GT-1 Pass 1.0.6.4 User Guide

GT-1 Pass provides a quick and easy way to evaluate and/or customize a GT-1P (GT-VP) module via USB or UART. This application allows you to adjust touch sensitivity, backlight brightness, and store settings to module memory.

Download GT-1 Pass

This tool can be downloaded from here:
https://www.noritake-elec.com/support/design-resources/tools/gt-1-pass

GT-1 Pass Setup

1. Unzip the downloaded file into a folder that you wish to keep GT-1 Pass. It is recommended to keep it in a new folder to avoid confusion with your existing files. You should now have the GT-1 Pass execution file, WinUSB installer for Windows 7 and GT-1 Pass quick start guide.
2. The WinUSB communication driver needs to be installed next. If you are using Windows 8.1/10, please skip forward to step 3. If you are using Window 7, please continue to the next step.
   A. Unzip WinUSBdriverForWin7.zip.
   B. Connect your GT-1P (GT-VP) module to your PC via USB.
   C. If you have not installed WinUSB or a Noritake virtual COM port driver before, the driver installation will fail. When it does, go to your PC's Device Manager.
   D. Right click on "GTWV070VHA00P" and choose "Update Driver Software".
   E. Click on "Browse my computer for driver software".
   F. Click "Browse" and navigate to WinUSBdriverForWin7/winusbcompat.
   G. Click on "Next".
   H. The driver should install and finish by saying that the "WinUSB Device" driver has been installed.

   * WinUSB is already packaged with Windows 8.1/10, so only install the VCOM driver on Windows 7.
3. Apply power to the GT-1P (GT-VP) module's designated power connector.
4. Connect your GT-1P (GT-VP) module to your PC via USB.
5. Launch the gt1pXXXX.exe file (or gt1pXXXXx86.exe if using a 32-bit operating system). The main GT-1 Pass window should appear.
6. You can now use this tool to evaluate your Noritake GT-1P (GT-VP) display module.

Simple View

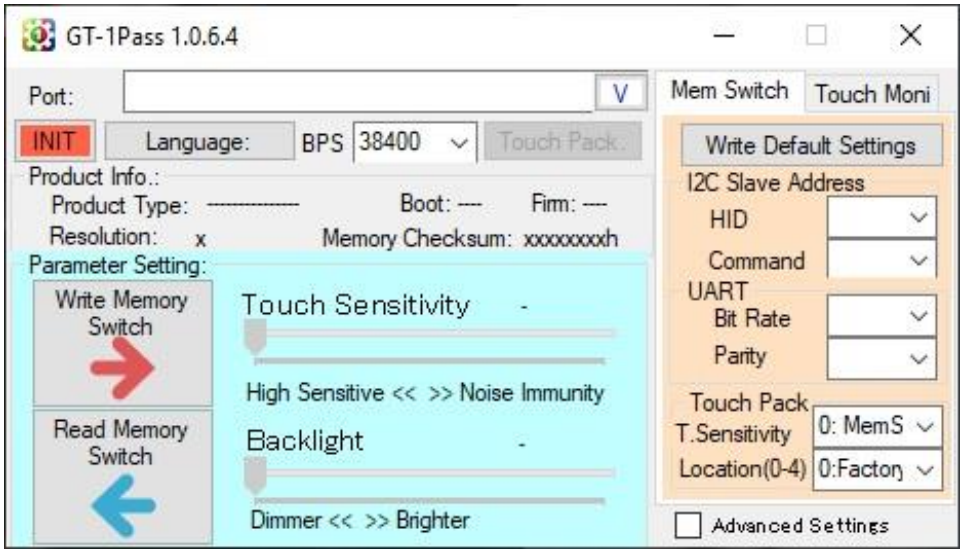

Figure 1: GT-1 Pass | Simple View

Connect a GT-1P (GT-VP) Module

This application can communicate with the GT-1P (GT-VP) module via USB or UART. The correct port must be chosen from the **"Port"** dropdown menu in order to communicate with a GT-1P (GT-VP) module. If USB is being used, then the **"Noritake Display"** option should be chosen. If UART is being used, then a virtual COM port associated with the connected display should be chosen.

Adjust Touch Sensitivity (Threshold)

The touch sensitivity (threshold) value can be changed by dragging the **"Touch Sensitivity"** slider. The setting will change once the slider has been released. A ten second testing period will start to allow the user to experience the new sensitivity setting. If the setting is satisfactory, clicking on the **"OK"** button will stop the testing period. If the testing timer expires, the threshold value will revert back to its previous value.

Adjust Backlight Brightness

The backlight brightness of the module can be changed by dragging the **"Backlight"** slider. The brightness will change as the slider moves. A ten second testing period will start to allow the user to experience the new brightness setting. If the setting is satisfactory, clicking on the **"OK"** button will stop the testing period. If the testing timer expires, the brightness value will revert back to its previous

value.

Memory Switch Tab

Clicking the **"Write Memory Switch"** will save all current setting values to the module's memory switches.

Clicking the **"Read Memory Switch"** will read all of the module's memory switches and populate the applicable values on the application.

Clicking the **"Write Default Settings"** will set the factory default touch sensitivity, brightness, I2C slave address, and UART values on the application and connected module.

The **I2C Slave Address** section lets the user select the slave address when communicating with the module normally (command) and through its HID capabilities. The **"Write Memory Switch"** button must be used to save these settings to the module.

The **UART** section lets the user select the module's serial baud rate (4800 - 115200) and parity (NONE, EVEN, ODD). The **"Write Memory Switch"** button must be used to save these settings to the module.

The **Touch Pack** section lets the user set the module's touch sensitivity source (Memory Switch or Touch Setting Package) and touch setting package location to use (0 - 4). The **"Write Memory Switch"** button must be used to save these settings to the module.

Touch Setting Functionality

Note: The touch setting package and touch level viewer functions are compatible with the following product(s):

- GTWV070VHA00P (F150a and later)

Functions not supported by your connected product will be greyed out and/or disabled.

Touch Monitor Tab

The touch monitor tab lets the user test out the single and multi-touch functionality while viewing the raw touch data. When enabled, the tool's other buttons will be greyed out to avoid accidental button presses. Each of the following modes can be selected with the drop-down menu.

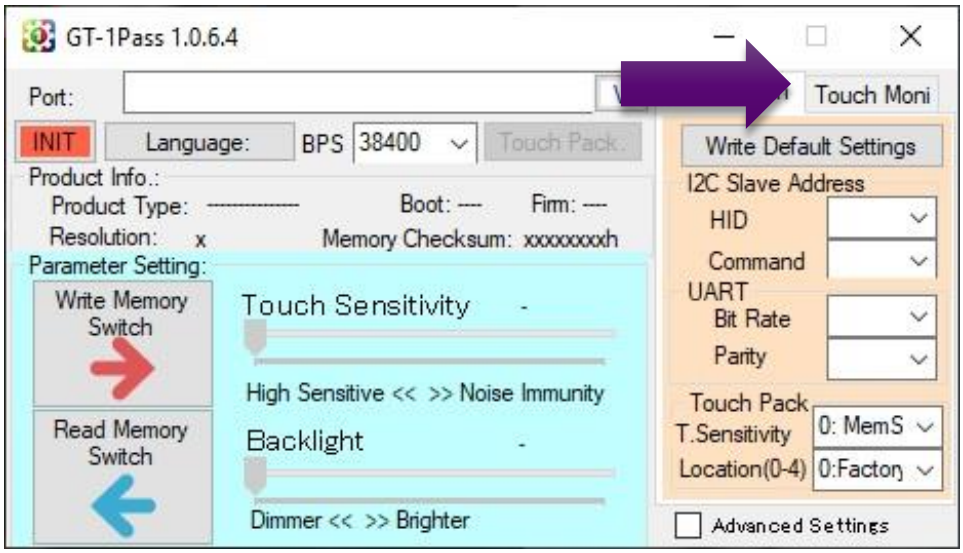

Figure 2: GT-1 Pass | Simple View | Touch Monitor

Off

Turn off the touch monitor.

Single

Set the touch mode to single touch mode. The HID driver is disabled during this mode. Data for only one touch will register and appear on the monitor.

Multi10

Set the touch mode to multi-touch mode. The HID driver is disabled during this mode. This mode can handle up to 10 simultaneous touches. Data for all touches will appear on the monitor.

Touch Level Viewer

Clicking the **"Touch Level Viewer"** button will open the "Touch Level Tool" window. The graph in the center is a graphical representation of the connected touch panel's touch level data.

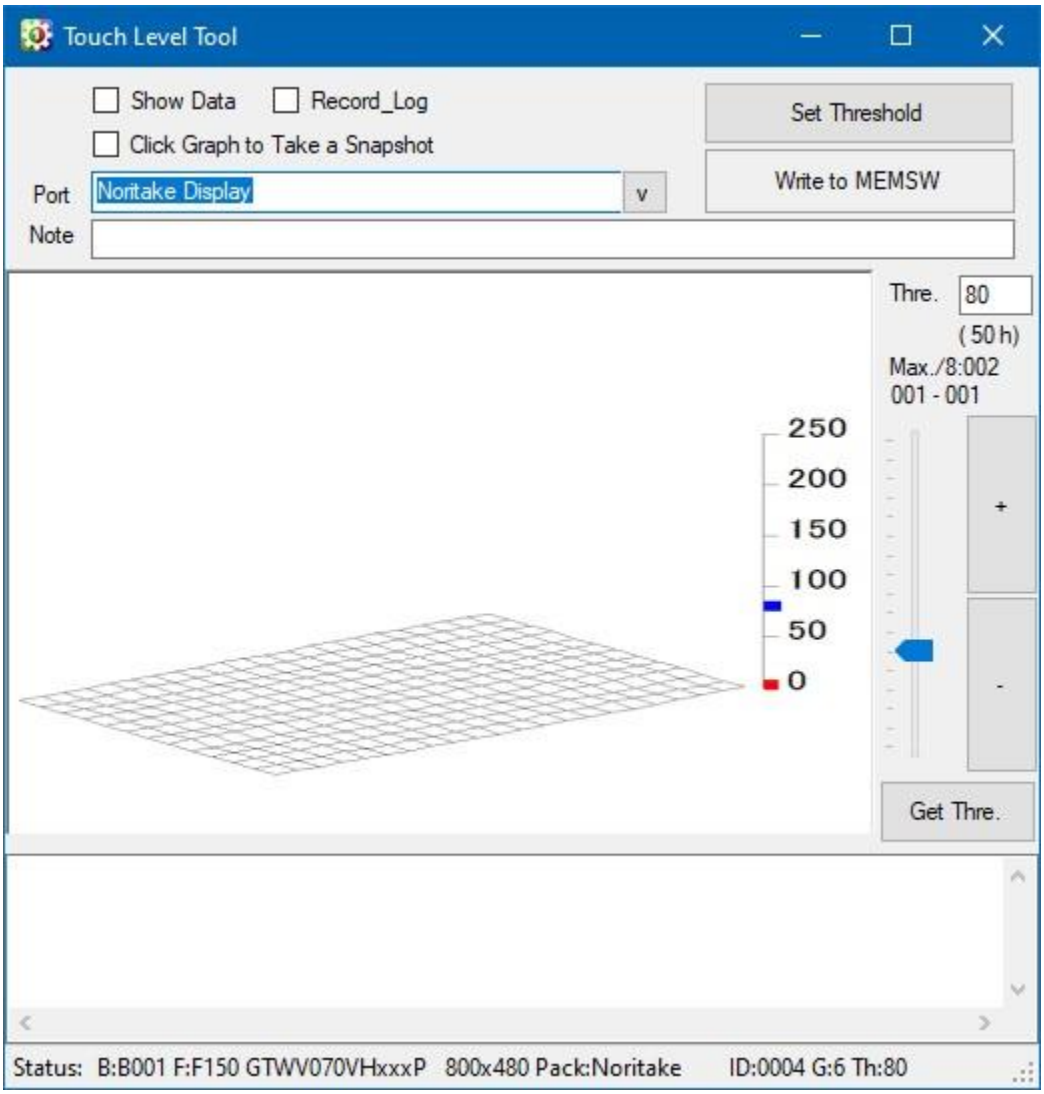

Figure 3: GT-1 Pass | Touch Level Viewer

View Touch Level Data

If the connected GT-1P (GT-VP) module's touch screen is touched, then the touch level graph will change accordingly.

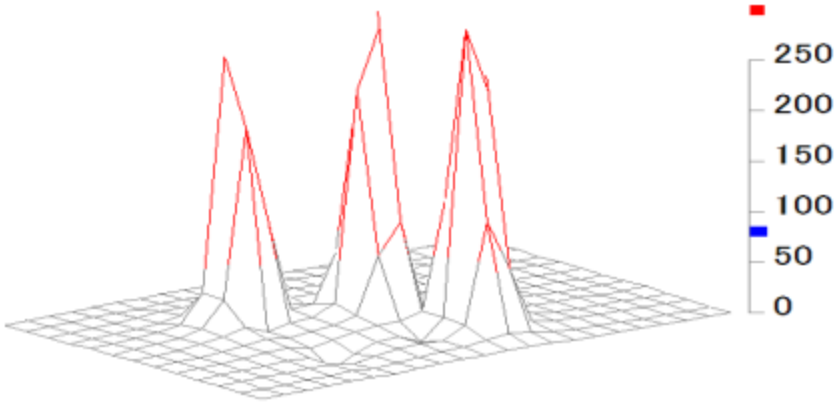

Figure 4: GT-1 Pass | Touch Level Viewer Input

The grey portions of the graph are touch values below the touch threshold value. The red portions of the graph are touch values above the touch threshold value.

Understand and Adjust Threshold

The touch threshold value controls when the touch controller registers a touch on the touch screen. If the touch value is larger than the touch threshold value, then a touch is registered. Otherwise, no touch is detected. The red portion of the touch graph will be registered as a touch input.

The touch threshold value can easily be adjusted and tested within the touch level viewer. The following operations are very useful in adjusting threshold:

Get Threshold

The **"Get Thre."** button will read the current threshold value from the connected GT-1P (GT-VP) module and set the graph's threshold value.

Set Threshold

The **"Set Threshold"** button will set the graph's threshold value as the connected GT-1P (GT-VP) module's current threshold value.

Adjust Threshold

The slider on the right-hand side of this window will adjust the graph's threshold value. The **"+"** and **"-"** buttons will adjust the graph's threshold value in increments of 1. The **"Thre."** text box shows the current threshold value. An exact threshold value can be entered here to immediately change the

graph's threshold value.

Save Threshold to Memory (Memory Switch)

The **"Write to MEMSW"** button will write the current graph threshold value to the module's memory.

Save a Snapshot

To save a snapshot of the current touch level graph, check the **"Click Graph to Take a Snapshot"** checkbox. When the graph is clicked, a snapshot text file will be created in the tool's directory in the "Snapshot" folder.

Record Touch Log

A continuous series of touch data can be recorded and viewed in the Touch Level Log Viewer. To record this touch data, check the **"Record_Log"** checkbox. A "Save As" dialog box will pop-up. Choose the location and file name for the touch log and click **"Save"**. Now, perform the touch inputs that need to be recorded. When done, uncheck the **"Record_Log"** checkbox to stop the recording process.

Show Data

Check the **"Show Data"** checkbox to display the touch count value of each graph data point. Figure 5 gives an example of this information.

```
0460 10/30/2019 9:55:01 AM B:B001 F:F150 GTWV070VHxxxP   800x480 Pack:Noritake        ID:0004 G:6 Th:137
Note:
    -6    -8    -9    -8    -5    -3   -20    -9   -15     0    -5     0   -11    -1    -4     5     3     6     8     3     3    -1
    -6    -3    -7    -3    -5    -3    -3    -8   -10     5     1     4    -2     7     5     3     4    -3     1    -7    -5    -6
     2     6     7     2     7     2    -6     5     5     3    19    17     7    12    15    20     5    -1     0     3     2     3
     1    -6     5    -2    -5    -2   -12    -5    -2     4    -4     0     1     1    -2    10     9    12    14     5    11     4
   -11    -7   -13   -11    -6    -3   -13   -13   -12    -9    -4    -6   -10    -7    -5    -1     8    -2    -2     1     1     2
     0    -6    -8    -3     9    -4    -1    -6    -5    -1     0     1    -2    -1    -2   -10   -14    -6   -13    -9    -9   -15
     4     3     5     3    -2     0    -2     3     1     6     5     6     5     9     0    12    -5    -8    -3    -2   -12    -9
     2     9     8     4     2    -2     7     1    -3     2     2     3     2    -1     1    -4     5    -6    -3    -8    -1    -9
     5     2     3     4    -4    -4    -8    -2    -7     4     5     0     4    -1     2    -1    -1    -5    -2    -4    -4    -1
     1     8     1     7     1     4    -8    -5    -4     3     3     6     4     3     3     8    13    10     5     5     8     5
     9    -1    -1     5     5     0     0     0     3     0    -2     8    -1     0     5     8    -1    -4     1    -3    -1     1
    -9    -1     0    -7    -5    -5   -11    -7    -3     4    -2     8    -8    -5    -6    -6    -8    -7    -4    -1    -1   -15
     4     2     7     2     6     2    -1    -5    -3     4     1     6     8     7     0     6     1    -2     9     6     9    14
```

Figure 5: GT-1 Pass | Show Touch Level Data

Touch Level Log Viewer

Clicking the **"Touch Level Log Viewer"** button will open the Touch Level Log Viewer window. This window can open and view any touch record log or snapshot.

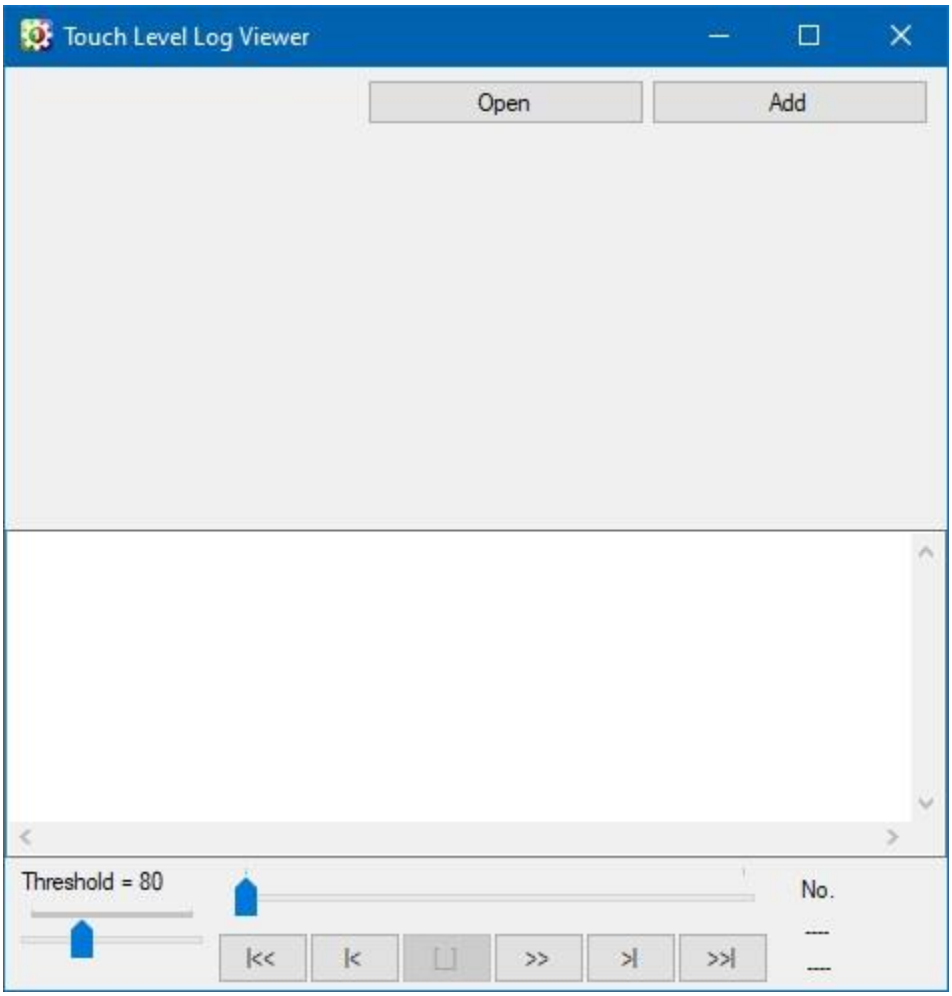

Figure 6: GT-1 Pass | Touch Level Log Viewer

Open a Touch Log File

Click on the **"Open"** button and an "Open" dialog box will appear. Choose a touch log file and click **"Open"**. The touch log will load into the viewer.

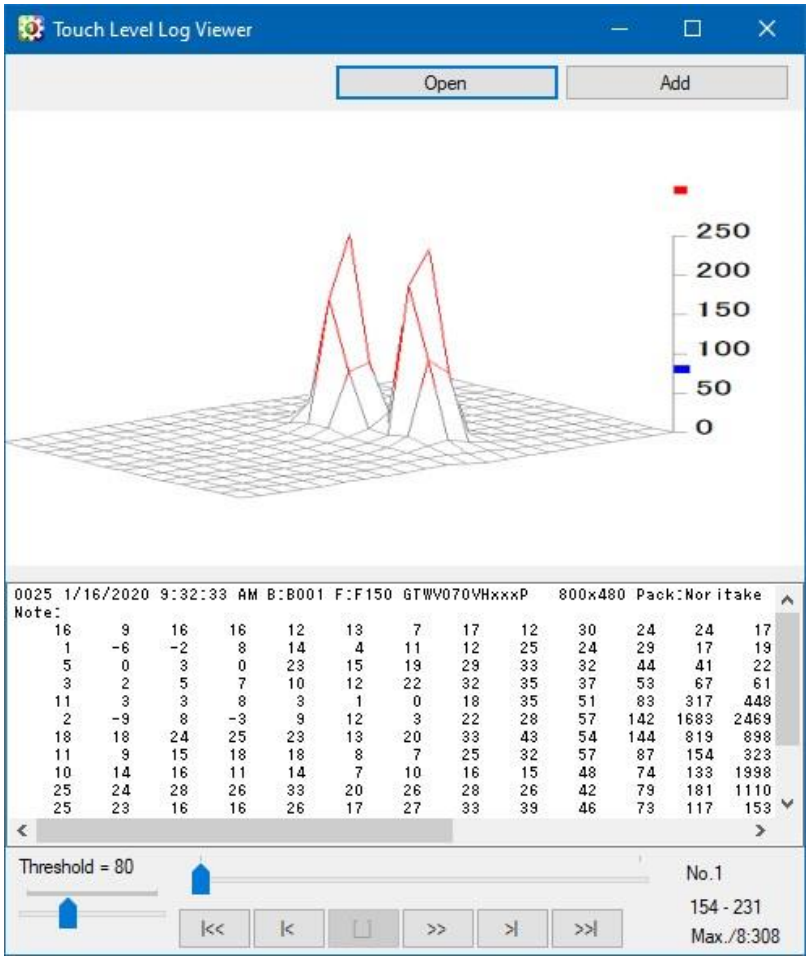

Figure 7: GT-1 Pass | Touch Level Log Viewer | Touch Timeline

Scrub through the touch log data timeline with the large slider on the bottom of the window. The **"|<<"** button will go back to the first touch data set. The **"|<"** button will move back by one touch data set. The **"[_]"** button will stop the automatic walk through the touch data log. The pause button is only active if the automatic timeline walkthrough is running. The **">>"** button will start an automatic walkthrough of the touch data log timeline. The **">|"** button will advance the touch data set by one. The **">>|"** button will skip to the last touch data set.

Open a Touch Snapshot File

Click on the **"Open"** button and an "Open" dialog box will appear. Choose a touch snapshot text file and

click **"Open"**. The snapshot file will load into the viewer.

Add More Snapshot Files

Click on the **"Add"** button and an "Open" dialog box will appear. Choose a touch snapshot text file or touch log file and click **"Open"**. The snapshot or touch log file will get added to the viewer's touch data timeline.

Adjust Threshold

Adjust the slider in the bottom left corner of the window to change the threshold value seen on the viewer. This is useful to help analyze touch log data with differing threshold values.

Touch Setting Package

NOTE: Touch setting package files are only compatible with GT-1P (GT-VP) modules with firmware version F103 or later.

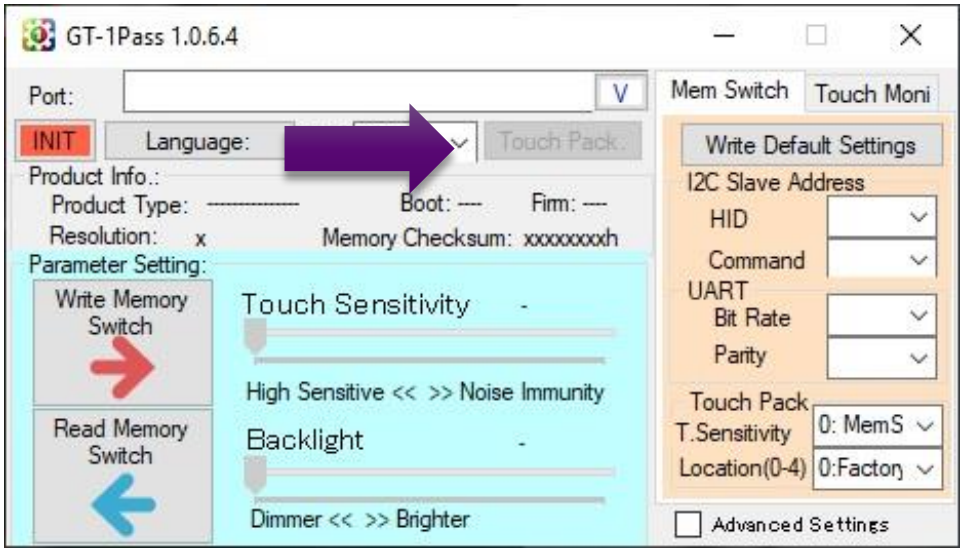

Figure 8: GT-1 Pass | Simple view | Touch Pack

Load a Touch Setting Package File

A touch setting package file can be loaded into the connected GT-1P (GT-VP) module with the **"Touch Pack."** button. When the button is pressed, a window will appear and allow for a destination location for the touch setting package file to be chosen. When the **"Store"** button is pressed, an open file dialog box will open. Once an appropriate touch setting file has been selected, the **"Open"** button will load the file to the module.

Select a Touch Setting Package for Use

When the **"Select"** button is pressed, the touch setting package file is selected on the module based on the destination value in the drop-down menu. So, if destination 2 is selected, then the touch setting package file stored in position 2 on the connected GT-1P (GT-VP) module is selected.

Close Touch Setting Package Dialog

The **"Cancel"** button will close the "Touch Setting Package" window.

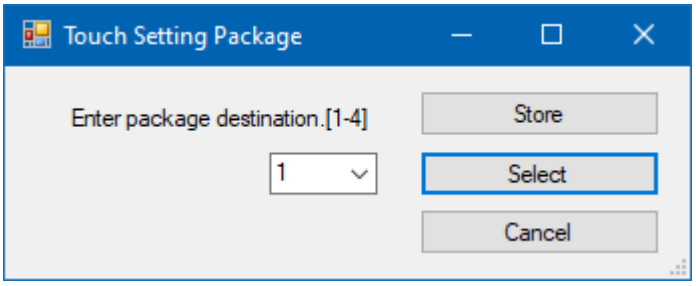

Figure 9: GT-1 Pass | Choose Package Destination

Advanced View

By checking the **"Show Advanced Settings"** checkbox, the advanced view will appear as seen in Figure 10.

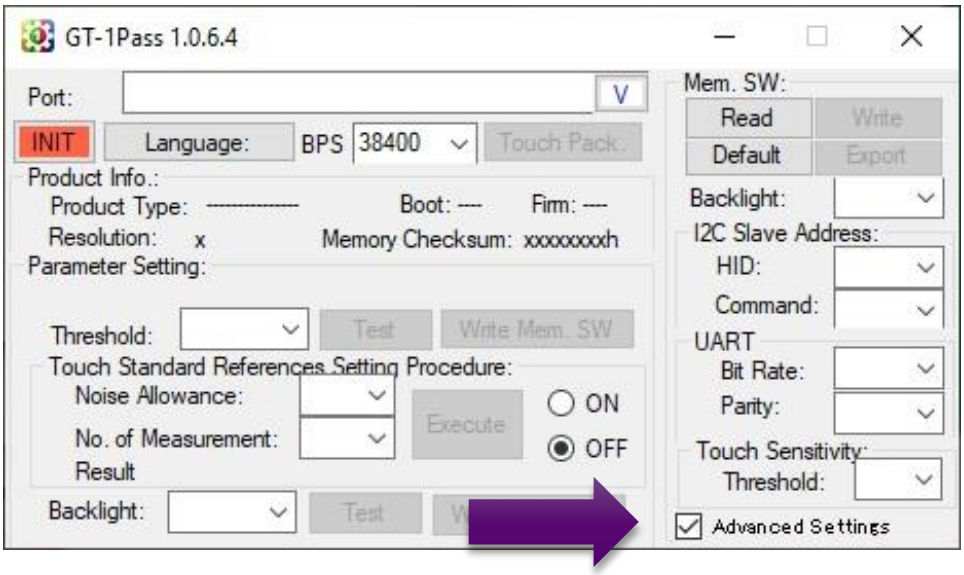

Figure 10: GT-1 Pass | Advanced View

Adjust Touch Threshold

The module's touch threshold can be adjusted by using the drop-down menu next to **"Threshold:"** to select the desired threshold value in hexadecimal. Clicking the **"Test"** button will send the threshold command to the module. After the command is sent, a 10-second timer will start so you can test the threshold setting just in case the setting is incorrect. Additionally, this setting can be saved to the module's memory switch by clicking the **"Write Mem. SW"** button. This will save the threshold setting upon module reset.

Touch Standard Reference Setting

This command can help improve touch detection reliability with dynamic environmental conditions. To start, the noise allowance and number of measurements need to be set. These can be set using their respective drop-down menus. The noise allowance value refers to the maximum amount of acceptable noise between each measurement. The noise level is the differences between each executed measurement. The measurement number value refers to the number of measurements performed. These measurements are then performed by pressing the **"Execute"** button.

This command returns the measurement results as either "successful" or "failed" next to the **"Result"**

label. If the command was successful, that means that all measurement points are less than the noise allowance value. If the noise allowance value was exceeded for any channel, then the command failed. Based on the measurement results, touch standard reference usage is either set to **"ON"** if successful or **"OFF"** if it failed. This ON or OFF state can be seen and adjusted by the radio buttons by the **"Execute"** button.

More information on this procedure can be found on p.11-12 in the GT800X480A-1303P datasheet.

Adjust Backlight Brightness

The module's backlight brightness can be adjusted by using the drop-down menu next to **"Backlight:"** to select the desired brightness value in hexadecimal. Clicking the **"Test"** button will send the brightness command to the module. Additionally, this setting can be saved to the module's memory switch by clicking the **"Write Mem. SW"** button. This will save the brightness setting upon module reset.

NOTE: Be careful when choosing a brightness value of 00h. This setting will turn the display OFF.

Memory Switch

The memory switch (Mem. SW:) section allows for the module's memory switch values to be easily read and manipulated.

Clicking the **"Read"** button will read all necessary memory switch values from the attached GT-1P (GT-VP) module and display them in the drop-down fields.

Clicking the **"Write"** button will write all of the current drop-down menu values to the module's respective memory switches.

Clicking the **"Default"** button will load the factory default values into the respective drop-down menus.

Clicking the **"Export"** button will show the byte code for the command that is being sent to the module when the **"Write"** button is pressed. Additionally, clicking **"Yes"** will copy the code to the clipboard.

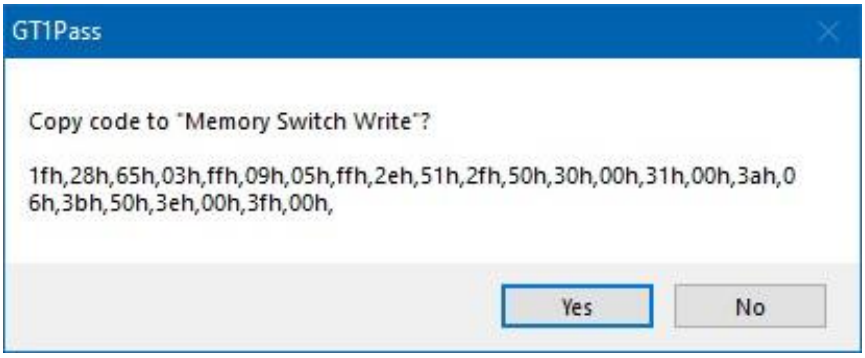

Figure 11: Export Pop-up Window

Revision History

Version	Date	Revision
E-M-0195-00	10/30/2017	Initial release.
E-M-0195-01	03/21/2018	Screen capture and GUI description update.
E-M-0195-02	11/01/2019	Revised for GT-1 Pass 1.0.5.1 BETA. Added touch setting package and touch level monitor information.
E-M-0195-03	01/16/2020	Revised for GT-1Pass 1.0.5.9. Removed beta warning. Updated images. Renamed to “User Guide” instead of “Quick Start Guide”
E-M-0195-04	10/23/2020	Revised for GT-1Pass 1.0.6.3. Updated images.
E-M-0195-05	04/09/2021	Revised for GT-1Pass 1.0.6.4. Updated images.