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17th September 2012, 08:09 AM

#1

Downunder35m



Join Date: Aug 2010
Location: private
Posts: 466
Rep Power: 379

Guide TT Touchscreen calibration

So, your TT does no longer give you an "a" when you enter an address or you have to press on weird spots in the menu to select something? It usually means your digitser for the screen is partially faulty but you might be able to "fix" it without buying a new one.

All current Navcore can use a texfile "cal.txt", located in the root of the device to override the default calibration of the digitiser. I will base my [instruction](#) on that and not on the cilb.txt for older Navcores (little bit different different).

Ok, how do I know the values for the cal.txt? Start your TT (best after a reset) and when the drums start press and hold the power button - this will show you the Linux status screen with all hardware related info.

Row 4 from the top shows your current bootloader, row 4 from the bottom shows the original calibration data of the digitiser. Only the first values are of interest, the rest shows the voltage for the digitiser.

As an [example](#) from my device:

93 921 147 840

The values are:

93 = min X

921 = max X

147 = min Y

840 = max Y

X

as shown on your status screen!

Normal touchscreens use a koordinate system and a point calibration, TT prefers to calibrate the start and end of the X- and Y- axis, so be prepared for a lot of reboots and changes inside the cal.txt!
 I only describe how to calibrate the Y-axis, procedure is identical for the X-axis.
 As by my example start chaning the mx Y value.
 If you lower the value the reaction on the screen should go down, if you increase the value the reaction should go more to the top of the screen.
 Change the value by about 50, save the cal.txt in the root of your device and boot the TT.
 You should notice a little difference already.
 Try to remember by how much it has changed to get an estimate on how much further you need to change this value only.
 Once you reach a point were you think it feel ok start the address input with the big keyboard for the finetuning.
 Hint: If you notice after the changing the max value there is barely any change adjust it by about 200 and try again, if still no real change use the min value to start the calibration.
 You now change both the min and the max value to get the most accurate result, using a touchpen is a good idea.
 Only minor changes in the values should made at this stage and only one value at a time, otherwise you might end up messing around.
 The final check should [confirm](#) the menu buttons work fine, all [characters](#) and numbers in the screen keyboard are assigned [correctly](#) and the zoom buttons in the map screen are working.
 Don't be too disapointed to notice the keyboard works but the zoom buttons don't - they are very small and in the corners so only a perfect calibration will get them back working.

On case the input is off in both axes you shoud still start with the Y section to gett he height correct before adjusting the x axis.
 Changing both at the same time makes it really har to figure out what change caused the reaction on the screen.
 I hope this will to get your TT going again.

[Password](#) for all my [files](#): downunder

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14th May 2014, 04:31 PM

#2

QUIN1965

GPSPower Helper



TT Touchscreen calibration



Join Date:	May 2012
Location:	al lado del mundo
Age:	53
Posts:	627
Rep Power:	780

Guide TT Touchscreen calibration

TT Touchscreen calibration

Method valid for up to 8,051 NavCore versions .

A [manual](#) method for correcting the calibration of the touchscreen any TomTom is to create a [file](#) called **calib.txt** (for example, Notepad) and save it in the root directory of the TomTom memory disk (eg , the SD card, the same directory of file ttsystem) .

calib.txt should include a line with four numbers separated by a space : X Max- Min- Max Min-Y X -Y

Note that the 'X' in the sequence (max , min) is inverted 'Y' sequence (min , max) . Max- X > X and Min- Min -Y
For example , the file may include :
928 118 107 912

TomTom Each device has its own most appropriate sequence.

To compile the file with default data , a method might be to perform a reset of TomTom (remove the SD card) , the device turns on and holding the power button for a few seconds until the black screen the drive appears . Called line . " **Touchscreen calib data** " consist of four numbers in the sequence represents Min- Max X - Max Min-Y X -Y , these numbers can be used to fill the line [configuration](#) **calib.txt** remembering to **change the first two** . For example, if the black screen of the unit returns **118 928 107 912** , **calib.txt** must be saved **928 118 107 912**.

Tuning then you can do by adjusting the numbers until the touch screen is calibrated. Distortions such as screen rotation , correcting trapezium and rhombus can not be achieved with this method, even if the symphony of these parameters may provide an acceptable touch screen management , even in the presence of distortions , the best screen to adjust the calibration is to exploit the onscreen keyboard NavCore application.

For example , on my old TomTom GO Classic device I realized that , after activating the keyboard NavCore screen when moving vertically (Y axis) the cursor calibrated appeared , while the horizontal motion (X axis) prevented the management right columns (especially in the position of the lower left corner) and left key . So I went to the last two digits and unaltered , after some testing , I have successfully used the following values: 805 200 107 912 .

Method applies to later versions NavCore 8,051 .

For version 8.3x 8.2xy NavCore , to use the same method as mentioned above , with these minor differences : the file must be named **cal.txt** (not calib.txt) and again should be placed in the root directory of the SD (or HD) TomTom drive system (eg , the same directory where you can find ttsystem) . In addition , the four numbers in the file must have a different sequence than previously described for versions up to 8.51 ; **cal.txt** shall include the following sequence: X Max- Min- Max X -Y Min -Y (note that also precedes Max Min -Y -Y) .

For example , **cal.txt** may include the following four digits : 928118912107

Again, these numbers are specific to each TomTom unit.

For example, my TomTom GO 630 works fine with 931 83 475 65 921 when the original was 83,856,142 .

Text translated from " mytomtom.co.uk " User Bart

To try to stop this clearer text included pikardaken user.

To begin we must know the calibration values is our default browser. To do this we have to do a reset (img. 1) introducing, for example, a [clip](#), a few seconds is sufficient. Then turn on the device and hold the button until we display hardware information (img. 2) appears.

We signed the data.

In my case it is " **83 921 142 856** " .

To work with these we have to change the order of groups of figures. We changed the first on the second and third on the fourth .

In my case is " **921 83 856 142** " .



Now we know what those values mean. The first 2 values are related to the calibration of center left and center right respectively. The last two values refer to the calibration center to center up and down, also respectively.

To work in the [tutorial](#) we will change the values of letters.

921 = X (vector to left)

83 = Y (vector to right)

856= V (up vector)

142 = W (vector down)



That means that when the problem is in the press center at the top we have to modify the " V " value center down the " W " value from center to right the value " Y" and the center left value " X " .

With that in mind , now let's try to calibrate the screen.

Whenever we can , we try to calibrate taking references on the menu for the fact that we have 8 buttons.

Suppose , as in my case , pressing the button "Go to ... " , which is the center to top, always marks that we are pressing the " Mobile Phone " button. In this case we have bad calibration center to top and we change the " V " . As always pressing us to mark down more of what we choose , we must reduce the value.

My default value was " 856 " and now, after calibration has stayed in " 475 " .

With the rest of the axes is the same.

Keep in mind the following:

Always press on the same site , at center above: " V " =

Reduce the " V " value means that the screen move down.

Upload the " V " value means that the screen move upward.

Always press on the same site , the center to bottom: " W " =

Reduce the " W " value means that the screen move down.

Raise the " W " value means that the screen move upward.

Always press on the same site , center left , " X " =

Reduce "X " value means that the display move to the right .

Top "X " value means that the screen move left.

Always press on the same site , the center right : "Y" =

Reduce "Y" value means move the screen to the right.

Upload "Y" value means that the screen move left.

When you create the calibration file , we will consider the following:

The file " cal.txt " will be called .

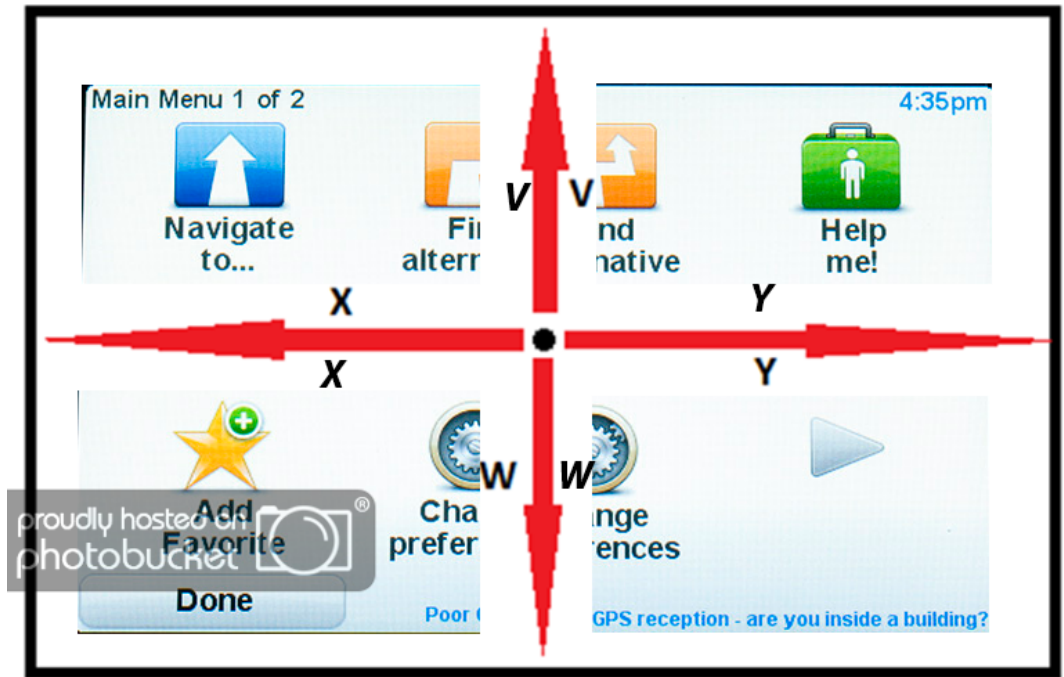
Only contain the coordinates of calibration.

The file we will put in the root directory of the internal memory or card browser if card ..

My original calibration was " 921 83856142 " and ended up being " 931 83 475 65" . As you can see the " V " values and " W " have been changed to more or less half the original . By that I mean do not be afraid to significantly modify the values need not be changed from 10 to 10 as I've seen in other tutorials (to call it somehow) .

To refine the calibration , a good place , we will in the main screen , as in the upper corners are buttons to enlarge and reduce the map .

You must take into account that the values are 4 and who work with screen quadrant is as if your gps had four small screens together and each quadrant will affect two vectors.



Credits Orni

Last edited by QUIN1965; 14th May 2014 at 04:39 PM.

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23rd July 2014, 08:13 AM

#3

Aiken Drum



Member	
Join Date:	Dec 2010
Location:	The Moon
Posts:	16
Rep Power:	0

A refined method to adjust TT touch screen calibration

Tutorial: How to calibrate touchscreens on TomTom PNAS
This method is a procedure to adjust screen calibration, no guessing involved. It will take up to two hours to accomplish.

First thing to do is read the first two posts in this thread to get the procedure to determine the current screen calibration of your TomTom. You will need the current calibration as a starting point. Note that you will be adding a file to your TomTom that will either be named **cal.txt**-for navcore versions later than 8.051 or **calib.txt**-for navcore versions 8.051 and earlier
You cannot calibrate the navcore version 10.xx and later TomTom's.

Credit to mpp for this tutorial.

The steps in a very short form:
- Very important! TomTom calibration always runs from the center of the screen to the outside in all four directions, so if your touchscreen center doesn't exactly match the display screen center you're screwed up and will never achieve correct calibration.

- Step 1: Locate the center of your touchscreen and match it up against the center of your displayscreen. Do this by shortening your axis first.
- Step 2: Spread the axis back up again to better match the outer buttons.

The steps explained in very detail:

- Prenotes:
- After using a lot of trial and error I found out, that my TomTom is always calibrating from the invisible, but locateable touchscreen center to the edges of the screen. This behaviour makes calibration much more predictable, but you first need to align the touchscreen center with the displayscreen center, before you can calibrate the axis. My TomTom is a TomTom ONE with FW higher than 8.051. In my case, I wasn't able to input the keys on the very right side (e.g. "0" and "P", including using the zoom bar while in scroll map mode). So, I had to calibrate the X-axis and this will be explained in the following tutorial.
 - Always calibrate one axis at a time. Do not try to calibrate axis X (horizontal) and Y (vertical) at the same time.
 - Always distinguish between the touchscreen center and your displayscreen center!
 - Use a plastic touchpad pen to get exact results. This is very important: you can't do the calibration with your thumb or your finger. You must have a very fine pointed tool to use on your touchpad. Look for a plastic pen on your PDA or smartphone or borrow one. You might also use a non-active ball-pen, but be careful not to scratch your touchscreen. In any case, use extra caution while using a tool on your touchscreen!
 - Use a spreadsheet to document your very steps. In columns, you will need to document MinX, MaxX, MinY, MaxY, "MaxX minus MinX" (the result can be useful later on) and three note columns for alignment of left, middle and right display part. Always note your initial values which you got from the diagnostics screen first. This will help you to notice any improvements or drawbacks.
 - I am not sure about running a reset while moving from trial to trial during the calibration process. As my TomTom ONE has no built-in flash memory it runs a quick reset ("the drums, you know") when the SD-Card was removed for changing values in the cal.txt. If your TomTom has a built-in memory you might need to run a quick reset for the new calibration values to become active.

Step 1a: Locate the center of your touchscreen

Where is the center of my displayscreen?

Open the input screen, where you can type in an address (that is usually starting from the main menu and trying to navigate to an address in a city). The inputscreen should show a full row of numbers above the usual keyboard layout (qwerty-layout). The numbers are from left to right: 1 2 3 4 5 6 7 8 9 0. Now, your displayscreen center is exactly on the border between number "5" and number "6". So to speak, right in the middle of the display.

Where is the center of my touchscreen?

This is a bit tricky, so please keep up with me. To find out about your touchscreen center, press and touch your screen on number 1 and move your pen (while still pressing the touchscreen) to the right. You might notice, while going from one number to the other that the touchpad in a specific section appears perfectly calibrated. For example, you move with your pen from number 6 to number 7 and exactly on that border the highlighted number changes from 6 to 7. So, the touchpad is perfectly calibrated in that section. This is, what I call, the "touchpad center".

Definition of the touchpad center: First condition to meet: Moving with your pen from one specific number to an adjacent number will result in corresponding highlighted buttons on the display screen. If you experience for example, that the touchscreen seems to be perfectly calibrated between number 6 and number 7, than that's where your touchscreen center can be found. Of course the initial location of that touchscreen center varies with each display AND factory calibration. Second condition to meet: Moving from the touchscreen center to the display edges on each side of an axis will give you the feeling, that the display becomes more and more decalibrated the closer you get to the edges on an axis of the display. To explain this in detail look at the following graph A. It shows a touchscreen, where the touchscreen center exactly matches the displayscreen center (step 1 of the tutorial has already been fully completed!), but the alignment of the numbers on the left and right side of the center still gets worse, when moving to either edge.

Graph A begins

Numbers touched by pen below (represented by 1st row of numbers)

Code:

Please Login or [Register](#) to see the links

Numbers actually highlighted on display above (represented by 2nd row of numbers)

Graph A ends

So, by pressing the right half of the number 9 button you are actually highlighting the zero button already. This is a horizontal off-calibration towards the edge of the screen. Notice how both screens (display and touch) do match around number 5 and 6, while they are very off towards both edges. If you touch the first half of number 2 button, it will actually highlight number 1 already.

Another example:

Graph B begins

Numbers touched by pen below (represented by 1st row of numbers)

Code:

Please Login or [Register](#) to see the links

Numbers actually highlighted on display above (represented by 2nd row of numbers)

Graph B ends

Look at the highlighted numbers of example B. When you press 2 you will most likely highlight number 1, press 3 and number 2 highlights, and so on. Look at the "numbers actually highlighted on display above" line. Do you see and feel, that the amount of decalibration gets smaller and smaller when moving from left to right? In detail: when you press number 2 you will get number 1. However with number 9 and 0 it behaves slightly different. Only if you press the first half of number 0, you will get number 9. But if you manage to hit the second half of that button, you will actually highlight the correct number, that is number 0. While the offset on the left side of the screen was a full "-1", the offset on the right side decreased to a "-0.5". So, if the offset only decreases from left to right (and does not increase again on the right side!), your touchscreen center can be found most likely on the outside of your right screen edge and you may therefore cannot locate it right now.

Even if you can already locate your touchscreen center, please shorten your axis a bit as described in the next section.

Help, I can't locate the touchscreen center or my touchscreen center seems to be way out of my display screen? What can I do?

Make the axis smaller at each end. This will sharpen things up and you will be able to locate the center of your touchscreen. Look at your calibration info on the diagnostics screen. Mine was:

Code:

Please Login or [Register](#) to see the links

Notice that the MinX and MaxX have switched positions for the cal.txt file**Notice that the MinY and MaxY have switched positions for the cal.txt file**

(If you don't understand where these numbers come from you need to read the first two posts in this thread)

Now, I shortened the X-Axis on each end by 100. On the right side on the X-Axis I subtracted 100 from 920 resulting in 820, and on the left side I added 100 to 98, resulting in 198.

With "820 198 890 114" I was finally able to locate my touchpad center somewhere around 7-8. Feel free to shorten each side of the axis by another 50 or 100 (or more!) until you can positively pinpoint your touchpad center.

Step 1b: Align the center of your touchscreen with the center of your display screen

In order to align your touchscreen center with your displayscreen you will have to add or subtract a number from both x-axis-values. Start with 20 or 40 and then finetune with 3 or 5. In contrary to the shortening of the axis you will now have to run the exact same calculation on each value. While shortening the axis you ran opposite calculations: add to the MinX value, but subtract from the MaxX value.

If the touchscreen center is to your right of your displayscreen center (that is button 6 and above), add 20 to 820 and 198 resulting in 840 and 218.

If the touchscreen center is to your left of your displayscreen center (below 5), subtract 20 from 820 and 198 resulting in 800 and 178.

From my experience, the result of adding and subtracting is just the opposite direction. This is a very important point! You add numbers and your touchscreen center will move left. You subtract numbers and your touchscreen center will move right. But just try for yourself. Fine tune until your center lies exactly between number 5 and number 6.

Test to determine, if your touchscreen center matches exactly your displayscreen center: If you move your pen from number 5 to number 6 back and forth and the highlighted number on the displayscreen follows absolutely exactly your direction, then you have aligned the center of your touchscreen and your display screen correctly and can proceed to step 2. Calculate your center by subtracting MinX from MaxX. In my case, this was: 852 minus 227 = 540. This was my touchscreen center.

Step 2: Expand your axis again, until your buttons are pretty much aligned.

You do this by adding 40 or 20 to your MaxX value and subtract 40 or 20 from your MinX value. This will spread the axis equally around your center. If you actually calculate your new center, it should still read the value of the "Test" above, 540 in my case! Now watch the alignment of the buttons going from 5-6 up to 0 and going down from 5-6 to number 1. For testing purposes, always start between number 5 and number 6 and either move to the right or left side. You may notice, that the highlighted number is slightly ahead of your actual touchpad pen position. This is an indication that you should expand more.

The goal is to achieve an alignment in a way, that if you press the very last part of number 9 it will highlight 0 and if you press the very first part of number 2 it will highlight already number 1. This will ensure, that you can access the edge buttons without a hassle. If you do not observe the very same pattern/offset on each side of the screen, your touchscreen center is still not perfectly aligned with your displayscreen center. This may happen due to expanding the axis. So, if during step 2 you find out that your center is not that perfectly aligned. go back to step 1. Use your current values (not the initial ones) to offset to the left or to the right equally to get both centers matched up again exactly on the border between 5 and 6.

Final note: As each TomTom user focuses and touches a number slightly different, you may need to compensate for that. In detail: Me, when trying to input the number 3 with my right hand, I will actually hit the button a little bit more on the right side. However, someone using his left hand might hit it more on the left side due to his different vision angle. So, after all the calibration work is done you might find it useful to compensate for this behaviour in the very end. That is in detail: if you try to press number 3 but get number 4 nearly half the number of attempts or even more, you should move your touchscreen center very slightly (by 3-5) to the left or right in order to compensate for your vision angle.

Any questions, suggestions? Just ask!

Regards,
mpp

EDIT: version 1.2 - typos corrected and more explanations added
EDIT: version 1.3 - some minor corrections and after using my calibrated TomTom for a week now I can assure you, that it is definitely worth the effort.

Last edited by Aiken Drum; 23rd July 2014 at 08:42 PM.

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5th January 2016, 09:30 PM

#4

Siddu ◦

Junior Member


Join Date: Jan 2016

Location: Helsinki

Posts: 8

Rep Power: 0



Hello Aiken Drum,
WOW! Absolutely Amazing!!

clear, step by step instructions. I followed the same and revived my TomTom Go750.

I have internal memory and a sd-card, I have to copy the cal.txt in both the places, if I remove cal.txt then the calibration goes back to old status. This means, we need to keep cal.txt file all the time and TomTom will read it every reset.

I can live with this.
Thank you, Thank you and Thank you.

Best regards
Sid

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20th September 2017, 04:30 PM

#5

justmemike ◦

Junior Member


Join Date: Sep 2017

Location: reggio emilia , Italy

Posts: 1

Rep Power: 0



Hello i have too Tomtom go 750 and i have 214 812 327 662 and i already modified cal.txt with 812 214 662 327 but nothing changes what is your combination numbers ?? please help me

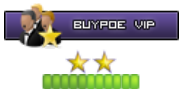
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20th September 2017, 08:10 PM

#6

Jeanet ◦

VIP Master



Join Date: Oct 2015

Location: Home

Posts: 113

Rep Power: 92



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