PreppComm

Making Communications Fun Again!

QUICK START GUIDE

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BEFORE YOU BEGIN:
Decision Time

QRP Transceiver
or
Base Station Decoder/Encoder?

Before you start into the Quick Start Guide, let's decide how you are going to use it? There are two sections to the guide:

1. **QRP Transceiver**: Getting started using your DMX-40 as a QRP (low power) Transceiver on 40 meters. This is referred to as the "**Transceiver Mode**." In this use, you only need the DMX-40, the keyboard, a set of headphones or powered speaker, and an antenna (or dummy load if you are learning how to use it). **Go to Section I below.**

2. **External Transceiver Decoder/Encoder**: This is for when you want to connect your DMX-40 to your base station transceiver to use as a CW decoder/encoder. This is referred to as the "**External Mode** or **Companion Mode**." This mode enables use of the internal computers for decoding and encoding, and uses the receiver and transmitter inside your base station transceiver. This allows the decoder and encoder to operate on any band your base station operate on, and at a higher power level, set by your base station. **Go to Section IV for setup.**

I. Section I: QRP Mode Setup

1. **<u>Set up the DMX-40 as shown in Figure 1 below.</u>** **Do not apply too much force when plugging in the keyboard - make sure you have the USB plug correctly oriented and aligned. Do not apply any downward pressure.**

FIGURE 1: STATION SETUP AS STAND-ALONE STATION

2. **<u>Turn on the transceiver using the RED power switch.</u>**

WARNING: NEVER OPERATE THE TRANSMITTER WITHOUT A LOAD ON THE ANTENNA CONNECTOR. DOING SO VOIDS YOUR WARRANTY FOR ANY DAMAGE CAUSED BY AN UNLOADED TRANSMITTER.

If you plan to use a key to transmit, this will be covered at the end of this section.

Note: You can turn off the internal transceiver by pressing the frequency button until it says "**External**." This is what we refer to as External Mode, or Companion Mode, and is discussed in detail in Section II. Pressing it again restores transceiver function

The *Splash Screen* will display for approximately 3 seconds, as shown in Figure 2 below.

FIGURE 2: SPLASH SCREEN

The *Main Screen then is displayed*, as shown in Figure 3 below.

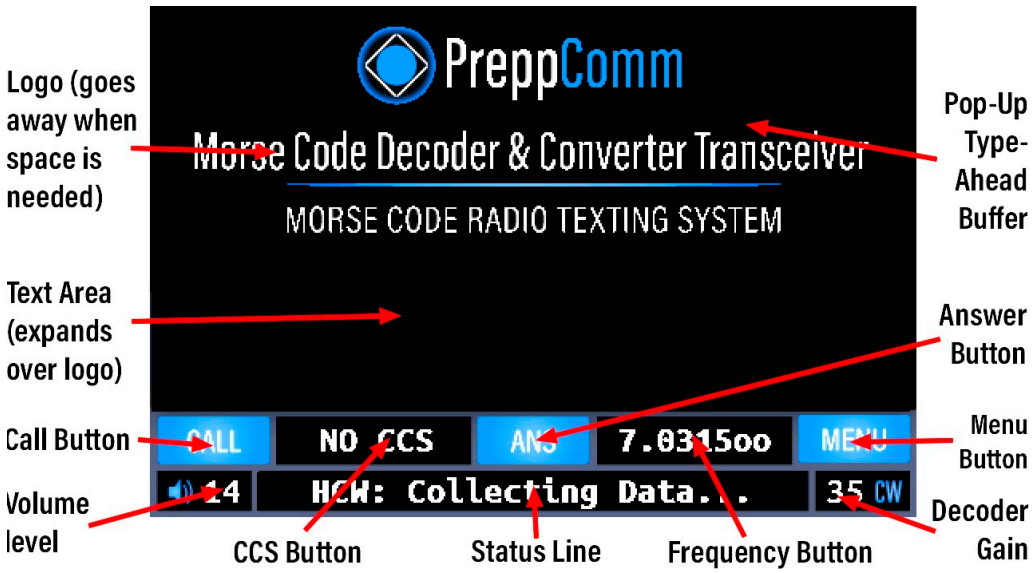


FIGURE 3: MAIN SCREEN

3. **<u>Press the Menu Button, and the *Main Menu* screen will display, as shown in Figure 4 on the following page.</u>**

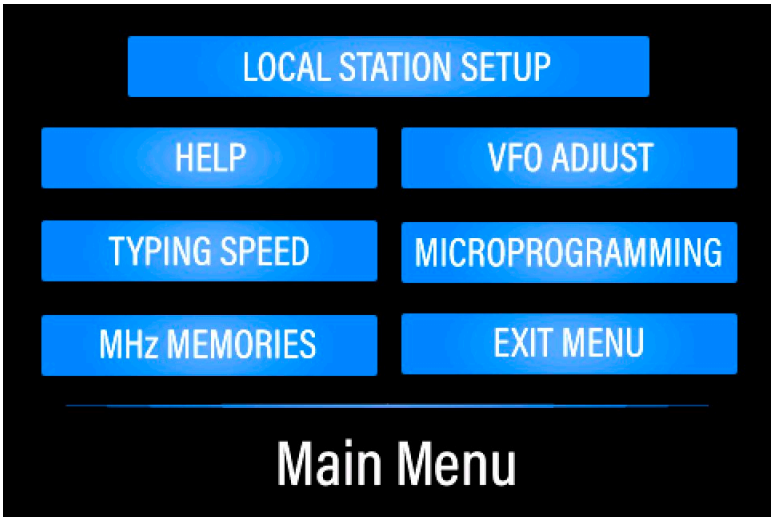


FIGURE 4: MAIN MENU

4. Press the LOCAL STATION SETUP button at the top of the menu. The *Call Letters* entry screen will display, as shown in Figure 5 below:

FIGURE 5: CALL LETTERS ENTRY SCREEN

5. **Enter your call letters assigned to you by the FCC.** Use backspace or delete to edit if you make a mistake. Note: you do not have to hold down the caps key - all caps is automatic. Press the **NEXT** button to continue.

6. Using the NEXT buttons, proceed through a series of screens and enter the required information

a) **Name**, or in ham radio lingo, your Handle, such as JOHN
b) **Location**, or QTH in ham lingo, such as CHICAGO, IL
c) **Rig Type** (PREPPCOMM DMX-40)

c) **Antenna Type**. If you don't have an antenna yet, put NO ANTENNA.
d) **License Level**. Select your FCC license level

The *License Level Entry* screen is shown in Figure 6 below.

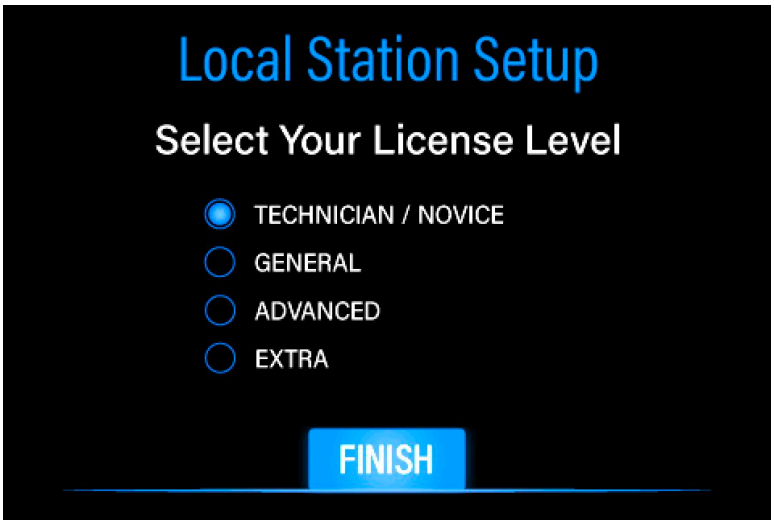


FIGURE 6: LICENSE LEVEL ENTRY SCREEN

7. Press the FINISH button on the License Level Screen

You will be returned to the *Main Screen*. You have now completed initial setup of your DMX-40 transceiver. Before we proceed, it is important to understand how the **Frequency** Button works (see Figure 3).

The Frequency Button

The DMX-40 can be thought of as two separate parts: the computer part, and the transceiver part. The computer portion is always active when power is on. When you see a frequency value in the **Frequency** Button, the transceiver section is also enabled, and the receiver or transmitter is active, depending on receive/transmit state. . However, when you see the word "**External**" instead, the internal transceiver, both receive and transmitter, are inactive.

External Mode aka **Companion Mode** is useful for experimenting with the operation of the DMX-40 without causing interference on the band, or when using the DMX-40 with an external transceiver, allowing the computer section to control that external transceiver by sending Morse code to it via the KEY IN/OUT jack, and listening to its receiver via the AUDIO IN jack. Switching between Normal and External modes is a simple touch on the **Frequency** Button.

II. QRP Mode: Using the Transmitter

IMPORTANT: Use a DUMMY LOAD or the External Mode while practicing CALL and ANSWER functions. Press the **Frequency** Button until it says **External.** This prevents accidental interference on the 40 meter band.

Also note: When in External Mode, the receiver is also disconnected.

In this section we are going to familiarize you with using the four different call and answer functions built into the DMX-40.

1. **Press CALL**. On the status line, you will see the question **SET CALL WPM = ?** Asking you to specify how fast to transmit, as there is no history to base that on at this first transmission, and the **CALL** button will turn **RED**.

2. **Press SPACE BAR** to set the default 20 WPM. You can change the default.

3. **Watch** as the DMX-40 transmits the general calling sequence.

4. **Press CALL** to end the sequence. Sequence continues until complete, and ends with a **K** appended. The **CALL** button will turn **AMBER** during the ending of the sequence. **K** means "Anyone Come Back." Note that the general call will run until you end it. Typically you will run it for 30 - 90 seconds when on the air.

5. **Press NO CCS buttо**n and enter the call letters of a station you would like to call. **Press SPACE or FINISH** to complete and return to the *Main Screen*.

6. **Note** the **CCS** Button now has the new call sign you just entered loaded. NOTE: the decoder can also fill the CCS button from a received station.

7. **Press CALL** to start the directed call sequence. Note it will automatically use 20 WPM from recent history.

8. **Watch** as the DMX-40 calls the specified station. Press **CALL** again to end the sequence. Note that **KN** is appended at the end, which means "only the station I am calling, come back."

9. **Press the ANS Button twice, quickly**. The first press will result in a **RED** button, the second press will result in an **AMBER** button. Ignore the Type-Ahead Buffer Pop-Up.

10. **Watch** as the DMX-40 transmits the answer-validate sequence. This is a short station ID used when you are responding to another station's CQ (general call) to attempt to establish a 2-way communication. If they answer you, then a 2-way has been established, and communication can begin. Answer Validate is not required if you make a call and someone answers you.

11. **Press ANS once**. The button turns **RED**, and a Type-Ahead Buffer pops up.

12. **Type a tilde (~) character, then press ANS again**. The button turns **AMBER**.

13. **Watch** as the DMX-40 sends the initial station ID, followed by the **INFO microprogram**, which is generated when you type in a tilde character. The Type-Ahead Buffer goes away as soon as the tilde is read out. The final station ID back to the other station completes the transmission, with a KN.

14. **Think up a short message**, such as "HI, BOB. HOW ARE YOU TODAY?"

15. **Press ANS and IMMEDIATELY type your message**. You should be able to type at least part of the message during the station ID, and then your message will begin to transmit.

16. **Press ANS again** to specify your typing is complete. Your message will appear in the Type-Ahead Buffer, until the station ID has completed, and then it will be read out one character at a time.

17. You now have a basic idea of how to use the four main transmit functions:

    1. General Call
    2. Directed Call
    3. Answer-Validate
    4. Answer

These built-in microprograms (CALL, ANSWER, and INFO) can be customized and controlled from function keys using RPL (Rig Programming Language) in our microprogramming system. There are 12 user-defined microprograms. Watch our YouTube video on microprogramming to get a "starter set" to play with.

III. QRP Mode: Using the Receiver

NOTE: For this section, you will need a real antenna, and the **Frequency** button should show a frequency value, not External. Press the button to switch to Frequency Mode, which turns on the transceiver inside the DMX-40.

1. Background

Obviously, the first thing you need to do to tune in a station is... remove the dummy load (if you used one) and connect to a real antenna. A good antenna is a critical aspect of any radio station. Since you are running QRP (Low Power), a good antenna is truly a MUST.

One one level, tuning in a station is fairly simple: you scan up or down the band looking for a signal, and stop and adjust around the signal so that it is decoding correctly. On the other hand, it can be quite daunting.

Why can it be daunting? There are several reasons that you need to be aware of. First and foremost is the "band condition." The band can be "open" or "closed." It depends primarily on the sunspot cycle, the current sunspot activity, and time of day. If you hear nothing on the band, the band is probably closed, or, as they say DEAD. Try later. However, a dead band does not mean you can't connect with someone nearby (local). If you have a scheduled time and frequency to meet, even if the band is dead, i.e., long distance communications is out, local can still work quite well, depending on your antenna. Typically, the 40 meter band opens in early to mid afternoon, and is open at various distances - ever growing farther and farther away - until very early morning. By that I mean oh-dark-thirty. It's all about the ionosphere and its height above the earth. It rises at night, and thus your "skip" distance increases.

2. Receiver Incremental Tuning

You may have noticed after transmitting that the **Frequency** Button changes to show **RIT +0**. RIT stands for Receiver Incremental Tuning. This decouples the receiver frequency from the transmitter frequency. The transmitter frequency remains constant, but you can make minor adjustments to the receiver frequency, as needed. Specifically, when another station comes back to you the first time, their frequency may be slightly off, and you may need to adjust the receiver frequency to remain set for optimal decoder operation. More on that below.

3. Receive Mode Keyboard Commands

Figure 7 below is a diagram showing the receiver keyboard commands. You can tell that you are in Receive Mode because both the **CALL** or **ANS** Button are **BLUE**. Press **MENU / HELP / RECEIVE** for a summary of these commands. The commands are on two separate screens, which you can access via the **NEXT** and **PREVIOUS** buttons. The **EXIT** button will return you to the *Main Screen*.

Note that on the *Help Screen*, there is also help for **TRANSMIT** and **MICROPROGRAM** commands, as well.

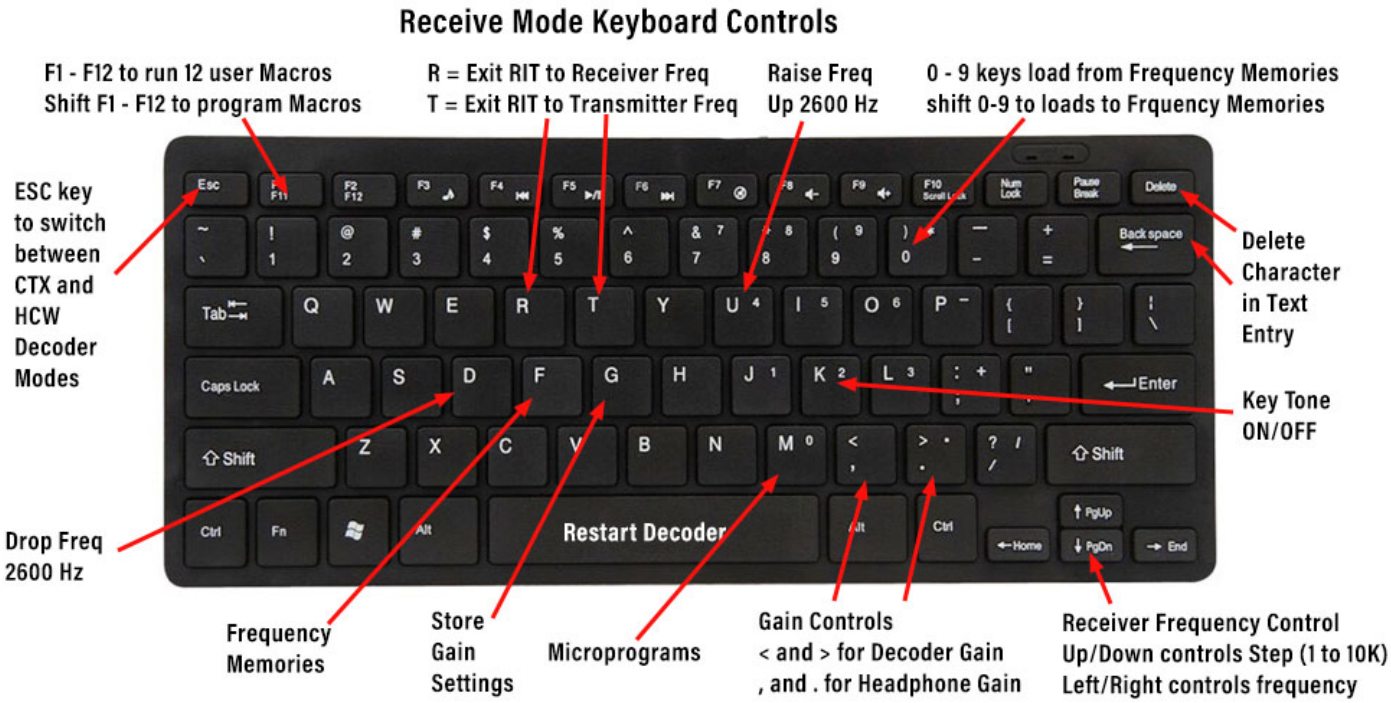


FIGURE 7: RECEIVE MODE KEYBOARD COMMANDS

There is a large version of this layout in **Appendix VI** of the **DMX-40 Reference Manual** you can use print out and as a guide. For now, just note the following keys:

a. the 4-way Receiver Frequency Control keys (bottom right)
b. the Gain Control keys, (to the left of the frequency controls)
c. the Restart Decoder (space bar) key.

Note that the initial frequency display shows 7.030000, which is 7.03 MHz, and the initial frequency step size of 1 Hz. 7.03 MHz is the small signal calling frequency for 40 meters.

4. Volume Controls

There are two separate volume or gain controls on the DMX-40. One controls the audio volume going to the headphone jack. The other controls the signal gain to the decoder. The default values are 10 and 30, and are shown at the bottom left and right of the *Main Screen* (see Figure 3).

Try adjusting both now, using the keys with or without the shift key down, watching the values change on-screen. For weak signals, increase the decoder gain to 40. For strong signals, you may need to reduce below 30. Audio setting is for your preference.

5. Tuning Practice

1. **Press the right arrow ke**y. Note the frequency has increased to 7030001. You have increased the receiver frequency by 1 Hz.

2. **Press and hold the right arrow key**, and after 1 second, auto-repeat on the keyboard kicks in. Now you see the frequency step up in 1 Hz intervals.

3. **Press the up arrow key once**. You have now increased the step size to 10 Hz. Note that the last digit has become a small zero. This is the visual indicator of the step size. Repeat steps 1 and 2 with 10 Hz steps.

4. **Press the down arrow key once**. The step size has returned to 1 Hz steps.

5. **Note**: Typically, you will scan the band for a station by using 100 Hz, or even 1000 Hz steps. Do that now by pressing the **up arrow** key twice (two small zeros for 100 Hz steps), and holding the **right arrow** key down.

6. **Test**: See if you can return to 7.030000 on the **Frequency** Button. Practice moving around. If you have a real antenna connected, check out 10 MHz or 5 MHz for WWV. Hint: Go to 10,000 Hz steps to get there quickly. Note that outside the 40 meter band (7.0 - 7.3 MHz) the status line displays **SW Listening** for Short Wave Listening.

7. ***If you hear a Morse Code signal***, adjust the frequency until you see the **CW IN** LED light up and track the signal. Using 10 Hz steps, move up and down in frequency steps to find approximate center of where the LED lights up. Adjust the decoder gain down if the **CW IN** LED is staying on between Morse Code tones (very strong signal), or up if the decoder is missing some tones (weak signal) using the Decoder Gain keys.

   If you don't hear any signals, try again later in the day when the band is open.

8. When you first tune into a new station, with CW IN LED blinking, press the SPACE bar to restart the decoder. The decoder will start collecting data, and when it has enough, it will determine the sender's speed and measure 5 different factors related to the specific style of the sender's code. The decoder will then use that information to fully decode the captured signal, and then continue in real time.

Always restart the decoder when tuning in a different station to ensure proper capture of the sender's code.

9. Any decoded Morse Code will appear on the screen in GRAY letters. If a transmitting station call sign is detected, it will be captured automatically, and it will show up in place of the NO CCS (Captured Call Sign) text in the **CCS** Button.

10. Do not be surprised by strange decodings. If you have not tried, it is hard to focus on sending with your hand and thinking about what is the next letter in the word, and thinking what is the next word... Sounds easy, but It is not, although practice makes perfect. Also, there are a lot of stations that send what appears to be gibberish. Often it is weather or other information. Look for conversations that sound like two or more people talking, or call CQ.

6. Calling CQ

1. If you can't find anyone calling CQ, find a quite spot on the band to transmit. Make sure the Green **ENABLED LED** is lit up. This tells you that your license allows you to transmit on this frequency.

2. Use the **CALL** Button to do at least a 30 second general call.

3. Listen for at least 30 seconds to see if anyone replies. Repeat. If you get no response after 5 or 10 calls, try longer calls. Maybe the band is dead, or your antenna is not working properly?

4. If someone answers, use the **left-right arrow keys** to adjust the frequency of the receiver for best decoder operation (you will be in RIT Mode automatically).

5. When they pass back to you, use the **ANS** Button. You are one your way!

7. The Tuning Rule: Before You Answer a CQ

Calling CQ and having someone answer you automatically means you and they are on the same frequency. You do not have to worry about the Tuning Rule. But if you are

answering someone else's CQ, you need to make sure you are one the correct frequency.

There are actually TWO frequencies where you can hear another station and have the CW LED flashing and the decoder happily operating. For example, if the other station is transmitting at 7.03 MHz, you can tune them in at 1300 Hz higher or lower, or 7.031300 MHz or 7.028700 MHz. Just to keep things sane, we subtract 1300 Hz from the receiver frequency, so it shows 7.03 MHz when tuned to a 7.03 MHz station with a 1300 Hz tone, but you can also tune the station 2600 Hz higher, at 7.032600 MHz and get the same tone. Sound complicated? Well, OK. So just follow the **Tuning Rule**.

8. The Tuning Rule

1. If you made the call and someone answered, skip this - no rule required.

2. If you want to answer a call: If increasing your frequency one step makes the received tone go DOWN in frequency, skip this.

3. If the tone went up, Press the **D** key to drop down 2600 Hz, and adjust your frequency slightly to receive the other station accurately (make sure you are within the decoding frequency bounds).

NOT using the Tuning Rule is the cause of many missed QSO's (ham lingo for an on-air conversation). Do not forget to do this step!

Experiment with this process by tuning in stations, then applying the Tuning Rule.

9. Getting it Right

Learning the ropes is a slow process. The best way to become comfortable with the process is to practice. Practice practice practice! There are two major areas to practice:

1. **Operating the DMX-40**: This is the easy part. Use the DMX-40 Reference Manual. There is so much more the DMX-40 can do we have not touched on.

2. **Tuning and Doing QSO's**: This is harder, because there is much to learn: what are the best frequencies to use? What is the best time of day to operate? How to identify different styles of operation? How to establish your own style? How to use microprogramming to support your own style? This is the more time-consuming part, but especially if you are a prepper, do it NOW, and do it FREQUENTLY so if the S does HTF, you will be comfortable operating your communications safety net!

IV. External Mode Setup

Before you begin setup, you are going to need some cables and adaptors. You will also need to determine if the "KEY IN" connector on your transceiver is a ¼" phone jack or something else. We will assume here that it is. You will have to make adjustments if it is something else. Likewise, we are assuming that any manual key you plan to use has a ¼" plug on the end of its cable. Below are the cables you will need, Amazon product codes, and a cable number we will use in the setup instructions.

Cable 1: KEY IN/OUT. This cable connects the DMX-40 KEY IN/OUT connector to two separate ¼" jacks. The RED one (Right Channel) is for your external key, and the BLACk one (Left Channel) we will hook up to your base station. Amazon product code: **B017IK07UC**

Cable 2: This is a standard 3.5mm stereo Y cable, with a 3.5mm male stereo plug on one end and two stereo 3.5mm female stereo connectors on the other end. Amazon product code: **B00GN76HAG**. Any stereo 3.5mm male to dual 3.5mm female Y cable will do.

Cable 3: Stereo 3.5mm cables 4 feet dual pack. Amazon product code: **B076BFZDG2**. Any stereo 3.5mm cable with two 3.5mm plugs (one on each end) will do. You will need 3 of these.

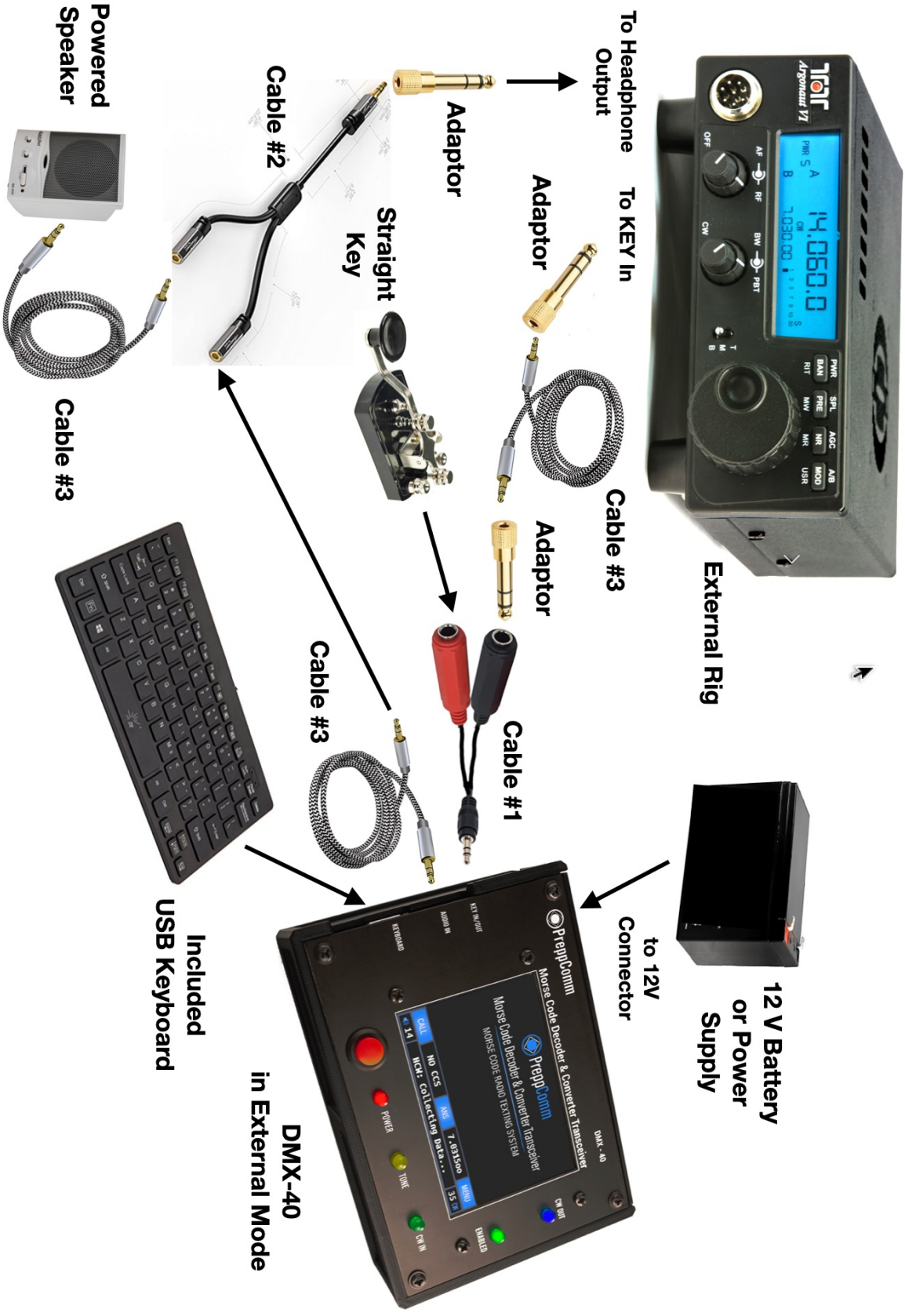
Adaptor Plugs: These are 3.5mm email to ¼" male stereo plugs. There are 3 in the Amazon pack, product code: **B08CKH55SX**. These are required if you have a ¼" jack on your Key In jack on your rig and/or a 3.5mm plug on your key. You may need all 3 of these.

On the following page, **Figure 8** is a setup diagram showing how all this connects together. Obviously, if you understand the diagram, you can arrange connections using alternate cables, but if you are not sure, use the diagram exactly as shown.

Remember: plug in the connectors carefully to the DMX-40 KEY IN/OUT and AUDIO IN connectors, and do not press downward. This is to prevent accidental damage of the connector and possible disconnection from the PCB.

Connection Sequence (referring to Figure 8 on previous page):

1. Connect power (12V) to the DMX-40. Use a 12V wall plug or battery. If using a wall plug, Make sure it is not causing interference on your rig's receiver.
2. Optionally, connect a 5W dummy load to the antenna connector on the DMX-40 (not shown in the diagram). This is to prevent you from operating the transmitter without a load if you forget to switch to External Mode.
3. Connect the provided keyboard to the DMX-40.
4. Turn on the DMX-40, and after it boots, ouch the frequency button so it says "External."
5. Nothing is connected to the headphone jack on the DMX-40 in this setup, as the transceiver inside is disabled. However, you also cannot hear the TONE OUT of the DMX-40. A more complex setup is discussed later if you wish to mix your transceiver audio and the TONE OUTPUT of the DMX-40.
6. Connect Cable #2 (Stereo Y Connector) to your transceiver headphone out jack, using an adaptor plug if necessary.
7. Connect a stereo Cable #3 to one side of the Cable #2 Y and the other end of Cable #3 to the input of your powered speaker.
8. Test to make sure your powered speaker is now generating the output signal from your receiver.
9. Connect another stereo Cable #3 to the other side of Cable #2 Y, and plug it into the AUDIO IN jack of the DMX-40.
10. Check to see if there is activity on the TONE LED of the DMX-40 when you turn in noise or stations on your transceiver (you should also hear them on the powered speaker).
11. Audio is now complete. **If you do not plan to use the DMX-40 to transmit code, but only plan to use your key, then you are done with setup at this point.** Your key remains plugged directly into your transceiver, as before.
12. Connect Cable #1 to the KEY IN/OUT jack on the DMX-40. Be careful to not stress the KEY IN/OUT connector.
13. Plug your key into the RED jack of Cable #1.
14. Test your key. Press the key and see if the CW IN LED lights up when the key is down.
15. Connect another stereo Cable #3 to the BLACK jack on Cable #1 using a 3.5mm to ¼" Adaptor Plug.
16. Connect the other end of the stereo cable to the KEY input jack on your transceiver, using another 3.5mm to ¼" Adaptor Plug if required.
17. Test to see that by pressing your key, your transmitter is activated.
18. Key wiring is complete.



V. External Mode Using Mixing

As mentioned above, this wiring does not "mix" the TONE OUT sound from the DMX-40 with your receiver audio output before the combination is fed to the powered speaker.

There are a number of low-cost 4-channel mixers available on Amazon, either powered or passive (unpowered). If you are interested in hearing BOTH the audio from your transceiver AND the TONE OUT from the DMX-40, this is for you. Note that the DMX-40 generates a tone output for either computer generated code or code from your manual key.

An example of a powered mixer is Amazon Product Code B07QDN6Z83. An example of an unpowered mixer is Amazon Product Code B08VJ44BSF. Both are near the $20 price tag.

Basically, rather than a cable #3 going directly from Cable #2 to the powered speaker, it would go to one input on the mixer, and an additional Cable #3 would run from the headphone jack on the DMX-40 to a second input of the mixer. The mixer output would then connect to the powered speaker.

One of the mixers above uses ¼" phone jacks, the other RCA jacks, so the cables you would need will depend on the mixer you choose.

The mixer will allow you to adjust the volume balance between the CW out tone and the received signal.

VI Operation in External Mode

1. Basics

The tone that the DMX-40 is looking for is NOT 600 or 650 Hz, tones normally used for listening to CW. Rather, it is 1300 Hz. Why did we mess your ears over by choosing 1300 Hz? Because we can lock onto a weak signal buried in noise twice as fast? Because we can send and receive code twice as fast? We thought that was good reason enough. Naturally, we would have loved to go even higher, but we had mercy on your ears.

What does this mean? It means a typical CW filter will not work - will cause the DMX-40 to not work. Rather, set your rig to SSB. If you check in the PreppComm Community, some have found adding a 1300 Hz filter helps, or their transceiver has the ability to create a filter around 1300 Hz that is not too sharp and thus causing the decoder to fail due to filter ringing, but most just use the SSB setting.

Essentially, if you are not tuning so the decoder is hearing 1300 Hz, the CW IN LED will not light up, and nothing will decode. This can be quite a shock if you are not expecting it, as you are used to decoding by hearing at just about any tone.

If you do a lot of CW, you are used to trying to isolate a single CW station so you can 'hear" only it, and thus decode it in your head. Here, it is quite different. You are feeding a fairly wide audio signal to the DMX, and so it is doing the isolating via its very narrow hearing ability around 1300 Hz. You can experiment with your filter settings if you want to try to also isolate it for your hearing, but be careful not to tighten it up so much that you cause ringing and decoder failure.

You also need to set up your transceiver so that it goes into transmit mode when the KEY IN is activated. Otherwise, you will have to switch manually between transmit and receive mode on your transceiver in addition to operating the DMX-40, which is, in a word, not going to work for you. Full or partial breaking is fine.

2. Decoder Only Use

If you only plan to use the internal decoder, and not use the encoder, including the CALL and ANSwer functions, automatic call sign capture, keyboard texting and type-ahead buffer, and microprogramming for customization of operating methods, then all you need to remember is to press the SPACE bar after tuning in the station of interest, making sure first that you are roughly in the center of the 1300 Hz bandpass of approximately 100-150 Hz. The SPACE bar restarts the decoder by clearing the cache of any information from previous signals. Also, while in decode mode, remember that

the ESC key switches between HCW (human CW) and CTX (computer texting) modes. You will want the HCW mode.

To operate:

1. turn on the DMX-40
2. Press the frequency button so it says External
3. Make sure you are in HCW Mode (HCW: Collecting Data...). The ESC switches between HCW and CTX.
4. Start tuning around looking for stations to decode on your transceiver.
5. You will use your normal routine to transmit. Note it is a good idea to have a dummy load on the antenna connector of the DMX-40 so it will not pick up your signal. If it still picks up your signal, you have a serious issue with RF in your shack, and you need to attend to that.
6. Don't forget to press SPACE at the beginning of a NEW CODE STREAM.

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3. Decode and Encode

If you do the complete setup as shown in Figure 8 above, you will be able to use both your key and the automatic keying functions of your DMX-40, as well as the microprogramming functions for customizing your operation mode.

Please review **Sections I** and **II** of this **Quick Start Guide**. **Section I** explains basic function, and **Section II** explains the various CALL and ANS functions for automatic operation in transmit mode.

Once you have these bases covered and understood, you can "break in" with manual keying at any time, and you can also train yourself for better timing by keying to the decoder while in receive mode on the DMX-40.

Note that transmit mode on the DMX while in External Mode simply means it is focused on transmitting CW to your rig, and receive mode means it is listening to your rig's receiver output. This means that you will be using function keys or the CALL and ANS buttons to transmit, just as if you were operating in QRP mode. But instead, you are transmitting at a much higher power via your external rig, and (one hopes) you have a much better receiver feeding the decoder.

To operate,

1. Turn on the DMX-40.
2. Press the frequency button so it says External.
3. Make sure you are in HCW mode (HCW: Collecting Data...). ESC switches between HCW and CTX.
4. Tune around the band looking for a spot to call CQ or for someone calling CQ, etc.

5. Operate the DMX-40 transceiver as if it is the controller, and operate your external transceiver as if it is merely a receiver and transmitter. In other words, you should be operating the external receiver controls, but not the transmitter controls, which should automatically engage when a key-down event occurs, and return to receive mode either immediately when a key-up event occurs (full break-in) or after a brief time (partial break-in).

That is a brief overview of setting up and operating your DMX-40. A more detailed description of features and functions is provided in the **DMX-40 Reference Manual**, which uses many internal links and an accessible from every page linked table of contents to help you find what you need to know. Also, make use of the PreppComm Community. There are a lot of Q&A's already there, and plenty of other DMX-40 users out there who have asked the same question you have, or have answered someone's question. It is also a place to get answers from the factory.