

VT101

Digital Mobile Magnifier/Microscope Users' Manual

Version 5.0 IH

Before using this product, read manual carefully and then keep it for future reference.

VT101 Users' Manual

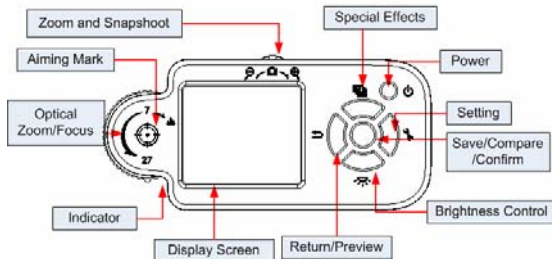
Packing Contents

Name	Quantity	Name	Quantity
Microscope	1	Installation (CD) Disk	1
Power Adaptor	1	Cleaning Cloth	1
Mini-USB Cable	1	AAA Ni-MH Rechargeable Battery	3
Manual	1		
Wrist Strap	1		

Operation

- Press power button for 2 seconds and then enter the normal observation Mode. The magnified images should now be shown on the screen.
- By placing the observed object below the aiming mark located on the back of the VT101 case, the screen will display the observed image desired.
- You may adjust the transparent protector in front of the lens protector in order to provide focus.
- Press the save button, or zoom wheel, to capture images for purposes of recording.

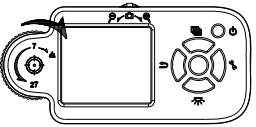
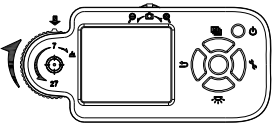
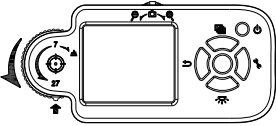
Controls

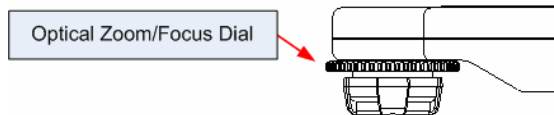


Optical Zoom/Focus : VT101 has an optical zoom function at 2 points (7x & 27x). The Optical Zoom/Focus can be used to adjust both the zoom rate and the focus.

When the indicator is moved to a lower magnification than 7x, VT101 will operate just like a digital camera. The observed object is not to be in direct contact from 1 to 7 times of magnification.

Different operation mode:

	Digital Camera Mode
	Magnification: 1/∞ ~ 7x
	Optical Zoom Adjustable Digital Zoom 4x
	Digital Magnifier Mode
	Magnification: 7x~25x
	Optical Zoom 7x Digital Zoom to 25x
	Digital Microscope Mode
	Magnification: 27x~108x
	Optical Zoom 27x Digital Zoom to 108x



Zoom and Snapshot: Digitally zoom in/out images for 4x. Press down on the zoom wheel to save the image into VT101 RAM. The VT101 can enlarge image to 108x. (27x4=108x).
Aiming Mark: Circular mark on the back of case shows position of lens, which helps locate lens over the target object.

Special Effects: Press this button to select different image effects. (E.g. normal, gray, inverse, ruler and comparison)

Power: Hold this button for 2 seconds to turn on/off VT101.

Settings: Press this button to enter *Setting Mode*.

Save/Compare/Confirm: Press this button to save current image into VT101 RAM. You can also save image by pressing down on the Zoom wheel. In *Preview Mode*, press this button to compare images. In *Setting Mode*, press this button to confirm image.

Brightness Control: Press this button to change LED brightness. This button can also be used to turn off the illumination LED.


Return/Preview: In a normal mode, press this button to enter *Preview Mode*. When in other modes, press this button to return to normal mode.


Power Supply

VT101 includes three Ni-MH **rechargeable** batteries.

VT101 can run from batteries or from the USB cable.

The Ni-MH batteries will recharge automatically, without removal of the batteries, if you use the USB cable to connect VT101 to your computer or the USB power adapter.

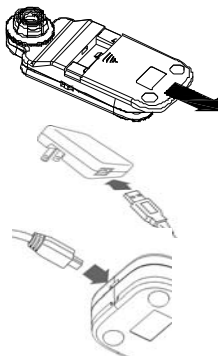
When the recharger is in the *power-off* mode, the white LEDs will flash **twice** every three seconds. If the recharger is in *power-on* mode, the  icon will be shown on screen.

After completely charging in the *power-off* mode, the white LEDs will flash **once** every three seconds. After completely charging in the *power-on* mode, the  icon will be shown on screen.

Recharge Ni-MH batteries every few months, even if the system is not used to maintain battery strength, this is suggested to extend longevity.

For lengthy storage periods, remove batteries to prevent damage due to battery leakage/ discharge.

VT101 may also use alkaline batteries. Do not mix battery types in use and do not recharge alkaline batteries.



Accessories

Power-adapter: Plugs into wall socket and into USB cable. Will accept 100V ~ 240V AC and output 5V DC.

Mini-USB cable: Used for data communications and battery charging.

Settings

Power Saving: To set the time period for automatic power shut off. To push any key except “ Power “ to dismiss the sleepy mode.

Status Display: To turn on/off display of screen status.

Brightness: To set 4 phases of LED brightness .

White Balance: To turn on/off Auto- White correction.

Delete all pictures: To delete all pictures in memory.

Factory Default: Returns to all original settings.



Image Effects

Gray (G): To remove color and create a gray-scale image for easier image discrimination.

Inverse (I): To reverse color and/or grayscale to help highlight some given features.

Emboss (E): Normal emboss algorithm. Useful to accentuate some given image features.

Dual Window View (D): Allows two window views including the left max. Magnification of the highlighted

image and the original left observed image.

Ruler: Hold the Special Effects button for 2 seconds and the ruler will appear at the bottom of screen. The value at the right side of the ruler is the entire length. It varies by changing magnification of the targeted object.

For Example : The value of the ruler is 0.5mm for 10 lattice. Each small lattice is 0.05mm. The scale is not exact due to the variable distance from lens to image, which is changeable as the user holds the VT101.










The ruler is shown only when the indicator is located at text 7 & 27. It is intended for user's convenience, not for scientific accuracy.



Preview: In normal observation mode, press Preview button to recall the saved image in the RAM. A saved image will be shown on the lower left of the screen. The button can be used to change page and erase image. Press the Preview button again to depart this mode.

Dual Window Compare: While in Preview mode, press Compare button to enter Compare mode. The recall image will show in the left window and the targeted image will be shown in the right window. Press Preview button again to leave this mode.

Status

	Battery Low	Battery power is low.
	Image Effect	N: Normal Mode G: Gray Mode I: Inverse Mode E: Emboss Mode D: Dual Window View Mode
	Freeze	When VT101 uses Dual Window View mode or Dual Window Compare mode. Press Confirm button will enter Freeze mode. Press Confirm button again to leave Freeze mode.
	Magnifying	Current magnification rate is shown when the indicator is located at text 7 and 27.
	Image Quality and LED Brightness	Four phases of adjustment.
	Frame-center	Hold the Special Effects button for 3 seconds to switch between frame-center mark and ruler.
	Ruler	
	Power Supply by USB or adapter	Power is supplied by USB cable to PC or an adaptor. .
	Charging	Recharging batteries engaged.

VT101-to-PC Connection

VT101 application program comes with the installation disk (CD), to allow you delivery of VT101 images to your PC via USB port, or from your PC to VT101. This application program is compatible with Windows 2K, XP, and Vista.

Installation procedure:

Step 1: Do not connect VT-101 to PC.

Step 2: Put VT-101 CD into CD player.

Step 3: The installation screen will start automatically. If the installation screen does not appear, please enter the root directory of CD and execute “**VT101Setup.exe**” for program installation.

Step 4: Install USB driver first, then install the application.

After completion, remove the CD.

Step 5: Whenever loading pictures to, or from, your microscope, it needs to be connected it to your PC via mini-USB cable. Click the VT-101 icon on the desktop screen to execute.


* VT-101 uses a CP2102 USB to UART bridge chip for communications with PC. For more information please refer to the website www.siliabs.com. CP2102 is a product of SILICON LABS, Inc.

** You may use the “add/remove programs” on the control panel to remove the application program and USB driver.

VT101 Application Program Instructions

When starting the VT101 application program (as shown in

figure 1), click the “**Language**” to select preference, then

click the  icon. A “**VT-101 Found**” dialog will appear on the screen, then click “**OK**” to continue.

When VT-101 is connected to PC (as shown in figure 2), all functions and keys on VT-101 are suspended from use, except variable magnification & LED brightness control.

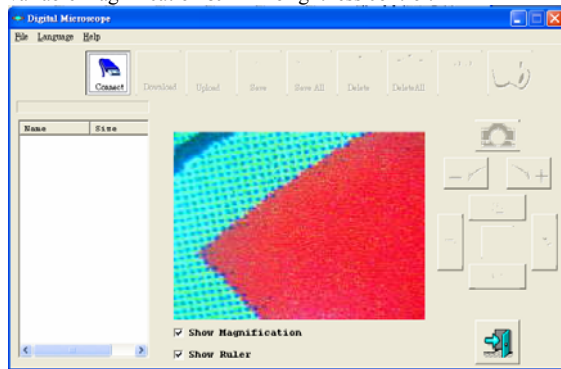








Figure 1.

Click the  icon and the image inside VT-101 will be copied to RAM memory on your PC. Also, the file name and size will be indicated in the window. You can preview images in the mid-side of the window, or you can save to permanent

memory by clicking the  or the  icon. The download

procedure may take some time depending on the number and size of pictures committed for storage.

Click the  icon, then the image will upload from PC to VT101. The image size is limited to 320x240 pixels standard jpg compressed format.

Click  and  icon will erase the image files inside the VT101's Flash-Memory permanently.

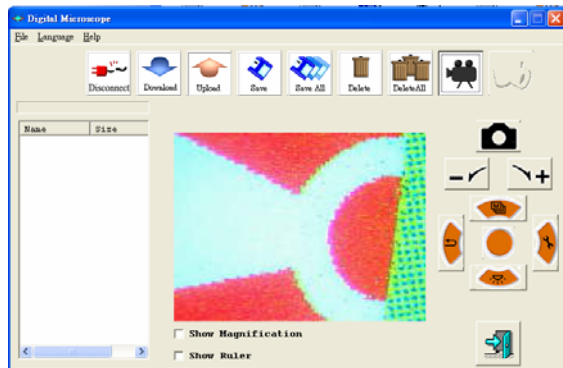







Figure 2.

The right lower portions of the screen both have the same function in the VT101

Click the  icon for real-time imaging. The observed image is shown as figure 3. You may click the “**Show Magnification**” or “**Show Ruler**” option, the effect is also shown as figure 3. Please remember ruler and magnification number are for reference only. They are shown when the optical zoom/focus indicator is located at text 7 and 27.

Magnification is variable by clicking the  or  icon. Transmission may be slow, after clicking the icon; you may have to wait a moment to obtain the desired image.

Click the  icon in figure 3 to save the display image to PC.

Click the  icon to leave Continuous Image Transfer mode.

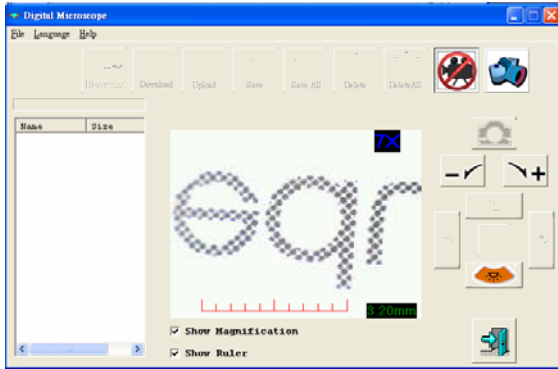




Figure 3.

Click the  icon will disconnect the VT101 to the PC.

Click the  icon will leave the program.

Safety

- The VT101 is not-waterproof! Please keep VT101 dry. Do not use in a humid place(bathrooms, etc.)
- Use VT101 only temps. of $-5^{\circ}\text{C} \sim 50^{\circ}\text{C}$.
- Sudden varied temperatures may cloud VT101 lens.
- Do not let VT101 lens face direct sunlight or intense light for an extended period of time. Strong light may hurt light-sensitive electronics as a result.
- Avoid touching the lens directly.
- The white LEDs have strong luminosity. Avoid directly staring at them. May damage your eyes. Caution!
- If the transparent protector in front of lens contacts any toxic observed materials or contaminated materials, avoid contact! Remove transparent protection from time to time to disinfect.
- Do not remove power/batteries when VT101 is on. May cause information loss or circuit damage as a result.

To dispose of the battery, obey local regulations regarding lawful disposal of hazardous materials.

Specifications: VT101	
Sensor element	300,000 pixels CMOS
Lens	High sensitivity lens
Auxiliary light	White LED \times 3 with super high brightness
LCD screen	1.8" TFT color LCD screen
Memory	2MB Data FLASH -- capacity \sim 60 pictures
Linkage	USB 2.0
Magnifying rate	Optical zoom 1 \sim 7x and 27x. Digital zoom 4x.
Plug	DC IN terminal (mini USB plug)
Power	3 x AAA, RO3, 1.5V alkaline batteries or 3 x 1.2V Ni-MH rechargeable batteries. AC transformer (Output: DC 5.0V/1000mA; Input: AC 100-240V 50/60Hz).
Current consumption	Maximum = 220mA (with LEDs on at highest illumination)
Size	120 \times 56 \times 25 mm
Weight	Approximately 70 grams (not including batteries)
Operational temperature	$-5^{\circ}\text{C} \sim 50^{\circ}\text{C}$
Environmental humidity:	Below 85% (no dew) recommended

LIMITED WARRANTY

We warrant VT101 to be free against defects in materials and workmanship at the time of purchase, assuming normal/reasonable use, for a period of one year from time of purchase. For this limited period, free repair/replacement of VT101 will be the responsibility of the distributors; a dated proof-of-purchase is required. Shipping costs are to be paid by the owner. Software included with VT101 is considered “*as is*” and is used solely at the risk of user, with no warranty of the user’s computer or the data within implied whatsoever.

We certainly value your goodwill and welcome any feedback you may have on this or any other product from this manufacturer. If you have any concerns regarding use of VT-101, or if you wish to make any comment, please feel free to contact us .Thank you for choosing VT-101.