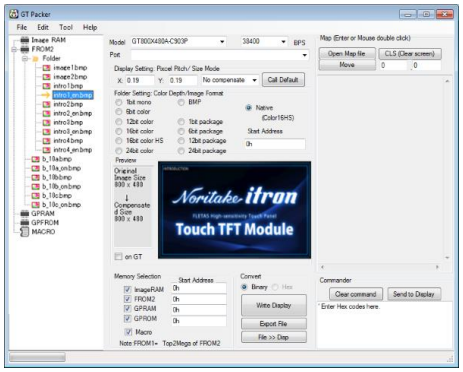
GT Packer Quick Start Guide

Scope



“GT Packer” is a tool that converts, combines, and sends images and other files to the GT-CP module’s programmable memory. This software also generates a MAP file for efficiently downloading image data to the module.

Applicable GT-CP Modules

GT480X272A-C903PA
GT800X480A-C903PA

System Requirements

- Microsoft Windows® 7 (32bit/64bit) / 8.1 / 10 with .NET Framework 4 & 4.5
- Serial communication port (USB / UART)
- 4 MB or more hard drive space

Image Conversion Functions

GT Packer is able to change the color bit depth of each pixel, image resolution, and compensate an image’s aspect ratio based on the display resolution of the GT module.

1. **Color Depth Adjustment**
   - This function provides ability to change the color bit depth of each pixel of the image data. A smaller color bit length can reduce memory consumption and more image files can be downloaded to the GT module.
2. **Aspect Ratio Adjustment**
   - This function will change the aspect ratio of all of the image files in the object tree.
3. **Resolution Adjustment**
   - This function will change the resolution of the image being sent to the GT module.
   - Added after software version 0.8.8.3.

Applicable Files

GT Packer is able to handle the following file formats:

File Type	File Extension
Image file	.bmp, .jpg, .gif, .and/or .png
Binary file	.bin
Text file	.txt
Outline Font file	.otf, .fon, and/or .ttf

Note1: Other Windows® compatible image files are also applicable.
Note2: Any files that have the ".bin" extension can be downloaded to the module as is.
Note3: The binary file(s) located on the node of the object tree will be downloaded to the module as-is. (After software version 0.8.5.0)

Output Functions

GT Packer has the following output functions to download data onto the GT module’s onboard memory.

1. **Preview an image on the GT module**:
    - Preview the image file on the module using the **“on GT”** checkbox. A connection must be established between the PC and module before previewing images.
2. **Write the data onto onboard memory:**
    - Write the data to ImageRAM, FROM2, GPRAM, and GPROM.
    - The .dat file on the Macro node will be downloaded to the GT module’s macro memory.
    - The .bin file on the Macro node will be downloaded to the GT module. (After software version 0.8.5.0)
3. **Generate data for memory write command(s):**
    - The write data including the write setting commands can be saved to the PC with a .bin format.
    - By sending the binary data (write data) contained in the file, GT Packer can download the data into the GT-CP module’s memory. We assume that a PC and/or factory equipment can also do the same thing by sending the binary (write data) file. So the binary file can be used in the production process to download the binary data without GT Packer.
4. **Create Map data and its file:**
    - GT Packer creates a memory address and command data for each object in the file. If the object is an image, the image write command will be included. If the object is a character font, the font definition and the defined font enable commands are also included. So a software engineer can refer to these commands and memory address to learn how to program GT modules.

Application Setup

1. Unzip the downloaded file into a folder that you wish to keep your GT Packer. It is recommended to keep it in a new folder to avoid confusion with your existing files. You should now have the GT Packer execution file, WinUSB installer for Windows® 7 and GT Packer quick start guide.

2. The USB 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 Windows® 7, please continue to the next step.

2.1. Unzip WinUSBdriverForWin7.zip.

2.2. Connect your GT-CP module to your PC via USB.

2.3. 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.

2.4. Right click on **“GT800X480A-C903PA”** and choose **“Update Driver Software”**.

2.5. Click on **“Browse my computer for driver software”**.

2.6. Click **“Browse”** and navigate to WinUSBdriverForWin7/winusbcompat.

2.7. Click on **“Next”**.

2.8. 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 it on Windows® 7.
- If you don’t want to use WinUSB or if you encounter an error during installation, install our GU-TFT driver

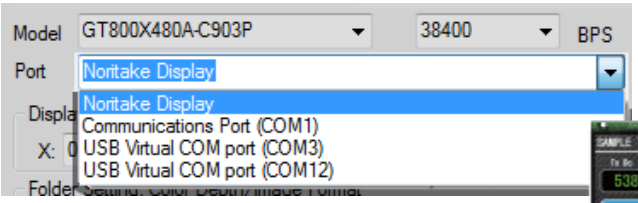
3. Connect your GT-CP module to your PC via USB. And apply the power.

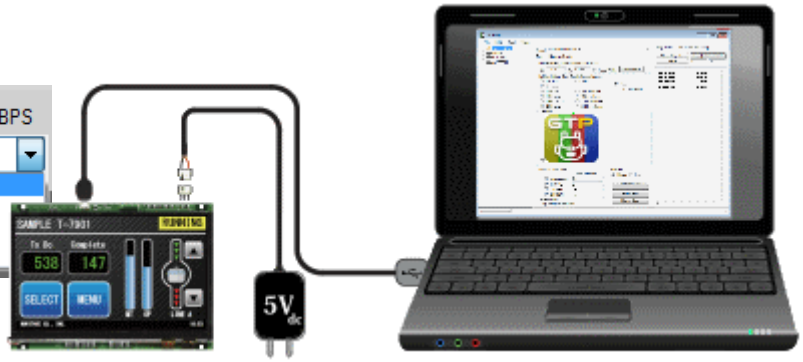
4. Launch the GTPackerXXXX.exe file. The main **“GT Packer”** window should appear.

5. You can now use this tool to evaluate your Noritake GT-CP.

Communication Settings

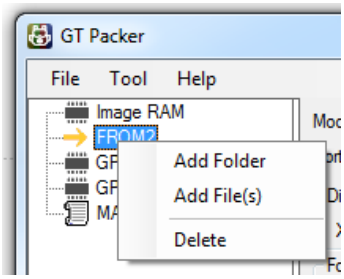
GT Packer requires some settings before operation.
Connect the GT-CP module to the PC and properly apply power. Launch GT Packer and select the model name that matches your GT-CP module. Then select the communication port for the connected GT-CP module.





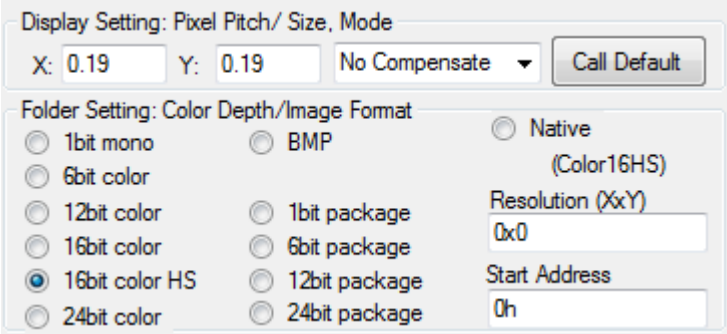
Note: Port selection may vary depending on the drivers installed on your PC.
Note: The COM port number will remain in the MAP file. If a different COM number is used, please re-initialize the MAP file to update the COM port number.

File Entry



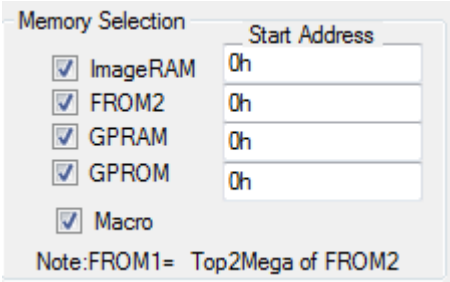
GT Packer handles five memory blocks (Image RAM, FROM2, GPRAM, GPFROM, and MACRO). Since FROM1 is a shadow image of the top 2MB of FROM2, GT Packer does not care about FROM1.
You can drag file(s) and folder(s) and drop them in the tree portion of the window. The file(s) or folder(s) will copy into the tree node(s).
Please remember that the color format of each image is folder specific.
You can add folder(s) or delete folder(s) and file(s) by right-clicking the node item that you wish to edit and selecting the desired action.

Select Image Folder Properties



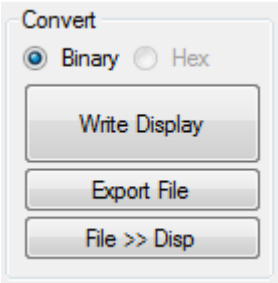
The color format and resolution of the images can be selected at the parent folder.
The pixel pitch is used to compensate for the TFT panel’s aspect ratio. The drop-down menu tells GTPacker to either perform **“No compensation”**, **“X compensation”**, or **“Y compensation”** on the image.
All images in the same folder are stored in the GT-CP module in the same color format and resolution. Child folders can be set to a different color format and resolution.
The image previews also follow this color format and resolution selection. Checking **“on GT”** allows you to see a preview of the image on the connected GT-CP module.
Note: Be careful when using a large resolution setting. This may cause the tool to slow down.

Memory Selection



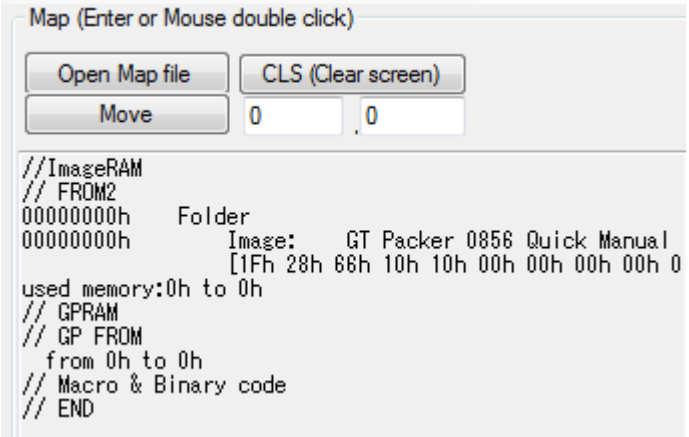
The memory selection area is at the bottom center of the GTPacker window. Each memory block can be chosen via check box and the start address written in its respective text box. The start address can be entered in decimal (00) or hexadecimal format (00h, 0x00 or &h00).
To overwrite the current FROM2 data, use “0h” as the memory start address.
The FROM2 start address set for a specific folder will take precedence over the start address indicated in the **“Memory Selection”** area.
The Macro will be stored into one of the four Macro memories specified by Msousi (Program Macro Editor).
The binary file in the Macro node will be transmitted to the connected GT-CP module as is. (After software version 0.8.5.0)

Convert and Output



The current files on the tree can be converted and packed into a binary file. A packed binary file can be exported as a file on PC, or directory sent to GT-CP module. The saved file can be sent to the GT-CP module at a later time by clicking the **“File >> Disp”** button. The mapping information file with the “.txt” extension is attached to the binary file.
Clicking the **“Write Display”** button executes the conversion process and then downloads the binary data to the connected GT-CP module.

Review the MAP



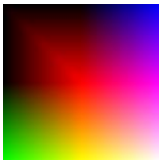
After the conversion and data packing are done, the Map information will be indicated in the Map section (on the right side of the window). The Map info includes the image file name and its respective display commands. By clicking the **“Open Map file”** button, the exported Map information file is loaded to the Map section.

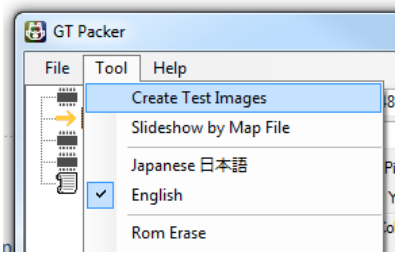
By double-clicking the command line or pressing the **“Enter”** key, the selected command is sent to the GT-CP module and recalls the stored image from the GT-CP module’s onboard memory.
This can be used to check if each image is stored properly.

By clicking the **“CLS (Clear screen)”** button, a clear screen command is sent to the connected GT-CP module and clears the module’s screen.

By clicking the **“Move”** button, the GT-CP module’s cursor position will move to the specified location using the user designated X-Y coordinates. The stored image will be displayed on the cursor position when being recalled.

Other Functions

- **Save and Load “Tree” File**
  Tree image data can saved and loaded using the File menu.
  Note: Each data/image file locations are saved using an absolute address. So if the file is moved or deleted, the tree will not be able to restore the file or object node constructions properly.
- **Create TEST Pattern (image files)**
  By clicking **“Create Test Images”** under the Tool menu, GT Packer will create test image  (256 x 256 pixels 24-bit color image) files on the desktop. By uploading these test images to the GT-CP module, you can check the color patterns on the TFT panel.

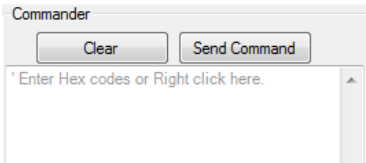


- **Make a Slideshow**
  By clicking **“Slideshow by Map file”** under the Tool menu, GT Packer will send the combination of commands to the connected GT-CP module with proper intervals according to the Map information. By following the Map information from top to bottom, the GT-CP module’s screen makes a slideshow. This allows the user to check if the images are stored properly.

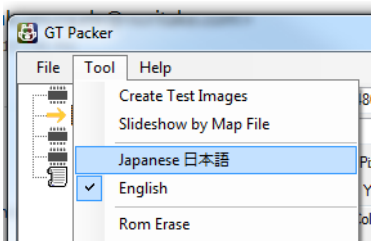
- **Rom Eraser**
  By clicking **“Rom Erase”** under the Tool menu, GT Packer will erase the contents of GPFROM and FROM2. This function will overwrite the existing data in memory to “FFh”.
  Since FROM1 is a part of FROM2, this function erases FROM1 as well. However, the address **“E00 0000h”** and after on FROM2 is reserved for the built-in outline font data, so this function does not erase and data located at or above memory address **“E00 0000h”**.

- **Reset VCOM-USB Mapping**
  Due to Microsoft Windows® specifications, we may need to reset the USB mapping information to use a virtual COM port driver for multiple GT-CP modules. By clicking **“Reset VCOM USB Mapping”** under the Tool menu, GT Packer will reset the USB mapping information. After resetting the mapping information, the first connected GT-CP module will be mapped.

- **Commander (A Hexadecimal Command Terminal)**
  The **“Commander”** dialog and its functions were applied for software version 0.8.5.5 (April 24th, 2018). The hex code entered in the text box will be sent to the connected GT-CP module by clicking the **“Send Command”** button. Additionally, right-click in the text area to use pre-written commands to easily send complex instructions to the GT module.



- **Menu Language Selection**
  The menu language can be changed to either English or Japanese (日本語). The selection is available under the tool menu.



- **Collect Files**
  Clicking **“Collect Files”** under the Tool menu will save all of the files currently in the tree to a user-designated location.

- **Touch Setting Package Data**
  The **“Touch Setting Package Data”** option in the Tool menu can store, change, and save touch setting package data memory switch information and settings.

- **Memory Switches**
  The **“Memory Switches”** option in the Tool menu opens the memory switch editor. The editor can:
  - Read the GT module’s current memory switch values
  - Write memory switch values to the GT module
  - Set the factory default memory switch values
  - Generate memory switch setting code in various formats and copy that code to the clipboard

Revision Note

Software Version	Date (MM-DD-YYYY)	Revision
0.8.2.3	09-18-2017	Initial Release
0.8.2.4	10-27-2017	Minor Bugs Fixed
0.8.5.6	07-16-2018	- Added macro and commander - Minor bugs fixed
0.8.8.3	10-04-2018	- Bug fixes - Added memory switch editor - Added the ability to change image resolution - Added additional functionality to Commander - Added touch setting package data functions