APPLICATION NOTES

4D SYSTEMS
TURNING TECHNOLOGY INTO ART

General Partitioning a micro-SD into FAT and RAW Components

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Description

This application note shows how to partition a uSD card into FAT and RAW components using the **RMPET** software in Workshop. The last section of this application note also shows how the **uSD Tester** tool is used. For testing the RMPET software, only a uSD card and the Workshop 4 IDE are needed. For testing the uSD Tester tool, additional items would be needed, as shown below.

Before getting started, the following are required:

- micro-SD (µSD) memory card
- Workshop 4 IDE (installed according to the installation document)
- A 4D Systems Picaso or Diablo16 Display Module (needed only if testing the uSD Tester Tool)
- 4D Programming Cable or uUSB-PA5/uUSB-PA5-II (needed only if testing the uSD Tester Tool)

Content

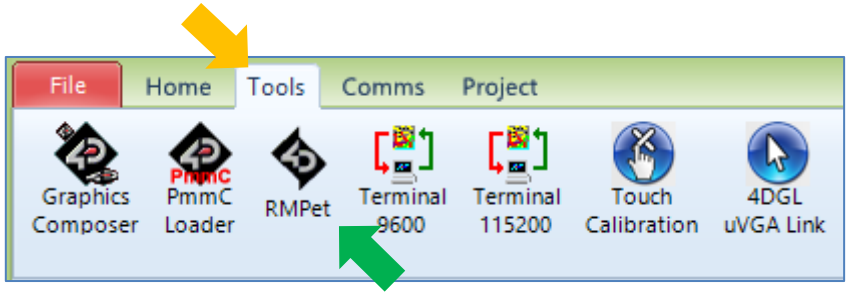
Application Overview

Before undertaking a partition of your µSD card, it is important to understand why you would want to do this. As an end user, you may want to load files of varying formats onto the µSD card, to then display on the screen. The FAT section on the µSD card is the region where these files will be stored. However, you may want a different section where raw data will need to be stored, such as data logging applications.

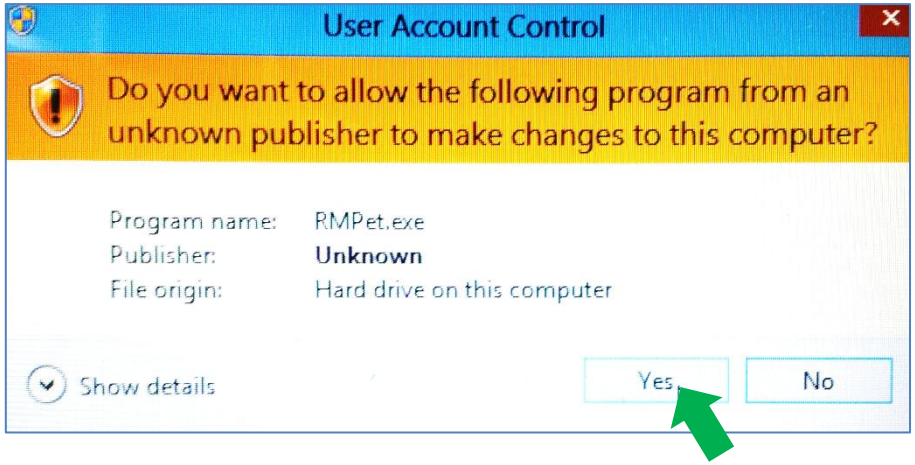
Setup Procedure

The RMPET Software

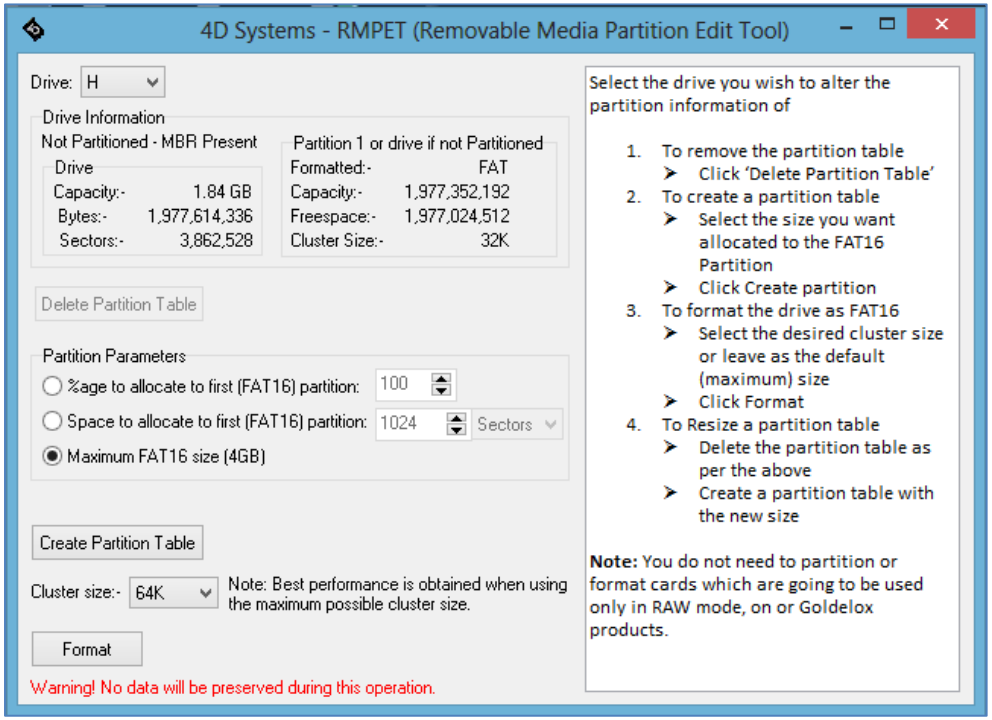
The **RMPET** (Removable Media Partition Edit Tool) icon is found under the Tools menu in Workshop.



Insert the µSD card into the computer and click on the **RMPET** icon to open the software. Depending on your PC User Account Control settings, Windows might ask for a confirmation to run the program RMPet.exe. Click Yes.

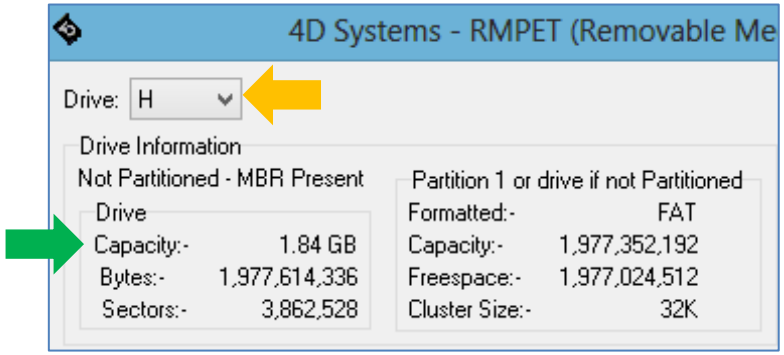


The RMPET window now appears.



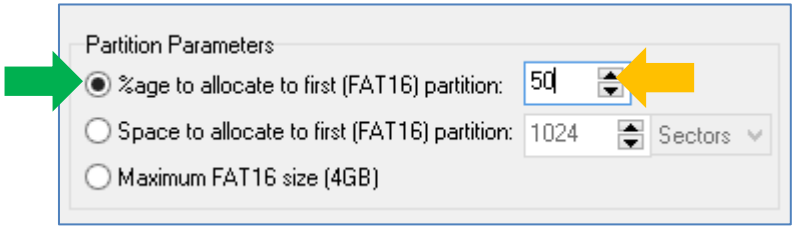
Selecting the Correct Drive

Click the drop down in the top left hand corner and select the drive that represents your µSD. Your device should be displayed across the top of the tool, showing the capacity of the device. **Compare this with the µSD card to ensure you have selected the correct drive.** I.e. if you inserted a 2GB card, you should see roughly 1.8GB capacity. Below is an example of a 2GB uSD card mounted as drive H.



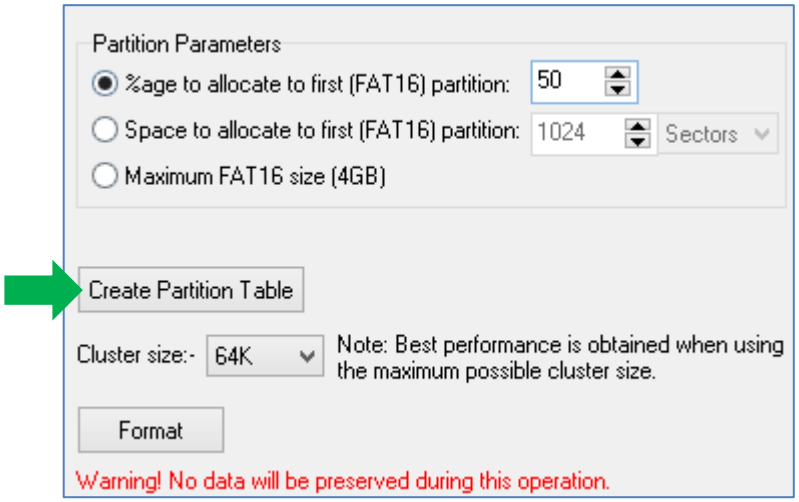
Memory Space Allocation

Now you need to allocate the percentage of available memory space for the partition. The example shows 50% allocation.

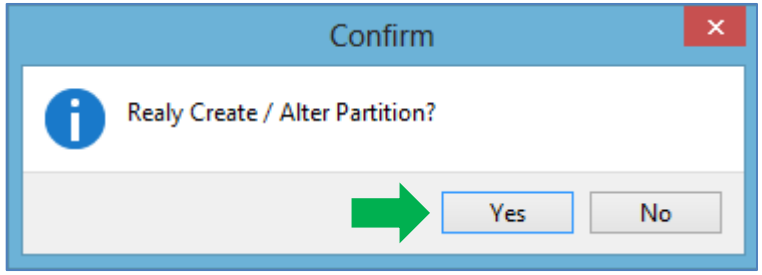


Executing the Partition

The next step is to execute the partition by clicking Create Partition Table.

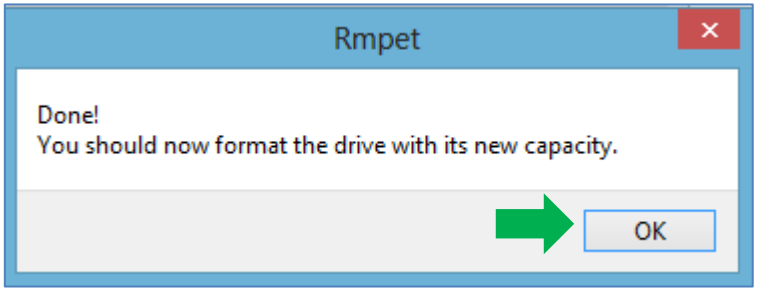


Windows asks for a confirmation. Click Yes.

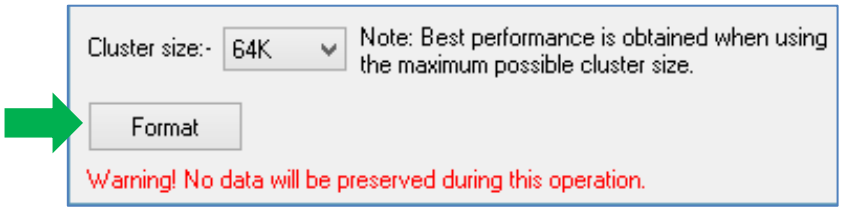


Formatting the Partitioned µSD

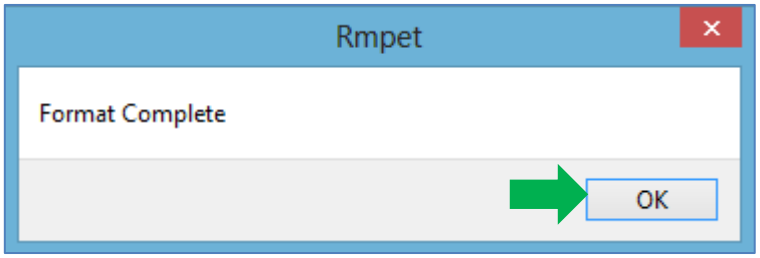
Your computer will prompt you to format the µSD card. Click OK to proceed.



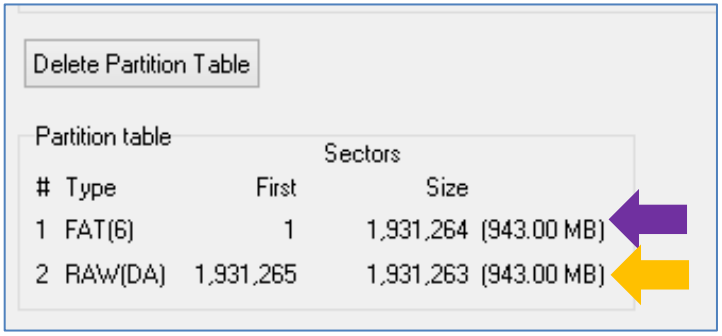
Click on Format.



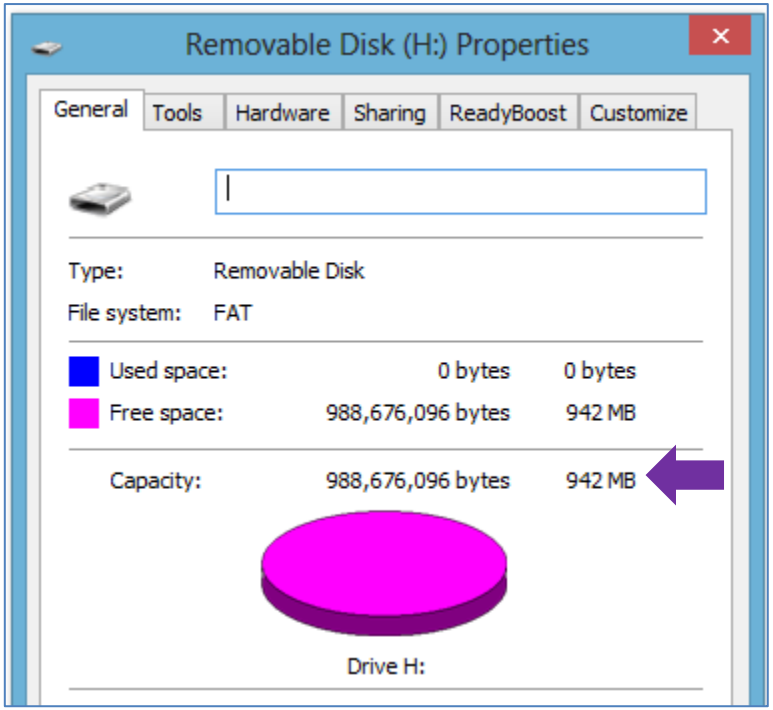
Format is complete. Click OK.



Your µSD card is now successfully partitioned into 50% FAT and 50% RAW components.



In the file explorer, drive H: now shows the following properties.

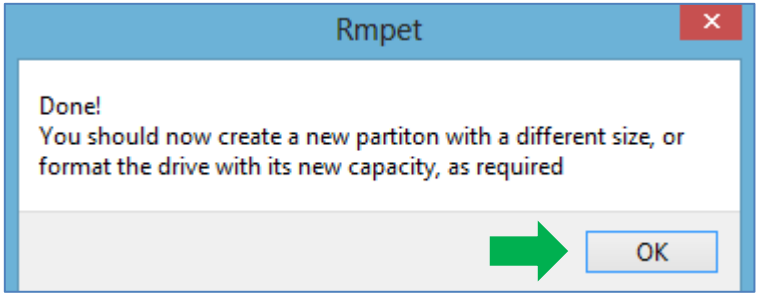


Removing a Partition

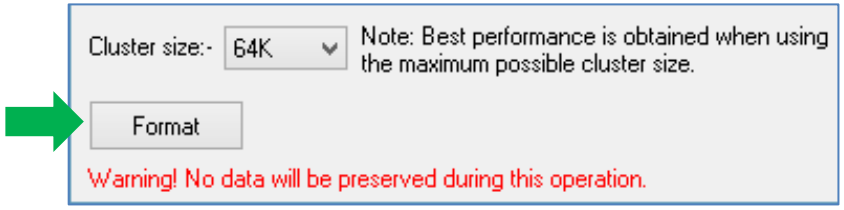
The partition can be removed by deleting it in RMPET.

Windows asks for a confirmation. Click Yes.

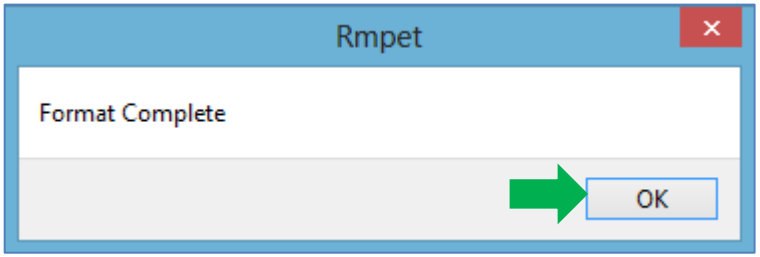
Partition is now removed. Click OK.



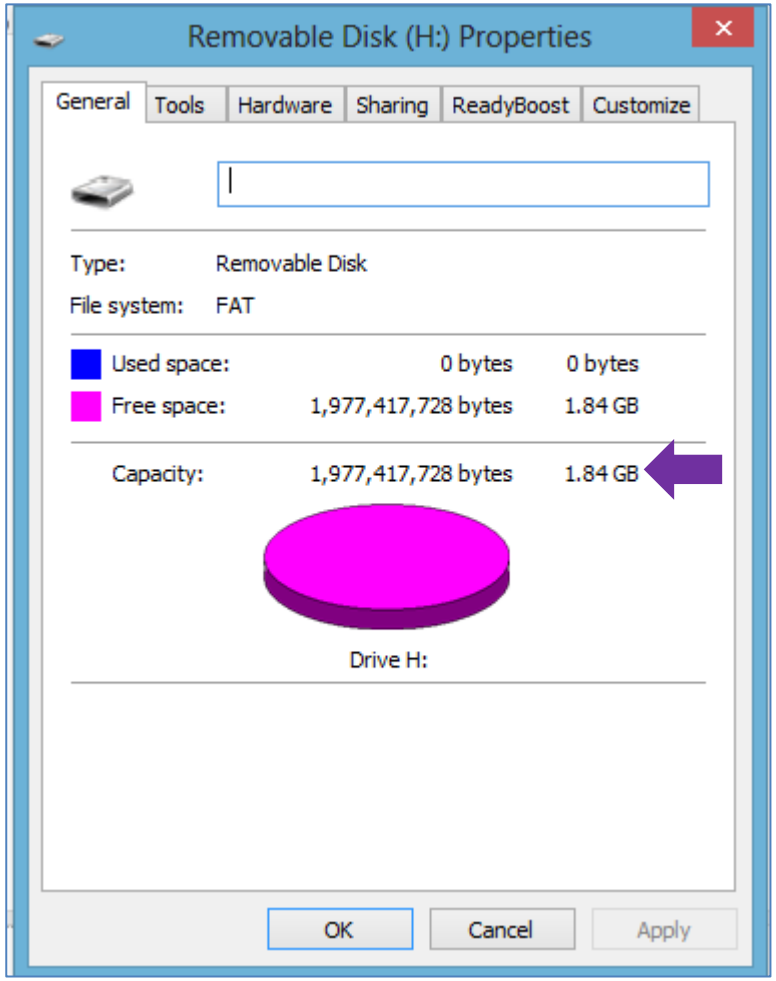
Click on Format.



Format is complete. Click OK.

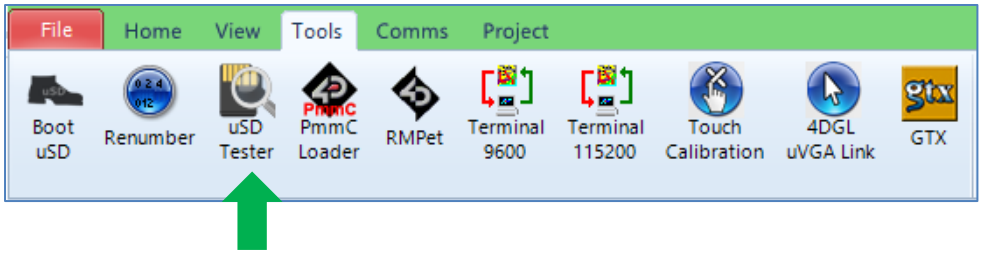


In the file explorer, drive H: now shows the following properties.



The uSD Tester Tool

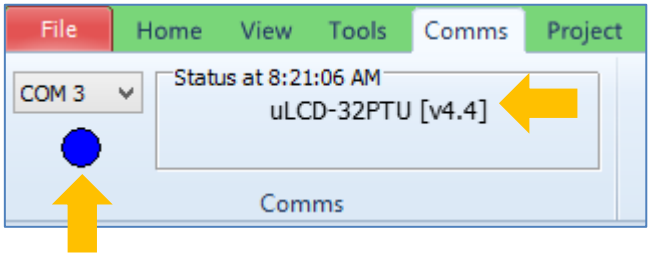
It is possible to test the uSD card while it is mounted on the display module. This is done by using the uSD Tester tool. This tool is found under the Tools menu in Workshop. Below is a screenshot image of the Tools menu in the ViSi-Genie environment.



Clicking on this button causes Workshop to upload a program to the display module. This program will access the uSD card mounted on the display module and will then print information about the uSD card on the screen. This information could be useful when troubleshooting issues related to uSD cards. You may attach the uSD card information to your inquiry when seeking technical support from 4D Systems. The following are the instructions for using the uSD Tester tool.

Properly Connect the Display Module to the PC

First ensure that the display module is properly connected to the PC thru a 4D Systems programming module. If the display module is properly connected to the PC, the Comms menu in Workshop should look similar to the image shown below.



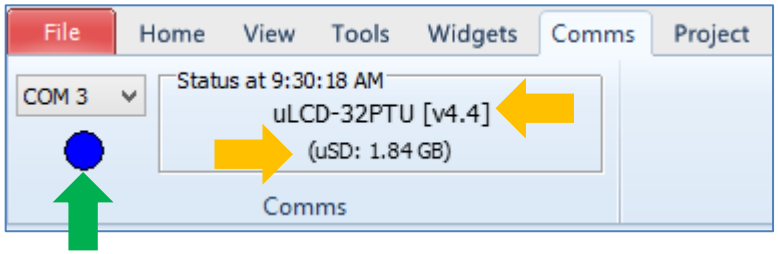
For more information on how to properly connect the display module to the PC, refer to the following application notes (choose according to your target display module):

General How to Update the PmmC for Diablo16
General How to Update the PmmC for Picaso

Mount the uSD Card to the Display Module

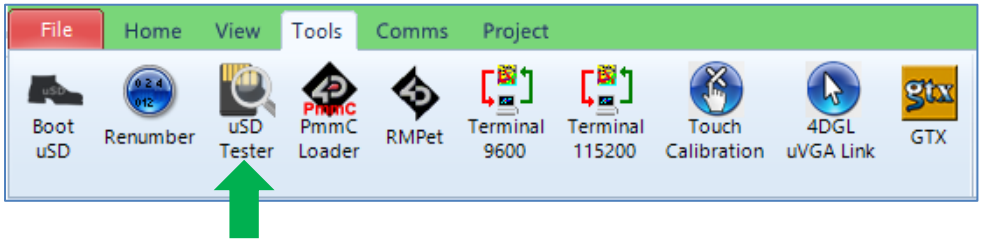
Now mount the uSD card to the display module. The Comms tab in Workshop should be able to detect the uSD card also. After mounting the uSD card to the display module, click on the blue button to update the status.

Below shows an example of a detected 2GB uSD card mounted on a uLCD-32PTU, which in turn, is connected to the PC.

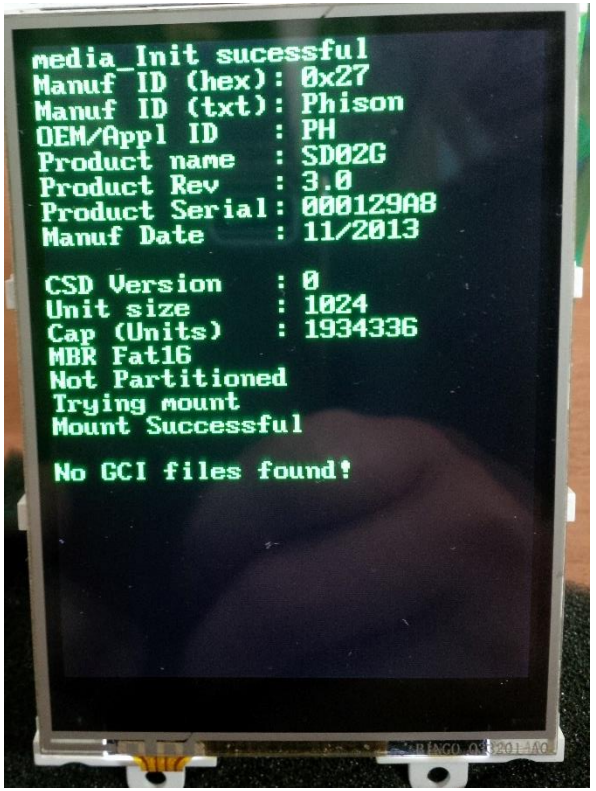


Click on the uSD Tester Tool Button

Now click on the uSD Tester tool button under the tools menu.



The uSD Tester program will then be uploaded to the display module. Note that this program is uploaded to the RAM memory of the display module. Hence, it is only temporary and it goes away when the display module is power cycled. Below is an example of what the display module should look like with a Phison uSD card mounted on it.



Again, you may attach a photo of the information for your uSD card to your inquiry when seeking technical support from 4D Systems. Below is a link to a forum post about common uSD card brands that work and/or do not work with 4D Systems display modules.

Not All uSD cards support SPI

Proprietary Information

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