

CE

ADAM- MC

A New Standard of
Automatic Cell Counter



USER MANUAL

NESMU-AMC-001E (V.5.1)

Nano**EnTek**

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Product Contents

ADAM-MC

The contents of the ADAM-MC are listed below:

Item	Quantity
Main device	1
User manual	1
USB cable	1
Installation CD	1
Key pad	1
Power cord	1
Fuse	2
External video monitor (Optional)	1

Accuchip kit

The contents of the ADAM-MC's Accuchip Kit are listed below:

Item	Accuchip2x Kit (Cat. No: AD2K-200)	Accuchip4x Kit (Cat. No: AD4K-200)	Accustain Solution (Cat. No: ADR-1000)
Disposable Chip	200pcs (2 channel)	200pcs (4 channel)	N/A
Solution T	2 x 12.5 ml	2 x 12.5 ml	4 x 12.5 ml
Solution N	1 x 12.5 ml	1 x 12.5 ml	2 x 12.5 ml
Available test Q'ty	Min. 200 test/kit	Min. 400 test/kit	
	Max. 400 test/kit (Only total cell count)	Max. 800 test/kit (Only total cell count)	

Upon receiving the instrument

- Examine the instrument carefully for any damage incurred during transit.
- Ensure that all parts of the instrument including accessories listed above are included with the product.
- Any damage claims must be filed with the carrier.
- The warranty does not cover in-transit damage.
- See the 13 page to install the instrument.
- Upon receipt, store Accustain solution at room temperature.

Safety Information

Safety precautions

1. Always ensure that the power supply input voltage match the voltage available in your location.
2. For operation environment, See page 12.
3. This machine is air-cooled so its surfaces become hot during operation. When installing it, leave a spaces of more than 10 cm (4 inches) around it.
4. Never insert metallic objects into the air vents of the instrument as this could result in electrical shock, personal injury and equipment damage.
5. Always set the main switch on the power supply unit to off before connecting the power cord to the wall outlet.
6. Always ensure that the grounding terminal of the instrument and that of the wall outlet are properly connected. The power cord should be connected to a grounded, 3-conductor power outlet.
7. To avoid potential shock hazard, make sure that the power cord is properly grounded.
8. Do not position the equipment so that it is difficult to operate the disconnecting device.
9. Be sure to set the main switch to off, unplug the power cord and lock the stage before moving.
10. If the instrument is broken or dropped, disconnect the cord and contact a authorized service person. Do not disassemble the instrument.
11. Use only authorized accessories.
12. Use this equipment only as specified in this manual and as specified in any documentation associated with its components. Any use of the equipment in an unspecified manner is strongly discouraged and may result in damage or injury as cautioned by signed warnings.

Safety Information, continued

Safety symbols

The symbols used in the ADAM-MC and the manual are explained below:



The Caution symbol denotes a risk of safety hazard.



ON (Power)



Protective earth (Ground)



The CE mark symbolizes that the product conforms to all applicable European Community provisions for which this marking is required. Operation of the ADAM-MC is subject to the conditions described in this manual. The protection provided by the device may be impaired if the instrument is used in a manner not specified by the manufacturer.



Caution, Biohazard

Protective measures must be used in dealing with biologically hazardous materials such as carcinogenic reagents.



Disposal of your old appliance

1. When this crossed-out wheeled bin symbol is attached to a product it means the product is covered by the European Directive 2012/19/EU.
2. All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities.
3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.
4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or visit our web-site, www.nanoentek.com.

Safety Information, continued

Warnings

Battery inside device

- Risk of explosion if battery is replaced by an incorrect type.
- This battery is not replaceable by a user.
- Refer to a qualified personnel.

Cover

- Do not remove a cover or disassemble a case.
- There is no adjustable components inside the instrument.
- If malfunction is found, refer to a service personnel.

Manual

- Do not attempt to service the equipment unless this manual has been consulted and is understood.
- This manual is available in English only.
- Failure to heed this warning may result in injury to service provider, operator from electric shock, mechanical or other hazards.

Sample handling

- Wear gloves during sampling. User's sample may have the infectious biohazardous substance.

Waste

- After using Accuchips, appropriately dispose it as biohazardous waste.
- Do not reuse the Accuchips.

Operator

- Must have the general knowledge of cell counting procedure and bio safety to handle the sample that may have the infectious biohazardous substance.

Product Specifications

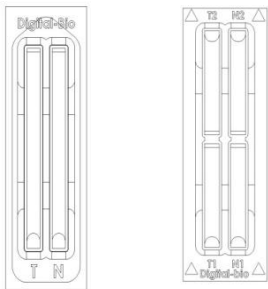
ADAM-MC



Voltage	AC 100 ~ 240 V, 50 ~ 60 Hz
Current	max. 1.8 A, max 100 W
Fuse	F3.15AL250V
Objective lens	4 X
LED	Green LED
CCD camera	B/W CCD
Filter	Excitation filter Dichroic filter Emission filter
Weight	9Kg
Size (W×L×H)	220 × 375 × 250 mm
Degree of protection	IPX0

AccuChip

AccuChip 2x AccuChip 4x



Measuring range	$5 \times 10^4 \sim 4 \times 10^6$ cells/mL
Analysis time	45 sec. ~ 2 min./test
Loading sample vol. per test	20 μ L/test (AccuChip 2X) 12 μ L/test (AccuChip 4X)
Measuring sample vol. per test	8.5 μ L/test (AccuChip 2X) 3 μ L/test (AccuChip 4X)

AccuStain solution T,N



PI (Propidium Iodide) staining of total cells (T) and non-viable cells (N).

Accessories



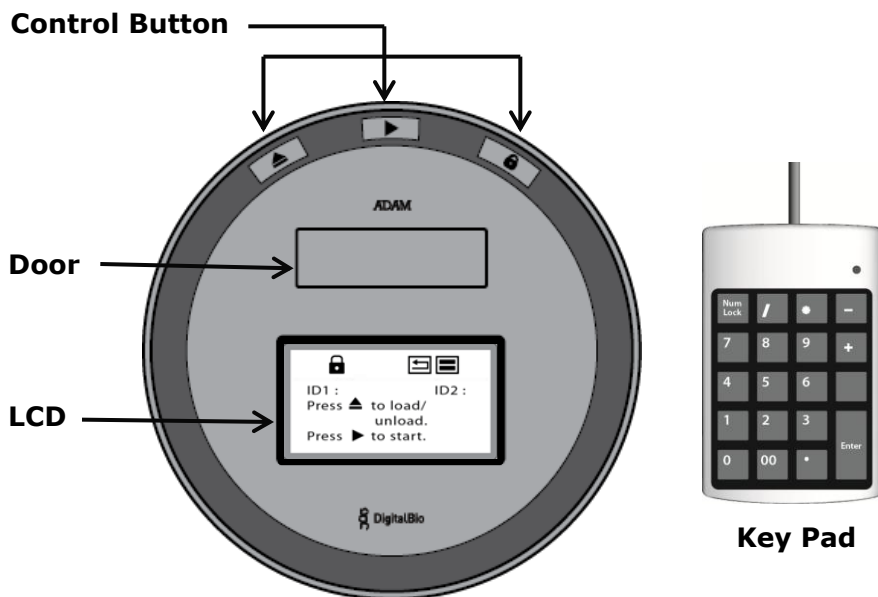
Power cord	1.5 m
Fuse	250 VAC, 3 A; F3.15AL250V
Keypad	USB Type / 1.3 m

Description of ADAM-MC

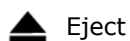
Front view of ADAM-MC

The ADAM-MC, an automated cell counter, is a benchtop automated cell counter that performs cell count and viability measurements using Accustain solution.

The front view showing various parts of the ADAM-MC is shown below:

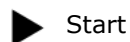


• Control buttons:



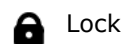
Eject

Ejects the chip holder from the ADAM-MC.



Start

Performs all procedures of automatic counting.



Lock

Protects the alignment of stage from external shock when the ADAM-MC is moved to the other places.

☞ It is strongly recommended to lock ADAM-MC before turning it off.

• Door

Chip holder comes out here.

• LCD

Displays the process and the result.

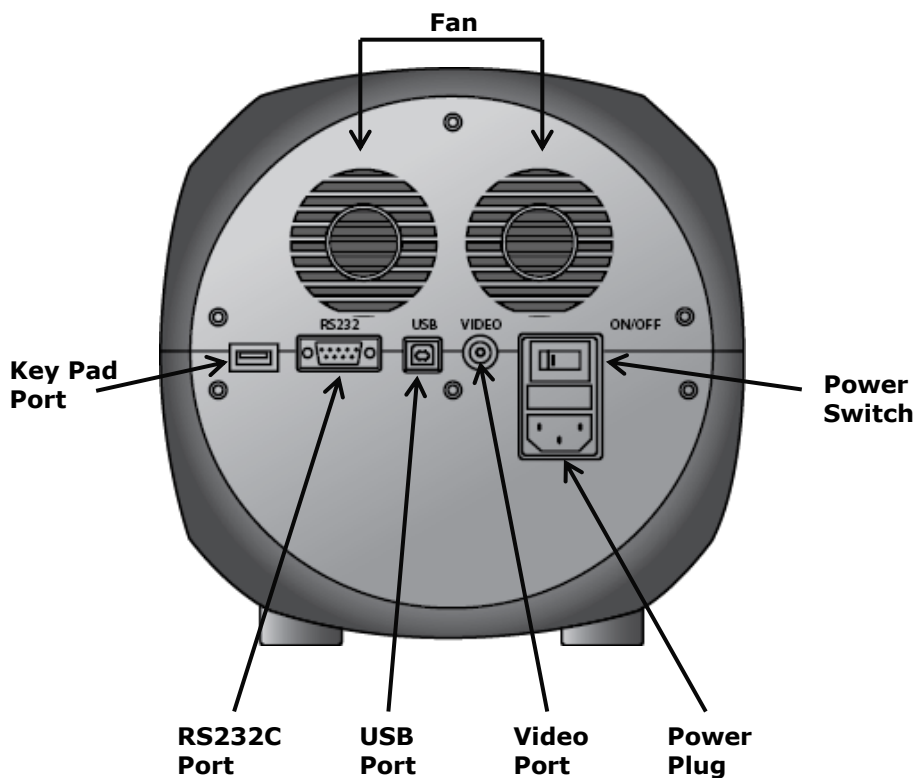
• keypad

Inputs the sample number less than 3 characters and press 'Enter' button.

Description of ADAM-MC, continued

Rear view of ADAM-MC

The rear view showing various parts of the ADAM-MC.



Fan	Cooling fan
Power switch	Main power on/off switch
Power plug	ADAM-MC power cord connection plug
USB port	Connect to computer with USB Cable
RS232C port	Not connect (Port for only QC and Service)
Key pad port	Keypad connection port
Video Port	External video monitor port

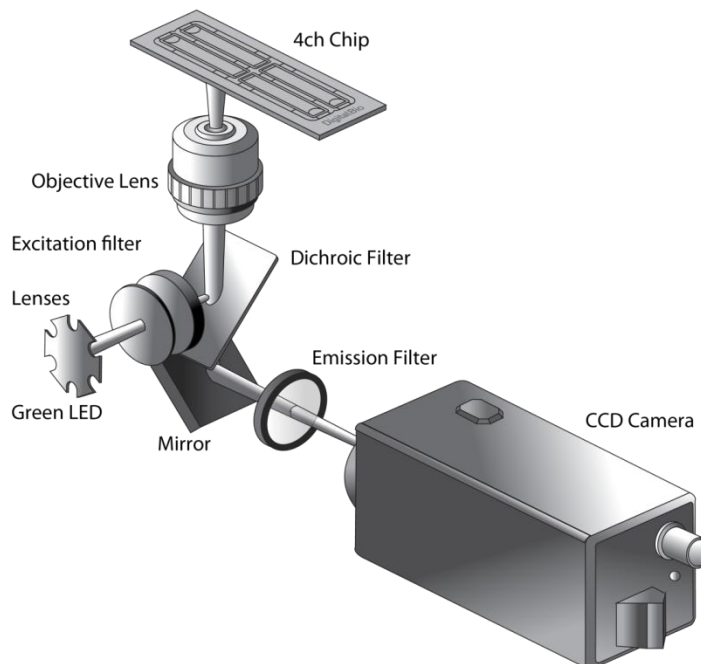
Introduction

Overview

Until now, cell counting and viability measurement for many types of cells have been performed manually using hemocytometer with Trypan Blue exclusion method, which is to distinguish viable cells from non-viable cells. One drawback of this method, however, is the propensity for the staining of artifacts; another drawback is that the naked eye can only differentiate between cells in a limited concentration range in the hemocytometer chamber. This combined with the potential problem of cell aggregation and limited sample volume leads to the common variation of counts normally associated with this method.

To address these problems, NanoEnTek has developed the ADAM-MC, which is based on a fluorescent microscopy technique for counting cells. The ADAM-MC utilizes sensitive fluorescence dye staining, LED optics and CCD detection technologies to make the cell analysis more accurate and reliable.

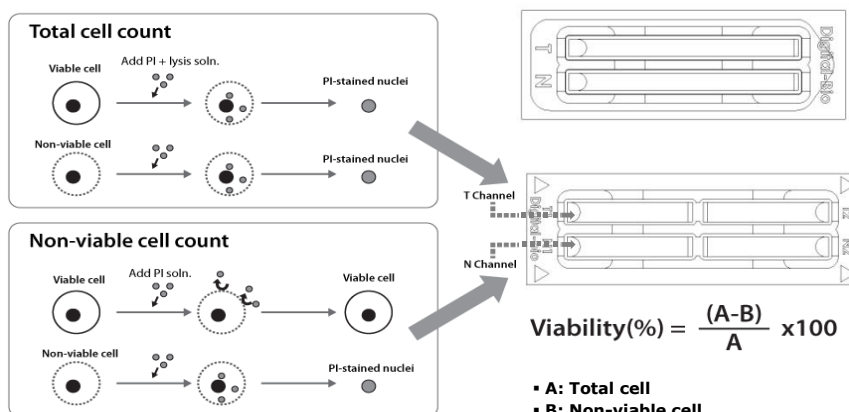
To count cells using ADAM-MC, the cells are mixed with a Propidium Iodide (PI) stain and directly pipetted on to a disposable plastic chip. The chip is then loaded onto a precision stage. An ADAM-MC system is automatically focused onto the chip and cells that have been stained are recorded by a sensitive CCD camera. The image results are automatically processed generating the cell count which is displayed on the front of the instrument. Simple. Fast. Accurate. Reliable.



Introduction, continued

Basic principals of counting

ADAM-MC is based on staining mammalian cell DNA with a fluorescent dye, Propidium Iodide (PI). PI does not enter cells with intact cell membranes or active metabolism. In contrast, cells with damaged membranes or with inactive metabolism are unable to prevent PI entering the cell. As a result, the nuclei of non-viable cells will only be stained. The ADAM-MC provides two kinds of staining solutions. AccuStain Solution T for the total cell counting is composed of the fluorescent dye (PI) and lysis solution. AccuStain Solution N for the non-viable cell counting is composed of the fluorescent dye and PBS. In order to measure the total concentration of cells, the plasma membranes of all the cells must be disrupted to stain all the Nuclei with PI. The process of disrupting and staining is achieved by treatment with AccuStain Solution T. In the second solution, live cells remain intact and are not stained. Only the non-viable cells are stained and detected. After treatment, the prepared cells will be loaded into the chip. The viability will be automatically calculated in the ADAM-MC software after each measurement of the total cells and the non-viable cells.



Getting Started

Environmental requirements

To obtain the best results,
install the ADAM-MC in a location following conditions:

1. Room temperature between 20 and 35 °C.
 - Not recommended for cold room use (≤ 4 °C).
 - At low temperature (≤ 10 °C), warm up the ADAM-MC for 10 min.
2. Not exposed to direct sun light.
3. Not subject to direct or continuous vibration..
4. Not subject to intense magnetic or electromagnetic fields.
5. Relative humidity between 0–95 %.
6. Area free from corrosive gases or other corrosive substances.
7. Area with very little dust or other airborne particles.
8. Allow a 10 cm minimum space around the instrument for proper air flow.
9. Not allow to put heavy material on top of ADAM-MC.

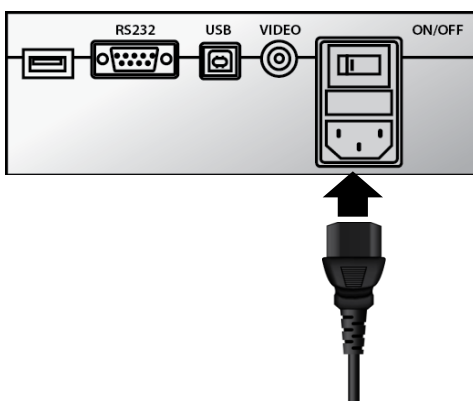
Getting Started, continued

Installation



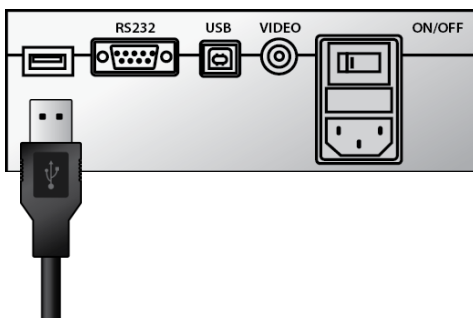
1. Remove all components of ADAM-MC from their box.

2. Place the instrument in a flat level and dry surface.

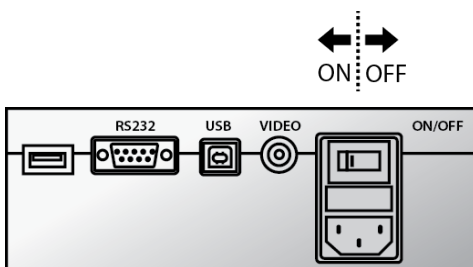


3. Plug to power cord into the electrical outlet.

- Be sure to use only the power cord supplied with your instrument.
- Powering the instrument with an unapproved power cord may damaged the instrument.



4. Plug to keypad.

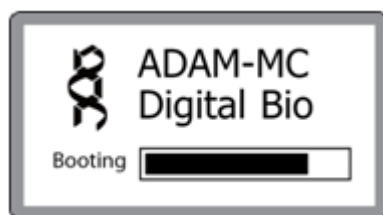


5. turn on the power switch.

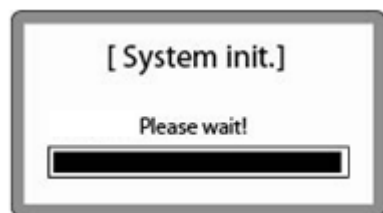
- Make sure that the main power switch is In the " I " (ON) position.

Getting Started, continued

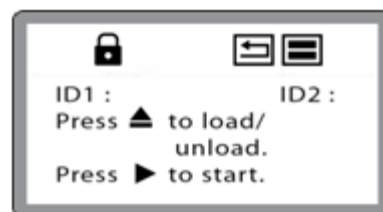
Start-Up screen



1. System booting.



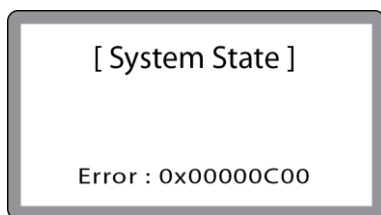
2. System will go through self diagnostic tests.
 - If you get an error message, please contact your local distributor or sales@nanoentek.com.



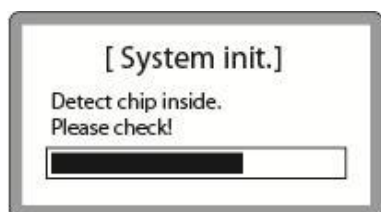
3. The home screens will be displayed as the image, no errors are detected.

Getting Started, continued

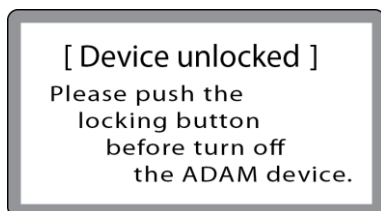
Error message during booting



1. It appears when booting not working properly.
2. Turn off main power and restart device.
3. If this message still appears after restart, contact your local distributor or **sales@nanoentek.com**.



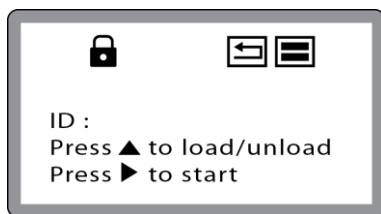
1. It appears when a chip is inserted during Start up.
2. Remove the chip from a device, and Do not turn on the device with a chip.
3. If this message continues to display when no chip is inserted, contact your local distributor or **sales@nanoentek.com**.



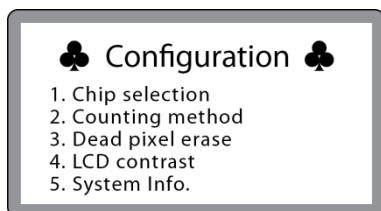
1. It appears when turning off without locking device.
2. Push the lock button before turn off the device. If this message still appears after restart, contact your local distributor or **sales@nanoentek.com**.

Getting Started, continued

Menu setting

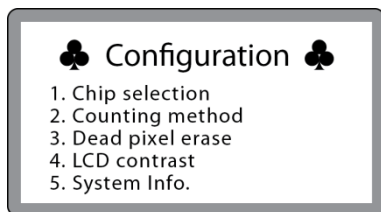


1. You can set the menu as you press the '*' button on the keypad from the screen for inputting sample numbers.

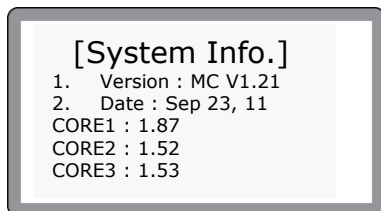


2. You can select the number from the Menu.

System information



1. Check the device versions and date which have been installed in the device.

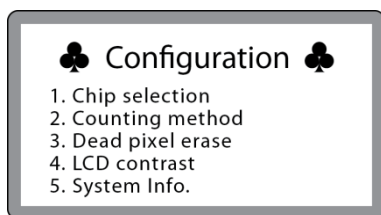


2. Select number 4 key from the MENU, and Press the 'Enter' key.

3. The screen will return to the Menu screen automatically.

Getting Started, continued

Chip selection



1. Press '1' for chip selection.

You can select the number from the Menu.



2. User can select the 2 kinds of chip type.

- '1' : Two channel chip (AccuChip^{2X})
- '2' : Four channel chip (AccuChip^{4X}).

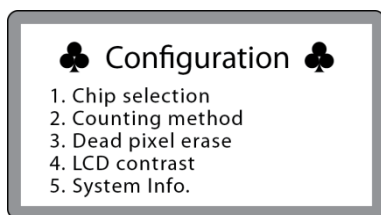
3. Press '1' or '2', and Enter key.



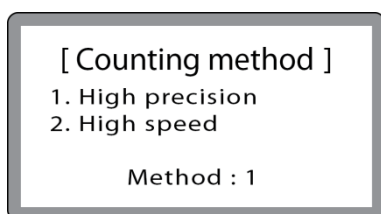
4. After pressing the 'Enter' key, the screen will return to the Menu screen automatically.

Getting Started, continued

Counting method



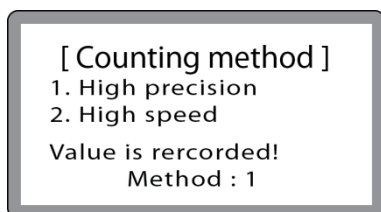
1. Press '2' for counting method.
You can change the capture frame mode.



2. You can select the 60 or 30 frames in 2CH mode and 22 or 11 frames in 4CH mode for counting as well.

2CH
High Precision: 60 frames capture
High Speed : 30 frames capture

4CH
High Precision: 22 frames capture
High Speed : 11 frames capture



3. Press '1' or '2' and 'Enter' key.
4. After pressing the 'Enter' key, the screen will return to the Menu screen automatically.

General Operation

Introduction

Instruction is provided in this section for preparing the cell sample with Accustain solution for use with disposable Accuchip for automated cell count using the ADAM-MC.

Preparing cell

- 1) Cultivate the required number of cells.
- 2) Add an appropriate volume of growth media or PBS to dilute to a final concentration of 5×10^4 cells/ml to 4×10^6 cells/ml.

Note☞ Concentration out of this range will result in errors.
Refer to page 23 for more information about errors.

- 3) Thoroughly mix the cell pellet by vortexing.
- 4) Check visually if any cell clumps or agglomerates are remained.

Counting cell

▪ Accuchip 2x



→ Non-viable
→ Total

Total Cell	Non-viable Cell
1) Add 50 μ L of your sample to 50 μ L supplied Accustain solution T .	1) Add 50 μ L of your sample to 50 μ L supplied Accustain solution N .
2) Mix gently by pipetting up and down.	2) Mix gently by pipetting up and down.
3) Load 20 μL sample mixture to the Accuchip on T channel.	3) Load 20 μL sample mixture to the Accuchip on N channel.

▪ Accuchip 4x



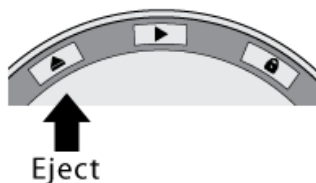
→ Non-viable
→ Total

Total Cell	Non-viable Cell
1) Add 50 μ L of your sample to 50 μ L supplied Accustain solution T .	1) Add 50 μ L of your sample to 50 μ L supplied Accustain solution N .
2) Mix gently by pipetting up and down.	2) Mix gently by pipetting up and down.
3) Load 12 μ L sample mixture to the Accuchip on T1 or T2 channel.	3) Load 12 μL sample mixture to the Accuchip on N1 or N2 channel.

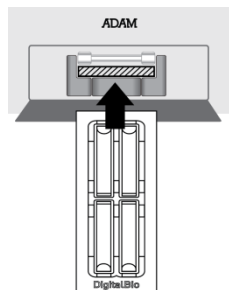
Note☞ When you load of the sample mixture to the Accuchip, please be careful not to make bubbles.

General Operation, continued

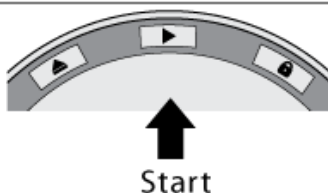
Operating ADAM-MC



1. Press " **Eject(▲)** " button on the main device to eject the chip holder.

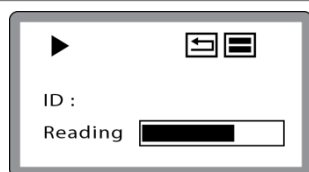


2. Insert the Chip loaded with the sample onto the chip holder.

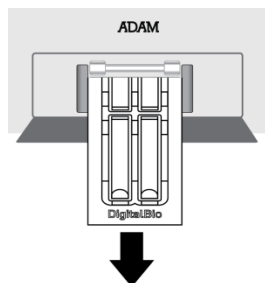


3. Press the " **Start(▶)** " button on the main device.

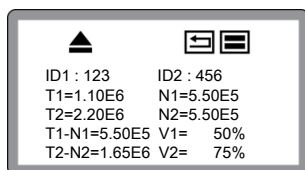
Note ⚠ Automatic Focus will be carried out at the first time the device is booted. Once ADAM-MC has done the Auto Focus process and on the following time, focusing process will be skipped.



4. The instrument takes approximately 90 seconds to count sample.



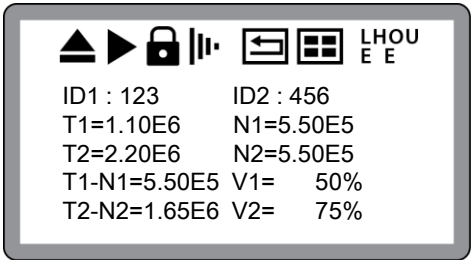
5. After calculating the cell number, the chip will be ejected automatically. Then chip can be removed.



6. The calculated cell number per 1ml will be displayed on the screen automatically.

7. For another experiment, repeat the process from steps 1 ~ 5.

Icon
function



1. Display a status of the performance such as Start, Eject, Lock or Insert.

Eject



Shows the Chip Holder is ejected .
(After pressing the Start button).

Start



Shows when cell counting is running.
(After pressing the Eject button).

Lock



Shows the Chip Holder is parked .
(After pressing the Lock button).

Insert



Shows the Chip Holder is inserted.
(After pressing the Eject button with AccuChip).

2. Display menu setting



Shows that performance setting is high precision.
ADAM-MC scans 22 fields in each chamber, representing a total volume of 3.1 μ L.



Shows that ADAM-MC reads 4 Channel chip.



Shows that ADAM-MC reads 2 Channel chip.

3. Display error message

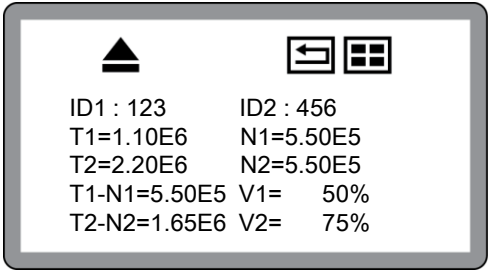
LHOU
E E

Error code.
(**→ go to page 23.)**

General Operation, continued

Result analysis

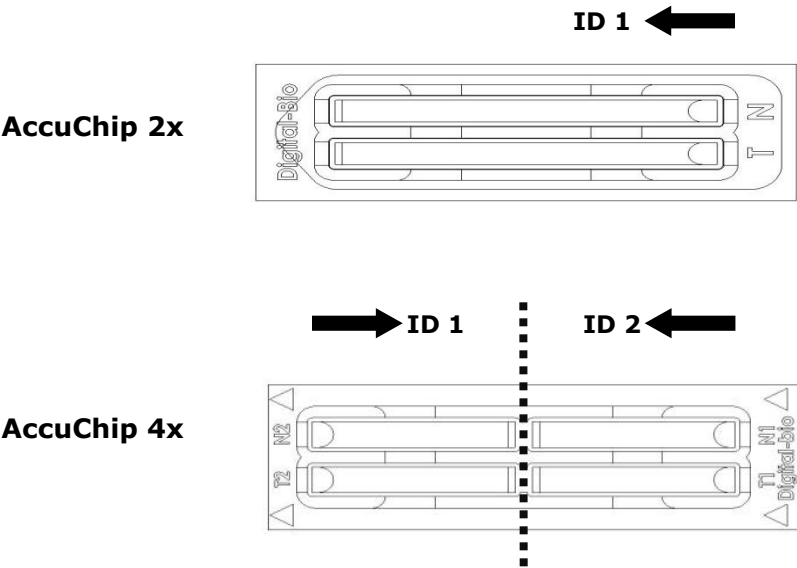
Press the '*' key after menu setting. Once inputted, the screen will return to the counting mode automatically.



* 1.10E6 = 1.10 X 10⁶ cells/ml

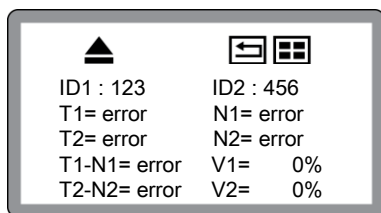
	Sample name	Number of Total cell	Number of Non-Viable cell	Viability
ID1	123	T1 (1.10E6)	N1 (5.50E5)	50%
ID2	456	T2 (2.20E6)	N2 (5.50E5)	75%

- The viability will be automatically calculated by the ADAM-MC software after each measurement of the total cells and the non-viable cells.
- First, the total cell number and second, non-viable cell number were measured and then the cell viability is calculated as subtracting non-viable cell counting numbers from total cell counting.

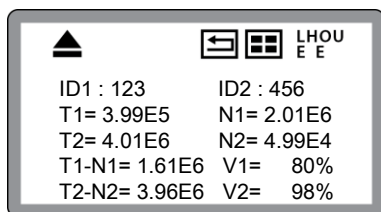


General Operation, continued

Error code

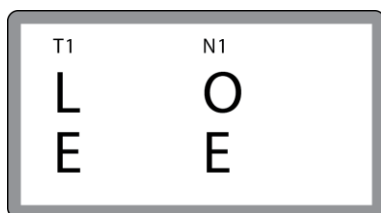


1. Check a chip is inside of device when turning on the device.
2. Removing the chip first, then rebooting the device.
3. If this message come up again after removing a chip, contact your local distributor or sales@nanoentek.com.



E: Frames with errors are over 50% of total counting frame. Frame with error is a frame that contains cells whose diameter is larger than 30 μ m.

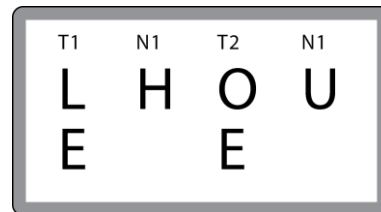
O: Cells are more than 4X10⁶ cells/ml. "Over detection range" will be shown on Report program.



[2 channel]

H: Cells are more than 2X10⁶ cells/ml. "High concentration cells" will be shown on Report program.

L: Cells are less than 4X10⁵ cells/ml. "Low concentration cells" will be shown on Report program.



[4 channel]

U: Cells are less than 5X10⁴ cells/ml. "Under detection range" will be shown on Report program.

General Operation, continued

Maintenance and cleaning

1. ADAM-MC does not need regular maintenance.
2. ADAM-MC has no replacement of consumable materials.
3. Clean the exposed outer surface of ADAM-MC using a soft cloth and isopropyl alcohol or deionizers water.



CAUTION:

Dispose of wipes in an appropriately labeled solvent contaminated waste container.

Software Installation

Introduction

ADAM-MC Software Program is designed to manage and report all results from ADAM-MC.

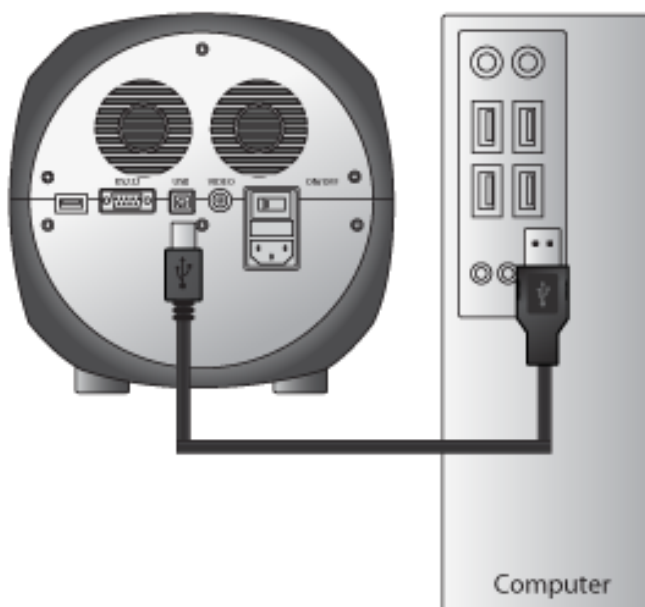
- All measurement results are saved on the memory of ADAM-MC, automatically.
- User can download the data from the memory of ADAM-MC and export it to **Excel (*.xls) format**.
- User can delete data from memory of ADAM-MC or can save captured images into Desktop or Laptop hard drive.
- The data list window consists of the sample number, chip, date, time, total, nonviable, viable, viability counting result in %.

※CAUTION:

Before running the program, check the connection of USB cable between the ADAM-MC and the laptop or desktop computer.

Getting started

The following steps are guide for connecting USB cable:



1. Connect the USB cable to ADAM-MC.
2. Connect the USB cable to desktop or laptop computer.
3. Turn on ADAM-MC and Desktop computer.

Software Installation, continued

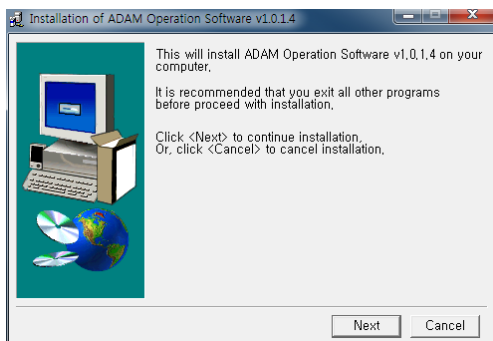
Installation

To install the ADAM-MC Operation software, follow the directions as below:

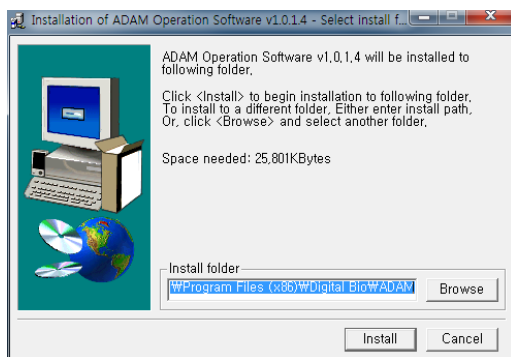


1. Insert the installation CD-ROM into the computer.
Then open the file
"Setup_ADAM_v1.x.x.x.exe".

※Report program can be installed in Windows 2000, XP or higher version.



2. The start-up dialogue of the software, as shown like left image, will appear.
3. Click "Next" to start installation.

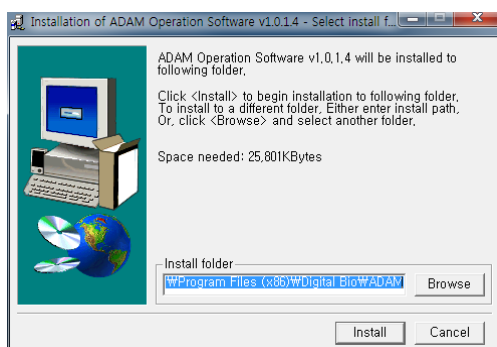


4. If you want to change installation folder, click "Browse" and choose the location that you want.

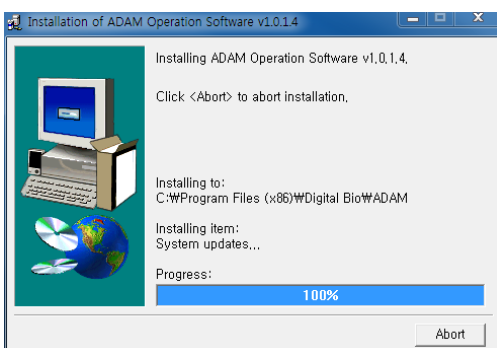


Software Installation, continued

Installation

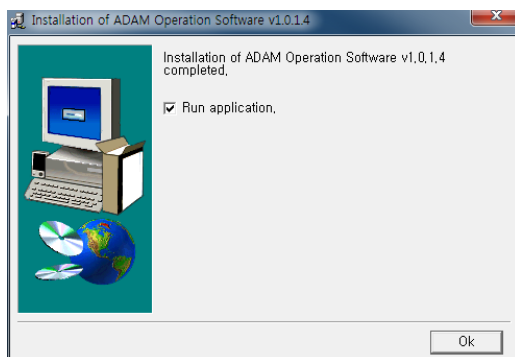


5. After choosing installation folder, click "Install" to proceed with the installation.



6. The computer activates the "Installation of the Software".
Initial installation folder is "C:\Program Files\Digital Bio\ADAM".

7. Report Program will be installed automatically.



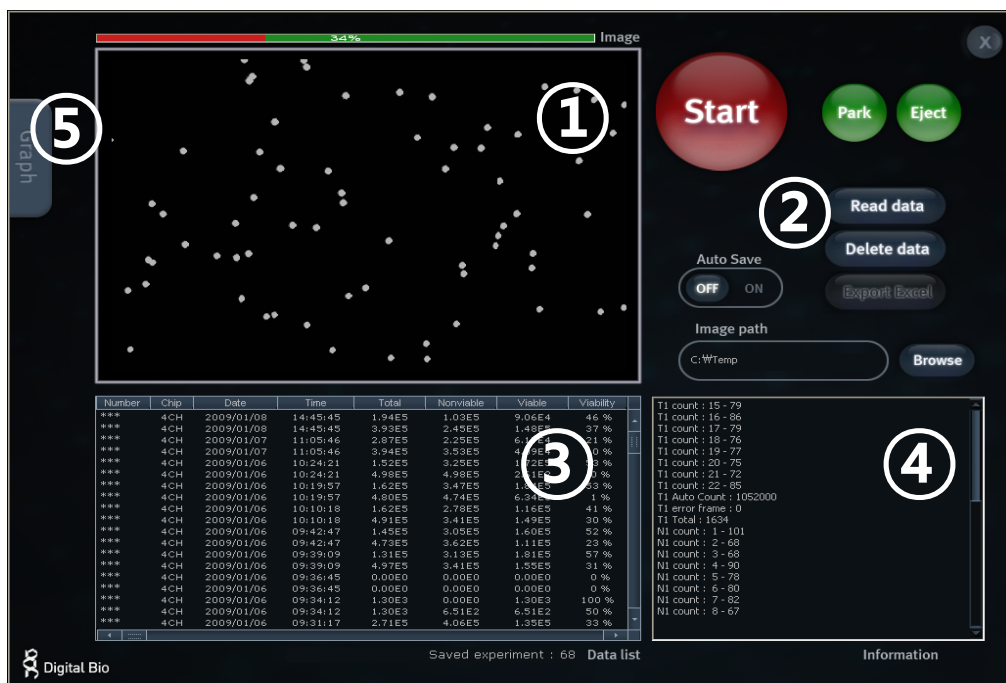
8. Click "Ok" to finish the installation.



9. If the installation was successful, the report program can be found at Start>All Program>ADAM.

Software Installation, continued

Function guide



① Image frame

Image captured by ADAM-MC will be shown here

② Function Buttons

Start cell counting, saving images, exporting data, and all function of Report Program are handled by using these buttons.
(see p.29 for more detailed information of each button)

③ Data List

All saved data in ADAM-MC will be loaded and shown in data list section.

④ Information

Operation and counting results of each frame will be displayed here.

⑤ Graph

Analysis of results including cell size and frame by frame counting will be shown in graph section.

Software Installation, continued

Function buttons



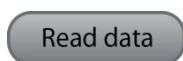
Start cell counting.



Park (Lock) stage of ADAM-MC.



Eject chip holder out of ADAM-MC.



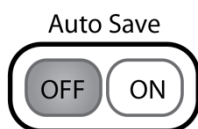
Loads the experiment data from the memory of the main device.



Deletes all of the loaded data and memory of the main device.



Transfers the data list to Excel format and saves it.



Auto Save

Turn on or off automatic image save option.

Default image save folder is "C:\Program Files\Digital Bio\ADAM\Images". Images will be saved until your hard drive has no more capacity to save.

Be sure to set Auto Save off, unless you need to save images.

Example of saved image file: 081221(yymmdd)-203452(hhmmss)-N1(channel name)-002.bmp



Choose folder to save images automatically.

Software Installation, continued

Data list

Number	Chip	Date	Time	Total	Nonviable	Viable	Viability
***	4CH	2008/12/14	18:34:58	6.37E4	5.65E4	7.24E3	11 %
***	4CH	2008/12/14	18:34:58	5.73E4	7.16E4	1.43E4	20 %
***	4CH	2008/12/11	11:08:09	7.76E4	2.71E5	1.93E5	71 %
***	4CH	2008/12/11	11:08:09	3.17E5	8.39E4	2.33E5	73 %
***	4CH	2008/12/09	20:23:01	3.62E4	3.59E5	3.22E5	89 %
***	4CH	2008/12/09	20:23:01	4.08E5	6.00E4	3.48E5	85 %
***	4CH	2008/12/09	20:20:15	4.29E4	3.65E5	3.22E5	88 %
***	4CH	2008/12/09	20:20:15	4.02E5	6.75E4	3.35E5	83 %
***	4CH	2008/12/09	20:17:30	3.45E4	3.60E5	3.26E5	90 %
***	4CH	2008/12/09	20:17:30	4.01E5	7.16E4	3.30E5	82 %
***	4CH	2008/12/09	20:14:44	3.96E4	3.56E5	3.17E5	88 %
***	4CH	2008/12/09	20:14:44	4.13E5	6.96E4	3.43E5	83 %
***	4CH	2008/12/09	20:11:12	3.11E4	3.15E5	2.84E5	90 %
***	4CH	2008/12/09	20:11:12	4.09E5	6.16E4	3.47E5	84 %
***	4CH	2008/12/09	20:09:31	2.69E4	3.06E5	2.79E5	91 %
***	4CH	2008/12/09	20:09:31	4.11E5	6.18E4	3.49E5	84 %
***	4CH	2008/12/09	20:07:49	3.45E4	3.08E5	2.73E5	88 %
***	4CH	2008/12/09	20:07:49	4.03E5	5.80E4	3.45E5	85 %
***	4CH	2008/12/09	20:06:08	3.62E4	3.07E5	2.71E5	88 %

Saved experiment : 120 Data list

Data list shows data stored in ADAM-MC memory.

Total amount of stored results are indicated at bottom of list as "Saved experiment".

Up to 200 counting results are automatically saved to ADAM-MC memory.

When memory of ADAM-MC is full, new counting result will replace old data.

These data can be exported as Excel Sheet (*.xls) and stored in personal computer or can be erased from ADAM-MC memory.

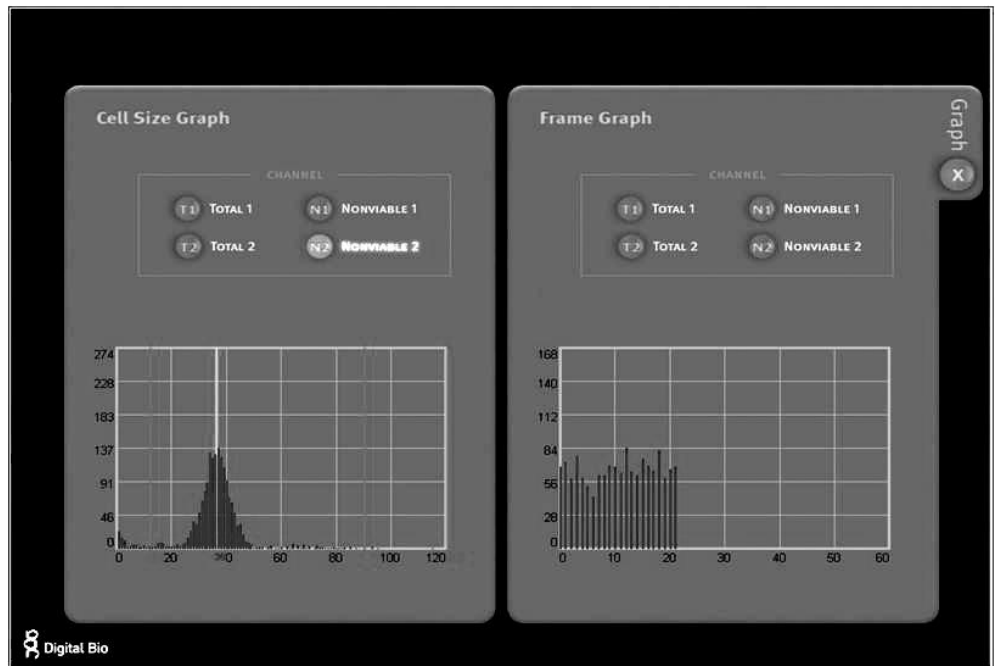
Information

```
T1 count : 12 - 68
T1 count : 13 - 71
T1 count : 14 - 69
T1 count : 15 - 79
T1 count : 16 - 83
T1 count : 17 - 83
T1 count : 18 - 75
T1 count : 19 - 76
T1 count : 20 - 78
T1 count : 21 - 71
T1 count : 22 - 72
T1 Auto Count : 1030504
T1 error frame : 0
T1 Total : 1604
N1 count : 1 - 95
N1 count : 2 - 64
N1 count : 3 - 64
N1 count : 4 - 92
N1 count : 5 - 69
N1 count : 6 - 91
```

This section shows information regarding operation of ADAM-MC. If cell counting is started through Report Program, the counting results of each frame that ADAM-MC captures will be shown here.

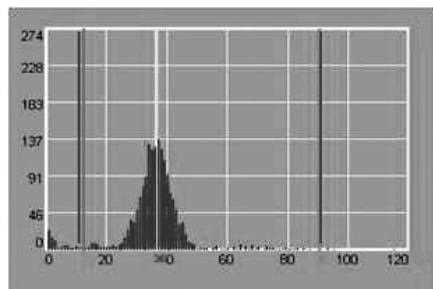
Software Installation, continued

Graph



This section shows information of cell size distribution and counting results of each frame that ADAM-MC captured. Through cell size graph, you can figure out whether there are cell clumps or aggregates. In case of counting evenly distributed cells without any aggregation, there should be a single peak on distribution of cell size.

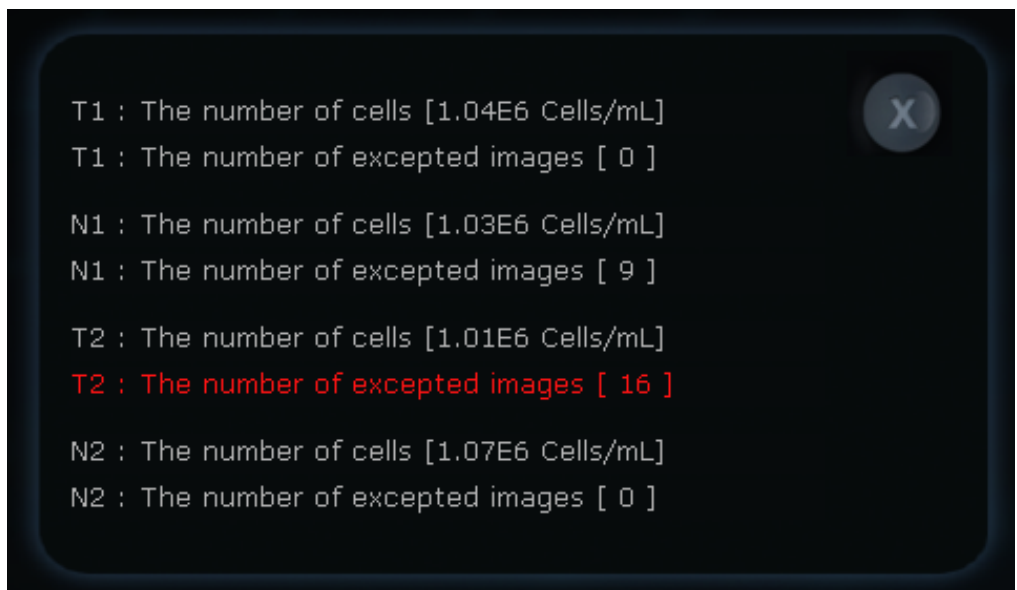
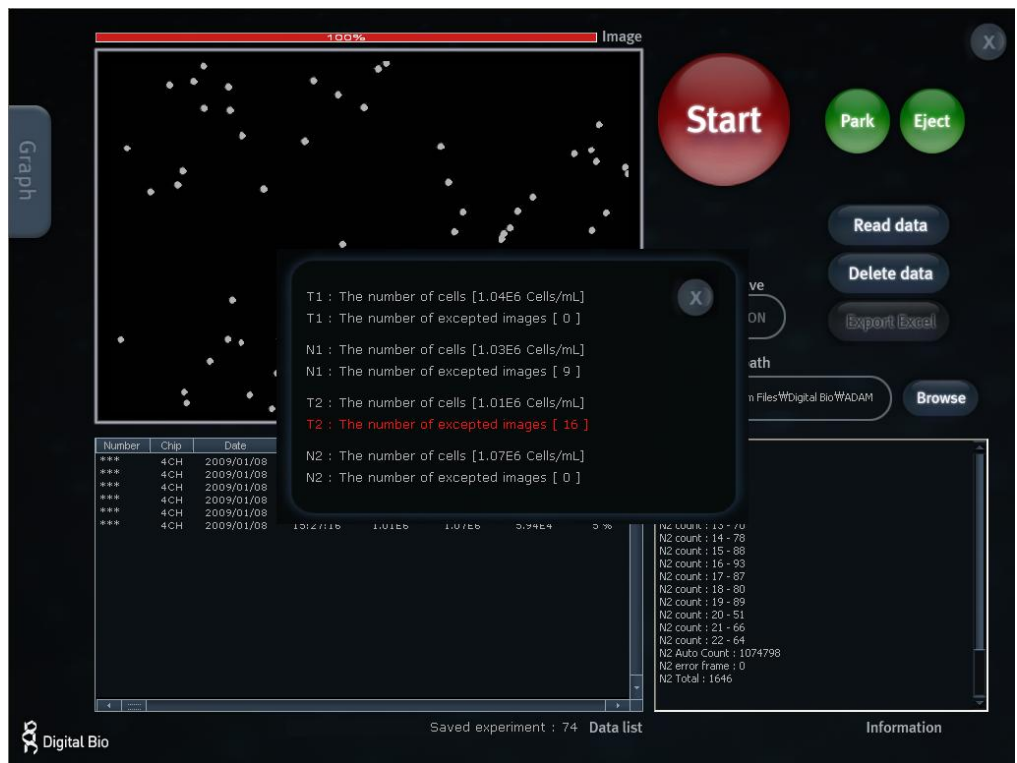
- The size of cell in graph is not real size of cell. It is the size of pixels in fluorescence image captured by ADAM-MC. And the size information is only to judge if there is a lot of aggregated cells.



Vertical red line indicates the cut-off size. Counting results between first and second red line are counted as single cell and those between second and third line are counted as 2 cell, and so on. Any results before first red line will not be counted as cell.

Software Installation, continued

Sample image of error message



Trouble shooting

Trouble shooting

Problem	Cause	Solution
ADAM-MC does not power up	• Power switch in off position	1. Check power switch on back of unit.
	• No power from outlet	2. Check power source.
	• Bad power cord	3. Replace.
Inaccurate result	• Cell number may be out of range.	1. Adjust the number of cells between $5 \times 10^4 \sim 4 \times 10^6$ cells/ml (refer to page 19).
	• AccuStain Solution has expired.	2. Check the expired date.
	• Too high clumped cells	3. Try again after vortexing the cells.
Software does not work	• PC setup incorrect/wrong instruct mode.	1. Check program setup.
	• Cable's not fully connected/ wrong adaptor.	2. Check all connections.
When error message is shown (For information on each error message, see page 23.)	• When there are too many frames with errors (Error message: E)	1. Check the suspension of cells if all cells are fully dissociated into single cells.
		2. If contaminants except cells are found, prepare sample again.
	• High concentration of cells (Error message: H)	1. Check if concentration of cell is too high.
	• Over detection range (Error message: O)	2. Dilute the sample and count again.
	• Low concentration of cells (Error message: L)	1. Check if concentration of cell is too low.
	• Under detection range (Error message: U)	2. Use concentrated sample and count again.

Warranty

Warranty

NanoEnTek warrants that the ADAM-MC will be free from defects in material and workmanship for a period of one (1) year from date of purchase.

If any defects occur in the ADAM-MC during this warranty period, NanoEnTek will repair or replace the defective parts at its discretion without charge.

The following defects, however, are specifically excluded:

- Defects caused by improper operation.
- Repair or modification done by anyone other than NanoEnTek or an authorized agent.
- Damage caused by substituting alternative parts.
- Use of fittings or spare parts supplied by anyone other than NanoEnTek.
- Damage caused by accident or misuse.
- Damage caused by disaster.
- Corrosion caused by improper solvent or sample.

For your protection, items being returned must be insured against possible damage or loss.

NanoEnTek cannot be responsible for damage incurred during shipment of a repair instrument; It is recommend that you save the original packing material in which the instrument was shipped.

This warranty should be limited to the replacement of defective products.

For any inquiry or request for repair service, contact sales@nanoentek.com or your local distributor.

Product List

Additional product list

Cat. No.	Product	Contents	Quantity
ADM-001	External video monitor (optional)	7" LCD Monitor	1
		200 pcs AccuChip ^{2X}	1
AD2K-200	AccuChip ^{2X} Kit	12.5 ml AccuStain solution T	2
		12.5 ml AccuStain solution N	1
		200 pcs AccuChip ^{4X}	1
AD4K-200	AccuChip ^{4X} Kit	12.5 ml AccuStain solution T	2
		12.5 ml AccuStain solution N	1
ADR-1000	AccuStain	12.5 ml AccuStain solution T	4
		12.5 ml AccuStain solution N	2

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ADAM-MC, User Manual

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The information in this manual is described as correctly as possible and is applicable to the latest firmware and software versions, but it may be changed without prior consent or notification.

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Documentation : **NESMU-AMC-001E (V.5.1)**

Revision History :

V.0.0	October 2008
V.1.0	February 2009
V.1.5	June 2009
V.2.0	September 2009
V.3.0	January 2010
V.3.5	November 2010
V.4.0	February 2012
V.5.0	April 2012
V.5.1	March 2014

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