| ENGINEERING BULLETIN | | | | |
|---|---|---|---|---|
| REVISIONS | | | | |
| REV | DESCRIPTION | DATE | CHG | APPR |
| F | Revised per PCR 22086 | 4/10/03 | | |

| APPROVALS | BAT GmbH<br>Neu-Anspach | |
|---|---|---|
| ORIGINATOR: | BULLETIN, VISTANET UPGRADE KIT, CATEGORY 1 | |
| PRODUCT ENG: | | |
| CHECKED: | 803J001-1 | Rev: F |
| ENGINEERING: | | Sheet: 1 of 10 |

## PARTS LISTS

You will need parts from one column of the 803K005-_ list and from one column of the 803A004-_ list. Since analyzer type and wiring topology determine the specific parts and quantities of parts, see the quantity columns for details.

### PARTS LIST FOR 803K005-_

| Part Number | Description | Quantity (By Analyzer Type) | | | |
|---|---|---|---|---|---|
| | | Standard GCC (803K005-1) | SIMDIS GCC (803K005-3) | Dual Detector GCC (803K005-5) | Standard CAC (803K005-7) |
| 803J001-1 | BULLETIN INSTRUCT VISTANET UPGRADE CAT 1 | 1 | 1 | 1 | 1 |
| TL124 | BOX, PADDED WHITE CARDBOARD 16x16x2 | 1 | 1 | 1 | 1 |
| TL123-4 | BOX, STATIC DISSIPATING 3.75x3.75x1 | 3 | 3 | 3 | 3 |
| TL27 | STRAP WRIST GROUNDING DISPOSABLE | 1 | 1 | 1 | 1 |
| 3615845-1 | TOOL WIRE WRAP & UNWRAP | 1 | 1 | 1 | 1 |
| 008094-1 | WIRE PRE-CUT 1 LG INS COP 30 GA | 5 | 5 | 5 | 5 |
| 3616674-1 | IC STATIC RAM 128K X8, DIP | 4 | 4 | 4 | |
| 803B022-1 | FIRMWARE VISTANET MAPPING ROM (34-1) | 1 | 1 | 1 | |
| 803B030-1 | FIRMWARE MAPPING VISTANET DALLAS (44-1) | 1 | 1 | 1 | |
| 803B015-1 | SOFTWARE ASSEMBLY STANDARD GCC (29-1) | 1 | | | |
| 803B016-1 | SOFTWARE ASSEMBLY SIMDIS GCC (30-1) | | 1 | | |
| 803B017-1 | SOFTWARE ASSEMBLY SDD GCC (31-1) | | | 1 | |
| 803B018-1 | SOFTWARE ASSEMBLY CAC (32-1) | | | | 1 |
| 803B031-1 | FIRMWARE MAPPING CAC DALLAS (45-1) | | | | 1 |
| 803B032-1 | FIRMWARE MAPPING CAC VISTANET (48-1) | | | | 1 |

### PARTS LIST FOR 803A004-_

| Part Number | Description | Quantity (By Wiring Topology) | | |
|---|---|---|---|---|
| | | High Speed Twisted Pair (803A004-6) | Low Speed Twisted Pair (803A004-7) | Low Speed Twinaxial (803A004-8) |
| 3617198-1 | PCB MULTIBUS 1 VISTANET | 1 | 1 | 1 |
| 3617698-6 | TERMINAL BLOCK, RIGHT ANG. , PLUG, 0.2 SP. | 2 | 2 | |
| 3616958-20101 | RESISTOR CAR FILM 100 OHM 5% 1/2 W | 4 | 2 | |
| 803J012-1 | BULLETIN HIGH SPEED KIT | 1 | | |
| 803J010-1 | BULLETIN LOW SPEED TWISTED PAIR KIT | | 1 | |
| 803A016-1 | BRACKET AND PCB ASSY RETRO VISTANET | | 1 | 1 |
| 803A010-2 | CABLE VISTANET INTERCONNECT MODEL 3100 | | 1 | 1 |
| 803J011-1 | BULLETIN LOW SPEED TWINAX KIT | | | 1 |
| 3617528-1 | CONNECTOR TWINAX CLAMP TYPE PLUG | | | 4 |

**!!!! SAFETY WARNING !!!!**

Before beginning the upgrade procedure, contact your facility's Safety Department to ensure that all safety compliance procedures are met. This includes, but is not limited to, obtaining the proper work permits, training, and personal protective equipment.

Ensure that there are no hazardous or flammable gases present in the immediate area of the analyzer during the entire duration of the procedure. During the non-purged time the analyzer will be declassified, which introduces an element of danger for fire, explosion, damage to property and injury or death to plant personnel.

If your analyzer is equipped with X-purge, refer to the X-purge section of your Analyzer Manual if the Override function is to be performed. Do not perform the Override function until you have read the procedure completely and you understand and can perform the procedure correctly.

**!!!! ELECTROSTATIC SENSITIVE COMPONENTS !!!!**

Electronic assemblies are sensitive to electrostatic discharge. To ensure adequate protection against electrostatic discharge damage, please use the enclosed wrist strap while handling all circuit board assemblies.

**!!!! FRAGILE COMPONENTS !!!!**

It is extremely important to take extra care inserting electronic devices into their sockets. Ensure that the legs of ICs are not bent during insertion. An IC insertion tool can be used to prevent damage.

## INTRODUCTION

This procedure defines the necessary steps in upgrading analyzers to be compliant on ABB Lewisburg's VistaNET communications system. Please refer to the diagrams supplied in this document for guidance in performing this procedure.

VistaNET Installation Guide 2200-IG contains additional information regarding VistaNET installation and cabling requirements. Please use this document for reference when making wiring connections to the analyzers.

VistaNET Administrator's Guide 2200-AG contains additional configuration information regarding the VistaNET-specific configurations required at each device to allow communications on the VistaNET communications network. Please refer to this document for guidance.

## REMOVING THE SINGLE BOARD COMPUTER PCB

1. Stop the analyzer at the end of the current cycle.

2. On the Background screen, note the software identification number in the upper left section of the screen.

3. Obtain the proper release permits to remove the analyzer from control.

4. Print all current analyzer tables.

**CAUTION**

**You must obtain a hardcopy printout of all analyzer tables before proceeding further. The Category 1 upgrade software supplied does not comply with the saved or stored images of the existing analyzer tables. These will have to be re-entered manually later in the upgrade procedure.**

5. Remove power and purge air. Comply with all safety regulations regarding work on equipment in your facility. Refer to the Safety Warning on page 3 of this document.

6 Put the supplied antistatic wrist strap around your wrist and connect the clip lead to the chassis or the analyzer card cage.

7 Remove the Single Board Computer (SBC) PCB from the Analyzer. Extract the PCB from the back plane using the board extractor levers. Note the position of the board (slot number) in the card cage.

8 Place the PCB in an electrostatic discharge protection bag

9 Disconnect the wrist strap clip.

10. Take the PCB to a clean area equipped with a clean workbench suitable for electronic repair and assembly.

11 Place the PCB (in its protection bag) on an antistatic mat. If an antistatic mat is not available, place a clean piece of cardboard on the work surface of the workbench.

12 You should still be wearing the antistatic wrist strap. Clip its lead to a metal object that is at earth ground potential.

13 Remove the SBC PCB from the electrostatic discharge protection bag.

14 Lay the bag on the flat surface of an antistatic mat or clean cardboard and place the SBC PCB, component side up, on the bag.

15 Refer to Figures 1 (-4 SBC PCB) and 3 (-5 SBC PCB) to identify the PCB version and orient the PCB as shown in the diagrams. Compare your PCB with the figures and proceed using the appropriate diagram and procedure.

## REWORKING THE –4 SINGLE BOARD COMPUTER PCB

1. Refer to Figure 1 for location of integrated circuits and jumpers.

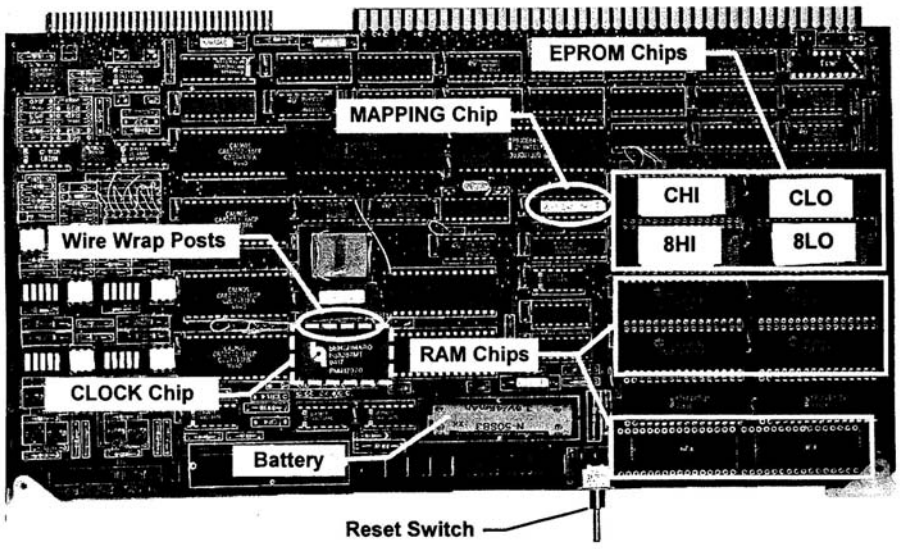


**Figure 1. -4 SBC PCB**

2. If this board has four RAM chips in the four upper locations shown in Figure 1, you do not have to replace the RAM chips.

3. If this board has six RAM chips in the locations shown in Figure 1, replace these six RAM chips with four chips, part number 3616674-1, from the kit, as follows (omit this step for a CAC):

   a. Locate the RAM chips (see Figure 1 for location).

   b. Use a chip extraction tool to gently remove the six existing RAM chips.

c. Install the four new RAM chips (part number 3616674-1) in the four upper locations, being careful to note the proper orientation of the chips (the notched end is to the left in the diagram). Be careful to ensure the chips' legs remain straight during insertion.

3. Replace the four EPROM chips as follows:

   a. Locate the four EPROM chips, noting the location of 8HI, 8LO, CHI AND CLO to ensure the new chips are installed correctly (see Figure 1 for location).

   b. Use a chip extraction tool to gently remove the four EPROM chips.

   c. Install the set of new EPROM chips (part number 803B015-1, 803B016-1, 803B017-1, or 803B018-1), being careful to note the proper orientation of the chips (the notched end is to the left in the diagram). Be careful to ensure the chips' legs remain straight during insertion.

4. Replace the mapping chip as follows:

   a. Locate the mapping chip (see Figure 1 for location).

   b. Use a chip extraction tool to gently remove the mapping chip.

   c. Install the new mapping chip (part number 803B022-1 for GC, 803B032-1 for CAC), being careful to note the proper orientation of the chip (the notched end is to the left in the diagram). Be careful to ensure the chip's legs remain straight during insertion.

5. Install two jumpers as follows:

   a. Locate the wire wrap posts near the Real Time Clock IC (see Figure 1).

   b. Install two 30-gauge jumpers as shown in Figure 2, using the wire and tool provided.

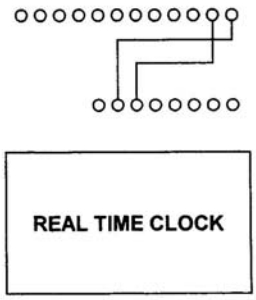


**Figure 2. JUMPER LOCATIONS, -4 SBC PCB**

6. Place the SBC PCB in the electrostatic discharge protection bag.

7. Unclip the antistatic wrist strap from the earth ground connection.

8. Take the SBC PCB to the analyzer location.

9. Connect the antistatic wrist strap clip to the analyzer chassis or card cage.

10. Install the updated SBC PCB into the slot from which it was removed.

## REWORKING THE –5 SINGLE BOARD COMPUTER PCB

Refer to the software identification number noted in step 2 of "Removing the Single Board Computer PCB."

If you have a –5 Single Board Computer PCB with Software Version 803V029, 803V030, 803V031, or 803V032, no integrated circuit chip or jumper changes are required. Go to the appropriate VistaNET installation instructions.

If you have a –5 Single Board Computer PCB with Software Version 2020, 2060, 2070, 2080, 2085,or 2220, replace the existing EPROM chips and mapping chip, and install jumpers, as follows (no RAM chip replacements are required):

1. Refer to Figure 3 for location of integrated circuits.

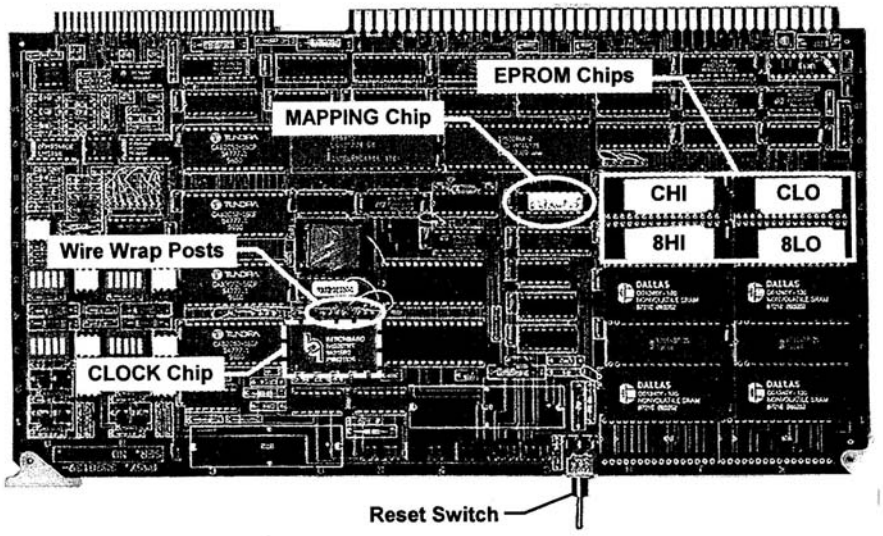


**Figure 3. -5 SBC PCB**

2. Replace the four EPROM chips as follows:

   a. Locate the four EPROM chips, noting the location of 8HI, 8LO, CHI AND CLO to ensure the new chips are installed correctly.

   b. Use a chip extraction tool to gently remove the four EPROM chips.

   c. Install the set of new EPROM chips (part number 803B015-1, 803B016-1, 803B017-1, or 803B018-1), being careful to note the proper orientation of the chips (the notched end is to the left in the diagram). Be careful to ensure the chips' legs remain straight during insertion.

4. Replace the mapping chip as follows:

   a. Locate the mapping chip.

   b. Use a chip extraction tool to gently remove the mapping chip.

   c. Install the new mapping chip (part number 803B030-1 for GC, 803B031-1 for CAC), being careful to note the proper orientation of the chip (the notched end is to the left in the diagram). Be careful to ensure the chip's legs remain straight during insertion.

5. Install two jumpers as follows:

   a. Locate the wire wrap posts near the Real Time Clock IC (see Figure 3).

   b. Install two 30-gauge jumpers as shown in Figure 4, using the wire and tool provided.

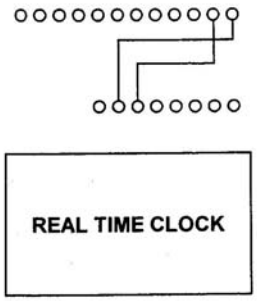


**Figure 4. JUMPER LOCATIONS, -5 SBC PCB**

6. Place the SBC PCB in the electrostatic discharge protection bag.

## INSTALLING THE HIGH SPEED VistaNET SYSTEM

1. Install the VistaNET Communication PCB in an unused slot in the card cage.

2. Route the cabling as shown in the kit drawing provided, 803J012-1.

## INSTALLING THE LOW SPEED VistaNET SYSTEM

1. Install the VistaNET Communication PCB in an unused slot in the card cage. Select a slot that permits connection of the VistaNET Interconnect Assembly.

2. Install the VistaNET Interconnect Assembly in a suitable location. The enclosed kit drawing, 803J010-1 (for twisted pair wiring) or 803J011-1 (for twinax wiring) show the suggested placement.

**NOTE**

**In some installations you may not be able to put the VistaNET Interconnect Assembly in the suggested area. In these cases, select a place in the Controller Enclosure that facilitates wiring to and from the VistaNET Interconnect Assembly. Mount the assembly by applying double-faced tape to the back of the assembly. Vista 2000 systems have mounting studs beneath the power supply. Remove and discard the supplied mounting bracket; use the same screws to mount the assembly to the studs.**

3. Connect the VistaNET Interconnect Assembly to the VistaNET Communications PCB using the supplied ribbon cable, part number 803A010-1.

4. Route the cabling as shown in the kit drawing provided, 803J010-1 (for twisted pair wiring) or 803J011-1 (for twinax wiring).

## COMPLETING THE UPGRADE

1. Verify that all safety considerations are satisfied and permits are in force.

2. Apply power to the analyzer.

3. Reset the SBC PCB by pressing the momentary switch on the SBC PCB. This updates the device address number in the computer.

4. From the Background screen, verify the remote number is displayed in upper right-hand corner of the screen.

5. Remove power from the analyzer.

6. Refer to VistaNET Installation Guide 2200-IG and connect the analyzer to the rest of the VistaNET communications network.

7. Close and secure the Controller doors.

8. If Y or Z purge is used, allow the analyzer to purge for the prescribed period designated on the analyzer tag or application data sheet. If X purge is used, refer to the X purge section of the analyzer manual.

9. After all safety precautions have been met, apply power to the analyzer.

10. Using the printout printed in step 4 of "Removing the Single Board Computer PCB," enter the analyzer tables.

11. Verify analyzer operation by performing several analyses.

12. Once you are satisfied that all tables are correct, save tables to EEPROM.

13. Enter the VistaNET configuration. Refer to VistaNET Administrator's Guide 2200-AG for guidance on configuration of VistaNET analyzers.

14. Once you are satisfied that all tables are correct, save tables to EEPROM.

15. Verify communications to control. Refer to VistaNET Administrator's Guide 2200-AG for guidance on verifying communications to the HIU, where applicable.

16. Once you are satisfied that analyzer operation and communication are satisfactory, return the analyzer to control.