PART II - PRIMARY SYSTEMS INFORMATION

V. Basic Intrusion Detection Systems (IDS)

3. Repairs

a. Troubleshooting Guides and Diagnostic Techniques:

Below is a list of potential operational) problems and/or installation discrepancies that could occur with the RTU-100, RTU-l90, and RTU-200, panels, along with possible causes for, each problem and suggested troubleshooting tips or remedies for that particular problem.

1) THE HOST CPU/CENTRAL STATION MONITOR INDICATES THAT THE RTU IS IN COMMUNICATION FAILURE ON THE PRIMARY COMMUNICATIONS LINE.

a) No power to the RTU.

-Check backup batteries.

-Check if the AC power LED on the RTU front panel is on. If not check AC power source.

b) The reset button on the RTU Processor Board was not pressed after installation. (This could cause incorrect address information when RTU is powered up.)

-Push reset button on the RTU Processor Board. Hold for 3 seconds.

c) Loose or improper communication line or power connections in the RTU.

-Check all TELCO board cable and wire connections in the RTU.

d) Address jumpers on the RTU Processor Board are wrong.

-Verify for correct line number and supervisory address jumpers on RTU Processor Board.

e) PPU line card and/or line parameters configured improperly.

-At a dedicated PPU terminal, or using the PPUTERM program, check the PPU internal line and modem configuration settings to ensure the correct baud rate, line delays, etc., are defined.

f) 2-Wire/4-Wire jumpers on RTU Processor Board incorrectly installed. (This is only applicable for MUX type communication.)

-Check JP3 on RTU Processor Board. JP3 jumper should be installed on 1-2 for 4- wire, and on 2-3 for 2-wire.

g) No Reply signal at the PPU from the RTU.

-Flashing REPLY LED on RTU indicates that RTU is transmitting in response to the PPV. Check communication line (TB3) to the PPV if REPLY LED is flashing.

h) No transmit signal from the PPU is being received at the RTU.

-If MUX or DIAL type communication, listen to the communication line with a telephone headset to see if the PPU XMIT signal is being received.

-If DIFF type communications, an oscilloscope IS required.

i) TELCO Board failure.

-Check fuses on TELCO Board.

-Check if battery cables are connected right.

-Replace TELCO Board.

j) RTU Processor Board (e.g. RTU-175C) failure.

-Replace RTU Processor Board and reset processor. Verify that the RTU Processor Board and Firmware is compatible with the communications format being used (e.g. MUX-MUX, DIFF-DIFF, DIFF-DIAL, etc.).

k) Cable from TELCO Board to Processor Board J2 is defective.

-Replace cable.

l) PPU Line Card failure.

-Replace the Line Card in the PPU. Ensure proper communication format/baud rate.

2. DIALER WILL NOT DIAL WHEN PRIMAR Y LINE FAILS.

a) Faulty cable from TELCO Board to RTU Processor Board J2.

-Replace ribbon cable.

b) EPROMs U20 and U27 on RTU-175C Processor Board have wrong firmware program

-Replace U20 and U27 EPROMs with correct firmware programming.

c) Dial telephone numbers programmed incorrectly.

-Using EPROG program at the Host CPU, check RTU parameters in LO EPROM of firmware set to ensure dialup phone numbers properly configured.

d) Telephone system will not support touch tone.

-Pulse dial is available from factory upon request.

e) RTU Processor Board failed.

-Replace Processor Board.

f) Improper phone line connection.

-Swap tip and ring wires.

3. DIALER DIALS, BUT CENTRAL STA TION DOES NOT RECEIVE.

a) PPU not answering.

-Check telephone number programmed into the RTU Processor Board firmware EPROM parameters.

b) Dialer telephone lines not connected correctly.

-Check dialer telephone line connections at TELCO Board.

-Check dialing functions with telephone test handset. Dial host PPU and verify proper ring latch operation.

c) Telephone line problem.

-Have telephone company check lines.

d) Delay needed in telephone number dialing.

-Program delays into EPROM with phone number.

e) PPU Line Card failure.

-Replace the Line Card in the RTU. Ensure proper communication format.

4. NO RTUs ON ONE LINE ARE BEING RECEIVED. OTHER LINES ARE OK.

a) Faulty Dial line connection at Host/Central Station PPU.

-Check line connections at the PPU. If MUX or DIAL type communication, listen to the communication line with a telephone headset to see if the PPU XMIT signal is being received. If DIFF type communications, an oscilloscope may be required. If connections OK but no signals, check with the telephone company on line status.

b) Line Card jumpers set incorrectly.

-Check PPU-50/100 manual for proper jumper configuration.

c) RTU Processor Board Line Number jumpers are incorrect.

-Verify correct line address jumpers on RTU Processor Board.

d) PPU Line Card failure.

-Replace the Line Card in the PPU. Ensure proper communication format. PPU line card and/or E. PPU line card and/or line parameters configured improperly.

-At a dedicated PPU terminal, or using the PPUTERM program, check the PPU internal line and modem configuration settings to ensure the correct baud rate, line delays, etc., are defined.

e) Line Card failure

-Replace Line Card at PPU-50/100.

5. ONE OR MORE R TUS ON THE SAME LINE SWING IN AND OUT OF COMMUNICA TION FAIL.

a) Duplicate RTU Processor Board supervisory address on the same line.

-Check the new RTU installed at the time the problem first occurred, and check supervisory address to ensure it is unique to the line. Remove power from the RTU with the swinging address and check if that address is still shown as on-line.

b) Improper termination of Passive Matrix Bridge (MUX only).

-Check connections at the bridge.

c) Bad communications line.

-Check line quality. Have Telephone Company check the lines.

d) Earth ground (CGND) missing from the TELCO board TBl-8.

-Install missing ground wires from TB1-8 to each ground.

e) PPU modem delay set incorrectly.

-Check modem delay times in PPU standalone.

6. RTU FAILS TO PROCESS, DISPLAY AND/OR PERFORM A COMMAND SENT BY THE HOST CPU/CENTRAL STATION.

a) RTU is in communication failure.

-Check solutions in item #1.

b) RTU Processor Board or RIM board or ROAM board incorrectly addressed

-Check addressing on RTU Processor board, RIM board, or ROAM board.

c) Command sent to the incorrect address.

-Check command file data base to ensure correct address is selected.

d) Cable from RIM to RDM, or from RIM to ZPR-ROM not connected or defective.

-Check cable.

e) RIM board defective.

-Replace RIM board.

f) ZPR-ROM or ROAM board defective (if command is to set/reset relays).

-Replace ZPR board.

g) RDM board defective.

-Replace RDM board.

h) RTU Processor Board not reset after line number address jumper change.

-Push RTU Processor Board reset switch.

i) RTU Processor Board failure.

-Replace RTU Processor Board.

j) PPU modern delay or baud rates set incorrectly.

-Check modem delay times and baud rate settings in PPU standalone.

7. RTU REPORTS INCORRECT ZONE INFORMATION TO CENTRAL STATION.

a) Incorrect or defective ZIM installed.

-Verify correct ZIM or replace ZIM.

b) Improper end-or-line device installed

-Check end-of-line resistor.

c) RIM board failure.

-Replace RIM.

d) TELCO board Power Supply defective.

-Replace TELCO board.

e) RTU Processor Board failure.

-Replace RTU Processor Board.

f) Phone line defective.

-Check for bad phone line.

8. "FAULT" LED WILL NOT TURN OFF ON RTU FRONT PANEL.

a) Resistor missing from Fire Bell Output on TELCO Board.

-Insert a lK-ohm resistor across TELCO board TB2-7 and TB2-8.

b) Blown fuse Ol11 TELCO Board.

-Check and replace with 1 AMP fuse.

c) Dial line supervision has detected no connection of the Dial Backup line.

-Swap tip and ring wires on TELCO board. Connect dial line.

d) RTU Processor Board firmware EPROM.

-Check to see if the EPROM is installed correctly.

9. CARD READER FAILS TO READ CARDS.

a) Reader wiring is incorrect.

-Check wiring at reader. Verify connections from reader to CIM board, or from reader 1:0 ACT-E or ACT-D, or connections from ACT-E, ACT-D, or other ACT reader to the FIM board. Verify correct polarity on data connections.

b) Incorrect Address setting on the ACT-E, ACT-D, or ACT Reader (FIM access).

-Verify address jumper setting on the ACT unit.

c) Wrong ZIMs or ZIMs in wrong location.

-Verify that that the appropriate Access Control ZIM's are installed in zones 5/6 and 7/8 of the RJM-8, or in the bottom 4 ZIM locations of the RIM-16. (All 8 ZIM location of the RIM-16 can be used for access control if the firmware parameters are used to set the RIM-16 board to operate as a TYPE 5 board.)

d) RIM board J1 jumpers wrong.

-Verify the jumper is in the JT2 position for access control operation.

e) If FIM access control, access Schemes jumper settings may be incorrect.

-Verify jumpers JP4 on the 175C Processor Board are set for the correct connection Scheme for the readers in use.

f) Bad RIM, CIM, CIM-EXP, or FIM board.

-Replace defective board.

g) Defective Card Reader or Read Head within card reader.

-Replace defective reader or reader head.

h) Defective or incompatible cards.

-Verify the data format of the access cards being used. Replace if not compatible. Verify if all cards fail to read or only certain ones. Replace the defective cards.

i) Wrong firmware EPROM and/or EPROM Parameters in RTU Processor Board.

-Verify that the EPROM is correct, and configured properly for your access control application.

j) Database at Central Station is configured incorrectly.

-Have Host CPU/Central Station administrators verify access control database.

k) RTU won't accept download from Host CPU. Check modem delays in PPU standalone.

-Verify account number in RTU Processor Board EPROM firmware parameters.

l) 12 VDC Reader connected directly to CIM.

-Add an OIM between CIM and Reader to match voltage differences.

m) Reader shorting CGND to CIM or FIM V-.

-Add an OIM between CIM and Reader to isolate CGND from V-.