

Introduction

Morse2go Version 2.2 is a small, low-cost communication device for people struggling with speech and movement. Text can be keyed into the M2G using your finger, foot, head, or mouth switch. Words display on the TFT screen. Once the text is entered, it can be converted into speech and played with a small outboard speaker.

Morse Code is the method used to create the text. Morse Code was invented over 150 years ago along with the Telegraph system. This invention enabled people in distant places to communicate in ways that had never before been possible. Morse Code consists of “dots” and “dashes” - short and long signals. When put together, they are used to make words or abbreviated symbols. For example, “... --- ...” is the familiar “SOS” distress call.

In addition to keying in the full text of a message, the M2G has short codes available which produce longer messages. For example, “:IH” produces the message “I am hungry”. The user can create their own codes and messages.

Quick Start

Let's get started. Read the sections at the end if you want to customize your M2G by putting in your own short codes.

You'll first power up the M2G. This is done by plugging a USB cable into a computer and the other end into the USB connector on the left side of the M2G. You should hear the startup greeting. Y

For battery power, there is a power connector on the left side, just in front of to the USB connector. Plug in the power cord and connect the other end to your battery supply. This can be any 6 to 9 volt supply, such as four rechargeable “AA” batteries, a 6 Volt lantern battery or a rechargeable gel-cell. You can also use a power cord that connects to a wall-wart power supply if you have an AC receptacle available.

Next plug in two switches. Switch 1 is pressed for the “dot”; switch 2 is pressed the “dash”. As you press these switches, they will be shown on the bottom line of the display along with the letter they represent. For example, if you press switch one, you will see the “dot” and the “e” on the bottom line. Once you have pressed the correct combinations of “dots” and “dashes”, hold switch 1 for about one half second to confirm. The character will appear in the Word Line (third line from bottom of screen). If you make a mistake, hold switch 2 for about one half second to delete what you previously entered. Once you complete a word, press switch 1 again for ½ second to indicate a space between words. The new word will move from the Word Line to the Message Area (top part of screen) Press switch 1 again to have the M2G “speak” the text you have entered.

You can use four switches instead of two if you like. In this case, switch 3 is used as the confirm, instead of using a long press on switch 1. Switch 4 is used for delete, instead of the long press on switch 2.

The switches can be anything. Micro-Switches make good switches and they can be connected to panels or buttons of your choosing. But you can make your own switches out of metal plate, copper wire, almost anything.

After the M2G is setup, try typing “HI”, using this sequence “.... ..”. Press Switch 1 four times, hold Switch 1 half second (enter), press Switch 1 twice, hold Switch 1 half second (enter). Once you see “HI” in the word work area, hold Switch 1 half second (enter) to confirm. You can make corrections with with a long press on switch 2. To clear the screen, press switch 2 three long presses.

To hear the text typed into the M2G, enter “.---.”. You will then hear what has been typed so far. This will speak all the text entered since the last Clear Screen, even if the text has scrolled off the screen. Pressing switch 1 three times (long presses) is another way to have the text spoken.

The Appendix contains a list of the Morse Codes and numbers. Also included is a list of short codes to abbreviate messages, adapted from Tania Finlayson's Tandem Master Morse USB Interface (www.tandemmaster.org), another great Morse Code device that helps people with disabilities communicate. The Short Codes can be changed easily for custom use.

Changing the Long Press Timing

By default, you hold down button one for about ½ second for an enter (a Long Press). This value can be changed easily by using the codes (:L3 to :L9) for 3/10 to 9/10 seconds. The codes :LA to :LF are used for 1.0 to 1.5 seconds. This value will be confirmed on the screen and saved for the next session. The change also applies to the Long Press of switch 2.

Note that Morse Code for the **colon** is “---...”, the same as the letters “OS” typed together.

Changing the Voice Code

To change the voice used for the M2G, enter the special code “:Vx”, where x is a number from 0 to 8. The voices available are shown below. For example, :V4 would be used for Doctor Dennis. There isn't a space between the “V” and the number 0-8.

Note that Morse Code for the **colon** is “---...”, the same as the letters “OS” typed together.

Voices used by the M2G:

- 0 - Perfect Paul (default)
- 1 - Huge Harry
- 2 - Beautiful Betty
- 3 - Uppity Ursula
- 4 - Doctor Dennis
- 5 - Kit the Kid
- 6 - Frail Frank
- 7 - Rough Rita
- 8 - Whispering Wendy

Code Table Maintenance

All of the codes used by this device are contained in a Google Document - see the website (www.morse2go.org), right sidebar, for the actual link to the Code Table. You can copy this document to your own Google Document and make changes or additions to it. You cannot change the original, so if you make a mistake or delete something, you can always return to the original.

The first 51 rows is the “mcode” section - the Morse Code letters. Column A indicates the type of code, in this case “mcode”. Column B contains the code itself. Instead of dots and dashes, we use a series of 1s and 2s. For example, the letter “A” is 12, for dot-dash, letter “Z” is 2211, for dash-dash-dot-dot, and so on. Column C is the actual letter.

Next comes the “scode” section. Column B contains the short code (2 to 10 characters), always preceded by a colon “:”. Column C contains the message generated by the short code. There are 35 short codes now. A maximum of 40 codes can be used because of an Aruinno memory limitation. However, codes in the original set can be changed to codes more useful to each user.

If you make changes to this spreadsheet, it would be primarily in the “scode” section, to add additional short codes.

Adding Short Codes

Short codes enable the user to enter custom messages that can be recalled and used rapidly. By now, you should have practiced using short codes. For example, the code “:ay” generates the message “I really appreciate your assistance”.

Once you have made changes to the Google Docs Spreadsheet, download it to your computer (File | Download as | comma-separated Values). Once saved on your hard drive, locate the file and change it's file name to “CODE.CSV”.

Turn off the M2G. Take the Micro SD card out of the M2G. Push on it lightly and it will pop out. Install this card in a Micro SD card adapter and connect it to your computer. Once you see the files on the SD card, backup and then delete the “CODE.CSV” file on the SD card, then copy the new

CODE.CSV file onto the Micro SD. Reinstall the Micro SD card in the M2G and turn it back on. The new codes will be in effect.

Check the M2G and see if it is working correctly. If not, you may need to install the original CODE.CSV onto the Micro SD card and test again. If problems persist, check the format of the Google Docs file, making sure the preceding colons are correct and only 40 codes (or less) are being used.

Appendix 1

List of Short Codes

:ab	M2G Version 2 Sponsored by Adaptive Design and HOS Amateur Radio Club
:ap	Hello I have an appointment with
:ay	I really appreciate your assistance.
:cb	I can understand everything you say and I can hear fine.
:ch	Can I help you?
:mc	I operate my communicator by sending Morse code
:cy	See ya!
:dn	Do you need anything else?
:eb	Could you please press the elevator buttons for me I am going to the
:gb	Good-bye
:hu	How are you?
:hv	I have to
:ib	I need to go to the bathroom.
:ic	I have to make a call.
:ie	I have a headache.
:ih	I am hungry.
:it	I am thirsty.
:iu	I have to hurry.
:mw	My money is in my wallet.
:nc	Nice to see you!
:np	No problem
:rp	Could you please repeat that?
:sp	I sign by a stamp
:tc	Take care
:tw	Could you please tell me where ?
:ty	Thank you!
:cc	My credit card is
:vf	Very Funny!
:wl	I would like to
:wn	What's new?
:wr	What is wrong?
:ws	What did you say?
:wt	What time is it?
:ww	I was wondering if
:yn	Pls ask questions that I can answer with Yes or No