



Model Train™
TECHNOLOGY

Speed Stick™

APP USER MANUAL

Companion app for Apple® and Android™

For use with the Series 5 — Bluetooth Edition Speed Stick

App Version 1.2 • BLE Protocol v1.0

Model Train Technology LLC

Manual rev 1.1

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INTRODUCTION

The Model Train Technology™ Speed Stick app is the free companion app for the Series 5 — Bluetooth Edition Speed Stick. It turns your phone into a large, easy-to-read remote display for your Speed Stick: every speed, time and lap reading appears on your screen the instant the stick measures it, and you can change the stick's Units, Mode and Scale right from your hand — no need to reach across the layout and press the button.

The app is available free for both Apple (iPhone) and Android phones. It is a passive Bluetooth display: there is nothing to pair and nothing to switch on. Bluetooth is always on in the Series 5 stick, so you simply open the app and your stick appears.

Note The Series 4 Standard Speed Stick has the identical sensor and accuracy as the Series 5, but it does not include Bluetooth, so it does not connect to the app. The app is part of the Series 5 Bluetooth Edition.

What the app can do

- Show the live speed, milliseconds, or loop time from one or more Speed Sticks.
- Switch the stick between MPH, KPH and raw milliseconds.
- Switch the stick between Speed mode and Loop mode.
- Set the model scale (Z through G and five European scales).
- Name each stick and follow several at once — handy on a club layout.
- Keep a running History of readings and share or export it.
- Customize how each stick's reading looks on your screen — color, font and italic.

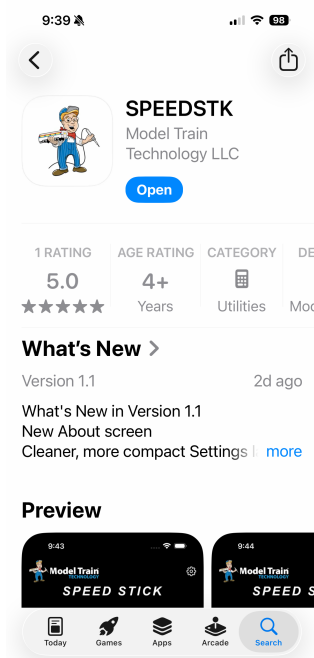
WHAT YOU NEED

Item	Requirement
Speed Stick	Any Series 5 (Bluetooth Edition) stick, firmware v5.2B or later. Powered on.
Apple device	iPhone with Bluetooth, running a current version of iOS.
Android device	Phone with Bluetooth, running a current version of Android.
Bluetooth	Turned on, with permission granted to the Speed Stick app when first asked.
Internet	Needed only to download the app — not needed to use it.

You do not need a Wi-Fi connection, an account, or a login to use the Speed Stick app. Everything happens locally between your stick and your device over Bluetooth.

GETTING THE APP

Search for “Speed Stick” by Model Train Technology LLC on the Apple App Store or on Google Play, and install it free. On the App Store the app is listed as SPEEDSTK.



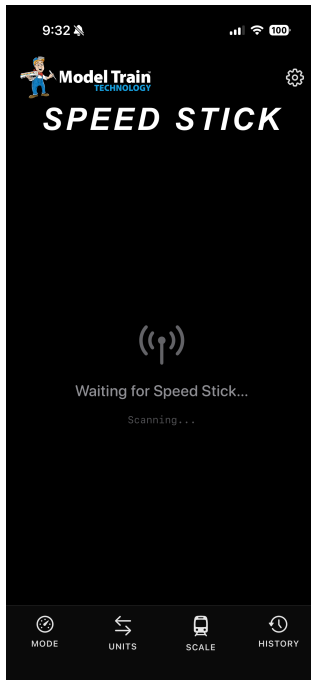
The Speed Stick app on the Apple App Store (“SPEEDSTK” by Model Train Technology LLC).

Opening the app for the first time

The first time you open the app, your device may ask permission to use Bluetooth. Tap Allow / OK. Without Bluetooth permission the app cannot hear your stick. You can grant or change this later in your device’s Settings under the Speed Stick app.

CONNECTING YOUR SPEED STICK

1. Turn the Speed Stick on (slide the power switch to the right) and let it finish its start-up.
2. Open the Speed Stick app.
3. The app shows “Waiting for Speed Stick... Scanning...” while it listens for nearby sticks.
4. Within a few seconds your stick appears and its current reading fills the screen.



While the app is listening it shows “Waiting for Speed Stick... Scanning...”

There is no pairing step and no connect button — the stick is always broadcasting and the app simply listens. If more than one stick is on, they all appear; see [Using More Than One Stick](#).

Tip If nothing appears after several seconds, check that the stick is powered on and awake, that it is within Bluetooth range, and that Bluetooth is on for your device. See [Troubleshooting](#).

THE MAIN SCREEN

The main screen is your remote display. From top to bottom it shows:



The main screen showing a live reading of 95.5 mph in HO scale.

- Logo and gear — the Model Train Technology logo, and the Settings gear (top right).
- SPEED STICK title — always shown so you know the app is running.
- Stick heading — the stick's name (for example “Paddington”) on the left and its battery level on the right.
- The big readout — the current speed, milliseconds, or loop time in a glowing display panel.
- Units line — “mph”, “kph” or “Milliseconds” under the readout.
- Scale line — the selected scale and ratio, for example “HO 1:87”.
- Bottom bar — four buttons: MODE, UNITS, SCALE and HISTORY.

Tapping MODE, UNITS or SCALE changes a setting on the stick. Tapping HISTORY opens the log of past readings. The Settings gear (top right) opens naming and display options.

READING SPEED

When a train passes the stick, the speed appears in the big readout and stays on screen until the next reading. The number is the scale speed — how fast the train would be going if it were a real, full-size train at the selected scale — shown to one decimal place.

Before the first train passes, the readout shows 0. Each new pass replaces the value. The stick automatically detects direction, so you can run the train either way past the stick.

CHANGING THE UNITS

Tap UNITS in the bottom bar to cycle the stick through its three units:

- mph — scale miles per hour.
- kph — scale kilometres per hour.
- Milliseconds — the raw time, in thousandths of a second, that the train took to travel between the two sensors. This is the most precise option and is ideal for speed-matching two locomotives.



Units set to Milliseconds — the raw between-sensor time (here 894 ms).

Changing the units is sent to the stick, so the stick's own OLED display changes to match. See [Sending Settings to the Stick](#) for what the brief “Updating stick...” message means.

CHANGING THE MODE — SPEED & LOOP

Tap MODE in the bottom bar to choose between the two measuring modes. A small menu appears with a check mark next to the current mode.



The MODE menu — choose Speed or Loop.

- **SPEED** — the normal mode. Measures the speed of each train as it passes the stick.
- **LOOP** — times how long the train takes to make a complete loop of your layout and return to the stick.

Choosing a mode sends the change to the stick, exactly as if you had set it with the button on the stick itself.

LOOP MODE IN THE APP

In Loop mode the stick uses one sensor to time a full lap of your layout. Start the train past the stick; when it comes back around and passes again, the completed lap time appears in the format minutes : seconds : hundredths (for example 1:23:45). The next lap then begins automatically.

Freezing a lap time

While in Loop mode the app shows a freeze control near the readout. Tap the snowflake to freeze the lap time on screen so

you can read or record it; tap again (the clock icon) to return to the live running timer. Freezing only affects what you see in the app — the stick keeps timing.

Note If a lap does not complete within 60 minutes the stick shows “Too slow!” and Loop mode resets, ready for a fresh start.

CHANGING THE SCALE

Tap SCALE in the bottom bar to open the scale picker, then spin the wheel to your model’s scale and tap Done. The stick recalculates all speeds for the new scale.



The Scale picker. Spin to your scale and tap Done.

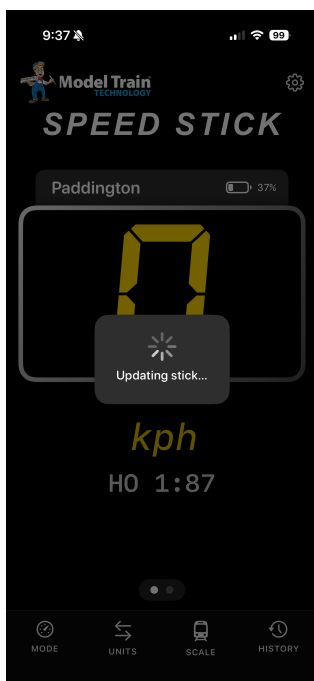
The app offers all eleven scales built into the Speed Stick:

Scale	Ratio		Scale	Ratio
Z	1:220		G	1:22.5

Scale	Ratio		Scale	Ratio
N	1:160		Nk	1:148
HO	1:87		TT	1:120
S	1:64		OO	1:76
O	1:48		Oe	1:45
			Ok	1:43.5

SENDING SETTINGS TO THE STICK

When you change the Units, Mode or Scale — or rename the stick — the app sends the new setting to the stick over Bluetooth. While it does, you see a brief “Updating stick...” message, and the stick itself shows “Updating” on its own screen because the app has briefly taken it over. The moment the app finishes, the stick returns to “Ready...”, just as if you had set it by hand.



“Updating stick...” appears for a moment while a change is sent over Bluetooth.

What can — and cannot — be set from the app

Units, Mode and Scale can be set either from the app or on the stick. Two settings are deliberately set on the stick only and cannot be changed from the app:

- RANGE (the SET RANGE detection distance).
- SLEEP (the automatic battery-saving idle mode).

Why RANGE and SLEEP depend on the exact placement of the stick on your layout, so they are set at the stick using its button, as described in the Speed Stick stick manual.

CUSTOMIZING THE DISPLAY

Tap the Settings gear (top right) to open Settings. Here you can name each stick and choose how its reading looks in the app.



Naming a stick

Each stick has a built-in four-character serial (such as HK8K). Tap the pencil next to a stick, type a friendly name of up to 16 characters such as “Paddington,” and tap Save. The name is sent to the stick over Bluetooth (you will see the brief “Updating stick...” message), so it lives on the stick itself rather than on one phone. From then on every phone shows that name for the stick, as do the optional trackside display and a JMRI panel. To clear the name and go back to the serial, erase it and tap Save.

Tip Because the name lives on the stick, it is the same for everyone — rename it on one phone and every phone, the display and JMRI all show the new name. (Color, font and italic, below, are different: those stay on your phone only.)

Display color, font and italic

For the selected stick you can choose a display Color (Blue, Yellow, Green or White), a Font (Modern, Rounded, Digital or 7-Segment) and turn Italic on or off. The section headings show which stick you are setting, for example “DISPLAY COLOR — Paddington.”

Note Unlike the stick’s name, color, font and italic are not sent to the stick. They change only how the reading looks in the app on your phone, and they are saved separately for each stick on each phone.

USING MORE THAN ONE STICK

The app can follow several Speed Sticks at once. Every stick has its own unique ID, so the app keeps them straight. This is ideal for a club layout or for timing several places at once.

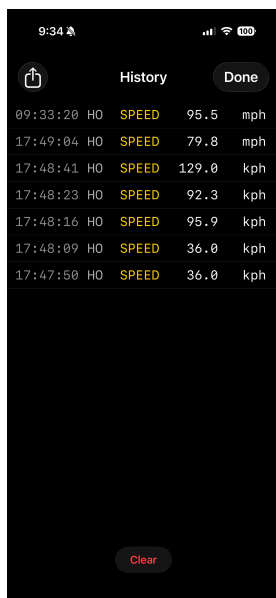


- Swipe left or right on the main screen to move from one stick's display to the next. The dots below the readout show how many sticks there are and which one you are viewing.
- The app automatically brings the most recently active stick to the front, so the stick that just saw a train comes into view on its own.
- Each stick shows the name stored on it, and keeps its own color, font and battery level.
- A stick that has gone quiet dims; if it stays silent it drops off the screen until it broadcasts again.

In Settings, tap a stick to select it — the color, font, italic and name controls then apply to that stick.

HISTORY

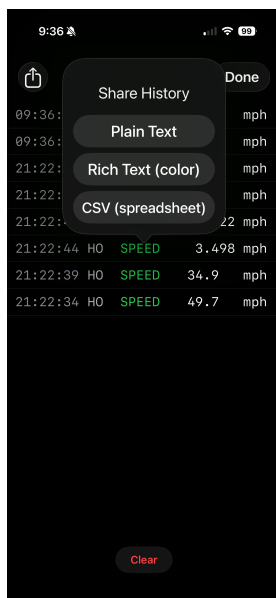
Tap HISTORY in the bottom bar to see a running log of readings. Each row shows the time, the scale, the mode, the value and the units.



		History	Done
09:33:20	HO	SPEED	95.5 mph
17:49:04	HO	SPEED	79.8 mph
17:48:41	HO	SPEED	129.0 kph
17:48:23	HO	SPEED	92.3 kph
17:48:16	HO	SPEED	95.9 kph
17:48:09	HO	SPEED	36.0 kph
17:47:50	HO	SPEED	36.0 kph

Clear

The History log of recent readings.



	Share History	Done
09:36:	Plain Text	mph
09:36:	Rich Text (color)	mph
21:22:	CSV (spreadsheet)	mph
21:22:		22 mph
21:22:44	HO SPEED	3.498 mph
21:22:39	HO SPEED	34.9 mph
21:22:34	HO SPEED	49.7 mph

Clear

Share History — Plain Text, Rich Text or CSV.

Sharing and exporting

Tap the share icon (top left of History) to send the log out of the app. Three formats are offered:

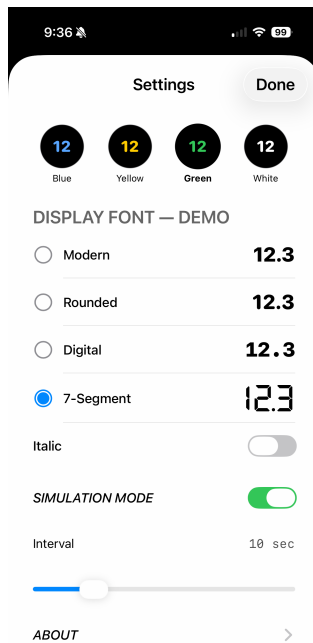
- Plain Text — a simple text list, good for notes or email.
- Rich Text (color) — keeps the colors, good for pasting into a document.
- CSV (spreadsheet) — a comma-separated file you can open in a spreadsheet for charts and analysis.

Clearing the log

Tap Clear at the bottom of History to empty the log. Tap Done to return to the main screen.

DEMO (SIMULATION) MODE

Demo mode lets you explore the app with no stick present — useful for learning the controls or showing the app at a show. Turn on SIMULATION MODE in Settings.

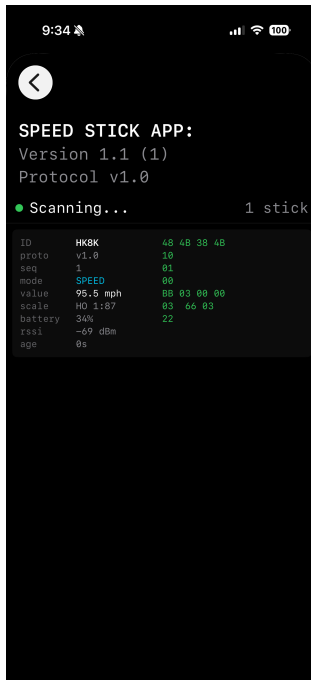


Simulation mode on, with an adjustable update interval.

- While Demo mode is on, the app stops listening for real sticks and shows a make-believe stick named DEMO that produces a new reading every few seconds.
- Use the Interval slider to set how often a new demo reading appears (from 5 to 30 seconds).
- Demo readings are kept in a separate demo history, so they never mix with your real readings.
- Turn SIMULATION MODE off to return to listening for your real sticks.

THE ABOUT SCREEN & VERSION NUMBERS

At the bottom of Settings, tap ABOUT to see the app's version, the Bluetooth protocol it uses, and a live diagnostic view of every stick the app can hear.



The About screen: app version, protocol, and live per-stick details.

The diagnostic rows show, for each stick: its ID, protocol version, sequence number, mode, current value, scale, battery, signal strength (rssi) and how long ago it was last heard (age). This is mainly for support; you do not need it for everyday use.

Three version numbers

There are three separate version numbers, and they are not the same thing:

- Stick firmware — printed on the stick and its boot screen (for example v5.2B).
- App version — shown on the About screen (for example 1.2).
- BLE protocol — the Bluetooth format the app and stick share (currently v1.0).

BATTERY

Each stick's battery level is shown in its heading on the main screen and in Settings. The stick broadcasts its battery level along with every reading. When a stick's battery falls to about 20% or below, the indicator turns red — a good time to recharge with the included USB-C cable.

Charging and battery life are covered in the Speed Stick stick manual. The app only displays the battery level; it does not change how the stick charges or sleeps.

TROUBLESHOOTING

Problem	What to try
No stick appears	Make sure the stick is powered on and awake (press its button to wake it), is within Bluetooth range, and that Bluetooth is on for your device.
App says it cannot use Bluetooth	Grant Bluetooth permission to the Speed Stick app in your device's Settings, then reopen the app.
Stick is dim or greyed out	The stick has gone quiet. Run a train past it, or check that it has not gone to sleep or run low on battery.
Reading looks wrong for the scale	Check the Scale shown under the readout and set it to match your layout (see Changing the Scale).
Can't change RANGE or SLEEP in the app	These are set on the stick only — use the stick's button menu (see the stick manual).
Only the DEMO stick shows	Simulation Mode is on. Turn SIMULATION MODE off in Settings to see real sticks.
Battery shows red	The stick is low. Recharge it with the included USB-C cable.

SUPPORT

For help with your Speed Stick or the app, visit Model Train Technology online or contact us through the support page on our website. Please have your stick's firmware version (from its boot screen) and the app version (from the About screen) handy.

ELECTRONICS & STATIC ELECTRICITY

The **MTT PRECISION DETECTOR™ – Trackside** circuit board and components are exposed when the cover is off. Electricity can be dangerous. Static electricity can cause component failure. Scuffing along a carpet and then touching one of the component connectors can cause a static spark. These components are fairly rugged — some designed for the automotive industry. Just be mindful of the risk. The current on the board will not harm you if the board is powered and operated as per the instructions.

WARRANTY

ONE YEAR MANUFACTURER WARRANTY: We warrant this **product** to be free from defects in workmanship and materials, under normal residential use and conditions, for a period of one (1) year from the original invoice date. Shipping and handling fees are to be paid for by the customer.

LIMITATION OF LIABILITY

UNDER NO CIRCUMSTANCE SHALL COMPANY OR ITS AFFILIATES, PARTNERS, SUPPLIERS OR LICENSORS BE LIABLE FOR ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL OR EXEMPLARY DAMAGES ARISING OUT OF OR IN CONNECTION WITH YOUR USE, OR INABILITY TO USE THE PRODUCT, WHETHER OR NOT THE DAMAGES WERE FORESEEABLE AND WHETHER OR NOT COMPANY WAS ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, COMPANY'S AGGREGATE LIABILITY TO YOU SHALL NOT EXCEED THE AMOUNT OF THE PRODUCT. THE FOREGOING LIMITATION WILL APPLY EVEN IF THE ABOVE STATED REMEDY FAILS OF ITS ESSENTIAL PURPOSE.



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