

Repair Guide for QV-10

Vol. 1 Basic Repair



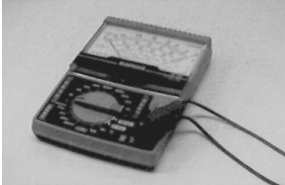

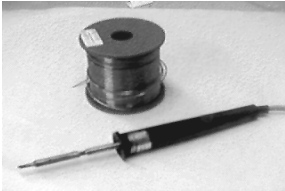
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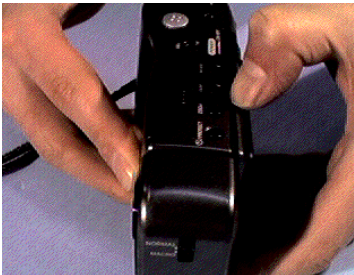

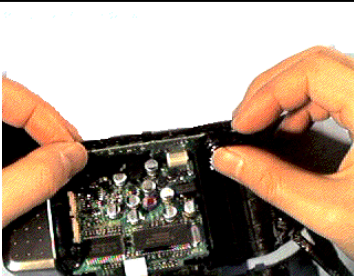

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Requirement

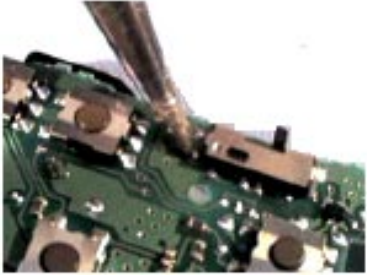
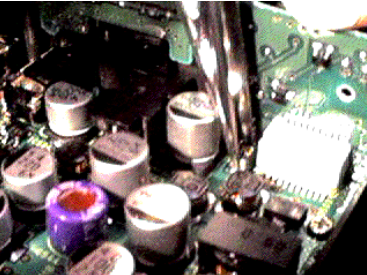


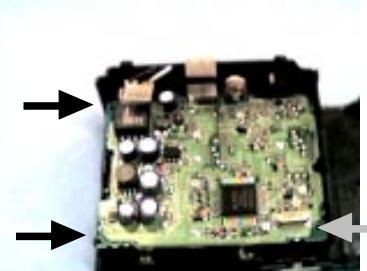
Equipment and Tool	
	<p>PERSONAL COMPUTER IBM PC/AT or compatible MS-WINDOWS Ver 3.1 or later 4MB of RAM (8MB recommended) 10MB available hard disk space Color monitor (full-color recommended) 386SX CPU or higher (486SX recommended)</p> <p>RS-232C serial port (D-Sub 9-pin) Mouse or other pointing devices 3.5" 1.44MB disk drive (for installation)</p>
	<p>SERVICE UTILITY SOFTWARE FLASH. EXE AMED.EXE ADJ.EXE</p>
	<p>LIGHT BOX HANDY 5000 for Color adjustment</p>
	<p>COLOR FILTER LBA 3 for Color adjustment</p>
	<p>OSCILLOSCOPE</p>
	<p>REGULATED DC POWER SUPPLY</p>
	<p>PHOTO DIODE</p>

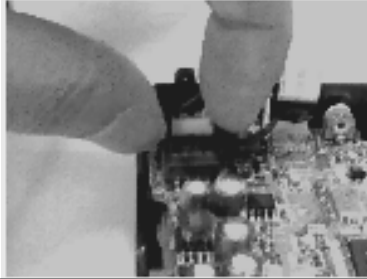
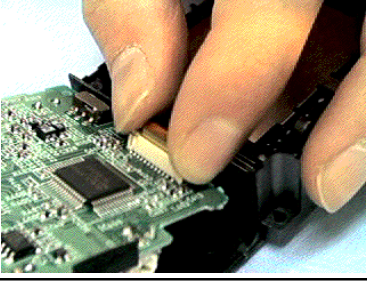
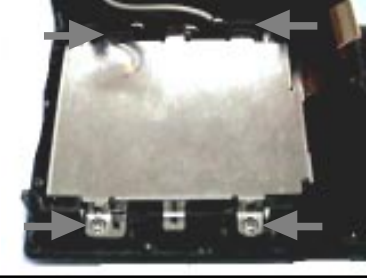


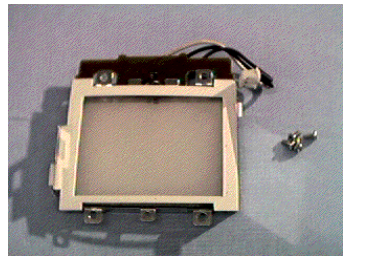
Equipment and Tool	
	CABLE
	PHOTO SENSOR AMP.
	ANALOG VOLTMETER
	KOTELYZER
	SOLDERING IRON and SOLDER
	TWEEZERS and SCREW DRIVER

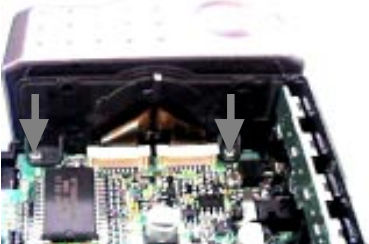



Disassembly

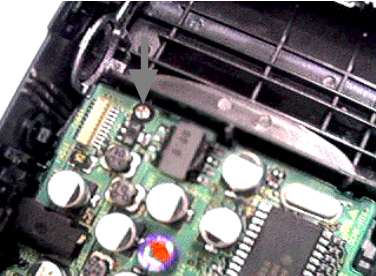

Procedure	
	Remove the two screws from the lower case.
	Remove the two screws from the lower case.
	Pull out the lower case.
	Take the battery cover.
	Pull out the keyboard PCB from the digital PCB.
	

Troubleshooting

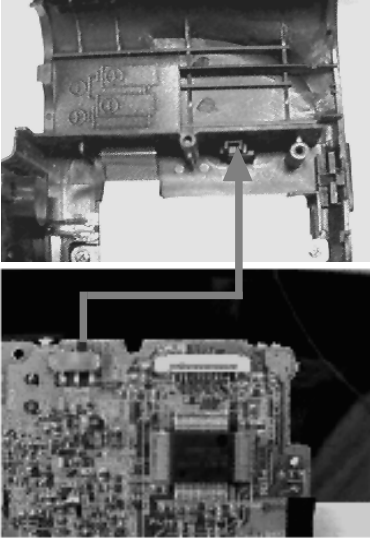


Procedure	
No power on	
	Check the power switch.
	Check the fuse (FU500) by using multimeter.
	Take the fuse (FU-100) by using multimeter.
	Replace the backlight or the LCD. Pull out the flat cable from the digital PCB.
	Remove the three screws from the upper case.

Procedure	
	<p>Remove the connector from the linear PCB.</p>
	<p>Loose the connector then the release hook. Pull out the linear PCB.</p>
	<p>Remove the four screws from the upper case.</p>
	<p>Replace the backlight.</p>
	<p>Replace the LCD. Vcom adjustment is necessary when changed the LCD. See page 14.</p>
	



Procedure	
<p>Picture element is missing when print out.</p>	<p>Defective the camera unit.</p>
	<p>Remove the two screws.</p>
	<p>Pull out the two connectors.</p>
	<p>Pull out the two flat cables from the connectors.</p>
	<p>Replace the camera unit. Color adjustment is necessary when changed it. See page 13.</p>

Procedure	
Sudden power failure.	Poor soldering on the power jack.
	Remove the one screw from the lower case.
	The connector(s) of the power jack should be soldered.

Assembly

Procedure	
Major points	Assembly can be performed in the reverse order of the disassembly steps. There are three major points of assembly work.
	1. Set the point of the slide switch to the switch knob.
	2. Gently set the switch knob to the point of the slide switch.
	3. Push hard the upper case with both hands in the direction of the lower case.

Data Restoring

Procedure	
Memory Error Reset 	Memory error message appears on the display, when QV-10 finds an error in the internal flash memory.
	Install the QV-10 service utility on your computer.
<pre>C:\></pre>	Create a directory for the QV-10 service utility on drive C.
<pre>C:\>md qv10</pre>	Press M D Space Q V 1 0 Enter to create the root directory
<pre>Directory already exists C:\>copy a:*.exe</pre>	Press C O P Y Space A : \ * . E X E Enter to copy the QV-10 service utility on to the suitable directory.
<pre>A:\ADJ.EXE A:\AMED.EXE A:\FLASH.EXE 3 file(s) copied C:\></pre>	

Procedure



Remove the QV-10 service utility disk from drive A.



RS-232C port
(D-Sub 9-pin)

Connecting QV-10 (DIGITAL terminal) to your computer (D-Sub 9-pin).

Creating backup file.



Use the cable and adaptor that come with LK-1 kit when connecting to your computer. Turn on your computer and camera.

```
C:\>cd qv10
```

Press **C** **D** **Space** **Q** **V** **1** **0** **Enter**

to change from the current directory to the directory where the utility FLASH.EXE exists.

```
Directory already exists  
C:\qv10>flash -s BACKUP
```

Press **F** **L** **A** **S** **H** **Space** **-** **S** **Space**

B **A** **C** **K** **U** **P** **Enter**

_____ *filename_____

to create back file .

* "The length of filename is up to eight characters."

1. To quit the utility. Press Escape.

2. In case of "Time out Error";


* Select the suitable com port or change slower bit rate, then retry.

* Make sure that all connections between the QV-10 and your computer are secure.

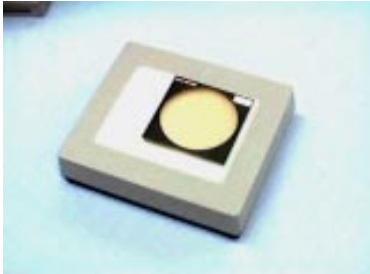


```
Saving flash memory to "BACKUP" 100%
```

Procedure	
<p>Restoring images stored in QV-10 at memory error.</p>	
<pre>C:\>cd qv10</pre>	<p>If need a change of directory, Press C D Space Q V 1 0 Enter</p>
<pre>C:\qv10>amed -PIR QV-10 Automatic Memory Error Debugger Ver 1.0 Serching management block.... Found at bank 1FF Status----OK Saving system block as "mngblk.dat" Saving system block at bank 1FE as "sysblk.dat" Image No. 1 in 006....00A save as "Image001.CAM" Image No. 2 insave as "Image002.CAM" ---Initialize Flash Memory ---Create management block ---Reset Restore system block at bank 1FE from"syblk.dat" Loading image "Image oo1.cam" Loading image "Image oo2.cam" C:\qv10></pre>	<p>Press A M E D Space - P I R Enter</p> <p>to load the images on to hard disk and restores the images on the computer.</p> <p>After restoring, the utility clears all original images in the camera and copies the restored images into the camera.</p> <p>In case of "Time out Error", select the suitable com port or change slower bit rate, then retry.</p>

After Replacing the Digital PCB

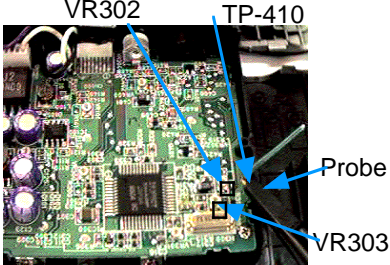
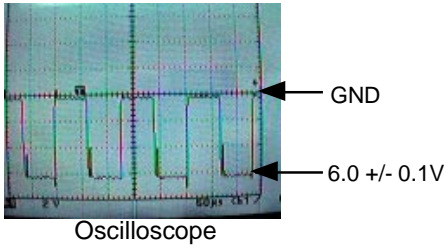



<p>Procedure</p>	
<pre>C:\>cd qv10</pre>	<p>If need a change of directory,</p> <p>Press C D Space Q V 1 0 Enter</p>
<pre>C:\qv10>flash -l BACKUP</pre> <p>Loading finish memory from "Backup 100%"</p>	<p>Press F L A S H Space - L Space</p> <p>B A C K U P Enter</p> <p>to copy the original images on the hard disk into the camera.</p>
	<p>The message on the camera's monitor will change "MEMORY EMPTY" to "MEMORY ERROR".</p>
<pre>C:\qv10>amed -PIR</pre> <p>QV-10 Automatic Memory Error Debugger Ver 1.0 Serching management block.... Found at bank 1FF Status----OK Saving system block as "mngblk.dat" Saving system block at bank 1FE as "sysblk.dat"</p> <p>Image No. 1 in 006....00A save as "Image001.CAM" Image No. 2 insave as "Image002.CAM" </p> <p>---Initiallize Flash Memory ---Create management block ---Reset</p> <p>Restore system block at bank 1FE from"syblk.dat" Loading image "Image 001.cam" Loading image "Image 002.cam" </p> <pre>C:\qv10></pre>	<p>Press A M E D Space - P I R</p> <p>Enter</p> <p>to load the images on to hard disk and restores the images on the computer.</p>

Color Adjustment

Procedure	
	<p>Color adjustment should be done;</p> <ol style="list-style-type: none"> 1. after replacing the digital PCB ass'y. 2. after replacing the camera unit. 3. after using the utility FLASH.EXE for copying the images taken by another camera. 4. after using the utility FLASH.EXE for initializing the flash memory.
	<p>Put on the color filter on the screen of the light source.</p>
	<p>Set the aperture switch to F8 (●) position and turn on the camera.</p>
	<p>Connect the QV-10 to your computer with LK-1, and put the camera with its lens toward the light source. Turn on your computer and the light source.</p>
<pre>C:\>cd qv10</pre>	<p>Press <input type="text" value="C"/> <input type="text" value="D"/> <input type="text" value="Space"/> <input type="text" value="Q"/> <input type="text" value="V"/> <input type="text" value="1"/> <input type="text" value="0"/> <input type="text" value="Enter"/></p> <p>to change the directory where the utility ADJ.EXE exists.</p>
<pre>C:\qv10>adj</pre>	<p>Press <input type="text" value="A"/> <input type="text" value="D"/> <input type="text" value="J"/> <input type="text" value="Enter"/></p> <p>The message WAIT appears on the monitor of the camera.</p>

Procedure	
<pre> System block 1FE CYSUM 3254E GRSUM 1EC33 RKY A6 RKC D RKG FEDD BKY 0 BKC FB BKG FEDD GKY 0 GKC FFD9 GKG 123 ALPHAFFFC BETA A8 TINT 98 RALimit-L 326 RALimit-H 553 BALimit-L 440 BALimit-H 7F0 MOA-CY 1CB MOA-GR 266 COL-KAT 0 COL-BAS 3E Y-OFFSET 5 RAMP-INIT 400 BAMO-INIT 5A0 C:\qv10> </pre>	
Initializing the Flash Memory	
<pre> C:\qv10>amed - i QV-10 Automatic Memory Error Debugger ver 1.0 --- Initialize Flash Memory --- Create management block --- Rest C:\qv10> </pre>	<p>Press <input type="text" value="A"/> <input type="text" value="M"/> <input type="text" value="E"/> <input type="text" value="D"/> <input type="text" value="Space"/> <input type="text" value="-"/> <input type="text" value="I"/> <input type="text" value="Enter"/></p> <p>A screen becomes monochrome when initializes hte flash memory, and color adjustment is necessary. See page 13.</p>

Vcom Adjustment

<p>Procedure</p>	
<p>Vcom adjustment</p> 	<p>It is required whenever replacing the TFT-LCD. Output point: TP-410 Adjust: VR-302 and VR303</p>
	<ol style="list-style-type: none"> 1. Adjust VR303 so that square-wave to read 6.0 +/- 0.1V. 2. Adjust VR302 so that high level of the square-wave is at 0 +/- 0.25V.
<p>A fine adjustment of Vcom adjustment</p>	<p>Select TEST mode to check a fine adjustment of Vcm adjustment.</p>
	<p>While pressing the MODE and Shutter button, slide to the right to turn on power.</p>
	<p>Press the self-timer and DEL button at a time.</p>
	<p>Press (+) or (-) button to select the BLACK.</p>

Procedure

Press the shutter button.



Connect a cable to a photo diode and a photo sensor (IN).



Connect a cable to an oscilloscope and the photo sensor (OUT).

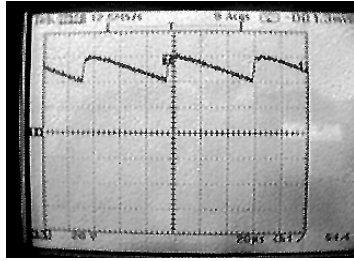


Place the photo diode on the middle of the display.

Procedure



Turn on the photo sensor Amp. and set RF RANGE in LOW.



Adjust VR302 for ripple at minimum.

Appendix

Usage

AMED

AMED : QV-10 Automatic Memory Error Debugger version 1.0 07/21/95

Usage: AMED (-spir) (-com1 | -com2 | -com3 | -com4) (-b9600 | -b19200 | -b38400 | -b57600)

- s : Save system block
- p : Save system block and image data
- i : Initialize Flash Memory. If image data are saved, restore them.
- r : Restore system block
- com* : Select com port channel (default = com1)
- b**** : Select bit rate (default = 57600 BPS)

FLASH

Usage: FLASH (-s|-l) <filename> (-com*) (-b9600 | -b19200 | -b38400 | -b57600)

- s : Save flash memory to the file
- l : Load the file to flash memory
- com* : Select com port channel (default = com1)
- b**** : Select bit rate (default = 57600 BPS)

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