams show the most common ways to connect your iPad to the Prodigy player system. If maximum reliability is a concern, any of the wireless connection methods can be replaced with a wired connection.

Note that there are many possible variations to these connection methods, and you can customize your connection to best match your needs.

Standard Mode (Bluetooth Audio)

- Audio-only connection to the piano
- Speakers mounted in or near piano
- Control from the same room



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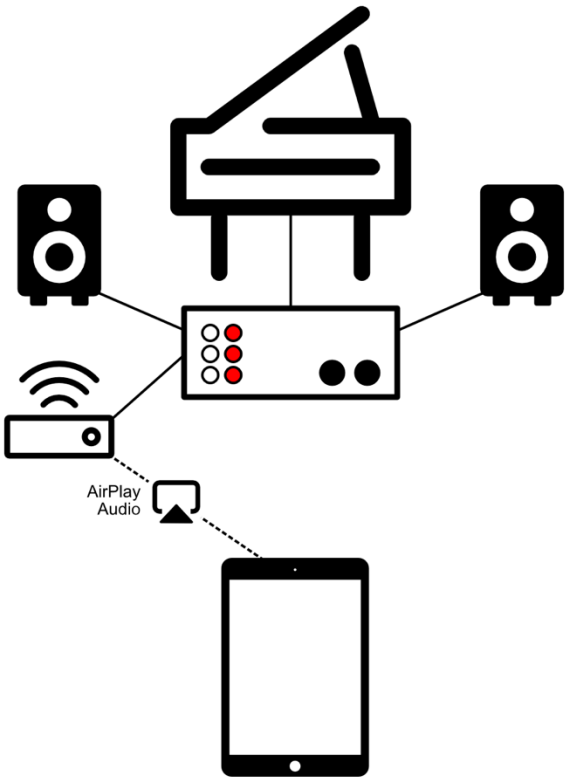
AirPlay Mode

- AirPlay-only connection to the piano
- AirPlay adapter audio output connected to Prodigy analog input
- Speakers mounted in or near piano
- Control from anywhere (as long as WiFi is available)



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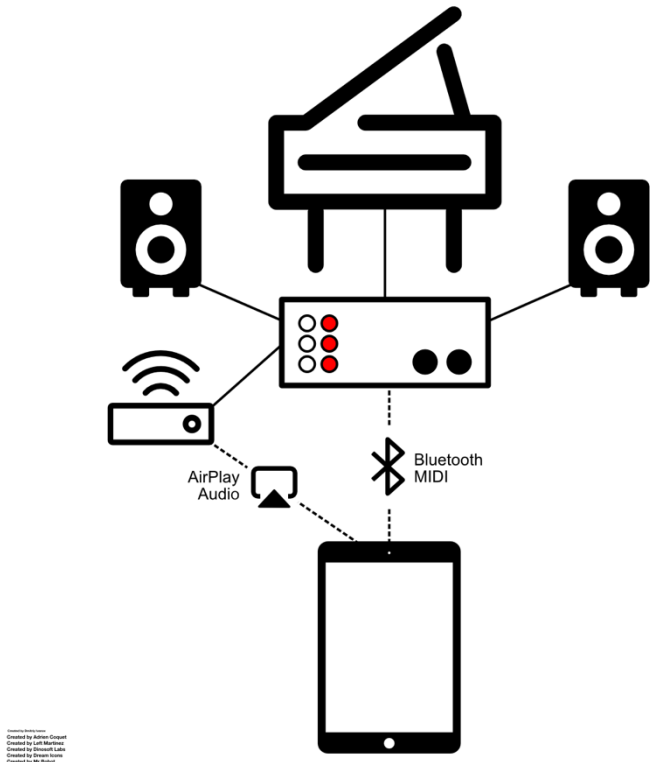
Professional Mode (AirPlay Audio, Bluetooth MIDI)

- Bluetooth MIDI connection to the piano
- Audio connection via AirPlay
- AirPlay adapter audio output connected to Prodigy analog input
- Speakers mounted in or near piano



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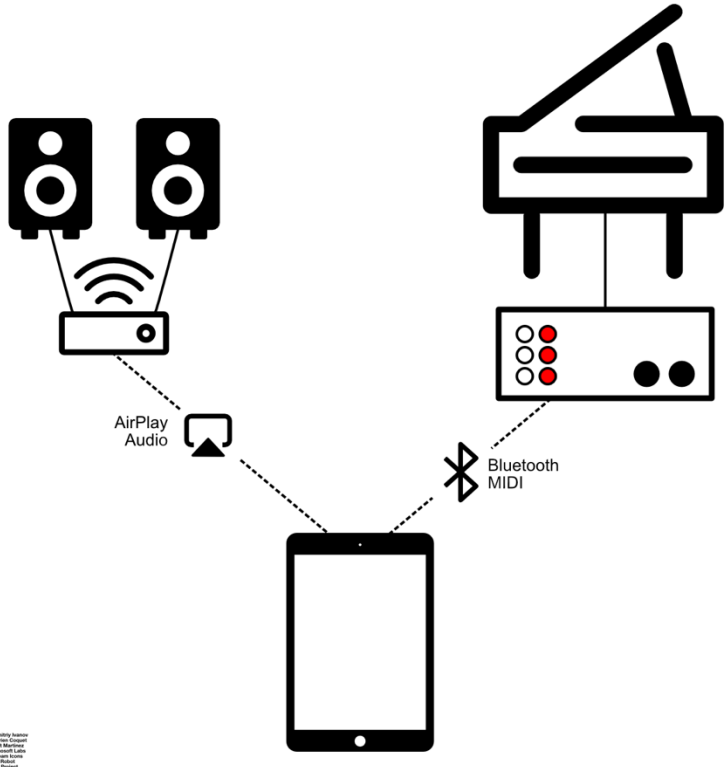
Professional Mode (External AirPlay, Bluetooth MIDI)

- Bluetooth MIDI connection to the piano
- Audio connection via AirPlay Audio
- Speakers and Airport Express placed anywhere in the room (or in AV cabinet)



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Professional Mode (External Bluetooth Audio, Bluetooth MIDI)

- Bluetooth MIDI connection to the piano
- Audio connection via Bluetooth audio directly to the speakers
- Speakers use internal Bluetooth receiver
- Speakers can be placed anywhere in the room