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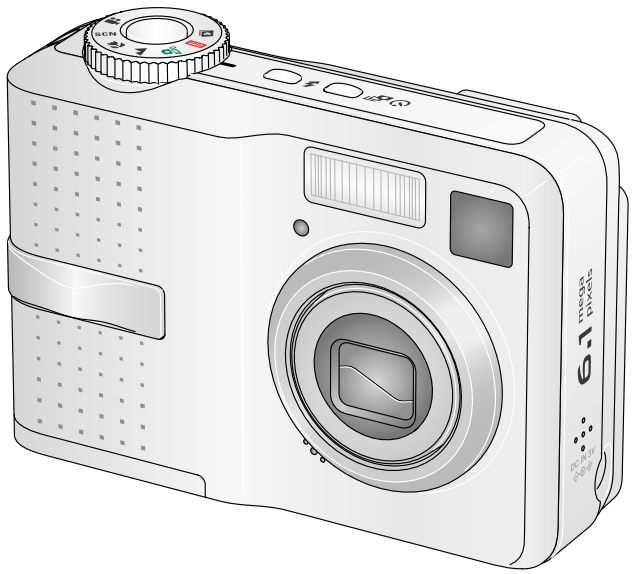
19JUN06

SERVICE MANUAL
for the
Kodak EasyShare C643 ZOOM DIGITAL CAMERA
Service Code: 1399
and the
Kodak EasyShare C603 ZOOM DIGITAL CAMERA
Service Code: 1417

Important
Qualified service personnel must repair this equipment.



Kodak Service & Support

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This equipment includes parts and assemblies sensitive to damage from electrostatic discharge. Use caution to prevent damage during all service procedures.

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Section 1: Illustrated Parts List

Necessary Materials

Primary Tools

Description	Part No.
ESD MAT	Region Provided
SCREWDRIVER - *Phillips*, No. 00 x 40 mm (1.57 in.)	TL-5429
SCREWDRIVER - *Phillips*, No. 000 x 40 mm (1.57 in.)	TL-5430
SCREWDRIVER - *Phillips*, No. 2 x 40 mm (1.57 in.)	TL-5431
SCREWDRIVER - *Phillips*, No. 0 x 50 mm (1.97 in.)	TL-5432
SCREWDRIVER - *Milwaukee*, cordless, with battery and charger, optional	TL-5424
BATTERY for a POWER SCREWDRIVER - 2.4 V, optional	TL-5422
HEX ADAPTER - 0.40 mm (0.02 in.) bit, optional	TL-5421
BIT - power, 00 x 80 mm (3.14 in.), 4 mm (0.15 in.) drive, optional	TL-5423
TWEEZERS - 2	TL-1207
TWEEZERS - special	TL-5338
SOLDERING IRON - 35 W, 188 - 204^{0}C (370 - 400^{0}F)	TL-2818
STATION - *Weller*, soldering, 50 W, optional	TL-5412
TIP - soldering iron, standard ST1, optional	TL-5413
TIP - soldering iron, single flat ST5, optional	TL-5414
TIP - soldering iron, conical ST7, optional	TL-5415
SOLDER REMOVAL TOOL	Region Provided
FLASH CAPACITOR DISCHARGE TOOL - resistor minimum, 6.8 kΩ	TL-5337
DIGITAL VOLTMETER	TL-4114
DC POWER SUPPLY - 0 - 12 V, 5.0 A with clip leads, ez or alligator	Region Provided
AIR HOSE - optional	Region Provided
Kodak LENS CLEANING PAPER	Region Provided
Kodak LENS CLEANER	1C8000
COVER CLEANER - *Johnson* SHINE-UP FURNITURE WAX	TL-5182
Computer: • *Microsoft Windows* XP OPERATING SYSTEM • *IBM* COMPUTER or compatible, with a *Pentium* PROCESSOR, 2.0 GHz or higher • 512 MB RAM • 40 GB hard disk space • CD-ROM DRIVE • USB PORT • 21-in. color MONITOR • INTERNET access	Region Provided
Color VIDEO MONITOR	Region Provided
FEEDBACK SOFTWARE	Region Provided
LIGHT BOX - *Arrowin* LBF, 2001	Region Provided
LAMP - *Arrowin* LBF, 2001 light box, EVC/FGX, *Phillips,* 6958	Region Provided

Description	Part No.
PAINT - gray, 18%, interior flat	Region Provided Vendor: RC Shaheen 1400 St. Paul Blvd. Rochester, NY 14621 Telephone: 585-266-1500 MUR1597
TARGET - gray, 18%, 3 x 4 ft minimum size	TL-5845
GEN 3 CUSTOM TEST FIXTURE	TL-5912
SHROUD - GEN 3 CUSTOM TEST FIXTURE - optional	TL-5910
TRIPOD - *Bogen,* Model 3021s	TL-5176
TRIPOD HEAD - *Bogen*, Model 3047	TL-5206
OPTRONICS PHOTOMETER/DETECTOR - *Graseby*	Region Provided
COLOR TEMPERATURE METER - *Gossen Color Pro 3F*	Region Provided
AUTO METER VF - *Minolta*	Region Provided
TAPE - masking	Region Provided

Special Tools

Description	Part No.
Kyoritsu INFINITY COLLIMATOR VC-1100	Region Provided
BATTERY VOLTAGE ADJUSTMENT TOOL - battery simulator	TL-5637
Kodak OXY-ALKALINE DIGITAL CAMERA BATTERY AA - 2-pack, 1.5 V, non-rechargeable	892 2338*
Kodak OXY-ALKALINE DIGITAL CAMERA BATTERY AA - 4-pack, 1.5 V, non-rechargeable	889 3992*
Kodak LITHIUM DIGITAL CAMERA BATTERY CRV3 - 3.0 V, non-rechargeable	888 2938*
Kodak Ni-MH RECHARGEABLE DIGITAL CAMERA BATTERY KAA2HR - 2.4 V, 2100 mAh	815 6572*
Kodak Ni-MH RECHARGEABLE DIGITAL CAMERA BATTERY AA - 2 pack, 2500 mAh	801 7949*
Kodak Ni-MH RECHARGEABLE DIGITAL CAMERA BATTERY AA - 4 pack, 2500 mAh	122 3353*
Kodak EasyShare CAMERA DOCK SERIES 3	188 6597
Kodak DOCK ADAPTER KIT D-22***	175 6824
USB CABLE, 8-Pin, Model U-8, for *Kodak EasyShare* DIGITAL CAMERAS	195 5137
A/V CABLE, 8-Pin, Model AV-8, for *Kodak EasyShare* DIGITAL CAMERAS	811 8390
SERVICE SOFTWARE “Vista for Service V4.1.0.7”	**
Firmware file “kc643100.fw”	**
Kodak EasyShare SOFTWARE, Version 5.2 or higher	*

* This item is provided by the region.

** This file is on the Kodak Partner Web site at https://partner.kodak.com/.

*** See “Configurations for the CAMERA DOCK” on Page 6.

Publication No.	Title
4J4308	“USER’S GUIDE for the *Kodak EasyShare* C643/C603 ZOOM DIGITAL CAMERA”
XP9999-52	“USER GUIDE for the GEN 3 CUSTOM TEST FIXTURE”

Configurations for the CAMERA DOCK

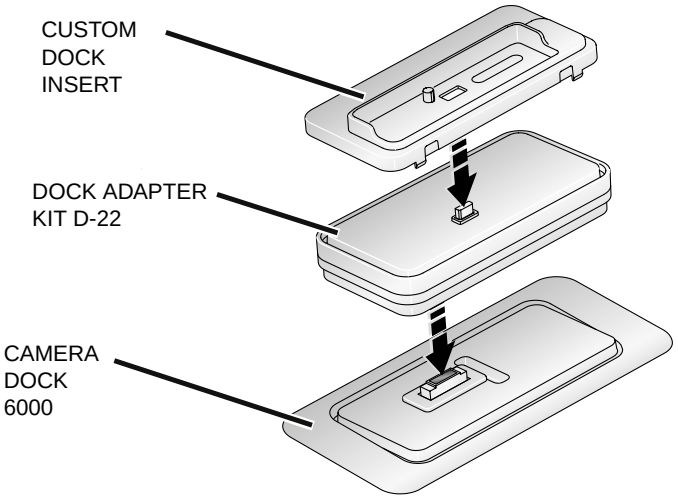


Figure 1

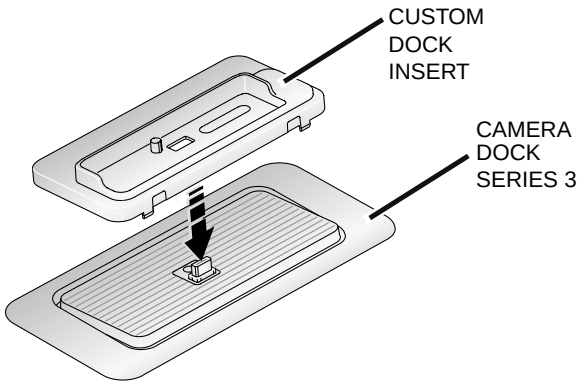


Figure 2

P252_0075BA

Note

- You must use the *Kodak* DOCK ADAPTER KIT D-22 when connecting the *Kodak EasyShare* C643 ZOOM DIGITAL CAMERA or the C603 ZOOM DIGITAL CAMERA to the *Kodak EasyShare* CAMERA DOCK 6000.
- The *Kodak EasyShare* C643 and C603 ZOOM DIGITAL CAMERAS are compatible with:
  - *Kodak EasyShare* CAMERA DOCK SERIES 3
  - other 26-PIN DOCKS

Reference Table for New CAMERAS

Use the following catalog numbers to order a replacement CAMERA if the CAMERA is under warranty and cannot be repaired, or to order a MASTER CAMERA.

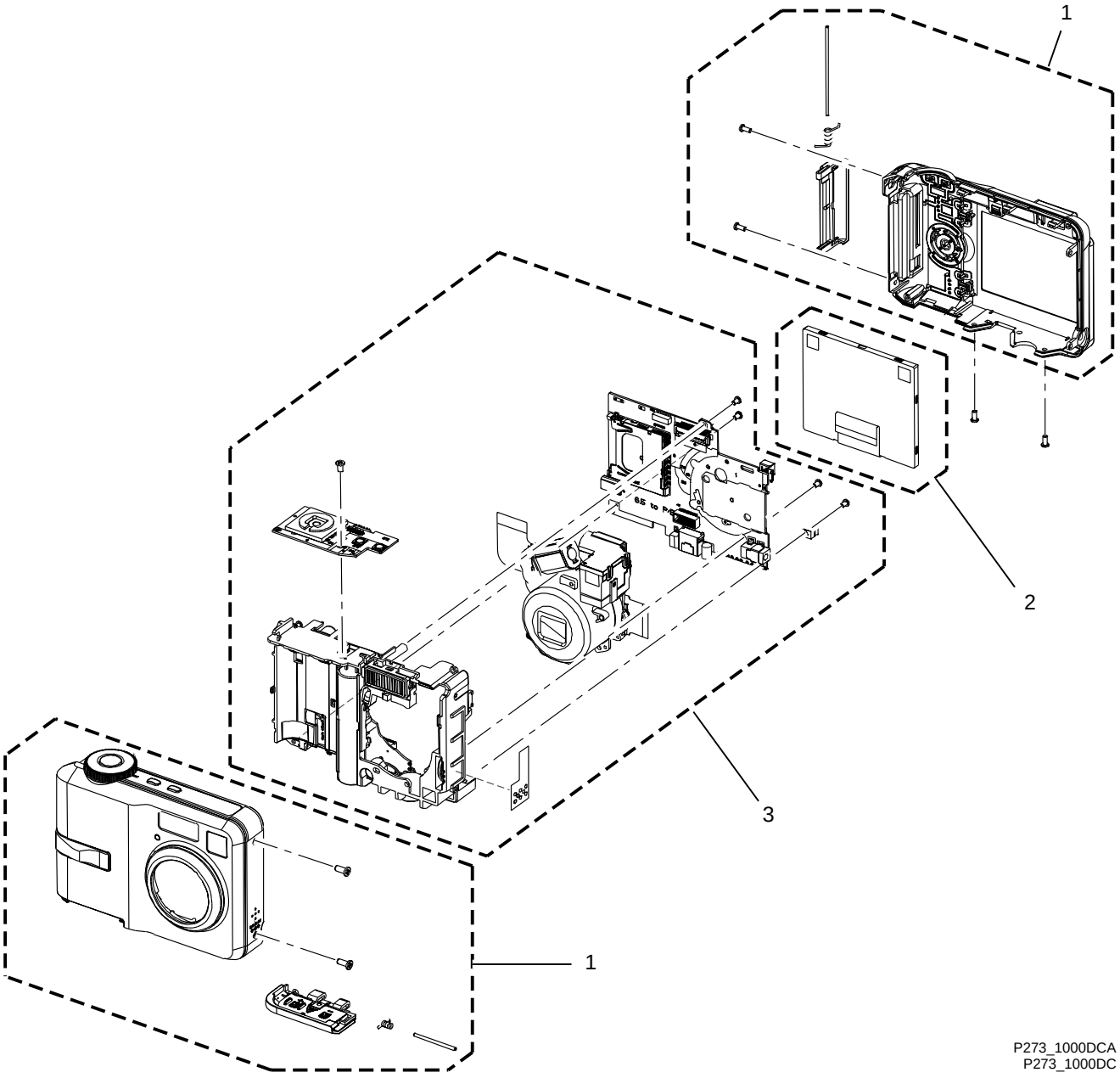
Region	Language	Catalog No. for C643	Catalog No. for C603
Americas and Canada, with SENSORMATIC and CHECKPOINT TAG	• English • French • Spanish	857 7355	157 4763
Americas and Canada, Non-OFM, with SENSORMATIC and CHECKPOINT TAG	• English • French • Spanish	168 4869	102 9766
Brazil	• Italian • Spanish • Portuguese	198 7650	802 2550
Europe, Africa, and the Middle East	• English • French • German	859 4129	167 4399
Europe, Africa, and the Middle East	• Italian • Spanish • Portuguese	393 6903	393 6978
Europe, Africa, and the Middle East	Nordic: • Swedish • Danish • Finnish	393 6911	393 6986
Europe, Africa, and the Middle East	Emerging: • English • Russian • Turkish • Polish	393 6929	393 6994
Greater China and Taiwan	• English • Chinese – simplified – traditional • Korean	100 0587	187 4775
People's Republic of China	• English • Chinese – simplified – traditional • Korean	868 8343	127 3135
Asia Pacific and Korea	• English • Chinese – simplified – traditional • Korean	120 7042	866 5648
Japan	Japanese	188 2729	120 9717
Kodak Service & Support - bulk, class A	English	SP 864 4676	SP 187 9659
Kodak Service & Support - retail, class A	English	SP 857 7355	SP 157 4763

Region	Language	Catalog No. for C643	Catalog No. for C603
Kodak Service & Support - bulk, class B	English	SP 864 4676	SP 192 7417
Kodak Service & Support - retail, class B	English	SP 866 5580	SP 116 4789

Reference Table for Adjustment Procedures

Component	Procedure
LENS AY AND MCU BOARD	• MCU BOARD/LENS AY - “Shutter Delay” on Page 36 • CCD - “AWB/ ISO/DBP” on Page 40

Visual Index



Item	Description
1	“COVER AYs” on Page 10
2	“MONITOR LCD” on Page 12
3	“LENS AY AND MCU BOARD, POWER BOARD AND FRAME AY, SHUTTER BOARD” on Page 13

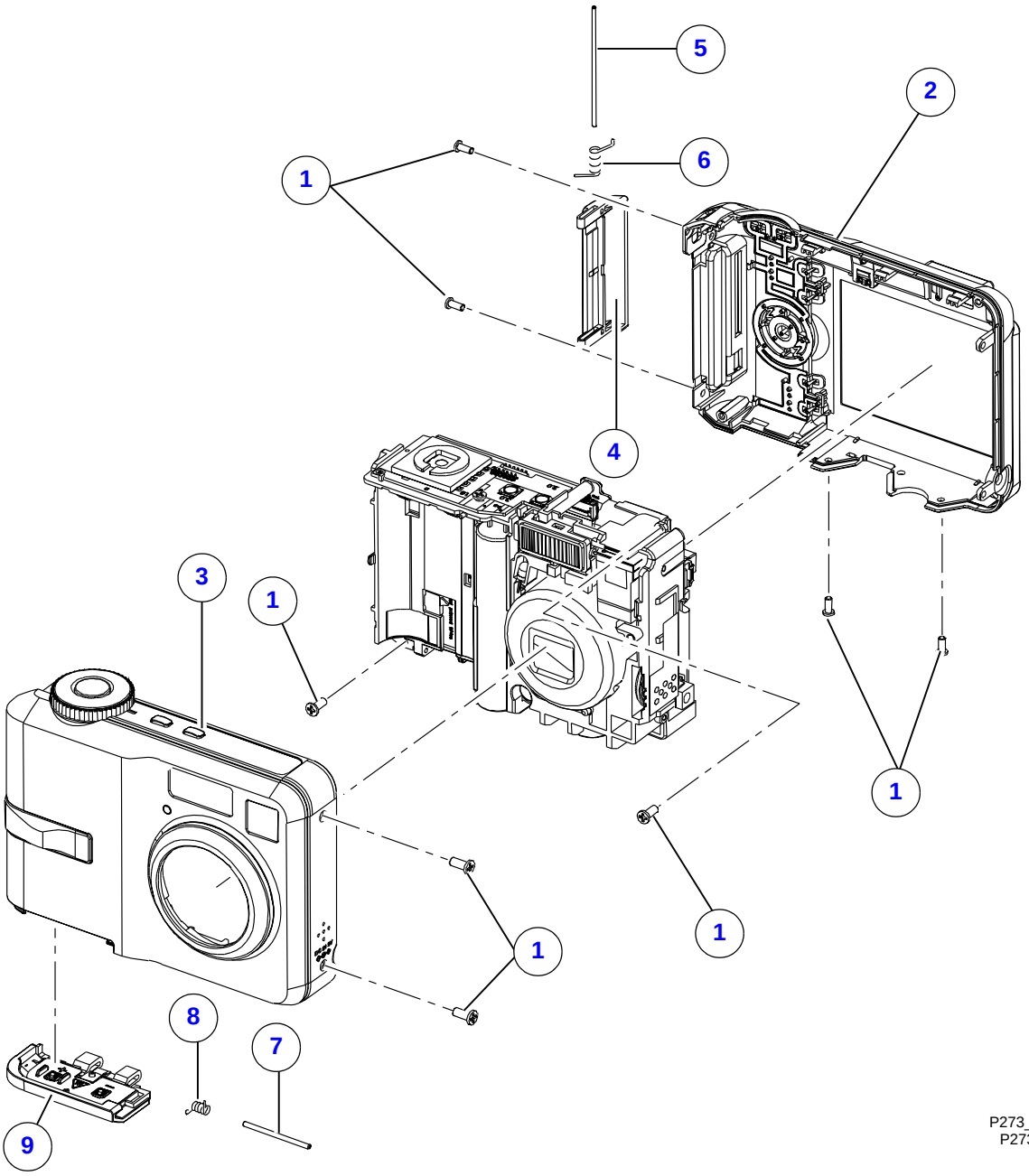
Equipment Parts

Caution

Before removing the BACK COVER AY, you must:

- remove, if installed:
  - MEMORY CARD
  - BATTERY

Figure 1 COVER AYs

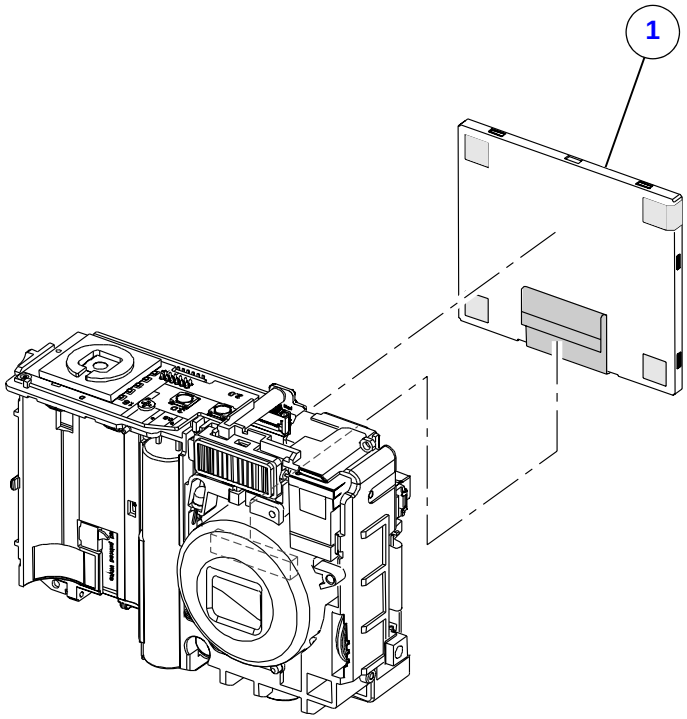


P273_1001DCA
P273_1001DC

Figure 1 COVER AYs

Item	Part No.	Description	Quantity	Notes
1	3F6374	SCREW - tapping, 1.7 x 4.0, nickel	8	
2	3F9415	COVER - back, C643	1	
	3F9464	COVER - back, C603	1	
3	3F9414	COVER - front, C643	1	
	3F9463	COVER - front, C603	1	
4	3F9423	CARD DOOR AY - C643	1	
	3F9466	CARD DOOR AY - C603	1	
5	3F9424	SHAFT - card door	1	
6	3F9425	SPRING - card door	1	
7	3F9421	SHAFT - battery door	1	
8	3F9422	SPRING - battery door	1	
9	3F9419	BATTERY DOOR - C643	1	
	3F9465	BATTERY DOOR - C603	1	
------	3F9618	PLATE - data, C643	1	Not visible in the graphic.
------	3F9619	PLATE - data, C603	1	Not visible in the graphic.
------	3F6387	STRAP - wrist	1	Not visible in the graphic.
------	3F9428	CUSTOM DOCK INSERT	1	Not visible in the graphic.

Figure 2 MONITOR LCD



P273_1002HCA
P273_1002HC

Figure 2 MONITOR LCD

Item	Part No.	Description	Quantity	Notes
1	3F9413	MONITOR LCD	1	See “MONITOR LCD” on Page 46 for special replacement instructions.

Caution

Before removing the LENS AY AND MCU BOARD, you must:

- remove the SOLDER from the SOLDER JOINTS
- do a discharge of the CAPACITOR at the CONTACTS - see Step 1 in **To Remove:** for the "POWER BOARD AND FRAME AY" on Page 44

Figure 3 LENS AY AND MCU BOARD, POWER BOARD AND FRAME AY, SHUTTER BOARD

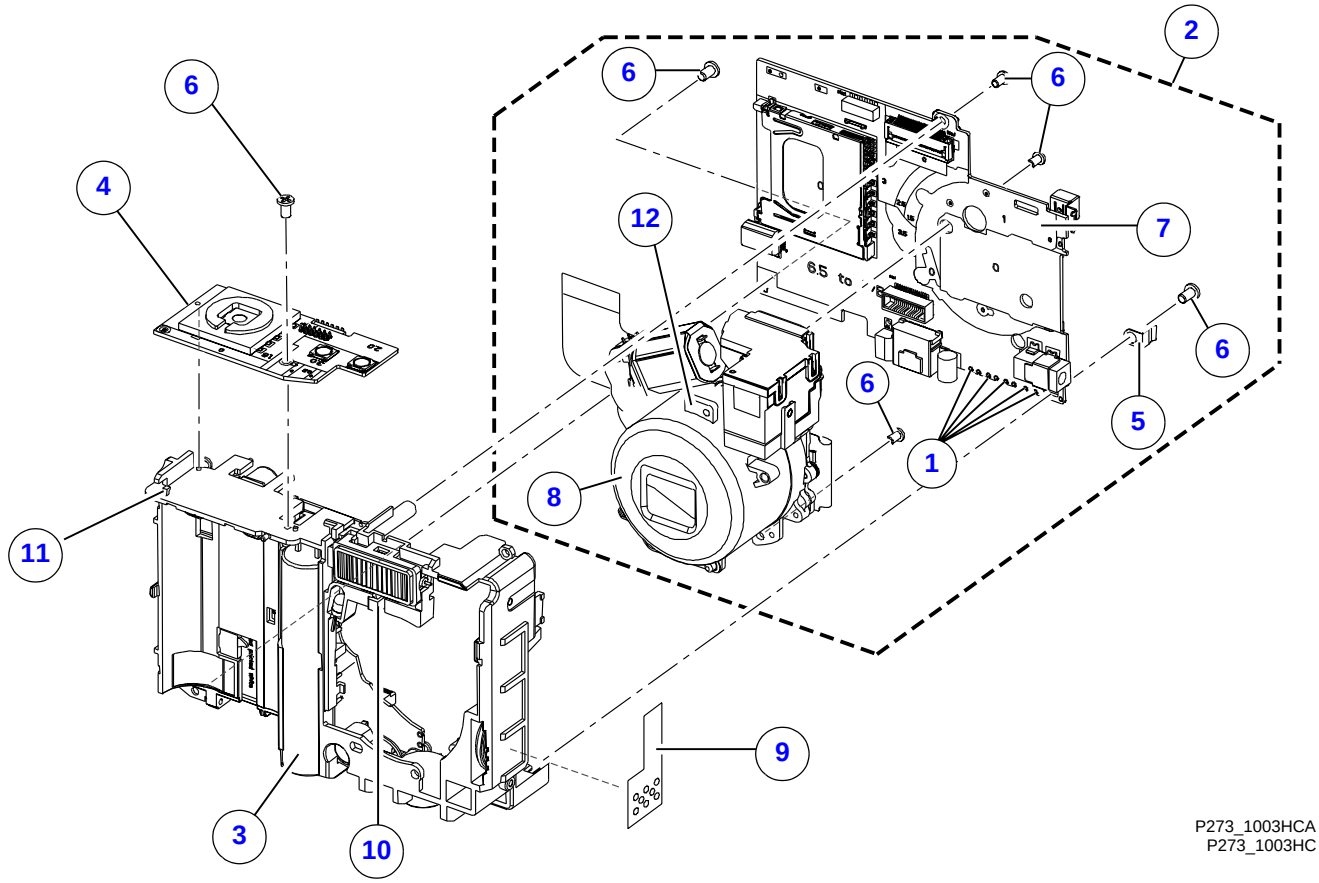


Figure 3 LENS AY AND MCU BOARD, POWER BOARD AND FRAME AY, SHUTTER BOARD

Item	Part No.	Description	Quantity	Notes
1	------	SOLDER JOINTS	5	
2	3F9583	LENS AND MCU BOARD AY	1	See "MCU BOARD" on Page 47 for details on where the colored WIRES are soldered to the MCU BOARD.
3	3F9417	POWER BOARD AND FRAME AY	1	See "POWER BOARD AND FRAME AY" on Page 44 for special replacement instructions.
4	3F9418	BOARD - shutter	1	
5	3F9426	ESD PLATE - monitor LCD	1	
6	3F6412	SCREW - tapping, 1.7 x 3.0, black	4	
7	3F9416	BOARD - mcu	1	See "MCU BOARD" on Page 47 for details on where the colored WIRES are soldered to the MCU BOARD.
8	3F9420	LENS AY	1	
9	3F9443	ESD PLATE - speaker	1	
10	------	HOOK A	1	Release the LENS AY AND MCU BOARD from the HOOK A.
11	------	HOOK B	1	Release the SHUTTER BOARD from the HOOK B.
12	------	TAB	1	Release the LENS AY from the TAB.
------	3F6204	FUSE - 1.25 A, F3	1	See "POWER BOARD - 1 of 2" on Page 93.
------	3F6205	FUSE - 2.5 A, F1, F2	1	See "POWER BOARD - 2 of 2" on Page 94.

Section 2: Alphabetical Index

Alphabetical Index

Part No.	Description	Figure No.
3F9465	BATTERY DOOR - C603	1
3F9419	BATTERY DOOR - C643	1
3F9416	BOARD - mcu	3
3F9418	BOARD - shutter	3
3F9466	CARD DOOR AY - C603	1
3F9423	CARD DOOR AY - C643	1
3F9464	COVER - back, C603	1
3F9415	COVER - back, C643	1
3F9463	COVER - front, C603	1
3F9414	COVER - front, C643	1
3F9428	CUSTOM DOCK INSERT	1
3F9426	ESD PLATE - monitor LCD	3
3F9443	ESD PLATE - speaker	3
3F6204	FUSE - 1.25 A, F3	3
3F6205	FUSE - 2.5 A, F1, F2	3
------	HOOK A	3
------	HOOK B	3
3F9583	LENS AND MCU BOARD AY	3
3F9420	LENS AY	3
3F9413	MONITOR LCD	2
3F9619	PLATE - data, C603	1
3F9618	PLATE - data, C643	1
3F9417	POWER BOARD AND FRAME AY	3
3F6412	SCREW - tapping, 1.7 x 3.0, black	3
3F6374	SCREW - tapping, 1.7 x 4.0, nickel	1
3F9421	SHAFT - battery door	1
3F9424	SHAFT - card door	1
------	SOLDER JOINTS	3
3F9422	SPRING - battery door	1
3F9425	SPRING - card door	1
3F6387	STRAP - wrist	1
------	TAB	3

Section 3: Diagnostics

Error Codes

E00

Description	Recommended Action
A communication error occurred between the MCU and the 16-BIT MAIN CPU.	1. Do "Upgrading the Firmware Using the MEMORY CARD" on Page 74. 2. Install a new MCU BOARD.

E12

Description	Recommended Action
An error occurred when the LENS was retracted after energizing the CAMERA.	1. Check the FPC CABLE from the MOTOR to the CONNECTOR J3 on the MCU BOARD. 2. Install a new MCU BOARD. 3. Install a new LENS AY.

E14

Description	Recommended Action
An error occurred when the LENS was extended after energizing the CAMERA.	1. Check the FPC CABLE from the MOTOR to the CONNECTOR J3 on the MCU BOARD. 2. Install a new MCU BOARD. 3. Install a new LENS AY.

E15

Description	Recommended Action
An error occurred when the STEP MOTOR was reset after energizing the CAMERA.	1. Check the FPC CABLE from the MOTOR to the CONNECTOR J3 on the MCU BOARD. 2. Install a new MCU BOARD. 3. Install a new LENS AY.

E20

Description	Recommended Action
An error occurred when the CAMERA was writing to the NANDFLASH memory.	1. Do "Upgrading the Firmware Using the MEMORY CARD" on Page 74. 2. Install a new MCU BOARD.

E22

Description	Recommended Action
An error occurred when the LENS was retracted after de-energizing the CAMERA.	1. Check the FPC CABLE from the MOTOR to the CONNECTOR J3 on the MCU BOARD. 2. Install a new MCU BOARD. 3. Install a new LENS AY.

E25

Description	Recommended Action
An error occurred when the STEP MOTOR was reset after de-energizing the CAMERA.	1. Check the FPC CABLE from the MOTOR to the CONNECTOR J3 on the MCU BOARD. 2. Install a new MCU BOARD. 3. Install a new LENS AY.

E41

Description	Recommended Action
An error occurred when the LENS was retracting.	1. Check the FPC CABLE from the MOTOR to the CONNECTOR J3 on the MCU BOARD. 2. Install a new MCU BOARD. 3. Install a new LENS AY.

E81

Description	Recommended Action
An error occurred when the LENS was extending.	1. Check the FPC CABLE from the MOTOR to the CONNECTOR J3 on the MCU BOARD. 2. Install a new MCU BOARD. 3. Install a new LENS AY.

Troubleshooting

LEDs

Description	Recommended Action
The red VIEWFINDER LED is blinking.	1. Install a new BATTERY. 2. Check the BATTERY CONTACTS. 3. Install a new BATTERY DOOR AY.

MONITOR LCD

Description	Recommended Action
The MONITOR LCD does not energize.	1. Check the connection of the red and black wires from the MONITOR LCD to the POWER BOARD AND FRAME AY. 2. Check the condition of the SOLDER that connects the POWER BOARD AND FRAME AY to: • LENS AY • VIEWFINDER • MCU BOARD • SOLDER that connects: • MCU BOARD/LENS AY has no damage • MONITOR LCD has no damage 3. Install: • new MONITOR LCD • new MCU BOARD/LENS AY
The MONITOR LCD energizes, but the screen is blank.	1. Check the FPC from the MONITOR LCD to CONNECTOR J1 on the MCU BOARD. 2. Install: • new MONITOR LCD • new MCU BOARD/LENS AY
Malfunction of pixels occurs on the MONITOR LCD.	Install a new MONITOR LCD.
The image on the MONITOR LCD is not in focus.	Install a new MONITOR LCD.
Horizontal or vertical lines display on the MONITOR LCD.	1. Check: • FPC from the MONITOR LCD to CONNECTOR J1 on the MCU BOARD • MCU BOARD/LENS AY has no damage 2. Install: • new MONITOR LCD • MCU BOARD/LENS AY

STROBE

Description	Recommended Action
The STROBE does not energize.	1. Check that the correct mode of the STROBE is selected. 2. Measure the voltage of the STROBE CAPACITOR across both ends of the LAMP. The voltage should be > 280 V. 3. Check: • FUSE F4 on the POWER BOARD • COIL and PLATE for the TRIGGER is soldered correctly
The STROBE operates in the “Fill Flash” mode, but does not operate in the “Auto Flash” mode.	Check the brightness of the environment.

Description	Recommended Action
Smoke emits from the CAMERA when the STROBE is actuated.	Check: • connection of the red and black wires between the STROBE AY and the POWER FRAME AY • STROBE COVER or STROBE REFLECTOR AY has no debris
The LAMP for the STROBE is dark.	Do a replacement of the CAMERA.

MEMORY CARD

Description	Recommended Action
The CAMERA does not recognize the MEMORY CARD.	1. Use a new MEMORY CARD. 2. Check: • “IMAGE STORAGE” option is set to “AUTO” • SOCKET of the MEMORY CARD on the MCU BOARD/LENS AY has no damage 3. Do “Upgrading the Firmware Using the Internal Memory” on Page 75.
Images are not stored on the MEMORY CARD.	1. Use a new MEMORY CARD. 2. Check: • position of the WRITE PROTECT SWITCH on the SD CARD • “IMAGE STORAGE” option is set to “AUTO” • SOCKET of the MEMORY CARD on the MCU BOARD/LENS AY has no damage 3. Format the MEMORY CARD and capture an image again. 4. Do “Upgrading the Firmware Using the Internal Memory” on Page 75.

Power

Description	Recommended Action
The CAMERA does not energize.	1. Check: • power source for the CAMERA • FUSE F1 and F2 on the POWER BOARD. If open, install a new FUSE. • BOARD-TO-BOARD CONNECTOR JP1 on the MCU BOARD/LENS AY to J3 on the POWER BOARD 2. Diagnose the MODULE that has the malfunction. • Disconnect all MODULES from the MODE DIAL BOARD. • Connect the MODULES one at a time, until the FUSE opens. 3. Install a new: • MODE DIAL BOARD • POWER BOARD • MCU BOARD/LENS AY
The CAMERA with no BATTERY does not operate on the CAMERA DOCK.	1. Check the DOCK CONNECTOR on the CAMERA. 2. Install a new MCU BOARD/LENS AY.

Image Quality

Description	Recommended Action
The images are black.	1. Check: • BOARD-TO-BOARD CONNECTOR J1 on the MCU BOARD/LENS AY to J3 on the POWER BOARD • FPC • any sound from the SHUTTER 2. Install a new MCU BOARD/LENS AY.
• The image is not in focus. • The color of the image is not correct. • The images are too light. • The images are too dark. • The images have pixels that are continually energized. • The captured image is other than the image displayed on the VIEWFINDER AY.	Install a new MCU BOARD/LENS AY.

Communication

Description	Recommended Action
The CAMERA does not download images from the USB PORT.	1. Connect the CAMERA to the computer to check for communication. 2. Check for damage on: • USB CONNECTOR to the PINS on the J3 on the MCU BOARD • BOARD-TO-BOARD CONNECTOR J1 on the MCU BOARD/LENS AY to J3 on the POWER BOARD 3. Install a new MCU BOARD/LENS AY.

General Functions

Description	Recommended Action
One or more do not operate correctly: • “menu” BUTTON • FLASH BUTTON • “share” BUTTON • “delete” BUTTON • “review” BUTTON • 4-WAY BUTTON • “OK” BUTTON	1. Check for damage to: • BUTTONS • inside the BACK COVER AY 2. Install a new: • BACK COVER AY • MCU BOARD/LENS AY
The SHUTTER BUTTON does not operate correctly.	1. Check the connection of the SHUTTER BOARD to the MCU BOARD/LENS AY. 2. Install a new: • SHUTTER BOARD • MCU BOARD/LENS AY
The SELF-TIMER LED does not operate correctly.	Check the connection of the red and black wires from the SELF-TIMER LED to the MCU BOARD/LENS AY.

Diagnostic Tests

Current Leakage Test

[1] Energize the DC POWER SUPPLY.

[2] Set the voltage to 3.0 V.

[3] Energize the DIGITAL MULTIMETER.

[4] Connect the DIGITAL MULTIMETER in series with the positive connection on the DC POWER SUPPLY.

[5] Set the DIGITAL MULTIMETER to read the current of 100 mA or less.

[6] Connect the POWER SUPPLY and the DIGITAL MULTIMETER to the BATTERY VOLTAGE ADJUSTMENT TOOL.

[7] Check that the CAMERA is de-energized.

[8] Install the CAMERA on the BATTERY VOLTAGE ADJUSTMENT TOOL.

[9] Energize the CAMERA.

[10] Check that the current is within the limits:

During the first 10 seconds	After 10 seconds
1 mA - 80 mA	0.5 mA - 20 mA

[11] Is the current within the limits?

Yes	No
De-energize the CAMERA.	1. Install a new POWER BOARD AND FRAME AY. 2. Do Step 1 - Step 10 again. 3. If the current is not within the limits again, do: • install a new LENS AY AND MCU BOARD • Step 1 - Step 10 again 4. De-energize the CAMERA.

Low Voltage Test

[1] Connect the DIGITAL MULTIMETER to the BATTERY VOLTAGE ADJUSTMENT TOOL:

Wire Color	From the DIGITAL MULTIMETER:	To the BATTERY VOLTAGE ADJUSTMENT TOOL
Red	"+"	"2.6 V"
Black	Ground	Ground

[2] Energize the DIGITAL MULTIMETER.

[3] Adjust the BATTERY VOLTAGE ADJUSTMENT TOOL to 2.5 V.

[4] Check that the CAMERA is de-energized.

[5] Install the CAMERA on the BATTERY VOLTAGE ADJUSTMENT TOOL.

[6] Rotate the MODE DIAL to "AUTO" to energize the CAMERA.

[7] Set the CAMERA to the "Fill Flash" mode.

[8] Press the SHUTTER BUTTON.

[9] Check:

- STROBE actuates
- image displays correctly
- low "Battery" icon displays

[10] Press:

- "review" BUTTON
- "T" BUTTON continually to a magnification to 8X

[11] Check the MONITOR for image quality.

[12] Do any of the following errors occur?

- red VIEWFINDER LED blinks
- "Battery" icon blinks
- error message "Batteries are too low for live view" displays

Yes	No
1. Install a new POWER BOARD AND FRAME AY. 2. Do Step 1 - Step 11 again. 3. If any of these errors occur again, do: • install a new LENS AY AND MCU BOARD • Step 1 - Step 11 again 4. De-energize the CAMERA.	De-energize the CAMERA.

Checking the Power On “Self Test”

[1] Do Preparing the “C643_C603 Self_Test” MEMORY CARD on Page 70.

[2] Insert the “C643_C603 Self_Test” MEMORY CARD in the CAMERA:

[3] Do either:

- Install the CAMERA on the CAMERA DOCK.
- Insert a BATTERY that has a full charge into the CAMERA.

[4] Energize the CAMERA to execute the test.

[5] If the MONITOR LCD displays “Date and time have been reset”, select “CANCEL”.

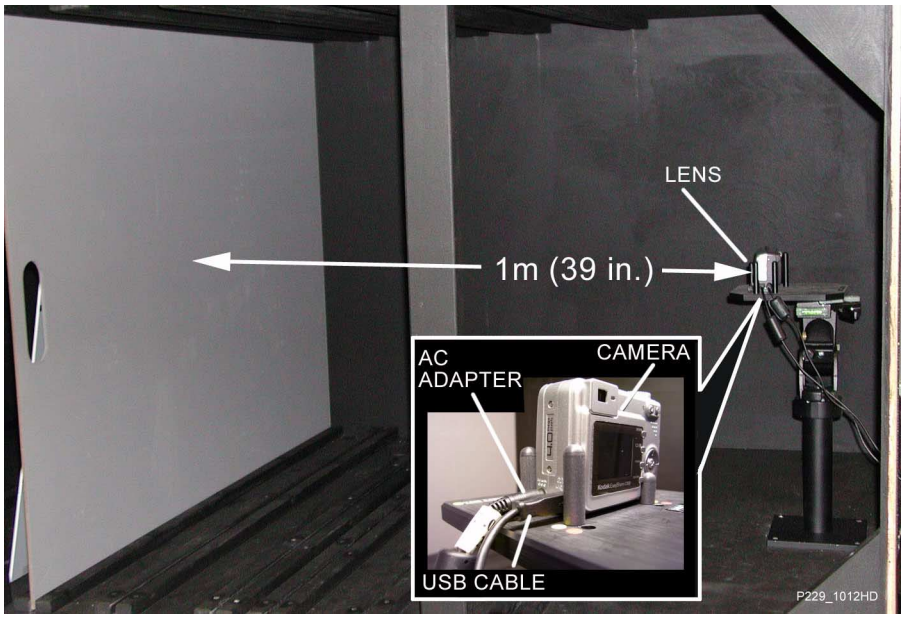
[6] For each test displaying on the MONITOR LCD, do:

Test	Check:
“F/W: n.nnnn”	version of the firmware
“MCU: n.nnnn”	version of the MCU
“RGB Level Checking...”	quality of the 6 colors
“Gray Level Checking...”	quality of the 6 gray areas
“LEDs On/Off testing”	• green LED on the front of the CAMERA illuminates • red and green LEDs on the back of the CAMERA illuminate
“LCD On/Off testing”	MONITOR LCD blinks
“Strobe testing”	STROBE energizes once
“SDRAM testing”	• “SDRAM OK” • “IDRAM OK” • “SD Card OK” • “NAND Flash OK”
“IDRAM testing”	
“SD card testing”	
“NAND flash testing”	
“Temperature checking...”	message “OK”
“LCD Bad pixel testing”	MONITOR LCD for: • dark pixels in the white screen • white pixels in the dark screen

[7] When the test is completed, de-energize the CAMERA.

[8] Remove the MEMORY CARD.

Checking for Uniform Flash



Important

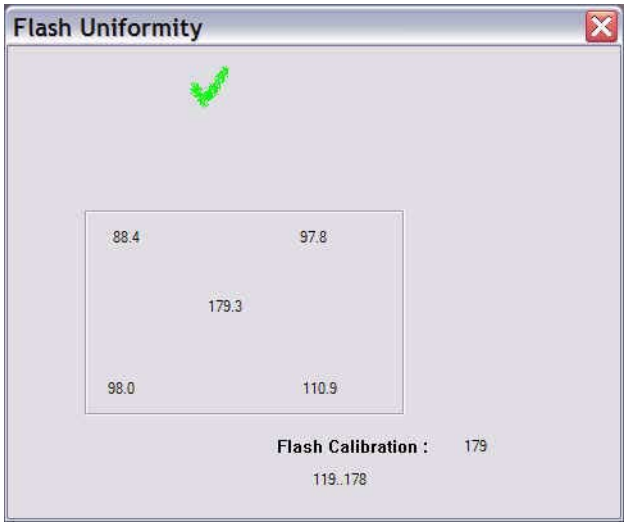
- A dark room or the GEN 3 CUSTOM TEST FIXTURE can be used.
- The distance is measured from the surface of the TARGET to the front surface of the CAMERA.

[1] If you are using:

GEN 3 CUSTOM TEST FIXTURE with Controlled Light	Dark Room
a. Connect: • USB CABLE between the CAMERA DOCK and the computer • 5 V AC ADAPTER to the CAMERA DOCK b. Install the CAMERA ADAPTER on the CAMERA DOCK. c. Adjust the GEN 3 CUSTOM TEST FIXTURE with: • VERTICAL MEASURE TUBE “J” for T1 • HORIZONTAL MEASURE TUBE “H” and “K” for T4 • “X” axis to 1344 • “Y” axis to 1072 d. Place: • 18% gray TARGET in the TARGET FRAME • CAMERA DOCK on the CAMERA NEST • CAMERA on the CAMERA DOCK e. Press and hold: • “review” BUTTON • “T” TELE BUTTON f. Rotate the MODE DIAL to “Auto”. g. Release the BUTTONS. h. Press the TRANSFER BUTTON on the CAMERA DOCK. i. Check that the MONITOR LCD de-energizes. j. Continue with Step 2.	a. Place the TARGET 1 m (39.4 in.) from the front surface of the CAMERA. b. Continue with Step 2.

[2] Select “Flash Uniformity”.

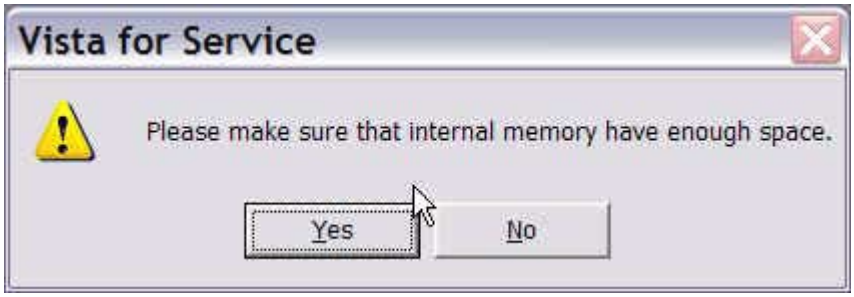
[3] Click [OK].



[4] Check the mark on the computer screen.

Green "✓"	Red "X"
• The test was successful. • Continue with Step 5.	• A failure occurred. • De-energize the CAMERA. • Do "Checking for Uniform Flash" on Page 25 again. • If the failure occurs again, check the hardware.

[5] Close "Flash Uniformity" window.



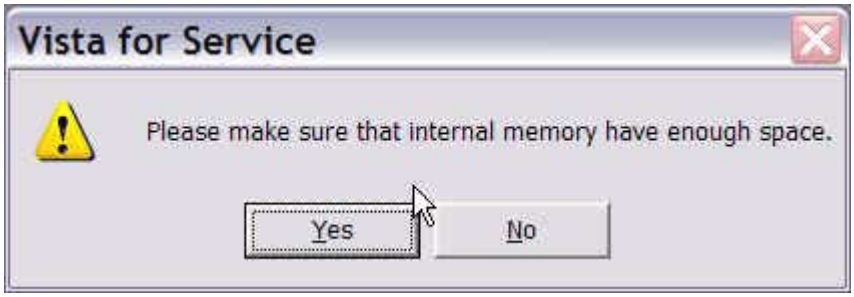
[6] Click [Yes].

[7] Continue with Checking "Wide IQ Chart w/o Flash" on Page 28.

Checking “Wide IQ Chart w/o Flash”

[1] Select “Wide IQ Chart w/o Flash”.

[2] Click [OK].



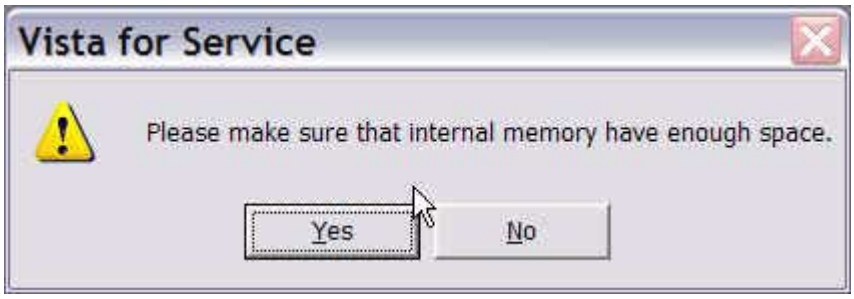
[3] Click [Yes].

[4] Continue with Checking “Wide IQ Chart with Flash” on Page 29.

Checking “Wide IQ Chart with Flash”

[1] Select “Wide IQ Chart with Flash”.

[2] Click [OK].



[3] Click [Yes].

[4] Close:

- “Menu for service” window
- “VISTA for SERVICE (Kodak)” window

[5] De-energize the CAMERA.

Checkout Procedures

Checking the General Functions of the CAMERA

Important

Do these procedures before returning the CAMERA to the customer.

[1] Install the 5 V AC ADAPTER to:
- CAMERA DOCK
- source of power

[2] Connect the CAMERA DOCK to the computer with the USB CABLE.

[3] Remove the BATTERY from the CAMERA.

[4] Install the CAMERA on the CAMERA DOCK. See “Configurations for the CAMERA DOCK” on Page 6.

[5] Check that the STATUS LED on the CAMERA DOCK illuminates green.

[6] Remove the CAMERA from the CAMERA DOCK.

[7] Install:
- CRV3 BATTERY in the CAMERA
- CAMERA on the CAMERA DOCK

[8] Check:
- none of the LEDs for the BATTERY on the CAMERA DOCK illuminate green
- STATUS LED on the CAMERA DOCK illuminates green

[9] Remove:
- CAMERA from the CAMERA DOCK
- CRV3 BATTERY from CAMERA

[10] Install:
- Ni-MH BATTERY in the CAMERA
- CAMERA on the CAMERA DOCK

[11] Check:
- one or more of the LEDs for the BATTERY on the CAMERA DOCK illuminate green
- STATUS LED on the CAMERA DOCK illuminates green

[12] Remove the CAMERA from the CAMERA DOCK.

[13] Energize the CAMERA.

[14] Check that the CAMERA energizes.

[15] De-energize the CAMERA.

[16] Remove the BATTERY from the CAMERA.

[17] Insert the MEMORY CARD into the CAMERA.

[18] Install the CAMERA on the CAMERA DOCK. See “Configurations for the CAMERA DOCK” on Page 6.

[19] Rotate the MODE DIAL to the “AUTO” position.

[20] Check the energize sequence:
- green LED illuminates on the CAMERA DOCK
- green LED to the right of the VIEWFINDER
  - blinks 2 times
  - remains illuminated
- error code does not display

[21] De-energize the CAMERA.

[22] Remove the CAMERA from the CAMERA DOCK.

[23] Install a new BATTERY that has a full charge into the CAMERA.

[24] Rotate the MODE DIAL to the “AUTO” position.

[25] Check the energize sequence:

- green LED to the right of the VIEWFINDER:
  - blinks 5 times
  - remains illuminated
- error code does not display

[26] Check the following BUTTONS and SWITCHES:

BUTTON/SWITCH	Do:
• “menu” • 4-WAY • “OK”	1. Press the “menu” BUTTON. 2. Check that the MONITOR LCD illuminates. 3. Press: • 4-WAY BUTTON up or down to move through the menu • “OK” BUTTON to select an option • “OK” BUTTON again to return to the screen before • “menu” BUTTON to quit 4. Press: • “menu” BUTTON • SHUTTER BUTTON 5. Check: • CAMERA quits the menu • image is captured • image displays on the MONITOR LCD
• “review” • “share”	1. Press the “review” BUTTON. 2. Check that the MONITOR LCD illuminates. 3. Press: • 4-WAY BUTTON left and right to display images • “share” BUTTON 4. Check that options display. 5. Press: • “share” BUTTON • “review” BUTTON again to quit 6. Press: • “review” BUTTON • SHUTTER BUTTON 7. Check: • CAMERA quits the “Review” mode • image is captured • image displays on the MONITOR LCD

BUTTON/SWITCH	Do:
FLASH	1. Press the FLASH BUTTON. 2. Check that the MONITOR LCD illuminates. 3. Press the FLASH BUTTON again 3 times to check that the “Flash” icon changes to: • “Auto Flash” • “Fill Flash” • “Red Eye” • “Flash Off” 4. Press the SHUTTER BUTTON. 5. Check: • image is captured without the FLASH • image displays on the MONITOR LCD
SHUTTER	1. Press the SHUTTER BUTTON to capture an image. 2. Check: • green LED blinks once before the CAMERA captures the image • image appears on the MONITOR LCD • green LED blinks when the CAMERA stores the image

BUTTON/SWITCH	Do:
“delete”	1. Press: • “review” BUTTON • “delete” BUTTON 2. Check that options display. 3. Select the “EXIT” option. 4. Press: • “OK” BUTTON to quit the “delete” screen • “review” BUTTON to return to the “Auto” mode 5. Press: • “review” BUTTON • “delete” BUTTON • SHUTTER BUTTON to capture an image 6. Check: • CAMERA quits the “delete” screen • image is captured • image displays on the MONITOR LCD 7. Immediately press the “delete” BUTTON. 8. Use the 4-WAY BUTTON to select “YES”. 9. Press: • “OK” BUTTON • “review” BUTTON 10. Use the 4-WAY BUTTON to check that the image is deleted. 11. Press the “delete” BUTTON. 12. Use the 4-WAY BUTTON to select “PICTURE”. 13. Press: • “OK” BUTTON to delete the image • “OK” BUTTON again to select “EXIT” 14. Use the 4-WAY BUTTON to check that the image is deleted. 15. Press the “review” BUTTON to quit.

[27] Press:

- 4-WAY BUTTON left and right to check that the exposure value changes
- SHUTTER BUTTON to capture an image

[28] Check that the MONITOR LCD displays:

- image
- icons:
  - “Flash” mode
  - quality of the image
  - type of memory
  - “Zoom” mode
  - exposure value
- number of additional images that can be captured

[29] Check the positions of the MODE DIAL.

After moving the MODE DIAL to:	Do:
“Video”	1. Check: • “Video:” displays on the MONITOR LCD • FRAMING MARKS are disabled 2. Press and release the SHUTTER BUTTON. 3. During the video recording, check: • green LED flashes • “REC” on the MONITOR LCD flashes • recording time displays on the MONITOR LCD 4. Press and release the SHUTTER BUTTON. 5. Check that the MONITOR LCD displays “Press OK to Play or Pause”. 6. Press the “OK” BUTTON. 7. Check that the video begins to play back. 8. Press the “OK” BUTTON. 9. Check that the video stops. 10. Press the “delete” BUTTON. 11. Check that the MONITOR LCD displays “VIDEO” in the list of options. 12. Press: • “delete” BUTTON to quit • “review” BUTTON 13. Check that the MONITOR LCD illuminates in “Liveview” mode.
“Favorites”	1. Check that “Entering Favorites...” displays on the MONITOR LCD. 2. Press the “menu” BUTTON. 3. Check that the MONITOR LCD displays a list of options. 4. Press: • “menu” BUTTON to quit • “review” BUTTON

Checking the Communication

[1] Connect the CAMERA DOCK to the computer with the USB CABLE for the CAMERA DOCK.

[2] Download the images and the video file with the USER SOFTWARE.

[3] Check the quality of the images.

[4] Do “Checking the Connection to the SERVICE SOFTWARE” on Page 63. If successful, the USB interface on the DOCK CONNECTOR is operating correctly.

[5] Remove the CAMERA from the CAMERA DOCK.

[6] Connect the CAMERA to the computer with the USB CABLE for the CAMERA.

[7] Download the 2 images with the USER SOFTWARE. If successful, the USB CONNECTOR on the MCU BOARD is operating correctly.

Checking the Accessories

[1] Disconnect the USB CABLE from the CAMERA.

[2] Connect the VIDEO MONITOR to the CAMERA with the VIDEO CABLE.

[3] If you are not using the internal memory, insert a MEMORY CARD with image files into the CAMERA.

[4] Energize the CAMERA.

[5] Press the “review” BUTTON.

[6] Check that the MONITOR LCD de-energizes and the image displays on the VIDEO MONITOR.

[7] De-energize the CAMERA.

[8] Remove the MEMORY CARD.

[9] Energize the CAMERA.

[10] Check that the green LED next to the VIEWFINDER blinks.

Checking the External Components of the CAMERA

[1] Check the COVERS of the CAMERA for scratches.

[2] If necessary, install new COVERS.

[3] Clean:

- COVERS
- SCREEN on the MONITOR LCD
- VIEWFINDER WINDOW
- FLASH COVER

[4] Check and clean the LENS.

Section 4: Adjustments

MCU BOARD/LENS AY - “Shutter Delay”

Adjustment Specification

Important

Do not use the CAMERA DOCK in this procedure.

Purpose:	To set the parameters for the speed of the SHUTTER.
Do When:	• After installing a new MCU BOARD/LENS AY. • Exposure of the images displayed on the MONITOR LCD is too high or too low.
Specification:	No failure messages display.
Special Tools:	• Computer with a MEMORY CARD READER/WRITER • BATTERY • LIGHT BOX • SD/MMC MEMORY CARDS

Prerequisites:

None

To Check:

You cannot check this adjustment.

To Adjust:

Important

- The C643 CAMERA and MEMORY CARDS are used for the examples in this procedure.
- The procedure can be used for:
  - C643 CAMERA
  - C603 CAMERA
- If you are doing a calibration of the C603 CAMERA, use the correct MASTER CAMERA and MEMORY CARDS made for that CAMERA.

[1] Do Preparing the “C643_C603 Shutter_Delay” MEMORY CARD on Page 71.

[2] Insert:
- new BATTERY with a full charge into the C643 CAMERA
- “C643_C603 Shutter_Delay” MEMORY CARD into the CAMERA

[3] Set the LIGHT BOX to LV15.

[4] Place the center of the LENS against the screen of the LIGHT BOX.

[5] Rotate the MODE DIAL to “AUTO” to execute the test.

[6] If the MONITOR LCD displays “Date and time have been reset”, select “CANCEL”.

[7] When the test is completed, check that the MONITOR LCD displays “Shutter Calibrate OK”.

[8] De-energize the CAMERA.

[9] Remove the MEMORY CARD from the CAMERA.

Postrequisites:

None

MASTER CAMERA - “Calibration of the MASTER CAMERA”

Adjustment Specification

Important

Do not use the CAMERA DOCK in this procedure.

Purpose:	To set the values for Automatic White Balance, ISO, and ID of the MASTER CAMERA.
Do When:	Before calibrations of this type of CAMERA.
Specification:	No failure messages display.
Special Tools:	• Computer with a MEMORY CARD READER/WRITER • BATTERY • LIGHT BOX • SD/MMC MEMORY CARDS

Prerequisites:

[1] Do MCU BOARD/LENS AY - “Shutter Delay” on Page 36.

To Check:

You cannot check this adjustment.

To Adjust:

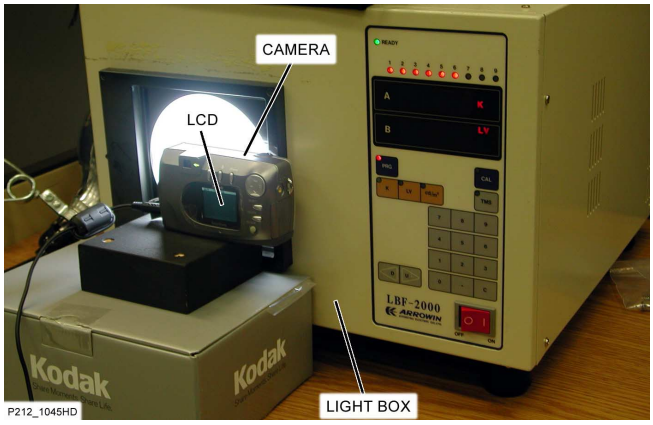
Important

- The C643 CAMERA and MEMORY CARDS are used for the examples in this procedure.
- The procedure can be used for:
  - C643 CAMERA
  - C603 CAMERA
- If you are doing a calibration of the C603 CAMERA, use the correct MASTER CAMERA and MEMORY CARDS made for that CAMERA in the procedure in Step 1.

[1] Do Preparing the “C643_C603 Master Camera” MEMORY CARD on Page 68.

[2] Insert:

- new BATTERY with a full charge into a MASTER CAMERA for the C643 CAMERA
- “C643_C603 Master Camera” MEMORY CARD into the CAMERA



[3] Place the CAMERA in front of the LIGHT BOX.
- The LENS must be within 3 mm (0.1 in.) of the screen, but not touching the screen of the LIGHT BOX.
- The center of the LENS must be placed in the center of the light.

[4] Set the LIGHT BOX to LV10.

[5] Rotate the MODE DIAL to “AUTO” to execute the test.

[6] If the MONITOR LCD displays “Date and time have been reset”, select “CANCEL”.

[7] When the test is completed, check that the MONITOR LCD displays “Big LB OK”.

[8] De-energize the CAMERA.

Important

You must use the same LIGHT BOX when using this MEMORY CARD for calibration of other C643 CAMERAS.

[9] Remove the MEMORY CARD.

[10] Check that the following 4 additional files were written on the MEMORY CARD:
- “BIG_LAMP.fig”
- “BoxID_ref.fig”
- “CameraID_ref.fig”
- “K_RESULT.txt”

[11] Do Step 2 to Step 6 again.

[12] When the test is completed, check that the MONITOR LCD displays “Small LB OK”.

[13] De-energize the CAMERA.

[14] Remove the MEMORY CARD.

[15] Check that the following 2 additional files were written on the MEMORY CARD:
- “CamerID_ref.fig”
- “Small_LAMP.fig”

Note

These 6 files are necessary before you do Preparing the “C643_C603 AWB_ISO_DBP” MEMORY CARD on Page 65.

[16] If the MONITOR LCD displays a failure message, do the correction:

Failure	Cause	Correction
“W/O Shutter K”	The calibration of the SHUTTER was not correct.	Do: 1. “Preparing the “C643_C603 Shutter_Delay” MEMORY CARD” on Page 71 2. Preparing the “C643_C603 Master Camera” MEMORY CARD on Page 68 again
“Memory Fail”	An occasional failure occurred during a test of the memory.	1. Do Preparing the “C643_C603 Master Camera” MEMORY CARD on Page 68 again. 2. If the message occurs again, check the hardware.
“ISO Cal Fail”	A failure occurred during the calibration.	1. Check: • LIGHT BOX • LV value 2. Do Preparing the “C643_C603 Master Camera” MEMORY CARD on Page 68 again.

Postrequisites:

None

CCD - “AWB/ ISO/DBP”

Adjustment Specification

Important

Do not use the CAMERA DOCK in this procedure.

Purpose:	To set the values for Automatic White Balance, ISO, and ID of the CAMERA.
Do When:	After installing a new MCU BOARD/LENS AY.
Specification:	The failure message does not display.
Special Tools:	• Computer with a MEMORY CARD READER/WRITER • BATTERY • LIGHT BOX • SD/MMC MEMORY CARDS

Prerequisites:

[1] Do MASTER CAMERA - “Calibration of the MASTER CAMERA” on Page 38.

To Check:

You cannot check this adjustment.

To Adjust:

Important

- The C643 CAMERA and MEMORY CARDS are used for the examples in this procedure.
- The procedure can be used for:
  - C643 CAMERA
  - C603 CAMERA
- You will need the files made from the procedure MASTER CAMERA - “Calibration of the MASTER CAMERA” on Page 38.

[1] Do “Preparing the “C643_C603 AWB_ISO_DBP” MEMORY CARD” on Page 65.

[2] Make a copy of the following files from the “C643_C603 Master Camera” MEMORY CARD:

- “BIG_LAMP.fig”
- “BoxID_ref.fig”
- “CameraID_ref.fig”
- “K_RESULT.txt”
- “CamerID_ref.fig”
- “Small_LAMP.fig”

[3] Place these 6 files in the folder “Batch” on the “C643_C603 AWB_ISO_DBP” MEMORY CARD.

[4] Insert:

- new BATTERY with a full charge into a C643 CAMERA
- “C643_C603 AWB_ISO_DBP” MEMORY CARD into the CAMERA

[5] Set the LIGHT BOX to:

- LV10
- color temperature 5800 K

[6] Place the center of the LENS against the screen of the LIGHT BOX.

[7] Rotate the MODE DIAL to “AUTO” to execute the test.

[8] If the MONITOR LCD displays “Date and time have been reset”, select “CANCEL”.

[9] When the test is completed, check that the MONITOR LCD displays “ISO Cal OK”.

Note

The result file “K_RESULT.TXT” is written to the MEMORY CARD.

[10] De-energize the CAMERA.

[11] Remove the MEMORY CARD from the CAMERA.

[12] If the MONITOR LCD displays the failure message “ISO Cal Fail”:

- open the file “K_RESULT.TXT” to obtain the type of failure
- do the necessary correction

Failure	Cause	Correction
“W/O Shutter K”	The calibration of the SHUTTER was not correct.	Do: 1. MCU BOARD/LENS AY - “Shutter Delay” on Page 36 2. CCD - “AWB/ ISO/DBP” on Page 40 again
“Memory Fail”	An occasional failure occurred during a test of the memory.	1. Do CCD - “AWB/ ISO/DBP” on Page 40 again. 2. If the message occurs again, check the hardware.
“ISO Cal Fail”	A failure occurred during the calibration.	1. Check: • LIGHT BOX • LV value 2. Do CCD - “AWB/ ISO/DBP” on Page 40 again.

Postrequisites:

None

Auto Focus - “EFA”

Adjustment Specification

Important

Do not use the CAMERA DOCK in this procedure.

Purpose:	To set the values for Automatic Focus.
Do When:	After installing a new: • MCU BOARD/LENS AY • LENS AY
Specification:	The message “OK” displays on the MONITOR LCD.
Special Tools:	• Computer with a MEMORY CARD READER/WRITER • BATTERY • INFINITY COLLIMATOR VC-1100 • SD/MMC MEMORY CARDS

Prerequisites:

[1] Do MASTER CAMERA - “Calibration of the MASTER CAMERA” on Page 38.

To Check:

You cannot check this adjustment.

To Adjust:

Important

- The procedure can be used for:
  - C643 CAMERA
  - C603 CAMERA
- If you are doing a calibration of the C603 CAMERA, use the correct MASTER CAMERA and MEMORY CARDS made for that CAMERA.

[1] Do “Preparing the “C643_C603 EFA” MEMORY CARD” on Page 67.

[2] Make a copy of the following files from the “C643_C603 Master Camera” MEMORY CARD:
- “BIG_LAMP.fig”
- “BoxID_ref.fig”
- “CameraID_ref.fig”
- “K_RESULT.txt”
- “CamerID_ref.fig”
- “Small_LAMP.fig”

[3] Place these 6 files in the folder “Batch” on the “C643_C603 EFA” MEMORY CARD.

[4] Insert:
- AC ADAPTER in the CAMERA
- “C643_C603 EFA” MEMORY CARD into the CAMERA

[5] Place the CAMERA on the CAMERA HOLDER in the INFINITY COLLIMATOR.

[6] Rotate the MODE DIAL to “AUTO”.

[7] If the MONITOR LCD displays “Date and time have been reset”, select “CANCEL”.

[8] Press the SHUTTER BUTTON to execute the test.

[9] Check that the test runs 6 times.

[10] When the test is completed, check that the MONITOR LCD displays “OK”.

[11] De-energize the CAMERA.

[12] Remove the MEMORY CARD from the CAMERA.

[13] Did the MONITOR LCD display the failure message “NG”?

Yes	No
a. Install a new LENS AY AND MCU BOARD. b. Do Step 4 - Step 12 again. c. If the MONITOR LCD displayed the failure message “NG” again, install a new POWER BOARD AND FRAME AY. d. Do Step 4 - Step 12 again.	Continue with Step 14.

[14] Capture some images at a variation of zoom positions of the LENS.

[15] Review the images on the MONITOR LCD.

[16] Check that the images are not too dark or too light.

[17] Press the “T” BUTTON to increase the magnification of the images to the maximum.

[18] Check that the images on the MONITOR LCD are in focus.

Postrequisites:

None

Section 5: Replacements

Important
You must see the “Equipment Parts” on Page 10 for all parts information.

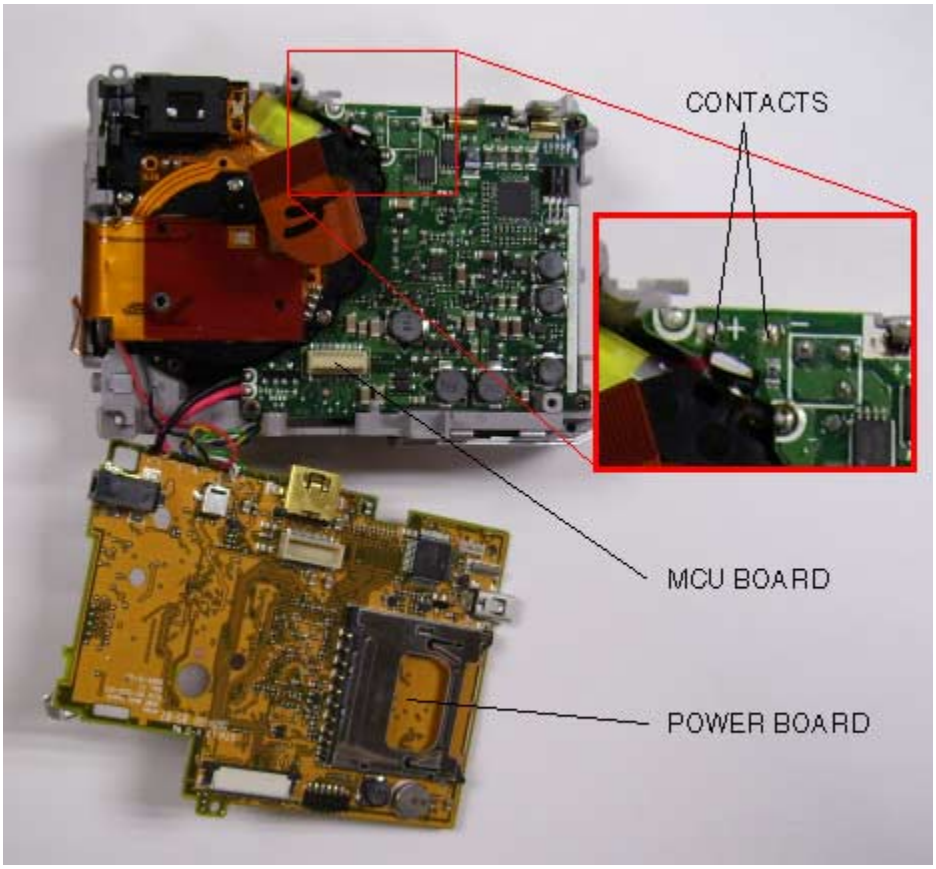
POWER BOARD AND FRAME AY

Prerequisites:

None

To Remove:

Caution
To prevent injury, you must do a discharge of the CAPACITOR.



[1] Before removing the POWER BOARD, do a discharge of the CAPACITOR across the CONTACTS on the MCU BOARD.

[2] See “LENS AY AND MCU BOARD, POWER BOARD AND FRAME AY, SHUTTER BOARD” on Page 13 for the parts diagram.

To Install:

Important

You must do this procedure when you do a replacement of the POWER BOARD AND FRAME AY.

[1] Compare the serial number of the CAMERA with the “Beginning Serial Number”:

CAMERA	Beginning Serial Number
C643	KCGFN61713506
C603	KCGFP61901199

[2] Is the serial number the same or higher than the “Beginning Serial Number”?

No	Yes
Continue with Step 3.	1. Install a new POWER BOARD AND FRAME AY. 2. Advance to Step 7.

[3] Remove the RESISTOR R13 from the new replacement POWER BOARD AND FRAME AY.

Note

See “POWER BOARD - 2 of 2” on Page 94 to locate the RESISTOR R13.

[4] Discard the RESISTOR R13.

[5] Remove the RESISTOR R13 from the old POWER BOARD AND FRAME AY.

[6] Install:

- RESISTOR R13 on the new POWER BOARD AND FRAME AY
- new POWER BOARD AND FRAME AY

[7] Assemble the CAMERA.

Postrequisites:

None

MONITOR LCD

Prerequisites:

None

To Remove:

Caution

To prevent injury, you must do a discharge of the CAPACITOR - see Step 1 in **To Remove:** for the “POWER BOARD AND FRAME AY” on Page 44.

[1] See “MONITOR LCD” on Page 12 for the parts diagram.

To Install:

Important

You must do this procedure when you do a replacement of the MONITOR LCD.

[1] Compare the serial number of the CAMERA with the “Beginning Serial Number”:

CAMERA	Beginning Serial Number
C643	KCGFN61713506
C603	KCGFP61901199

[2] Is the serial number the same or higher than the “Beginning Serial Number”?

No	Yes
Continue with Step 3.	1. Install a new MONITOR LCD. 2. Advance to Step 5.

[3] Remove:

- MONITOR LCD
- POWER BOARD AND FRAME AY

Important

See the replacement procedure for the “POWER BOARD AND FRAME AY” on Page 44.

[4] Install a new:

- POWER BOARD AND FRAME AY
- MONITOR LCD

[5] Assemble the CAMERA.

[6] Do Preparing the “C643_C603 Monitor LCD” MEMORY CARD on Page 69.

[7] Insert the “C643_C603 Monitor LCD” MEMORY CARD in the CAMERA.

[8] Energize the CAMERA.

[9] Check that the MONITOR LCD displays the message “Script Loading... Run...”.

[10] Capture an image.

[11] Check the quality of the image displayed on the MONITOR LCD.

Postrequisites:

None

MCU BOARD

Prerequisites:

None

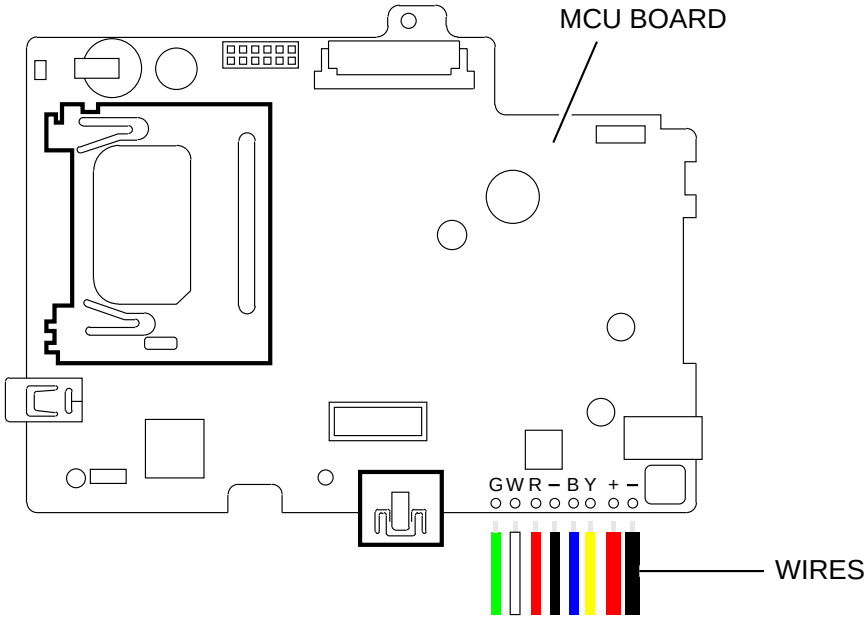
To Remove:

Caution

To prevent injury, you must do a discharge of the CAPACITOR - see Step 1 in **To Remove:** for the "POWER BOARD AND FRAME AY" on Page 44.

[1] See LENS AY AND MCU BOARD, POWER BOARD AND FRAME AY, SHUTTER BOARD on Page 13 for the parts diagram.

To Install:



P273_1006BCA
P273_1006BC

Important

You must install the large red and black wires on the right.

[1] Solder each WIRE at the correct CONTACT on the MCU BOARD:

CONTACT	Size of WIRE	Color of WIRE
G	small	green
W	small	white
R	small	red
–	small	black
B	small	blue
Y	small	yellow
+	large	red
–	large	black

Postrequisites:

None

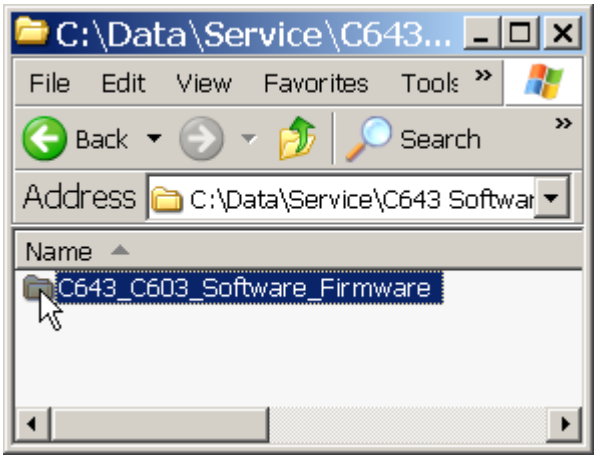
Section 6: Additional Service Procedures

Downloading the Files from the Partner Site

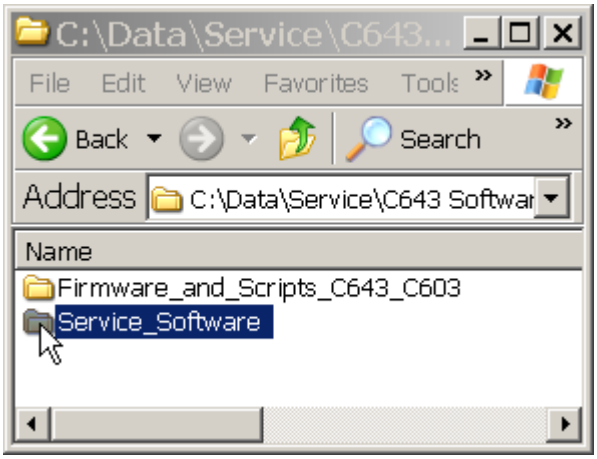
[1] From the Kodak Partner site, download the software and firmware files from *Kodak EasyShare* C643_C603_ ZOOM DIGITAL CAMERA_Software_and_Firmware.

[2] Right-click the “C643_C603_Software_Firmware.zip” file.

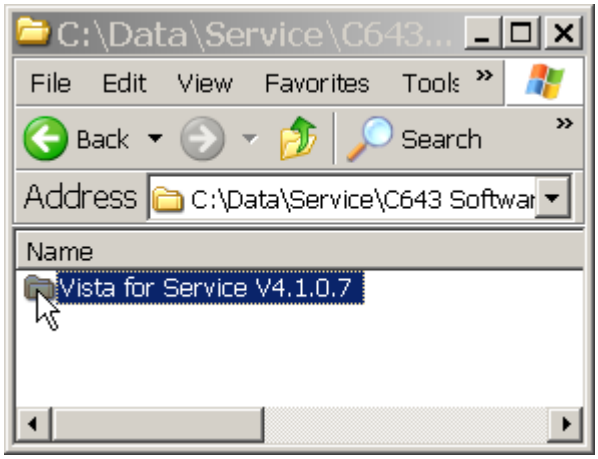
[3] Select **WinZip>Extract to here**.



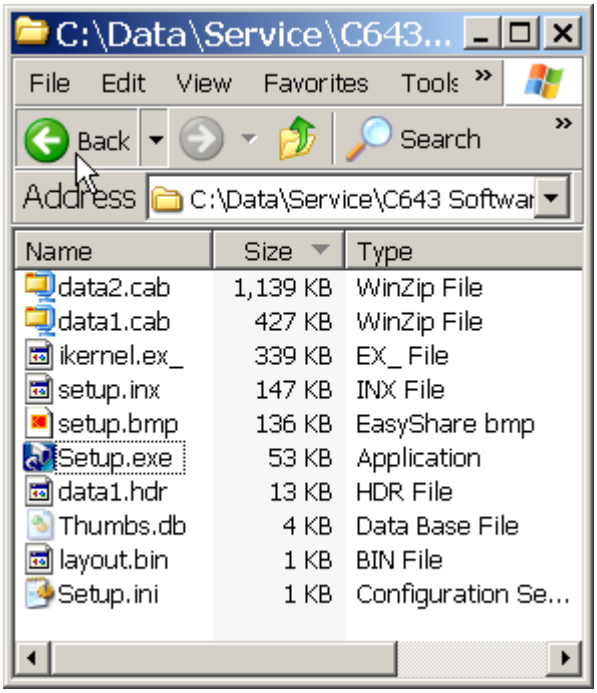
[4] Open the folder “C643_C603_Software_Firmware”.



[5] Open the folder “Service_Software”.

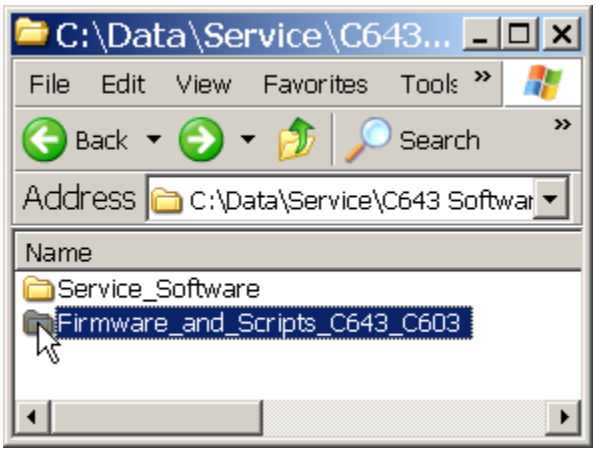


[6] Open the folder “Vista for Service V4.1.0.7”.

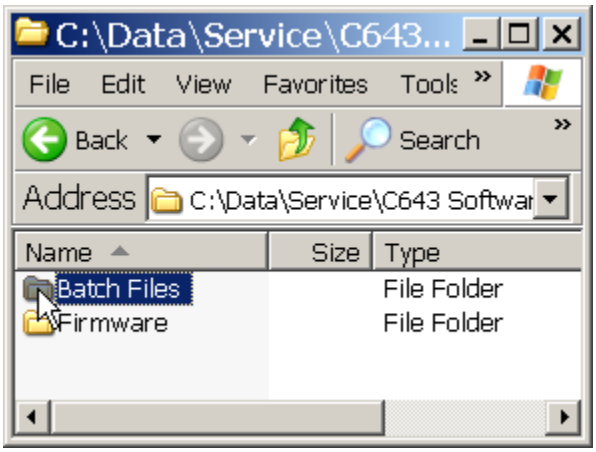


[7] Check for the 10 files.

[8] Click [Back] 2 times.

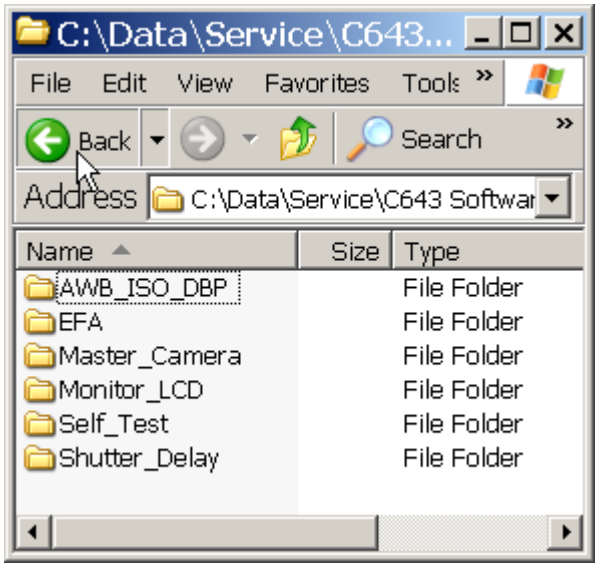


[9] Open the folder "Firmware_and_Scripts_C643_C603".



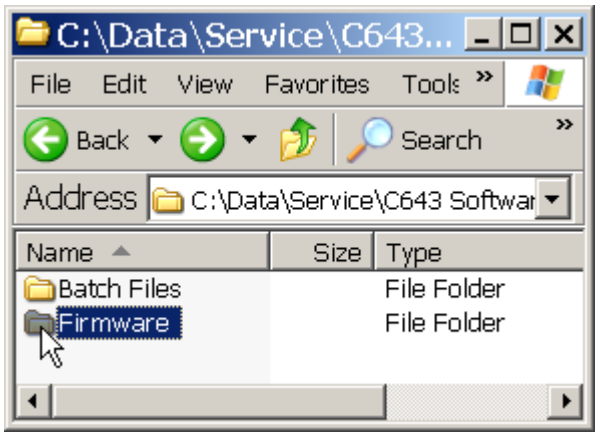
[10] Check for the 2 folders.

[11] Open the folder "Batch Files".

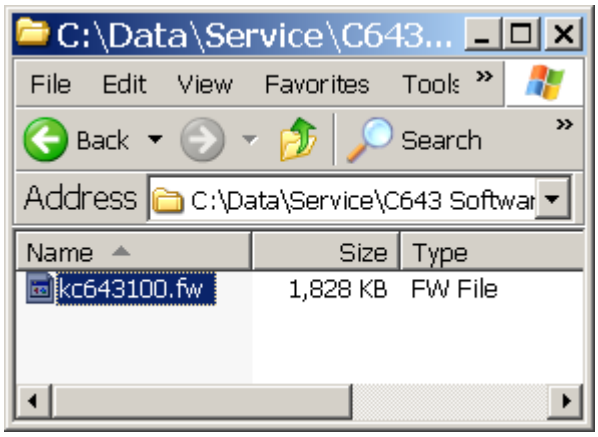


[12] Check for 6 folders.

[13] Click [Back].



[14] Open the folder “Firmware”.



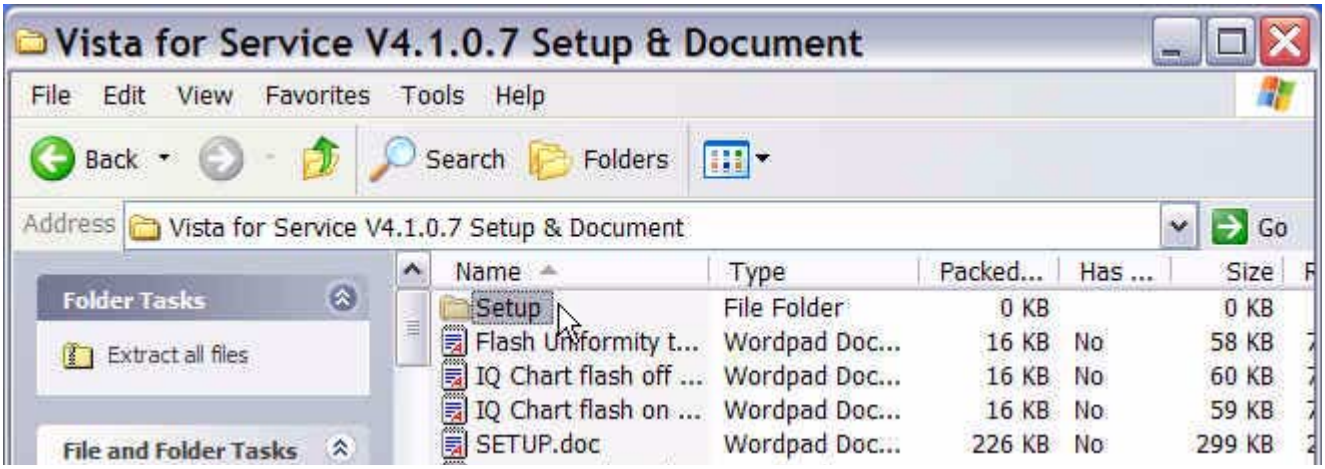
[15] Check for the firmware file.

Installing the *Altek Vista* SERVICE SOFTWARE on the Computer

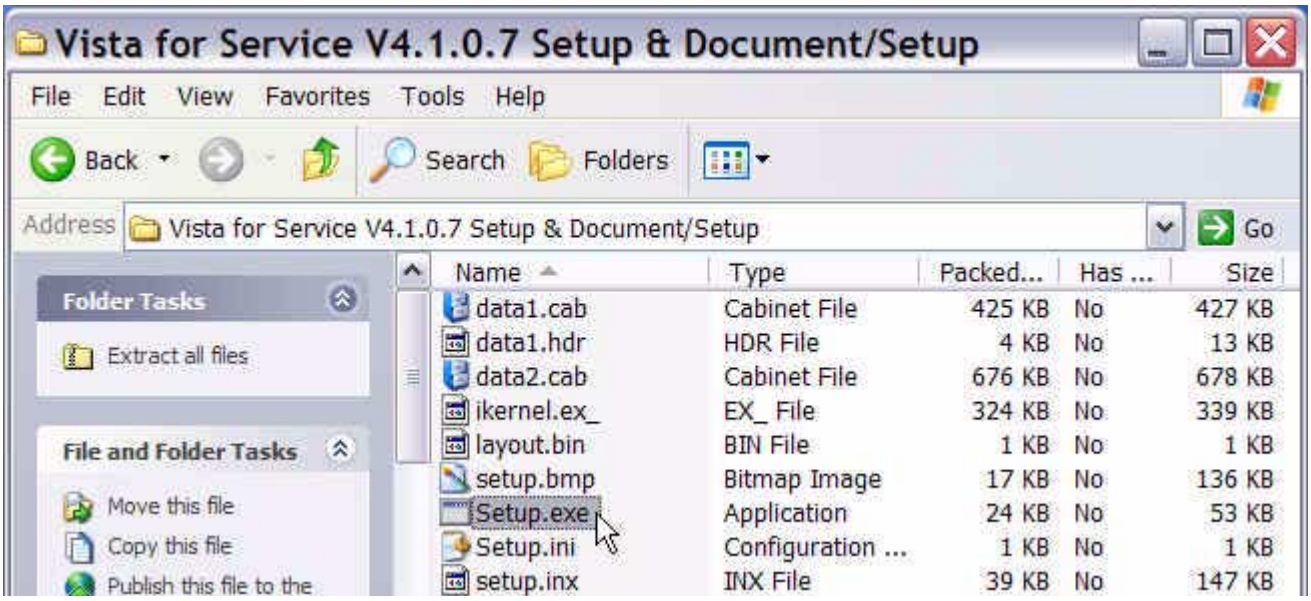
Important

Microsoft Windows XP OPERATING SYSTEM is necessary for the correct operation of the SERVICE SOFTWARE.

[1] Open the folder “Vista for Service”.



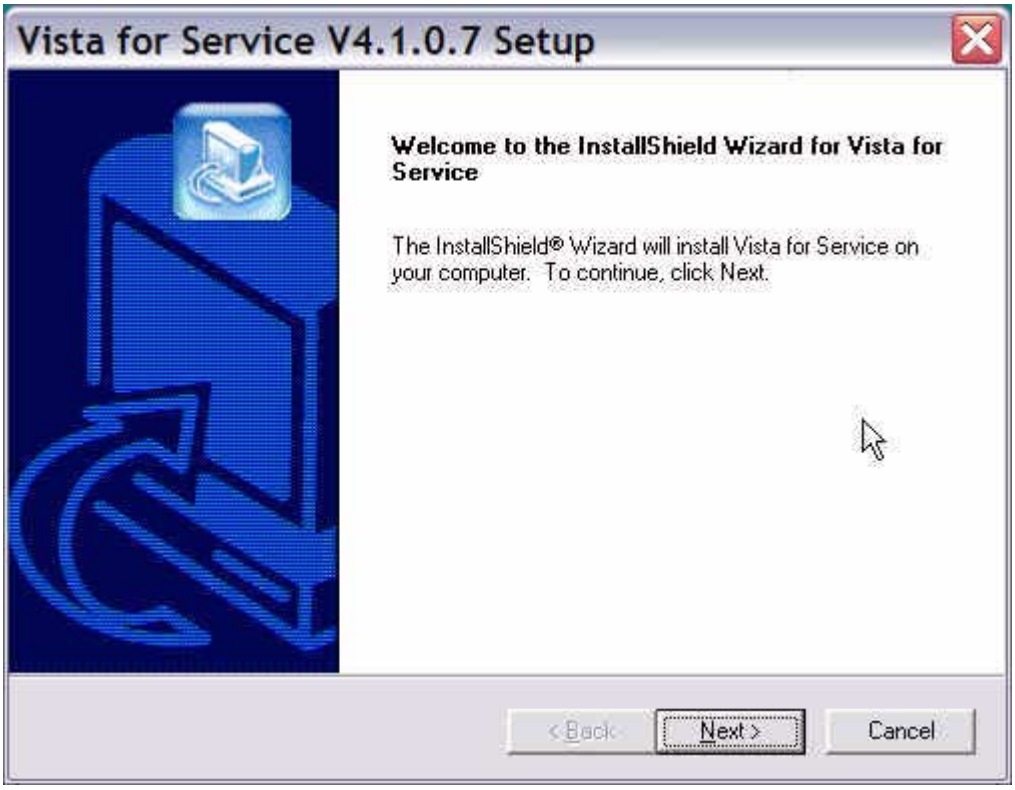
[2] Open the folder “Setup”.



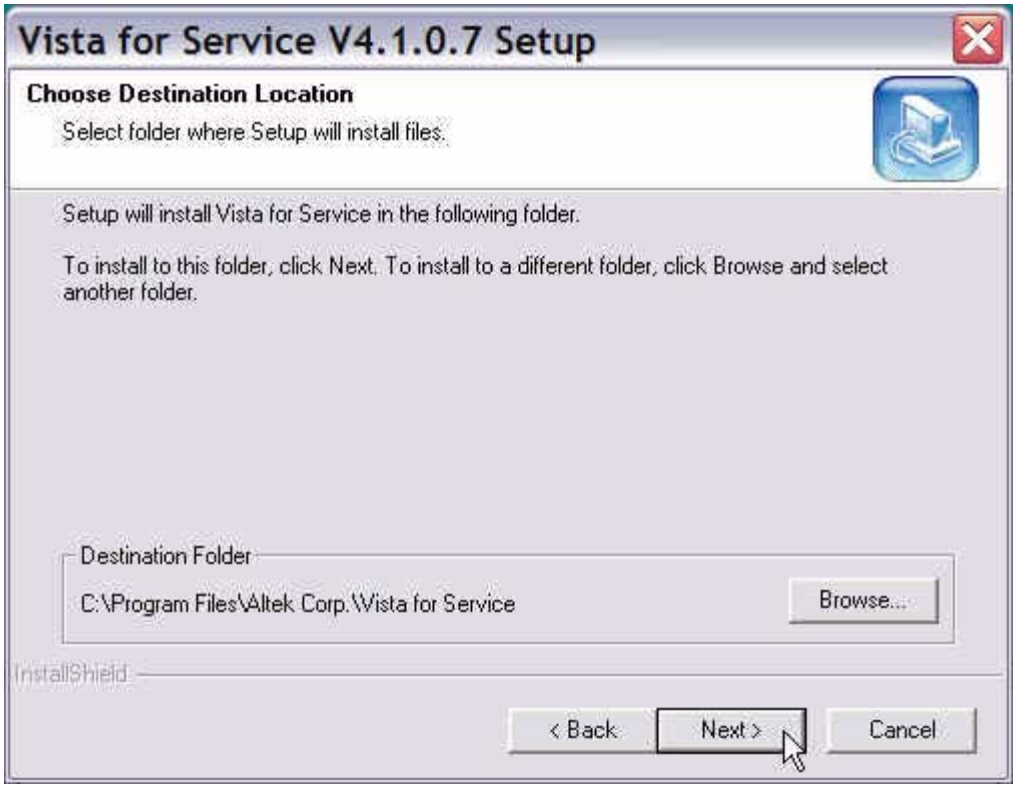
[3] Double-click “Setup.exe”.

[4] Wait until:

- this window is complete
- the next window displays

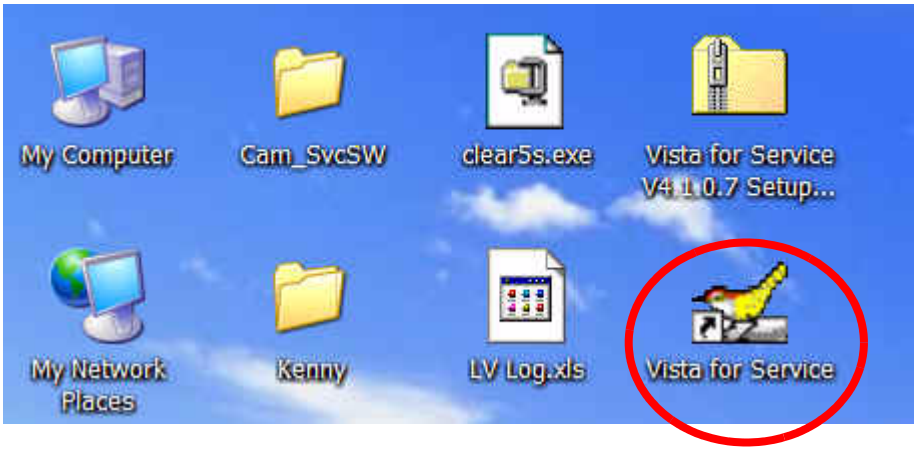


[5] Click [Next>].



[6] After selecting a folder, click [Next>].

[7] Click [Yes].



[8] Check that an icon for the “Vista for Service” appears on the computer screen.

[9] Connect the CAMERA to the computer with the USB CABLE.

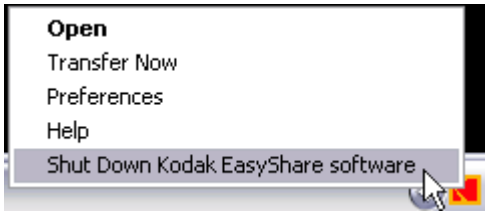
[10] Energize the CAMERA.

[11] Check that the *Kodak EasyShare* SOFTWARE detects the CAMERA.

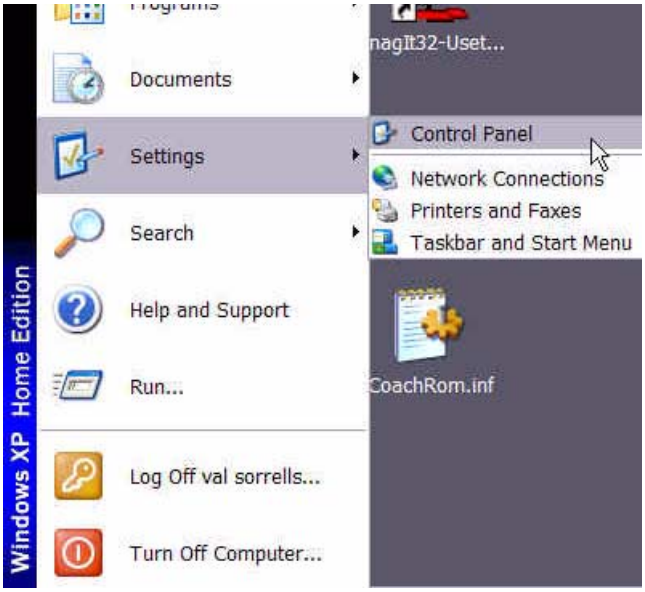
[12] Click:

- [Cancel] at the “Transfer” window
- [Exit]

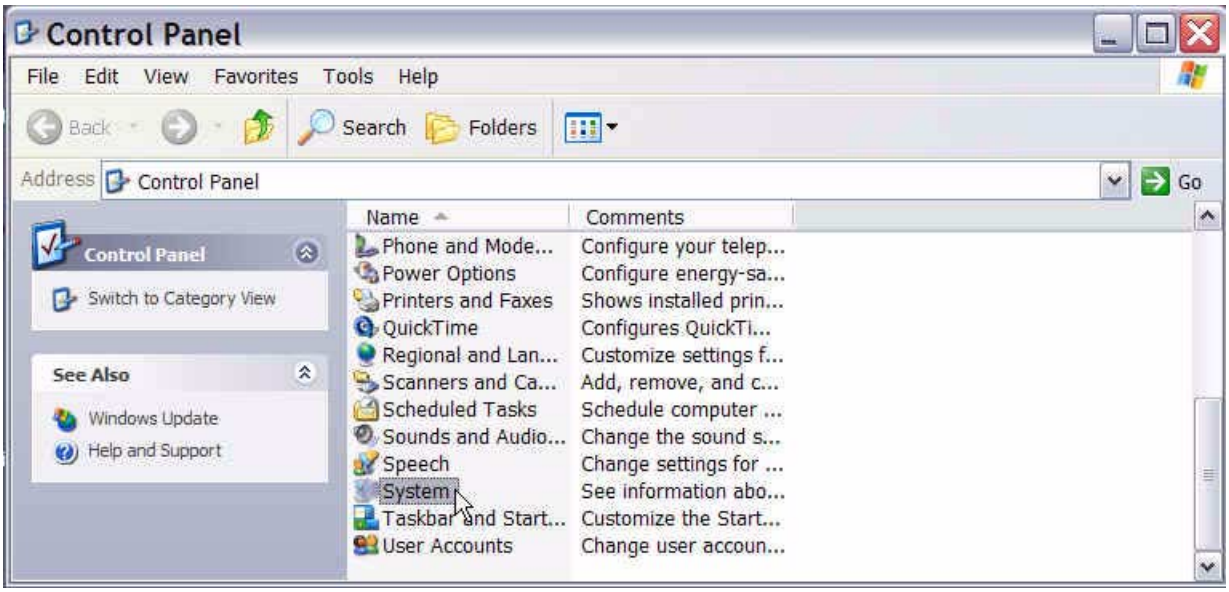
[13] At the lower right edge of the computer screen, right-click on the “Kodak” icon.



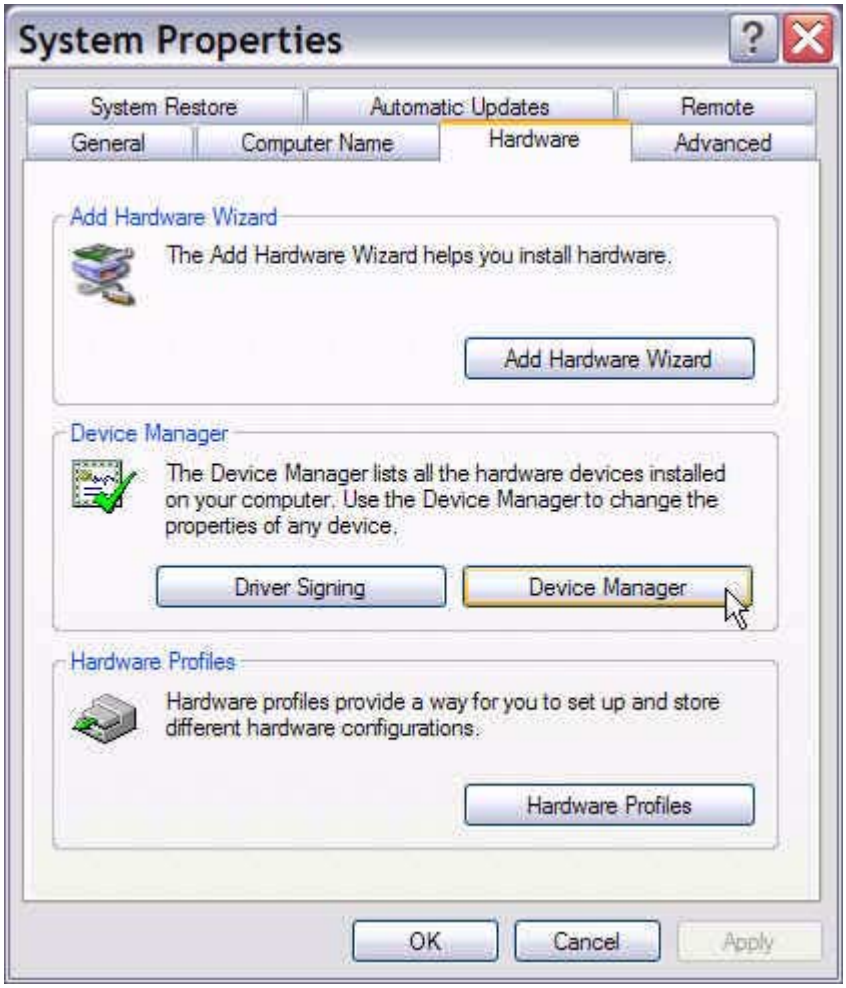
[14] Select “Shut Down Kodak EasyShare software”.



[15] Select **Start>Settings>Control Panel.**

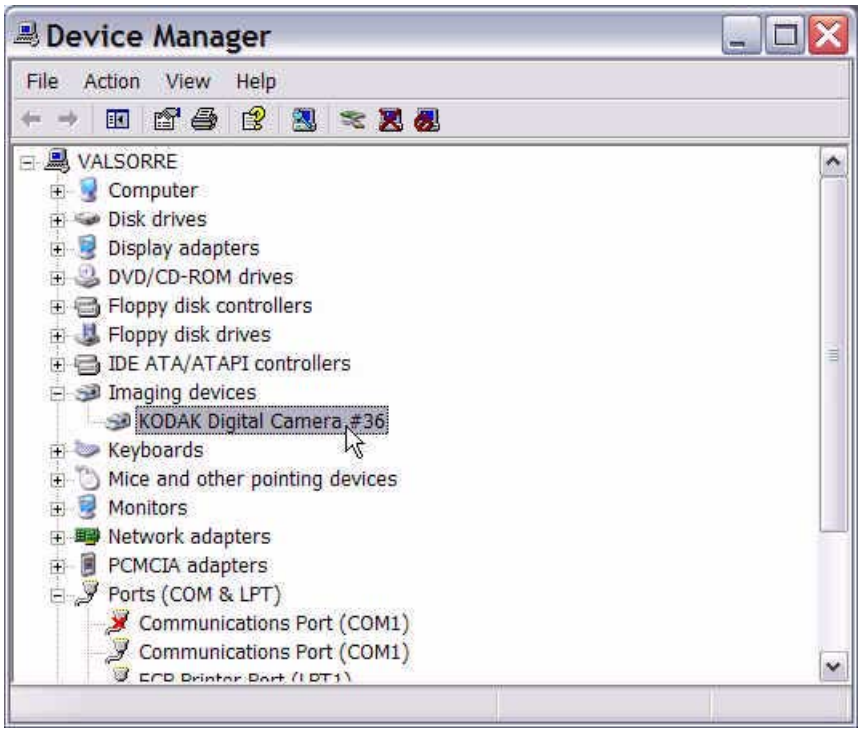


[16] Double-click “System”.



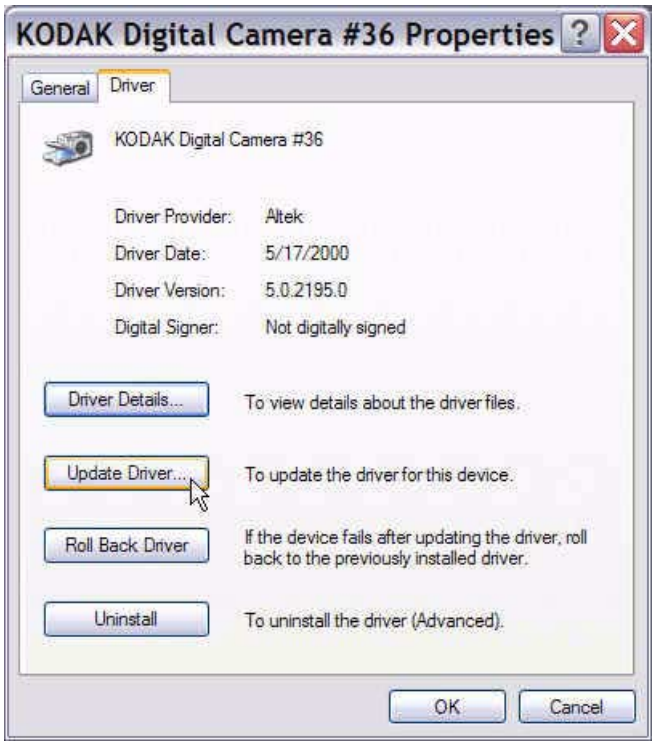
[17] At the “System Properties” window, select the “Hardware” tab.

[18] Click [Device Manager].



[19] Double-click:

- "Imaging devices"
- "KODAK Digital Camera"



[20] Click [Update Driver...].

[21] Select “Install from a list or specific location (Advanced)”.

[22] Click [Next].

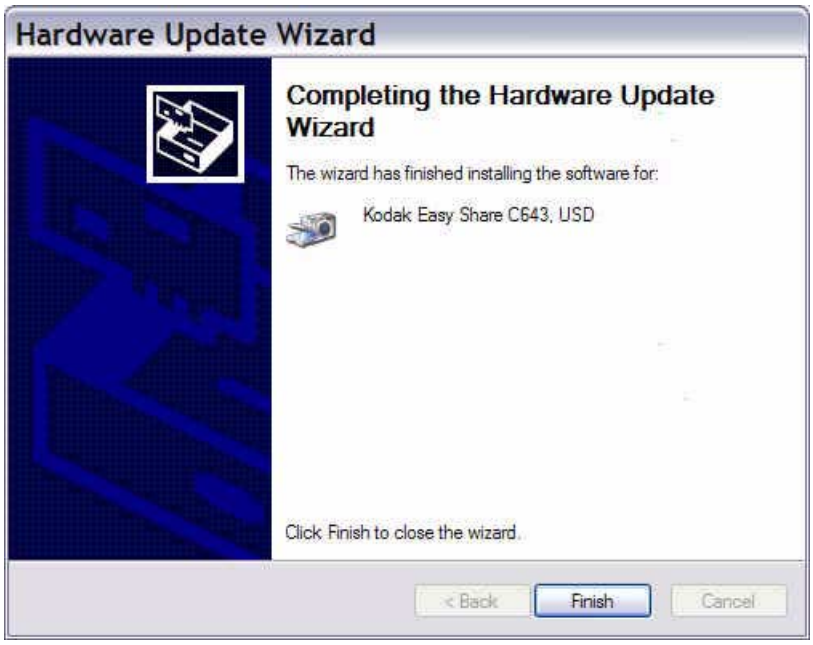
[23] Select “Don’t search. I will choose the driver to install”.

[24] Click [Next].

[25] Select “Kodak Easy Share C643, USD”.

[26] Click [Next].

[27] Click [Continue Anyway].



[28] Click [Finish].

[29] Close all windows.

[30] De-energize the CAMERA.

[31] Remove the USB CABLE from the CAMERA.

[32] Double-click the “Vista for Service” icon.

[33] To energize the CAMERA:

- press and hold
  - “delete” BUTTON
  - “T” TELE BUTTON
- rotate MODE DIAL to “AUTO”

[34] Install the USB CABLE to the CAMERA.

[35] Continue with “Doing the Configuration of the SERVICE SOFTWARE” on Page 60.

Doing the Configuration of the SERVICE SOFTWARE

Important

You must do this procedure only once.

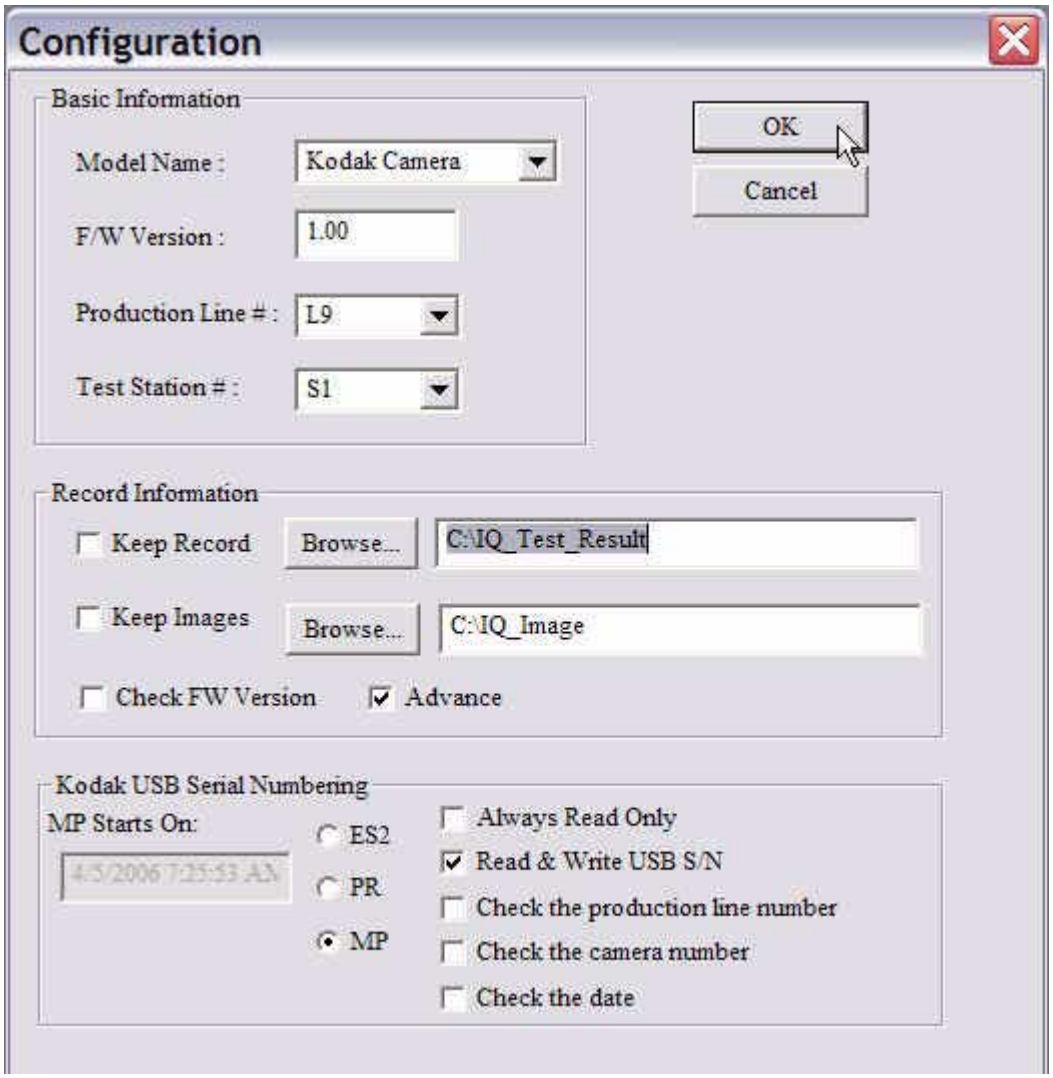
[1] Double-click the “Vista for Service” icon.

[2] Click [OK].

[3] Select **Settings>Password...**

[4] Click [OK].

[5] Select **Settings>Configuration...**

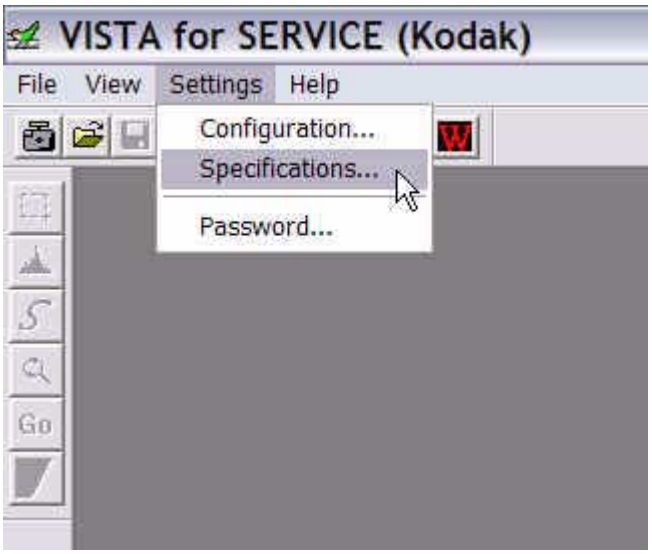


[6] Check that the information in the fields on this screen match the graphic.

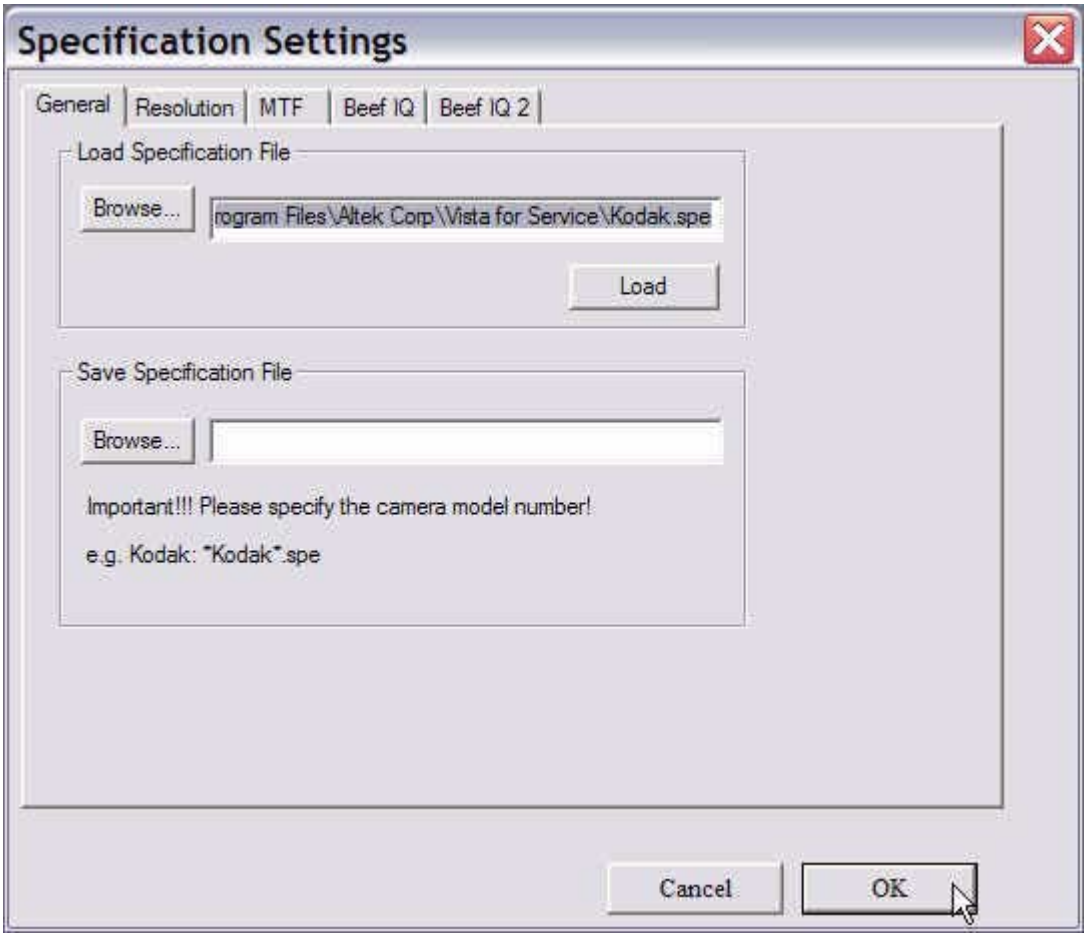
Note

If the information is not the same, you must enter the information to match the graphic.

[7] Click [OK].



[8] Select **Settings>Specifications...**



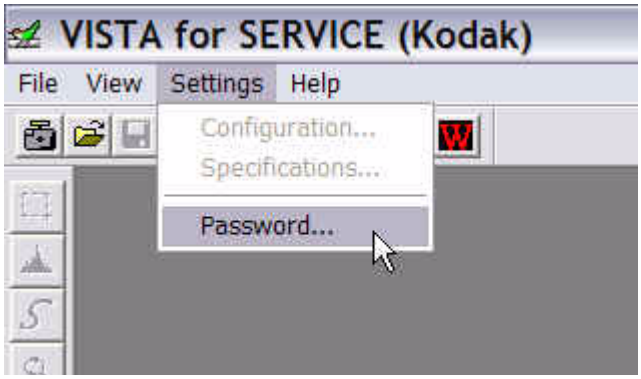
[9] Check that the path for the file “kodak.spe” is **C:\Program Files\Altek Corp\Vista for Service\Kodak.spe**.

[10] Click [OK].

[11] De-energize the CAMERA.

[12] Disconnect the USB CABLE from the CAMERA.

Checking the Connection to the SERVICE SOFTWARE



[1] Double-click the “Vista for Service” icon.

[2] Select **Settings>Password**.

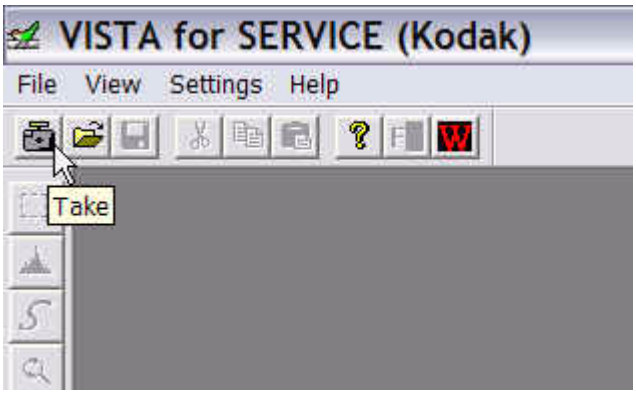
[3] Click [OK].

[4] At the same time, press and hold:

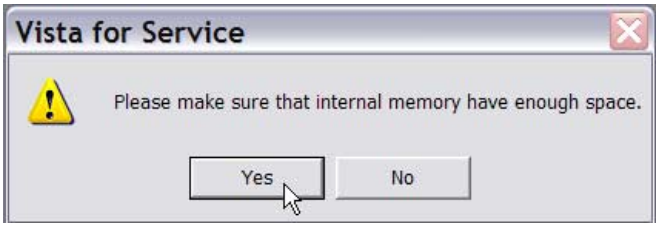
- “review” BUTTON
- “T” TELE BUTTON

[5] Rotate the MODE DIAL to “AUTO” to energize the CAMERA.

[6] Check that the green LED next to the VIEWFINDER on the CAMERA blinks.



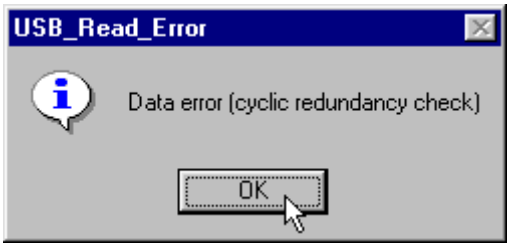
[7] Click the “Take” icon.



[8] Click [Yes].

[9] If no errors display:

- de-energize the CAMERA
- disconnect the USB CABLE from the CAMERA
- continue with “Checking for Uniform Flash” on Page 25



[10] If any of the error windows appear when you run the SERVICE SOFTWARE:

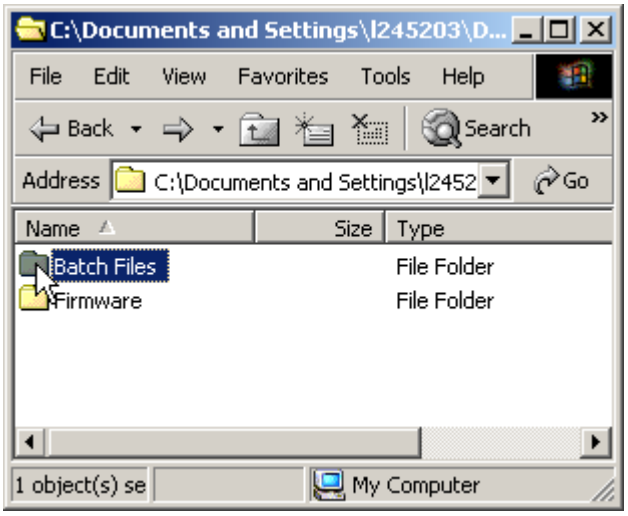
- Click [OK].
- Do "Checking the Connection to the SERVICE SOFTWARE" on Page 63 again.
- Check:
  - CAMERA is energized
  - connections for the USB CABLE
  - connections for the AC ADAPTER
  - connections the CAMERA DOCK
  - see "Installing the Altek Vista SERVICE SOFTWARE on the Computer" on Page 51

Preparing the MEMORY CARDS for Service

Important

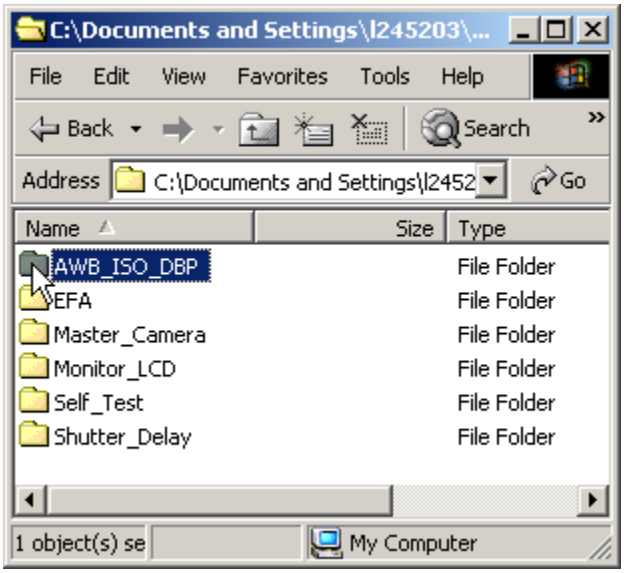
- You will need 6 blank MEMORY CARDS.
- The prepared MEMORY CARDS can be used for either:
  - *EasyShare* C643 ZOOM DIGITAL CAMERA
  - *EasyShare* C603 ZOOM DIGITAL CAMERA

Preparing the “C643_C603 AWB_ISO_DBP” MEMORY CARD

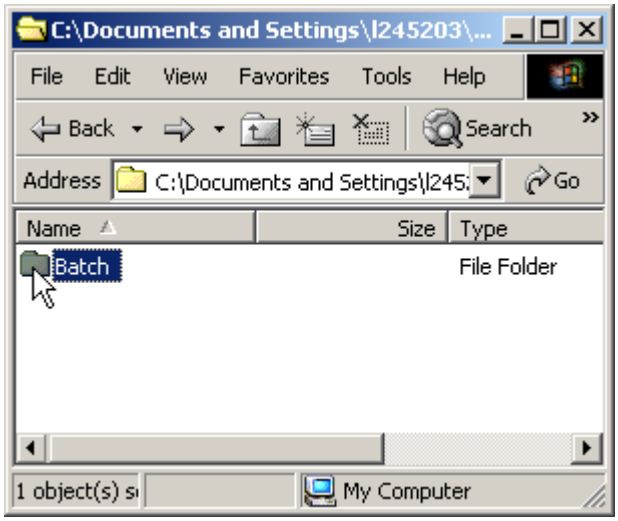


[1] Open the folders:

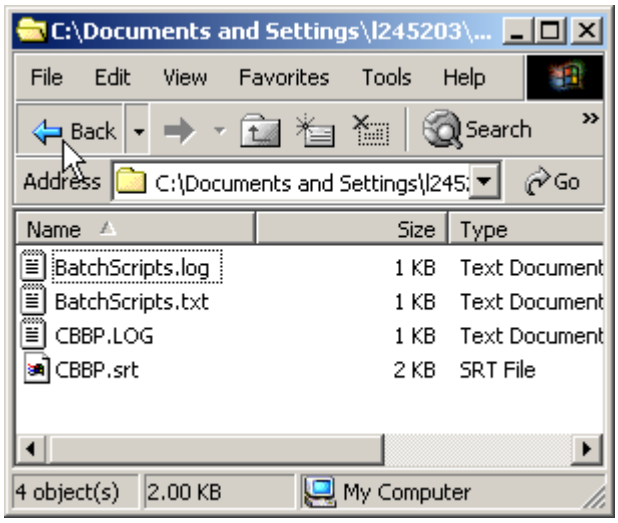
- “Firmware_and_Scripts_C643_C603”
- “Batch_Files”



[2] Open the folder “AWB_ISO_DBP”.



[3] Open the folder “Batch”.



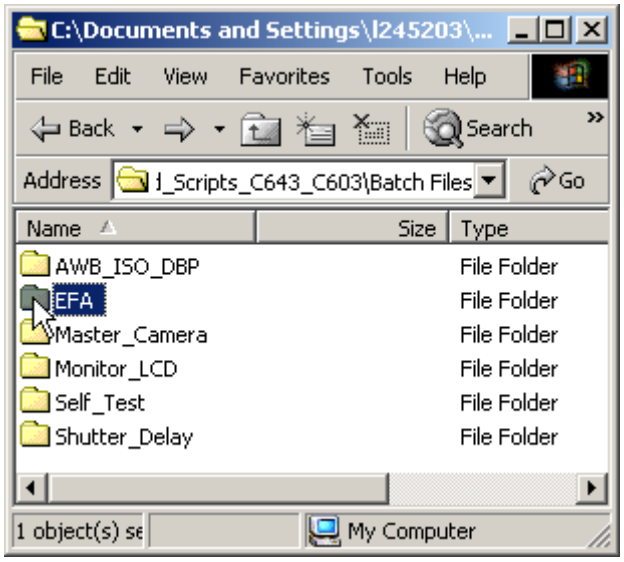
[4] Check for 4 files.

[5] Click [Back].

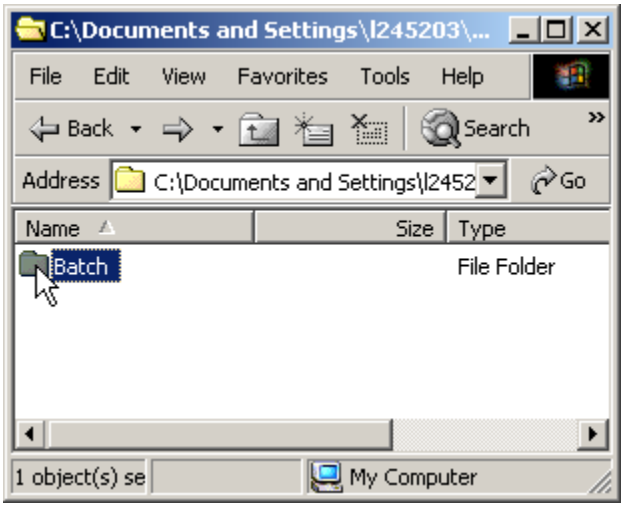
[6] Make a copy of the folder “Batch” to a blank MEMORY CARD.

[7] Label the MEMORY CARD “C643_C603 AWB_ISO_DBP”.

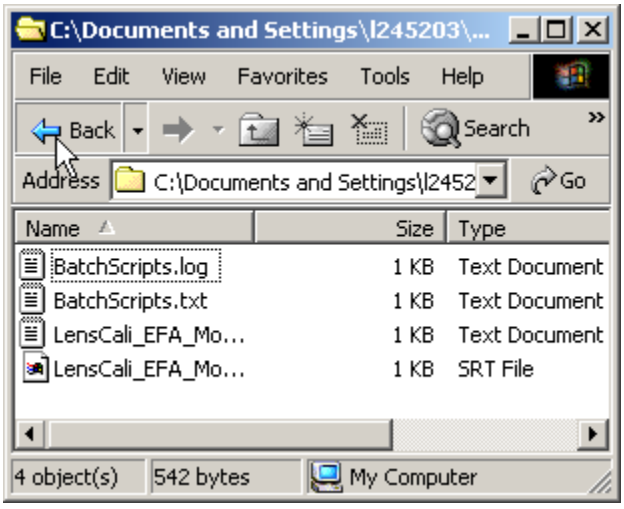
Preparing the “C643_C603 EFA” MEMORY CARD



[1] Open the folder “EFA”.



[2] Open the folder “Batch”.



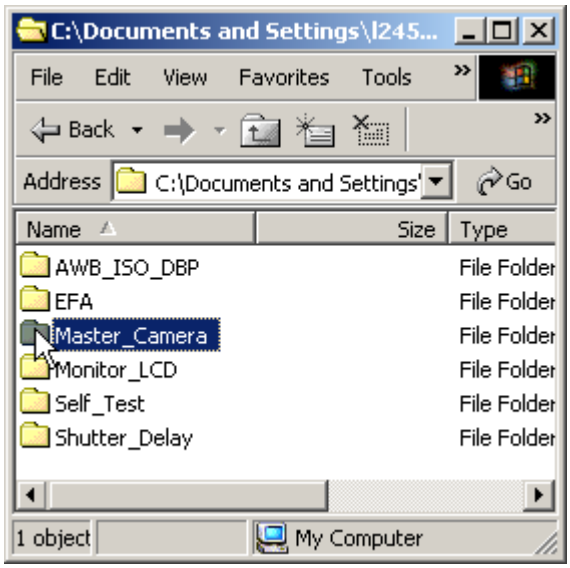
[3] Check for 4 files.

[4] Click [Back].

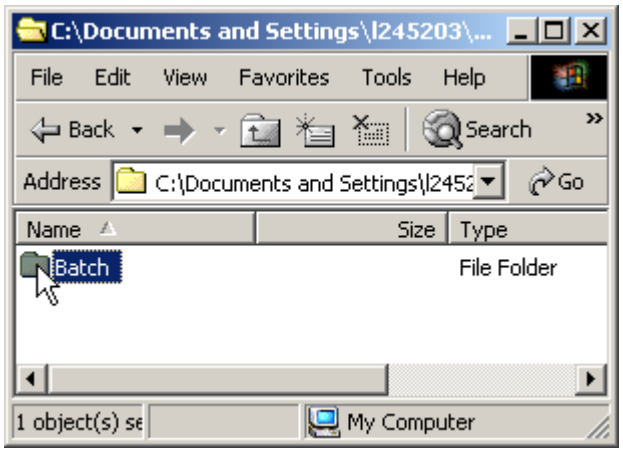
[5] Make a copy of the folder “Batch” to a blank MEMORY CARD.

[6] Label the MEMORY CARD “C643_C603 EFA”.

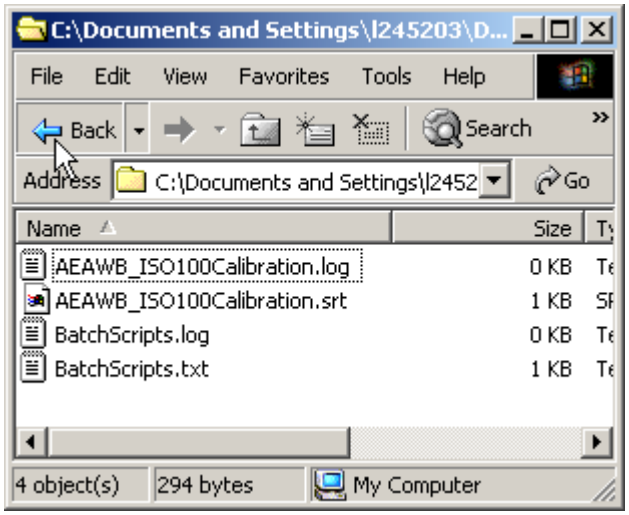
Preparing the “C643_C603 Master Camera” MEMORY CARD



[1] Open the folder “Master Camera”.



[2] Open the folder “Batch”.



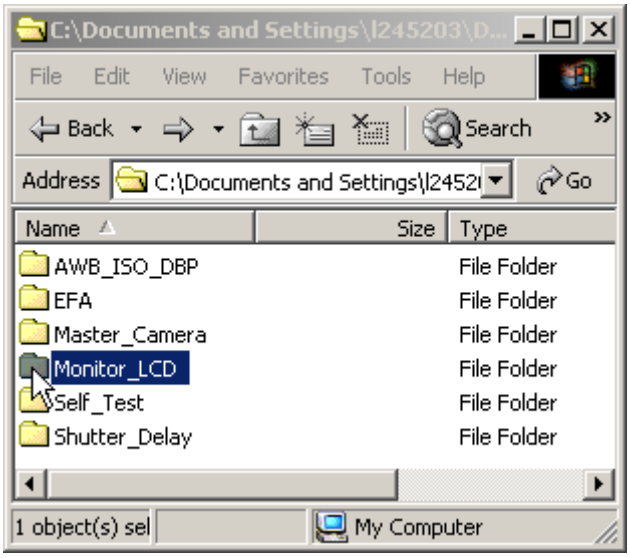
[3] Check for 4 files.

[4] Click [Back].

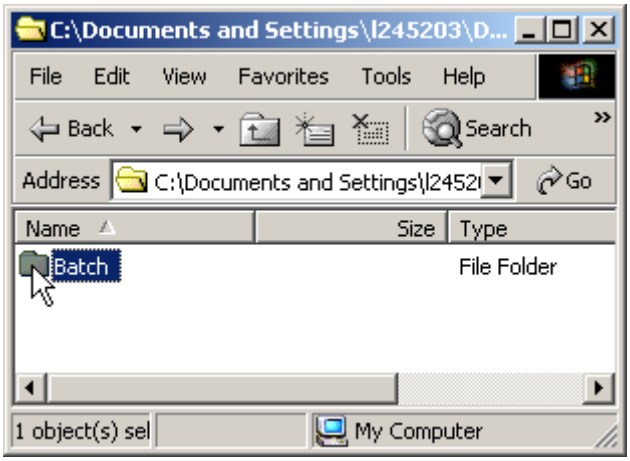
[5] Make a copy of the folder “Batch” to a blank MEMORY CARD.

[6] Label the MEMORY CARD “C643_C603 Master Camera”.

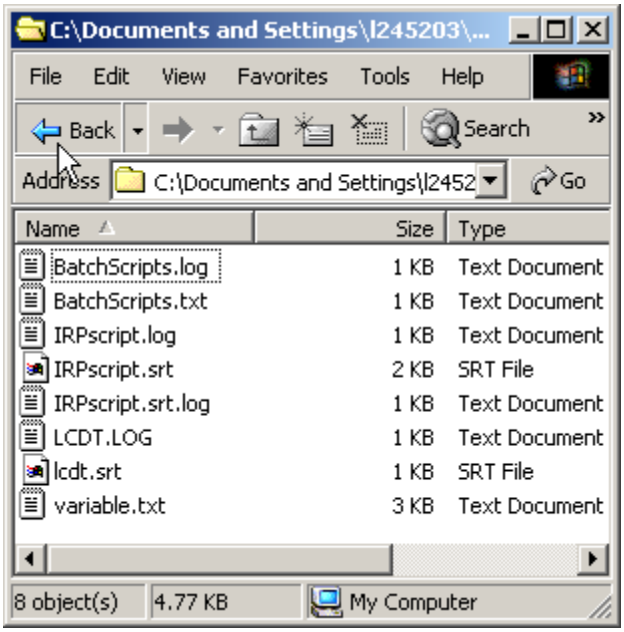
Preparing the “C643_C603 Monitor LCD” MEMORY CARD



[1] Open the folder “Monitor_LCD”.



[2] Open the folder “Batch”.



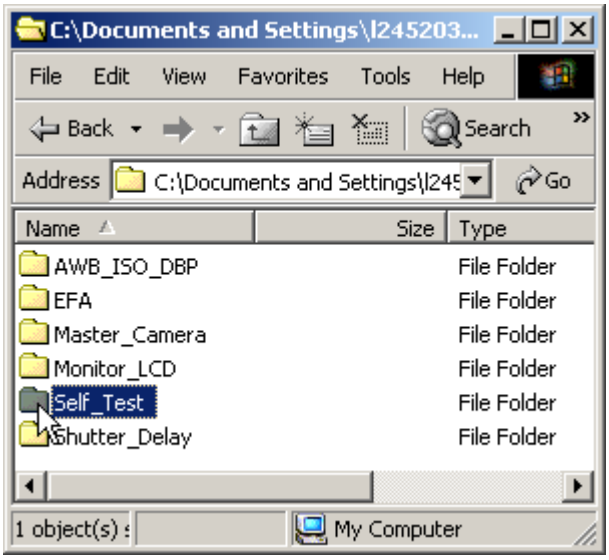
[3] Check for 8 files.

[4] Click [Back].

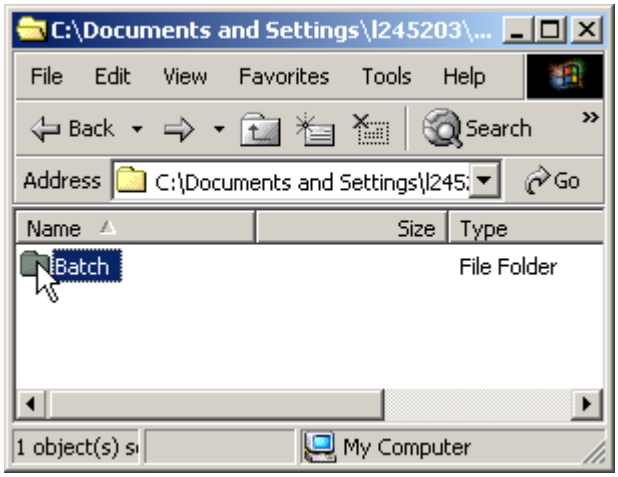
[5] Make a copy of the folder “Batch” to a blank MEMORY CARD.

[6] Label the MEMORY CARD “C643_C603 Monitor LCD”.

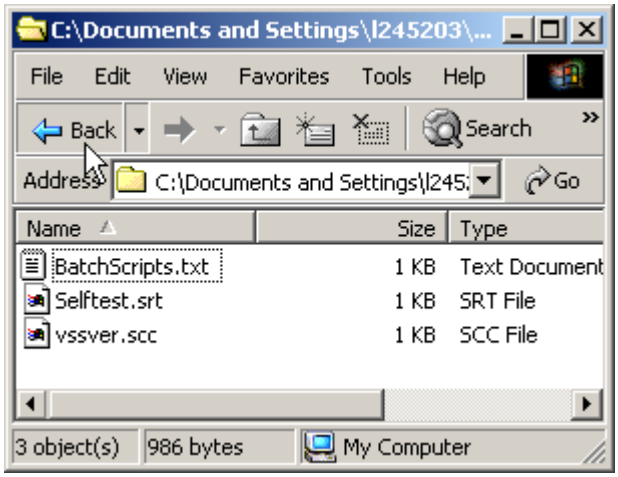
Preparing the “C643_C603 Self_Test” MEMORY CARD



[1] Open the folder “Self_Test”.



[2] Open the folder “Batch”.



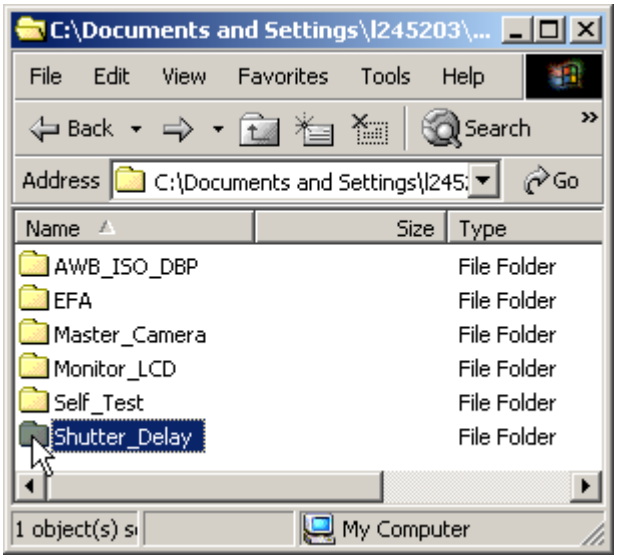
[3] Check for 3 files.

[4] Click [Back].

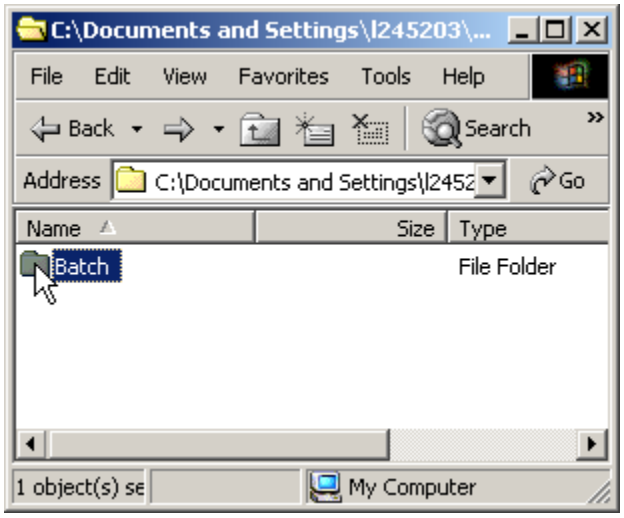
[5] Make a copy of the folder “Batch” to a blank MEMORY CARD.

[6] Label the MEMORY CARD “C643_C603 Self_Test”.

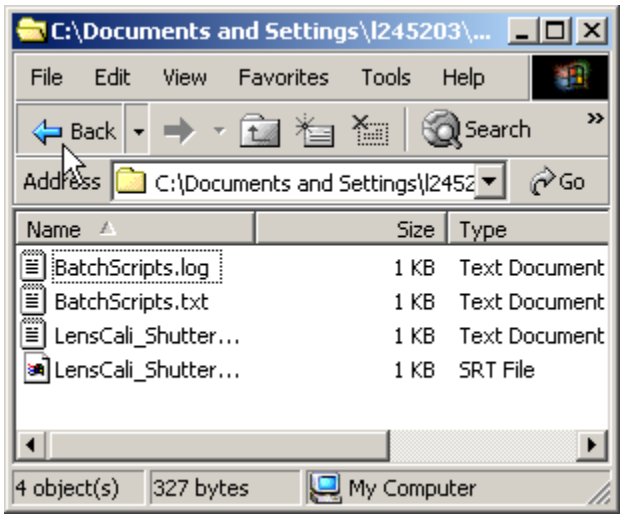
Preparing the “C643_C603 Shutter_Delay” MEMORY CARD



[1] Open the folder “Shutter_Delay”.



[2] Open the folder “Batch”.



[3] Check for 4 files.

[4] Click [Back].

[5] Make a copy of the folder “Batch” to a blank MEMORY CARD.

[6] Label the MEMORY CARD “C643_C603 Shutter_Delay”.

Doing a Calibration of the Test Equipment

Setting up the LIGHT BOX - “Light Box Calibration (LV10.0)”

Important

- This calibration:
  - adjusts for the differences in color temperature between the FACTORY LIGHT BOX and a SERVICE LIGHT BOX
  - must be run once using a MASTER CAMERA before any of the “Adjustments” on Page 36, that use the LIGHT BOX with this type of CAMERA, can be run
  - should also be run when the LIGHT BULB is changed
- Do not use the CAMERA DOCK.

[1] Do “Preparing the “C643_C603 Master Camera” MEMORY CARD” on Page 68.

[2] Install into the CAMERA:

- BATTERY
- “C643_C603 Master Camera” MEMORY CARD

[3] Set the LIGHT BOX to LV10.0.

Important

- The CAMERA must be placed in the center of the LIGHT BOX.
- The LENS must not touch the SCREEN of the LIGHT BOX.

[4] Place the MASTER CAMERA in front of the LIGHT BOX.

[5] Rotate the MODE DIAL to “AUTO”.

[6] If the Date and Time Setting mode displays on the MONITOR LCD, select “CANCEL”.

[7] The calibration is complete when the MONITOR LCD displays “Big LB OK”.

Note

The calibration results are stored on the “C643_C603 Master Camera” MEMORY CARD. The files include:

- “BIG_LAMP.fig”
- “BoxID_ref.fig”
- “CameraID_ref.fig”
- “K_RESULT.txt”

[8] De-energize the CAMERA.

[9] Do Step 3 to Step 6 again.

[10] The calibration is complete when the MONITOR LCD displays “Small LB OK”.

Note

The calibration results are stored on the “C643_C603 Master Camera” MEMORY CARD. The files include:

- “CamerID_ref.fig”
- “Small_LAMP.fig”

[11] De-energize the CAMERA.

[12] Remove the MEMORY CARD from the CAMERA.

[13] If the calibrations are successful, make a copy of the results files into the“Batch” folder on the MEMORY CARDS that are to be used for the “AWB/ISO/DBP” adjustments.

[14] If the calibrations are not successful, do:

Failure Description	Cause	Action
“W/O Shutter K”	No SHUTTER calibration.	Do the procedures: 1. “MCU BOARD/LENS AY - “Shutter Delay”” on Page 36 2. “Doing a Calibration of the Test Equipment” on Page 72 again
“Memory Fail”	Software “script” failure	Do the procedure “Doing a Calibration of the Test Equipment” on Page 72 again.
“ISO Cal Fail”	Environment variation	1. Check the settings and environment variations. 2. Do the procedure “Doing a Calibration of the Test Equipment” on Page 72 again.

Upgrading the Firmware Using the MEMORY CARD

Important

Use the firmware file “kc643nnn.fw” for both CAMERAS:

- *Kodak EasyShare* C643 ZOOM DIGITAL CAMERA
- *Kodak EasyShare* C603 ZOOM DIGITAL CAMERA

[1] Do Downloading the Files from the Partner Site on Page 48.

[2] Energize the CAMERA.

[3] Check that “AUTO...” is selected for the “IMAGE STORAGE”.

[4] Format the MEMORY CARD in the CAMERA.

[5] De-energize the CAMERA.

[6] Insert MEMORY CARD in a CARD READER/WRITER.

[7] Make a folder in the root directory on the MEMORY CARD with the name “System”.

[8] Make a copy of the “kc643nnn.fw” firmware file to the “System” folder on the MEMORY CARD.

[9] Change the file name to “kc643.fw”.

[10] Remove the MEMORY CARD from the CARD READER/WRITER.

[11] Insert into the CAMERA:

- BATTERY that has a full charge
- MEMORY CARD with the firmware file

Important

Do not rotate the MODE DIAL after the energizing.

[12] At the same time:

- press the “delete” BUTTON
- rotate the MODE DIAL to “AUTO”

[13] Check that the CAMERA energizes.

[14] Select:

- “UPGRADE”
- “CONTINUE”

[15] Check:

- downloading begins
- downloading completes

[16] Select “EXIT”.

[17] De-energize the CAMERA.

[18] Remove the MEMORY CARD.

[19] Energize the CAMERA.

[20] Check that the firmware on the CAMERA is the correct version.

Upgrading the Firmware Using the Internal Memory

Important

Use the firmware file “kc643nnn.fw” for both CAMERAS:

- *Kodak EasyShare* C643 ZOOM DIGITAL CAMERA
- *Kodak EasyShare* C603 ZOOM DIGITAL CAMERA

[1] Do Downloading the Files from the Partner Site on Page 48.

[2] Make a copy of the “kc643nnn.fw” firmware file.

[3] Change the file name to “kc643.fw”.

[4] Connect a USB CABLE to:

- CAMERA
- computer

[5] Energize the CAMERA.

[6] Select:

- “kc643.fw” file
- **Edit>Copy**

[7] Double-click:

- “My Computer” icon
- “CAMERA” icon
- “Internal Memory” folder

[8] Select:

- firmware file in the “Internal Memory” folder
- **Edit>Paste**

[9] De-energize the CAMERA.

[10] Disconnect the USB CABLE from:

- CAMERA
- computer

[11] Energize the CAMERA.

[12] Select:

- “UPGRADE”
- “CONTINUE”

Note

The upgrading of the firmware file completes in less than 2 minutes.

[13] Select “EXIT”.

[14] De-energize the CAMERA.

[15] Energize the CAMERA.

[16] Check that the firmware on the CAMERA is the correct version.

Checking the ACTUATION, FLASH, POWER-ON COUNTERS and Serial Number

[1] Energize the CAMERA.

[2] Press the “menu” BUTTON.

[3] Use the 4-WAY BUTTON to do a search for “SETUP MENU”.

[4] Press the “OK” BUTTON.

[5] Use the 4-WAY BUTTON to do a search for “ABOUT...”.

[6] Press the “OK” BUTTON.

[7] Check that the MONITOR LCD displays the firmware version.

[8] At the same time, press:

- 4-WAY BUTTON to the right
- “delete” BUTTON

[9] Release the BUTTONS.

[10] Check that the MONITOR LCD displays “HIDDEN MENU”.

[11] Press the 4-WAY BUTTON up to “TOTAL INFO”.

[12] Press the “OK” BUTTON.

[13] Record the information for the COUNTERS in the FEEDBACK SOFTWARE.

COUNTERS on the CAMERA	Description on the FEEDBACK SOFTWARE
ID	“ID of production Serial Number”
BV	“Boot code Version”
MV	“Micro processor code Version”
CS	“Actuation”
CF	“Flash”
CP	“Power On”

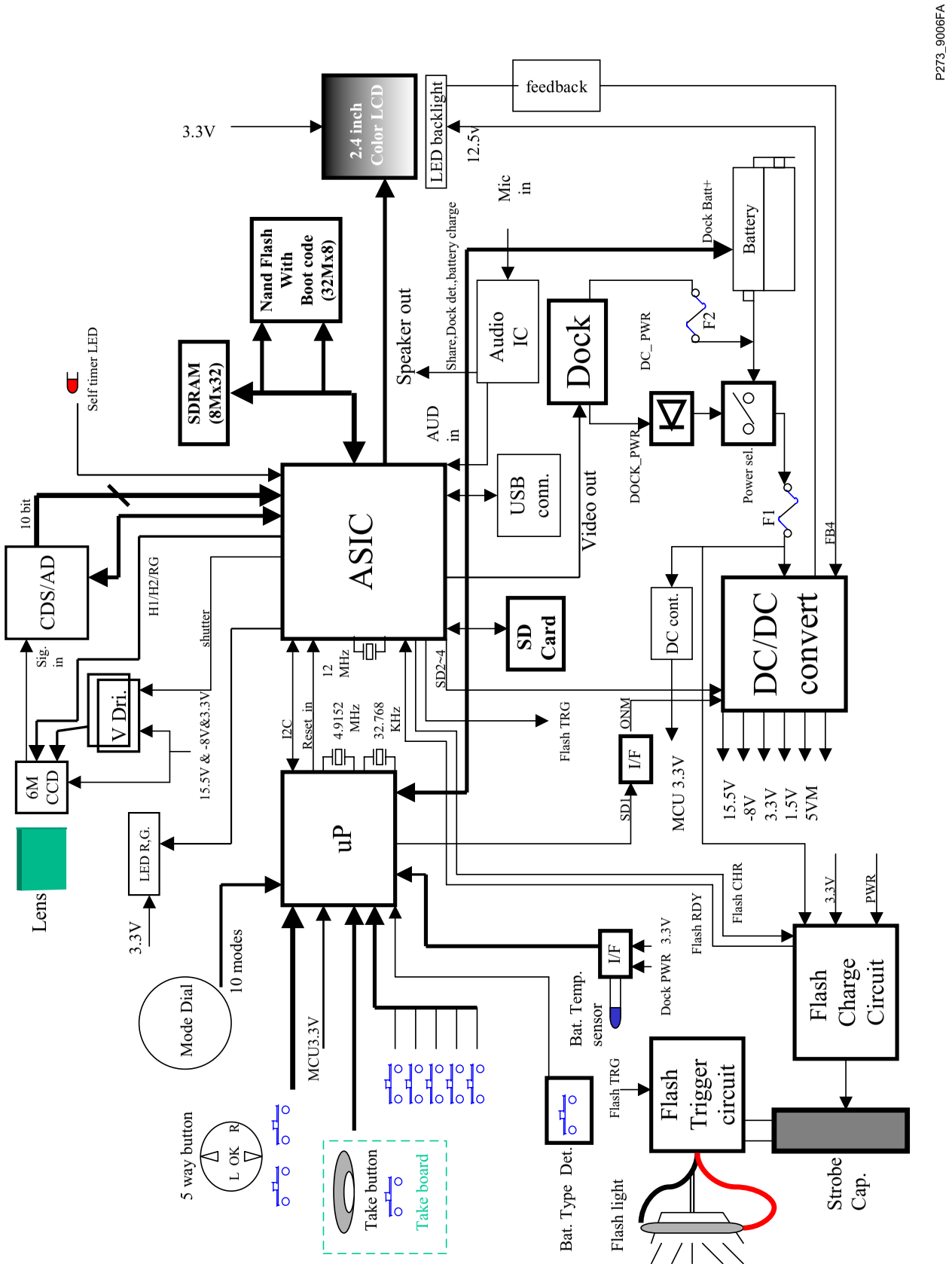
[14] Press:

- 4-WAY BUTTON left 2 times
- “OK” BUTTON
- “menu” BUTTON to exit

Section 7: Diagrams

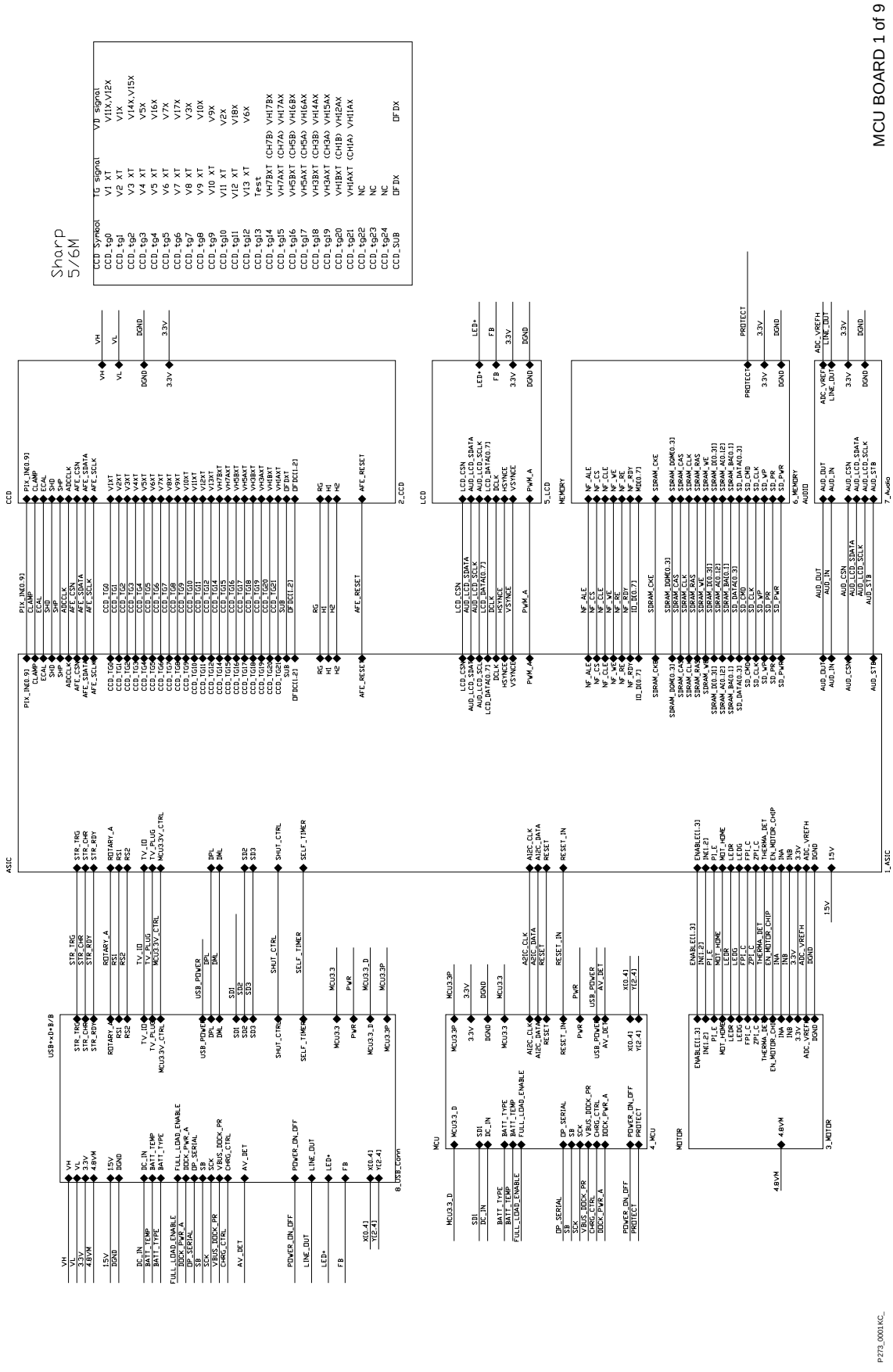
Block

System Overview

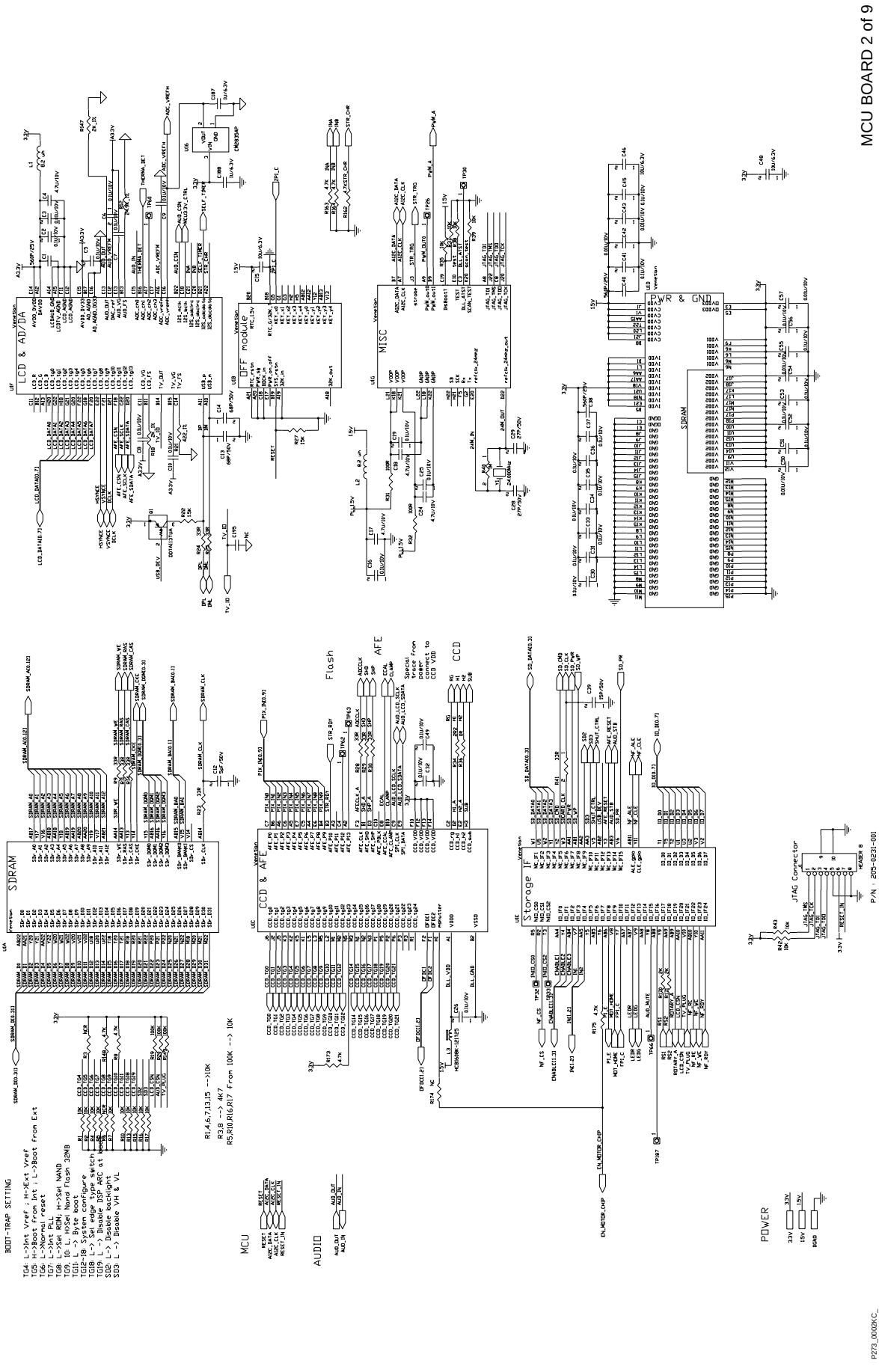


Schematics

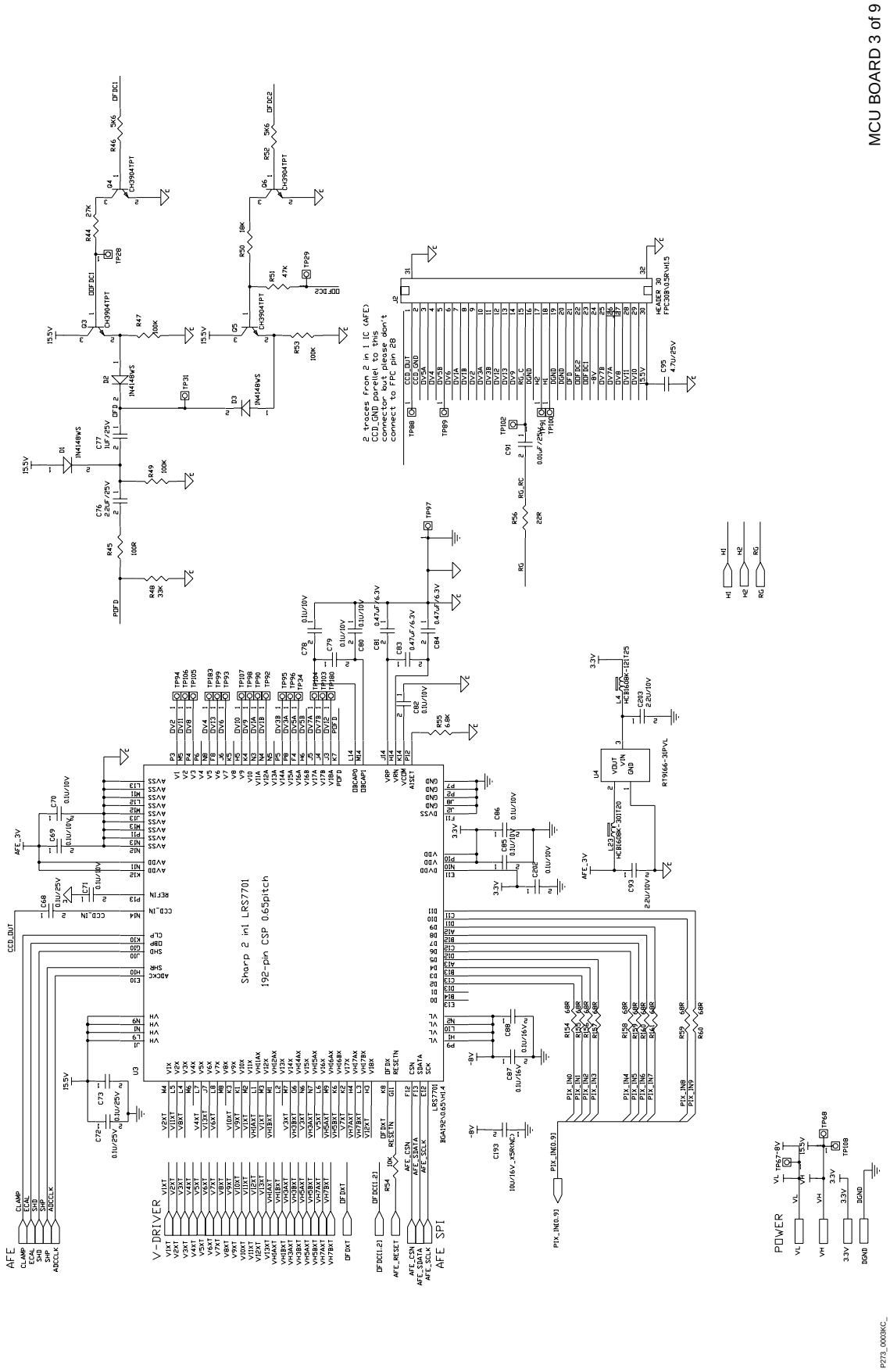
MCU BOARD - 1 of 9



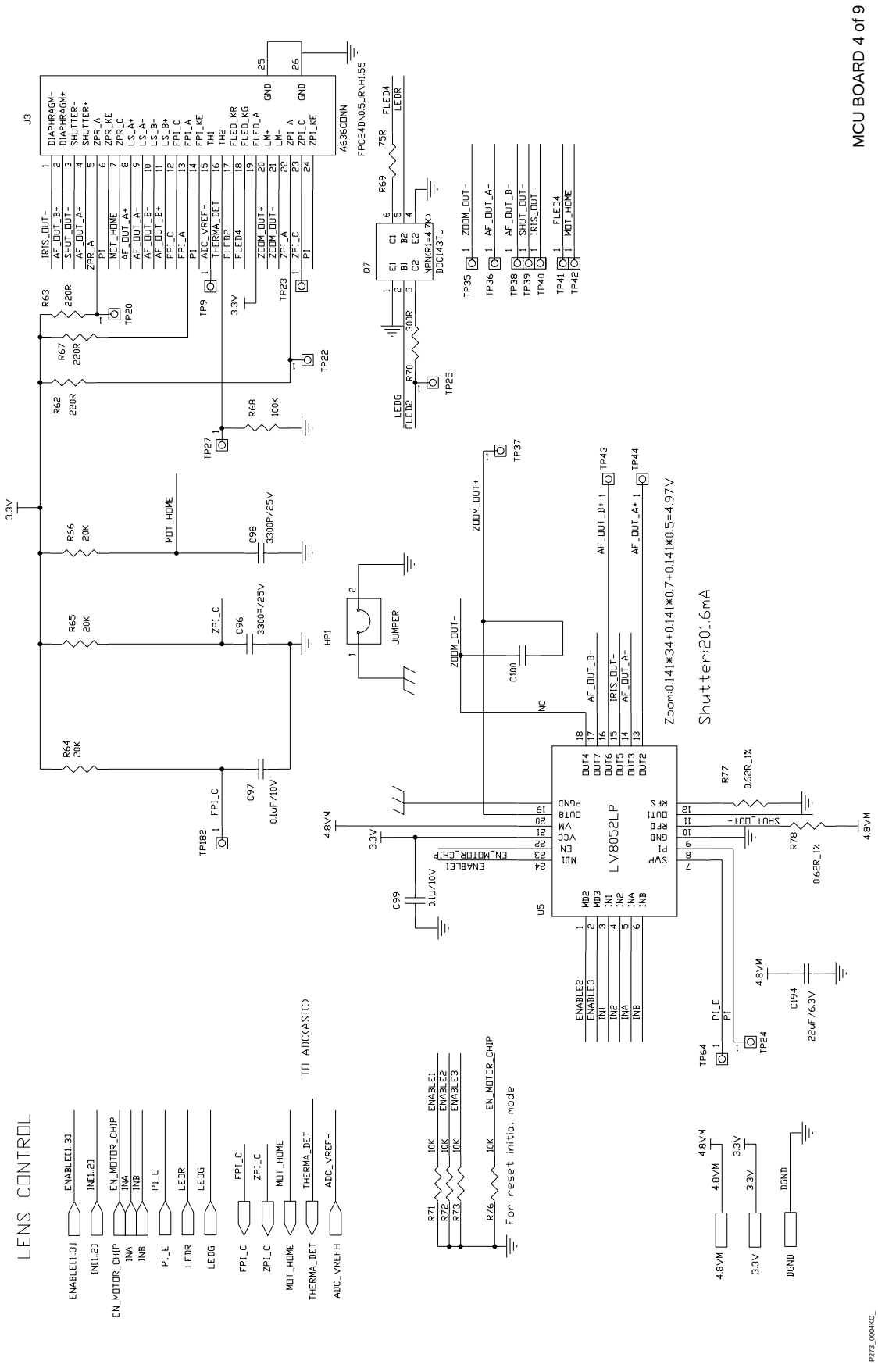
MCU BOARD - 2 of 9



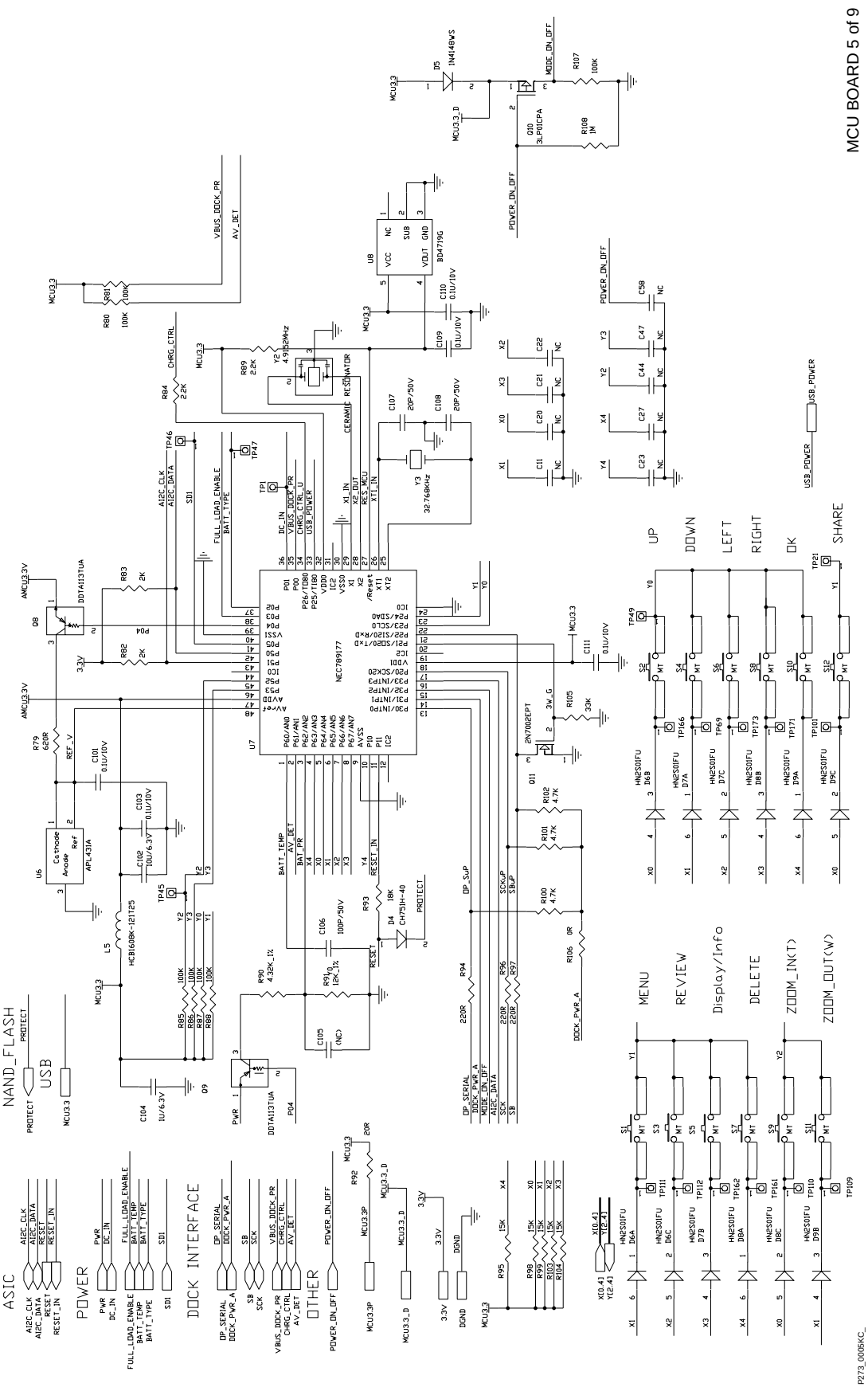
MCU BOARD - 3 of 9



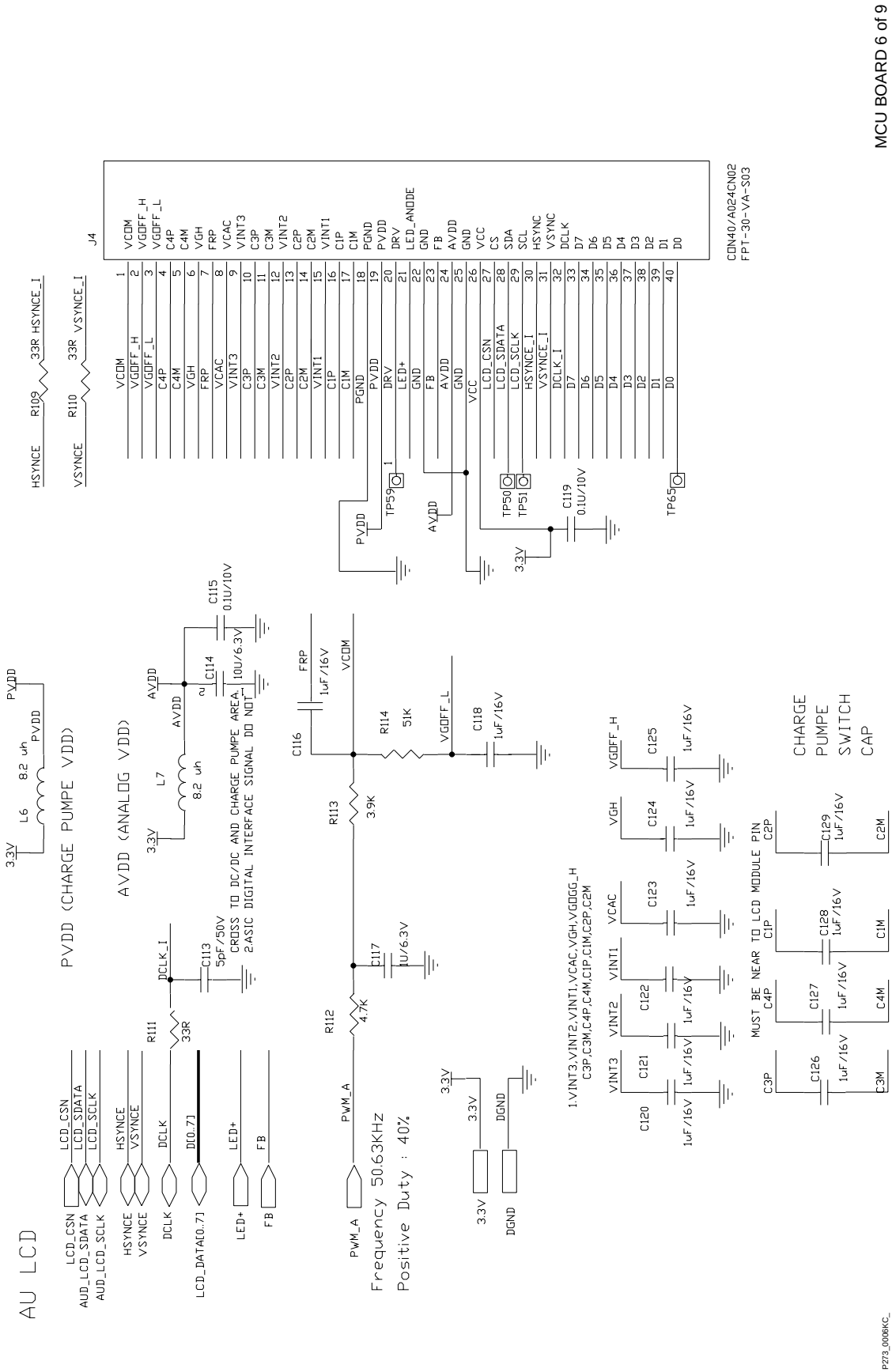
MCU BOARD - 4 of 9



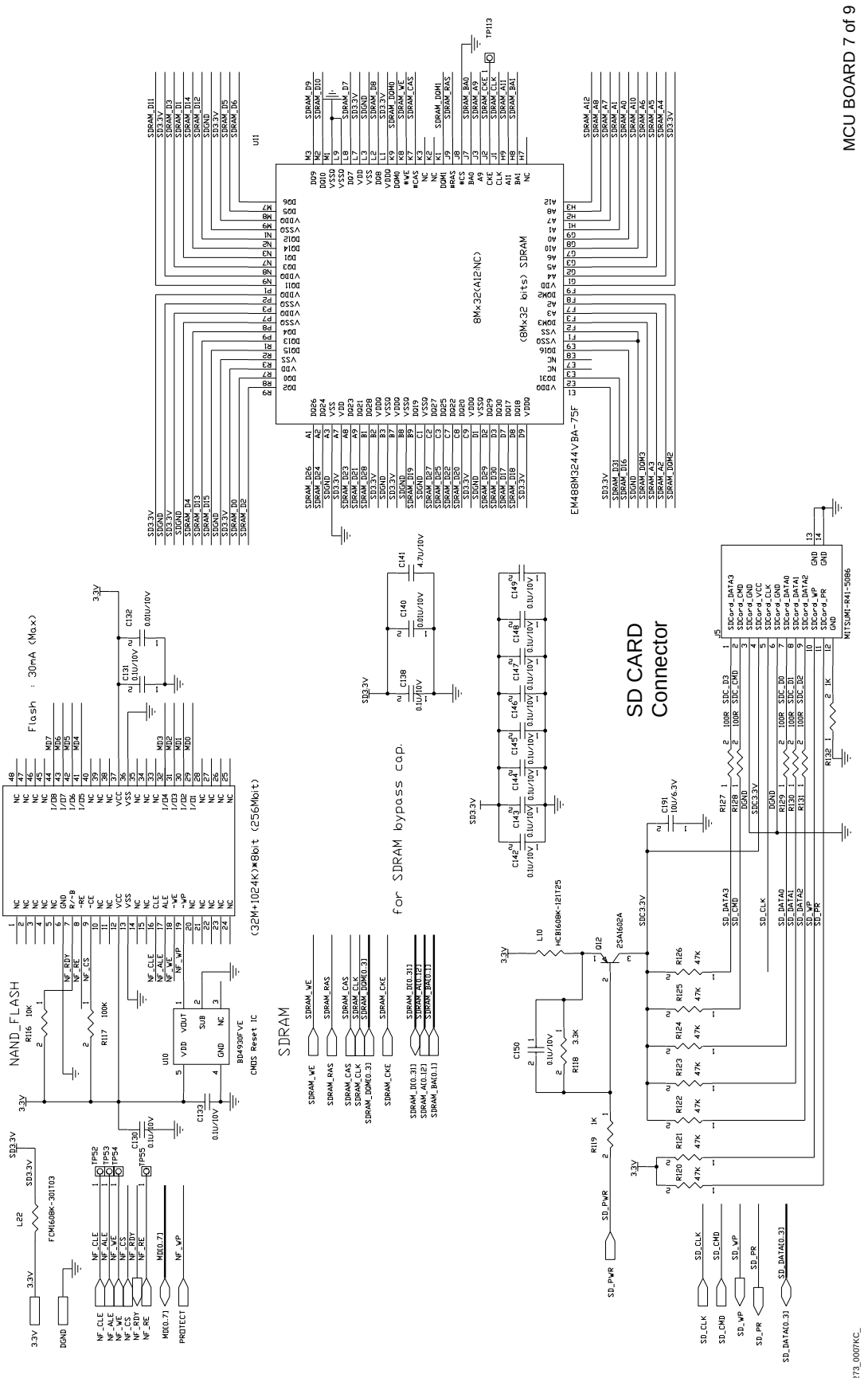
MCU BOARD - 5 of 9



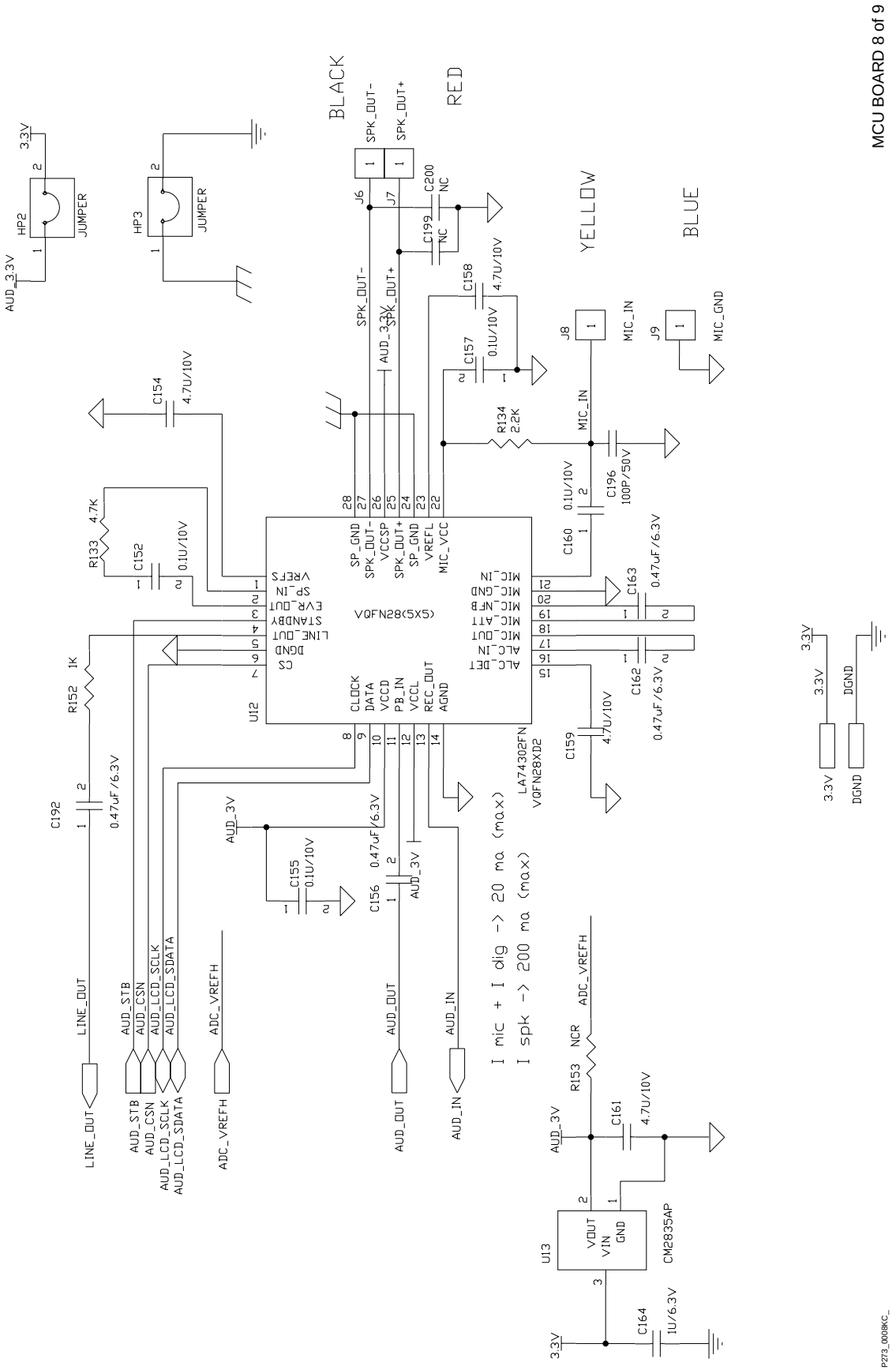
MCU BOARD - 6 of 9



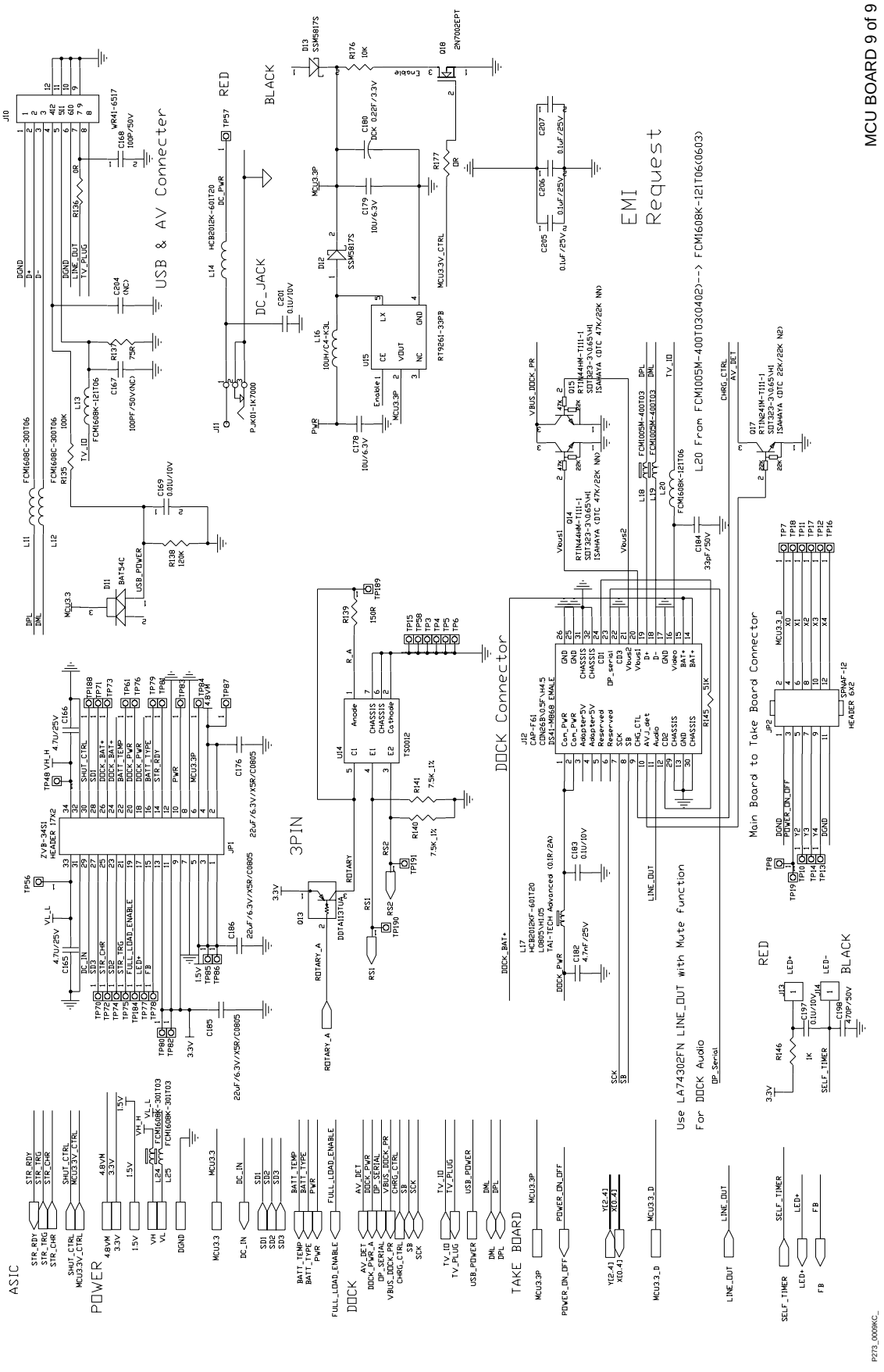
MCU BOARD - 7 of 9



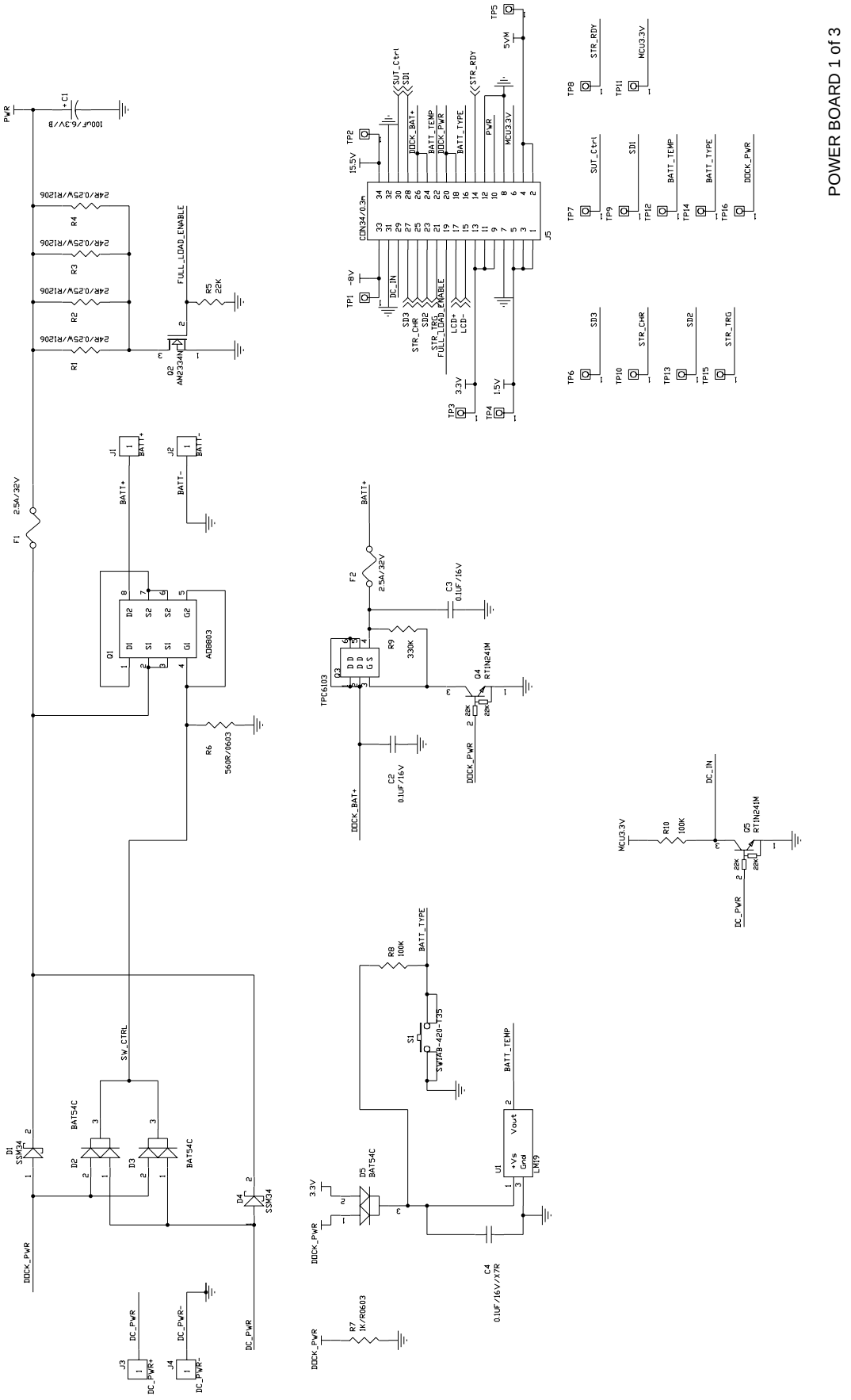
MCU BOARD - 8 of 9



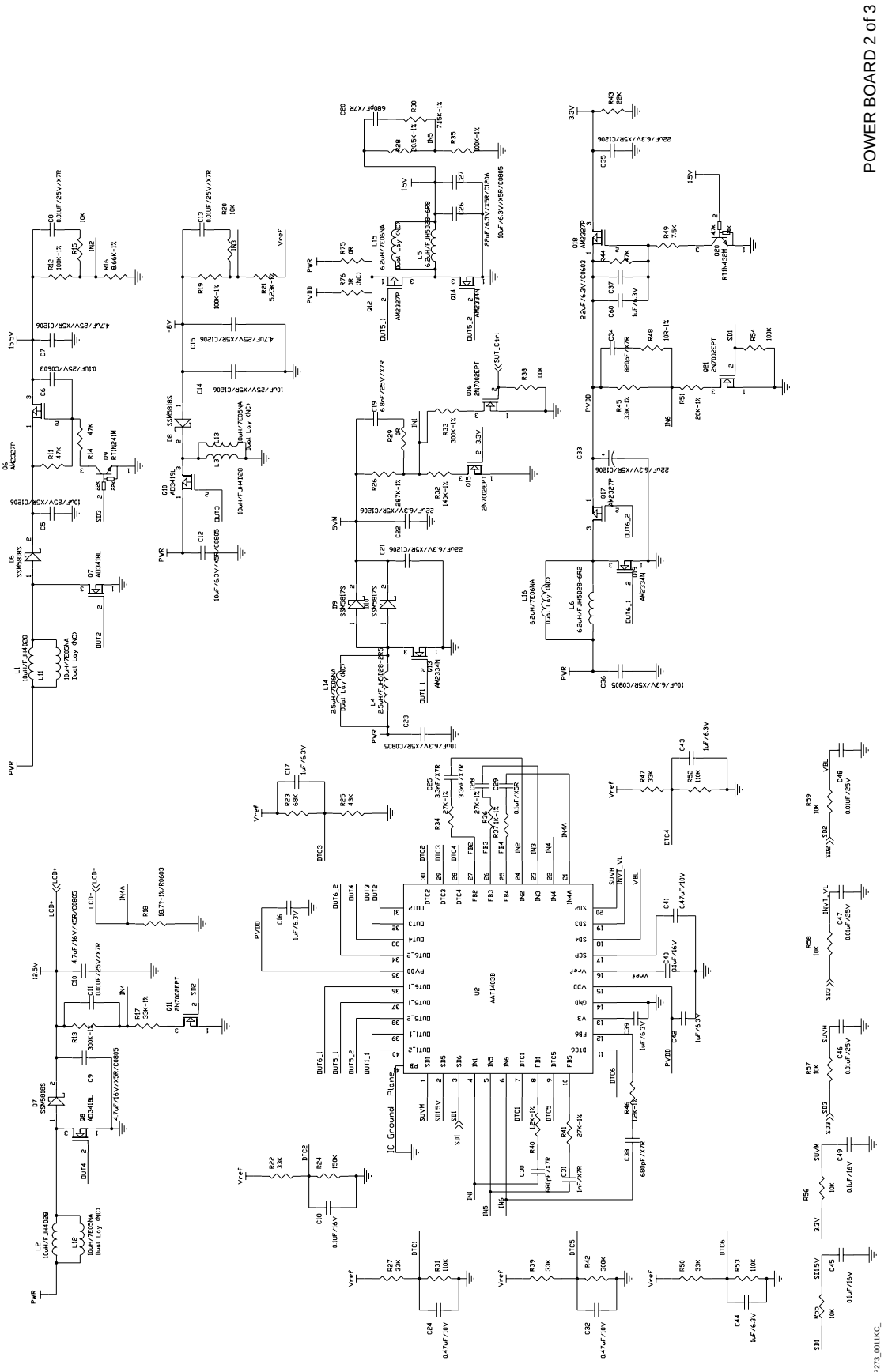
MCU BOARD - 9 of 9



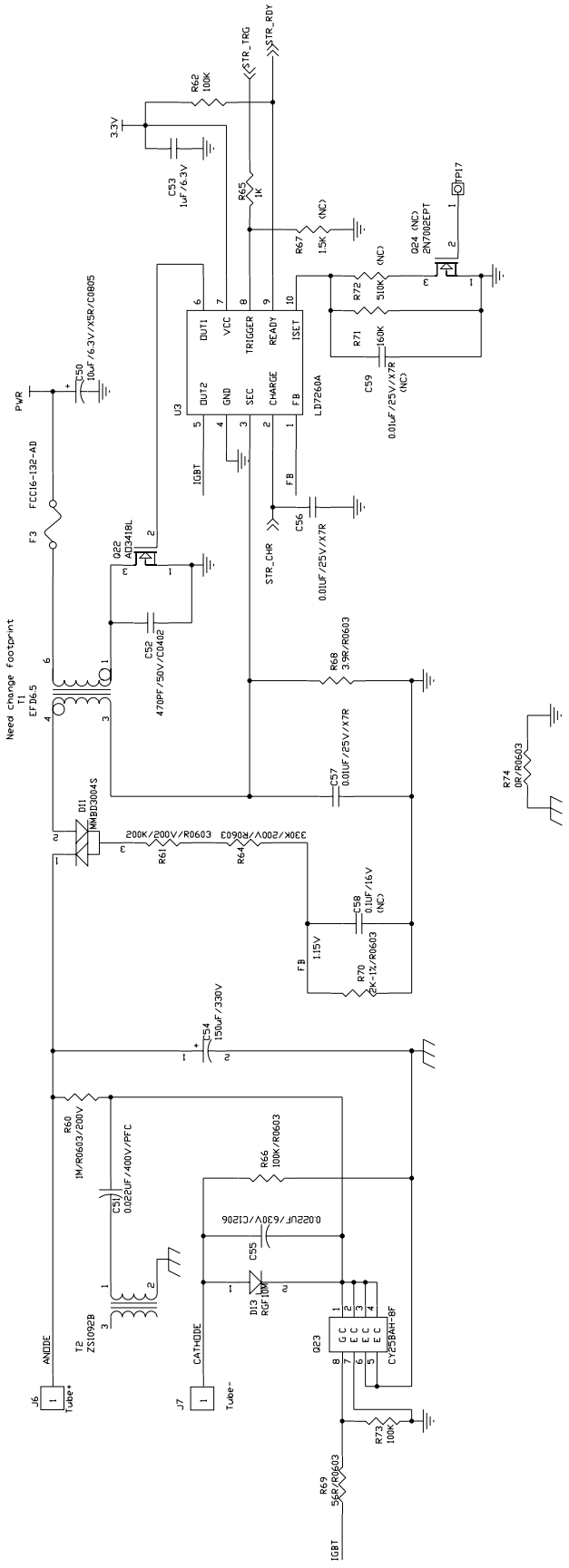
POWER BOARD - 1 of 3

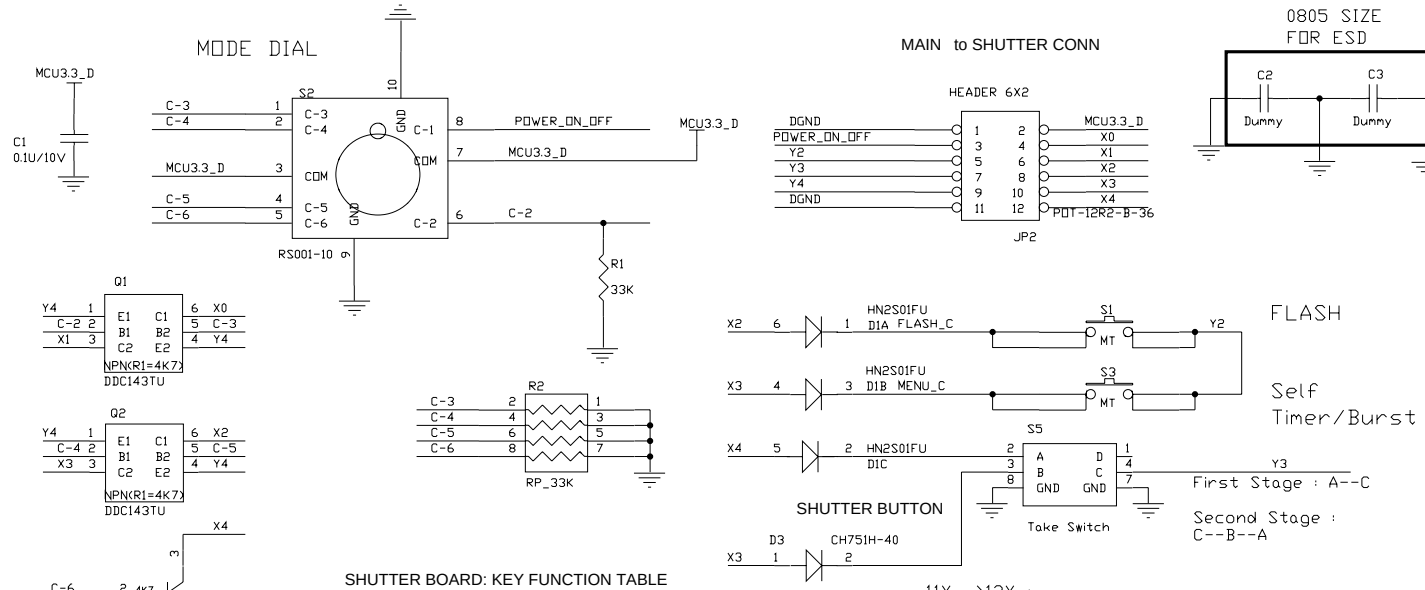


POWER BOARD - 2 of 3



POWER BOARD - 3 of 3





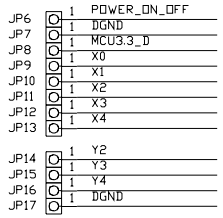
11X-->12X :
Add two C0805 component for ESD protection

SHUTTER BOARD: KEY FUNCTION TABLE

(0 : low, 1 : HIGH, H : pull high, P : PULSE)

TAKE BUTTON(STAGE 1)	⏚X4/Y3
TAKE BUTTON(STAGE 2)	X3,X4/Y3

		MODE_ON_OFF,X0,X1,X2,X3,X4 /Y4
(MODE 0)	OFF	0,1,1,1,1,1,1
(MODE 1)	AUTO	1,1,1,1,1,1,p
(MODE 2)	SCN	1,0,1,1,1,1,p
(MODE 3)	Portrait	1,0,1,1,1,0,p
(MODE 4)	Sport	1,1,1,1,0,0,p
(MODE 5)	Landscape	1,1,1,1,0,1,p
(MODE 6)	Close-up	1,1,1,0,0,1,p
(MODE 7)	Video	1,1,1,0,1,1,p
(MODE 8)	No use	1,1,0,0,1,1,p
(MODE 9)	Favorite	1,1,0,1,1,1,p

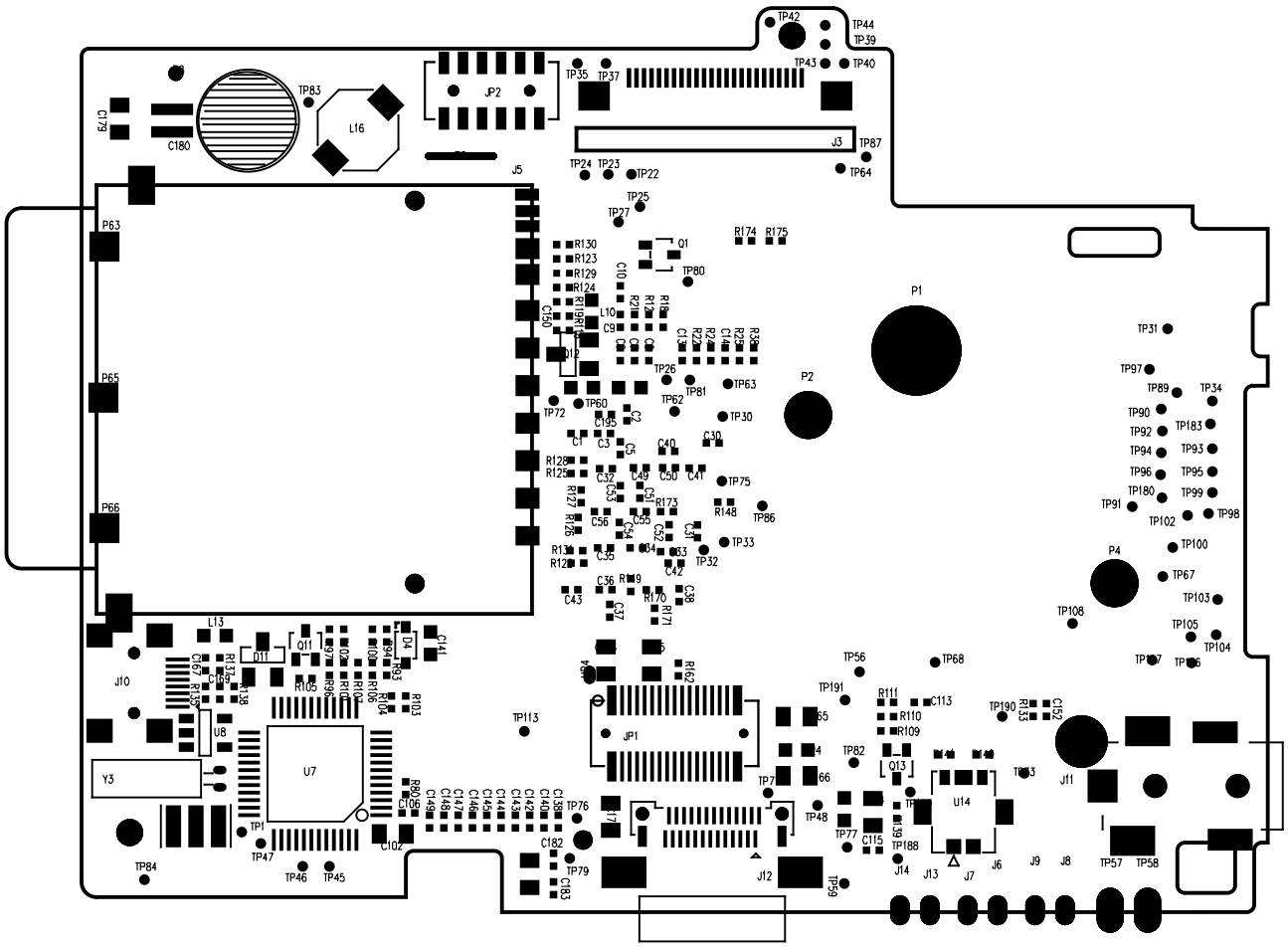


P273_0013KC_

SHUTTER BOARD

Component Locator

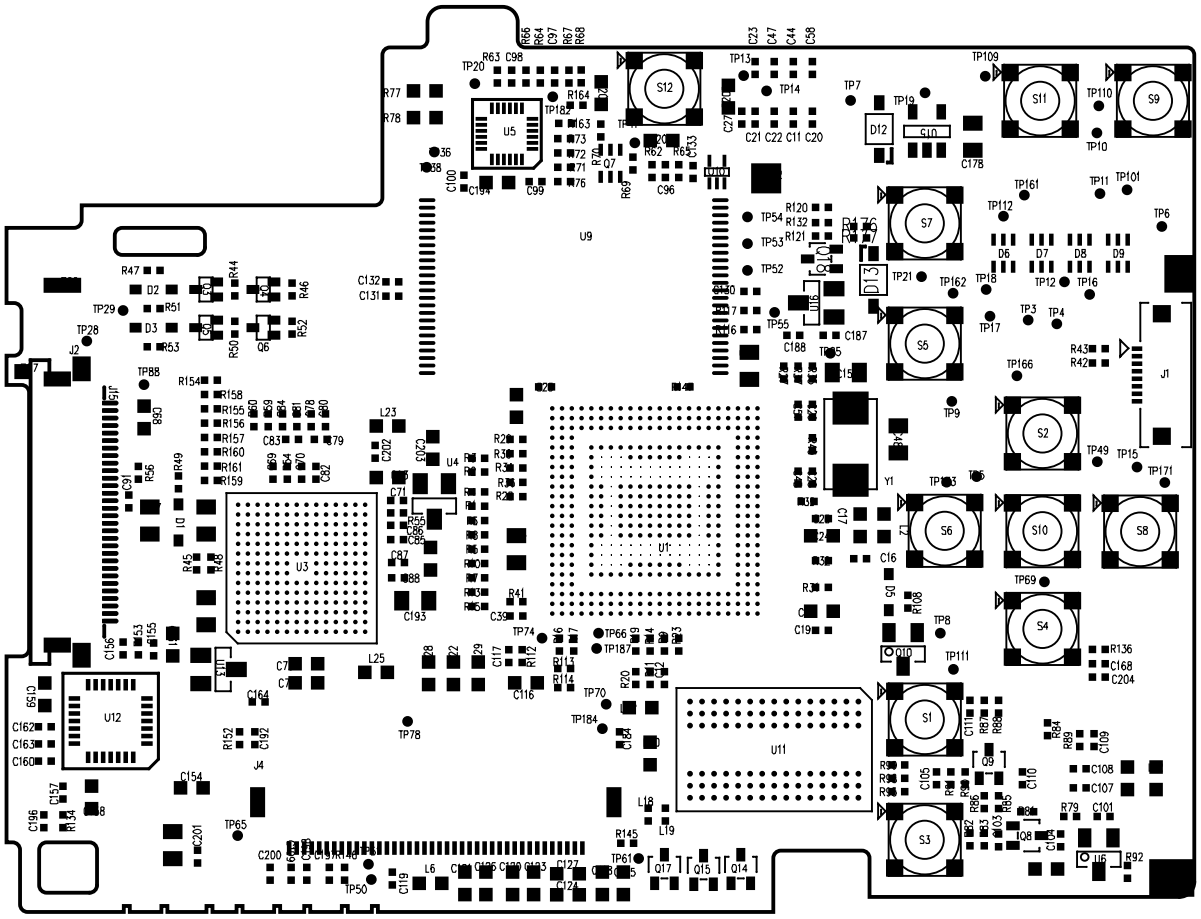
MCU BOARD - 1 of 2



MCU BOARD - 1 of 2

P273_9001DC

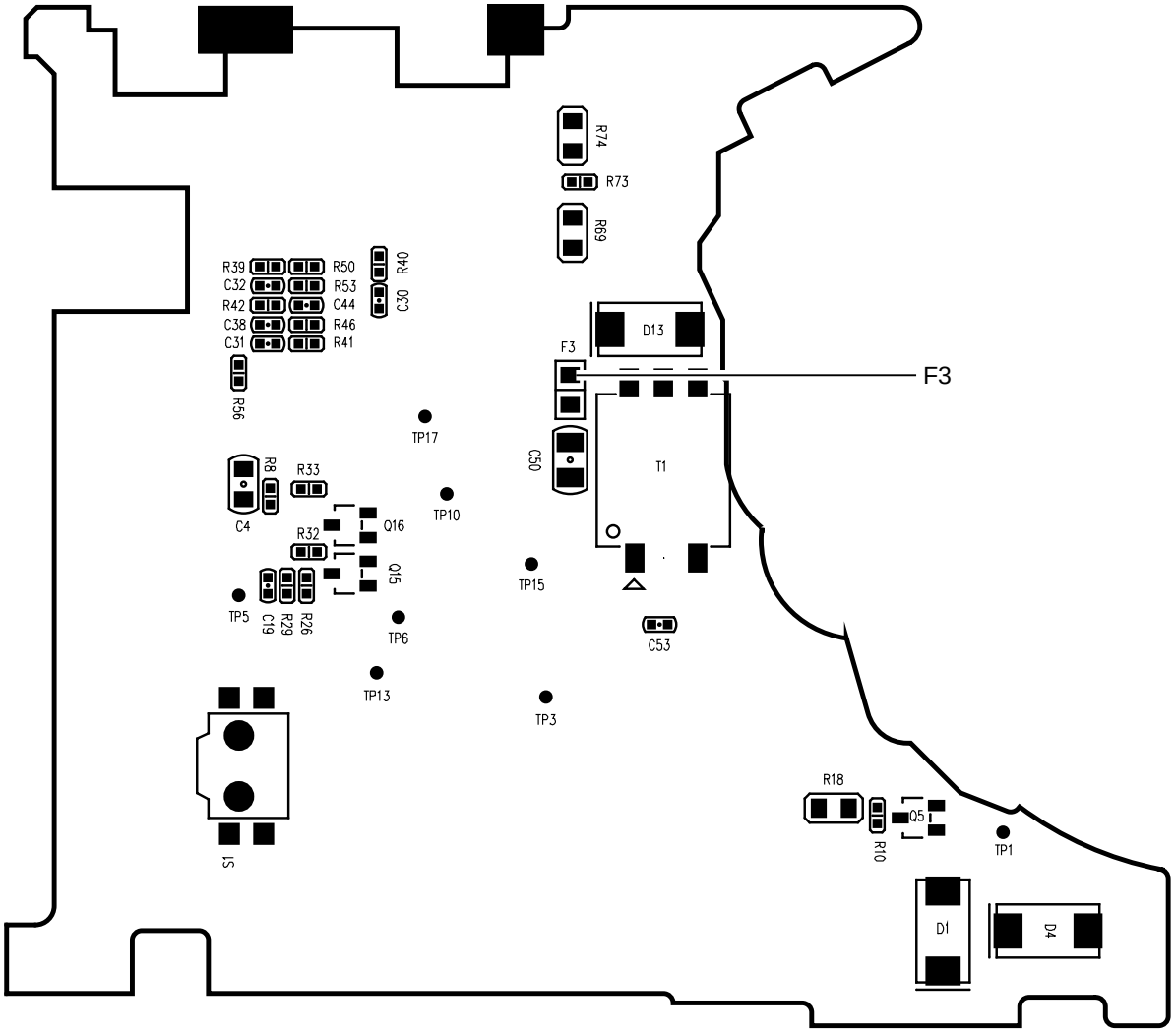
MCU BOARD - 2 of 2



MCU BOARD - 2 of 2

P273_9000DC

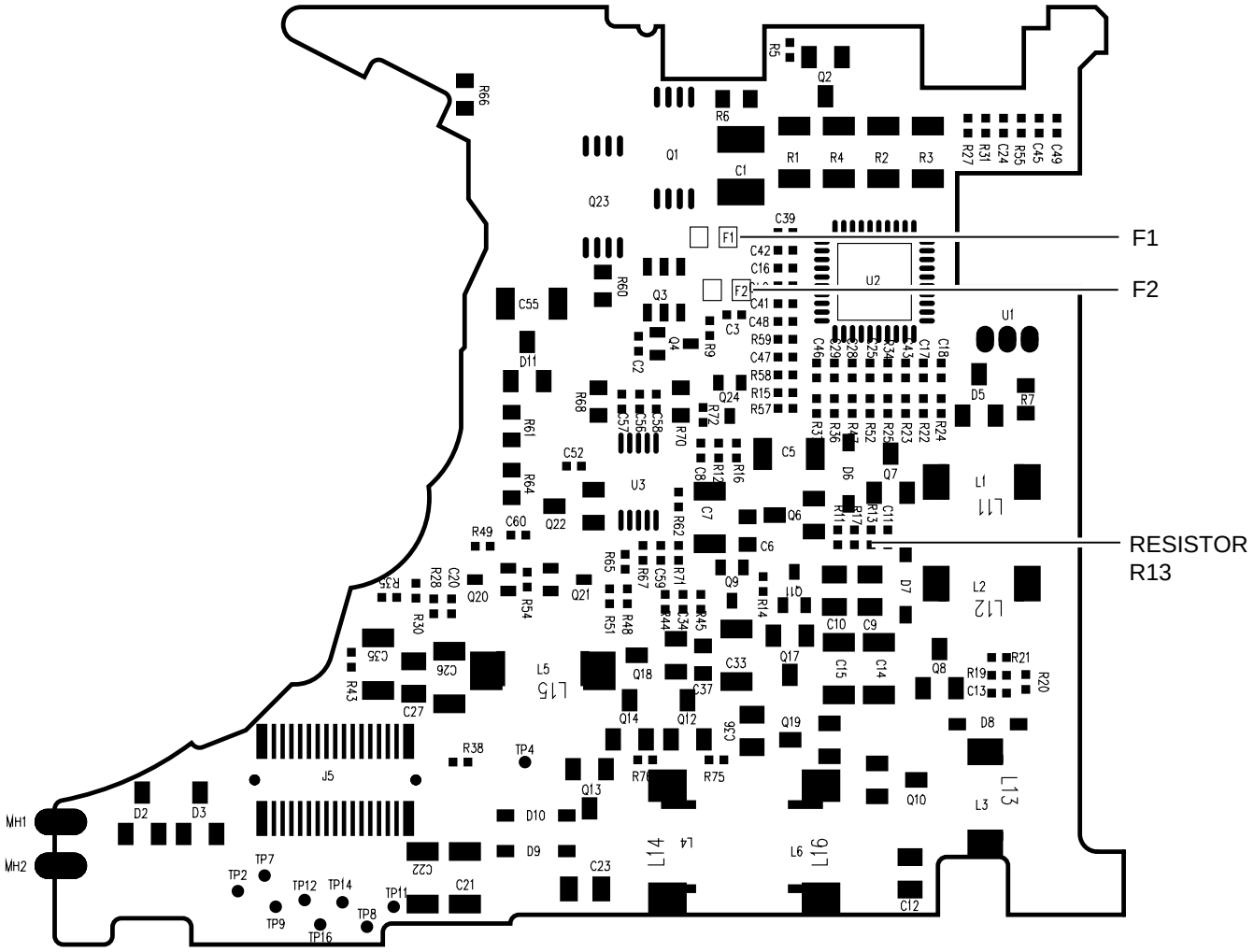
POWER BOARD - 1 of 2



P273_9004DCA
P273_9004DC

POWER BOARD - 1 of 2

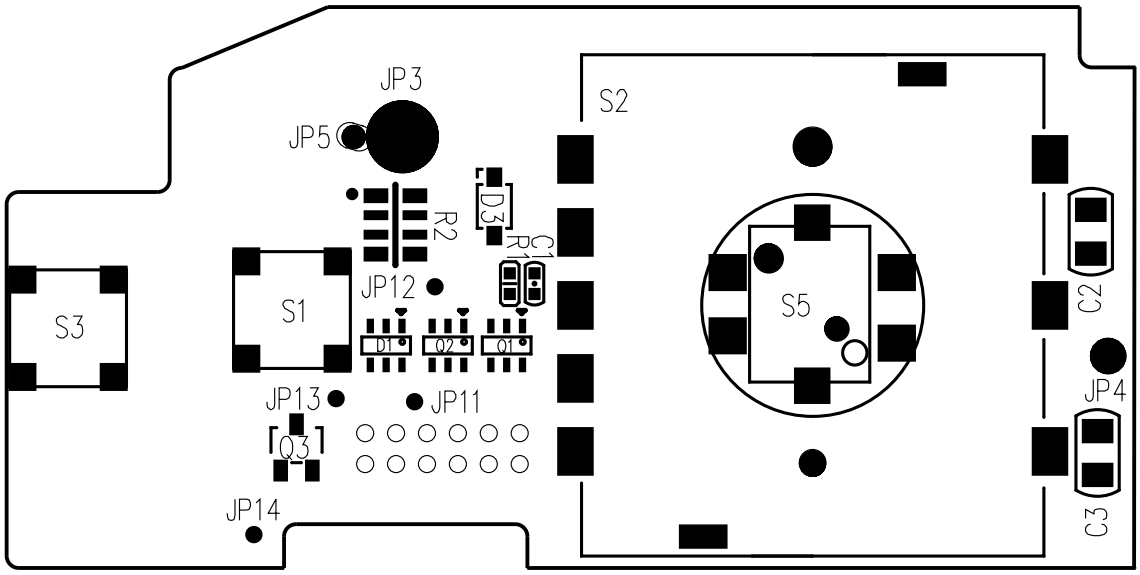
POWER BOARD - 2 of 2



P273_9005DCA
P273_9005DC

POWER BOARD - 2 of 2

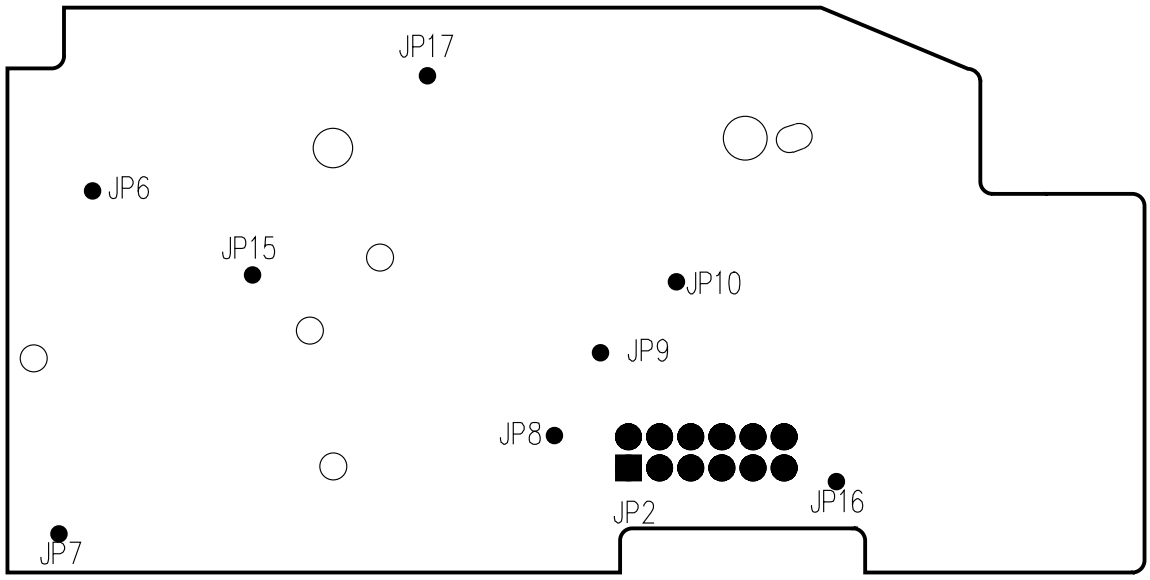
SHUTTER BOARD - 1 of 2



SHUTTER BOARD - 1 of 2

P273_9002HC

SHUTTER BOARD - 2 of 2



SHUTTER BOARD - 2 of 2

P273_9003HC

Section 8: Publication History

Publication Date	Publication No.	Changed Pages	File Name	Notes
19JUN06	SM1399-1	---	sm1399_1.fm	New Publication

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