

RTC Associates, Inc.

Service

Access Control Products

Support

RTC Control I System Evaluation

RTC Associates, Inc. performs the following during a Control I System Checkout.

Concentrator Maintenance

The work to be done at each concentrator and a brief description with any products needed is as follows in the approximate order to be completed.

1. Remove the concentrator from the coaxial loop allowing time for a reconfiguration to occur. This will provide us with an instant test for the coaxial switchers on either side of the concentrator being worked on. If either switcher malfunctions steps will be taken to create a loop configuration that will allow the other concentrators in the system to function correctly during the time work is being performed.
2. Remove all power from the concentrator with the exception of the master concentrator as the computers will not be powered down.
3. Thoroughly clean the concentrator. Vacuum and wipe down all areas. Remove all boards from the card cage, clean and inspect backplane. Remove all Jones plugs. Clean, inspect and tighten any connectors as needed. Mark Viking connectors with the associated slot number. Clean and inspect each board noting slot number in the card cage and the address of each board. Grouping of like boards and the shifting of boards will be done if needed. A drawing with board address and locations in each concentrator will be provided in the final report.
4. Inspect Acopian and Electrostatic power supplies, 30-0068 sense boards and all connections. Repair or replace wires that have loose connections or loose components.

Once all needed work is completed on the power supplies, attached boards and wiring, the supplies will be powered on and set up for the correct voltage on the backplane of the card cage to insure it meets Computrol's original specifications. All voltages before and after will be provided in the report as well as AC voltages.

5. With the use of the Computrol FIM tester all control signals sent to the concentrator will be tested. An oscilloscope will be used to verify signals and address. All relays will be cycled and LED test boards will be used to verify their actuation. The coaxial switcher will be fully tested for cable configuration requirements. Other boards tested at this time will be the Contact Input, Output Contact, Modem, CDI and Fault Detect. Any adjustments that can be made will be done. Any defects or faults that are found will be repaired or the board will be replaced. It is important at this time that all spare boards and all spare power supplies are made available to us so that another trip will not be needed. If this work will be done at night these boards must be readily available.
6. Once all necessary adjustments, repairs and installations are completed the concentrator will be returned to service and can be tested by security.

System Operational Evaluation

The system will be tested using the RTCA-500 Communications Analyzer which connects directly to the data communications link to assist in evaluating and locating any problems that may exist. The Monitor has the capability of gathering information the computer sends to the remote concentrators and the data information returned from each remote concentrator. The Monitor saves this data in memory as a data transaction which can be viewed later for further analysis. Along with the data transactions, any errors such as parity, time-out, and address errors are also stored.

The Monitor works in one of three modes:

1. Snapshot mode
2. Continuous monitor mode
3. Selected MUX FIM mode

The “Snapshot “ mode monitors the cable until 2045 transactions have been recorded. This is the most accurate mode for recording data transactions on the cable. The data is stored in memory and an error total report is printed to the screen. The data can be analyzed line by line to distinguish where the trouble is located.

The “Continuous” monitor mode displays the data on the screen as it is being collected in real time. When the 2045 transactions have been collected the buffers reset or rollover to keep collecting data. We can also select different options to display on the screen, such as errors or change of state only.

The “Selected MUX FIM” mode enables us to monitor data to and from an entire concentrator or from a single alarm point in the concentrator.

Each concentrator will be evaluated for the following using a digital volt ohm meter, oscilloscope and Comptrol I FIM tester with associated test boards:

- Power Supplies & Regulator / Sense Boards

All power supplies will be checked with a volt /ohmmeter to insure correct voltage levels are present. An oscilloscope will be used to insure any AC ripple is below 200mv and there are no noise spikes present. All sensing boards will be tested for correct regulation levels and noise. The voltages will be checked at the backplane and both supplies set up individually according to manufacturer specifications.

- Card Cage

Using the Comptrol I FIM tester the concentrator can be addressed the way the computer communicates with it. Individual cards in the cage can also be addressed therefore testing all data and communication lines.

- Modems

The CM500KB modems will be checked using an oscilloscope to measure the FSK cable output and the detector level input for proper voltage levels and blank times. Any needed adjustments to the baseline or detector will be made.

The signals will also be checked for noise/voltage spikes that could interfere with proper data communications.

- Input Output FIM's

Individual tests will be performed on all boards in the concentrator. All input circuits and relays both in and out will be tested. Communication starts at the coaxial switcher and communicates to the other boards just as a computer would. These tests are the same that would be performed to do component level repair work if the boards were returned for service.

- Card Reader Interface

All card reader interface boards will be checked with an oscilloscope to insure the baud rate is at its correct frequency and voltage level, which is critical for data transmissions to and from the card readers.

- General

All boards, connector and Jones plugs will be checked, solder joints and terminal lugs on wires, screw connections on terminal blocks and caps on fuses will all be checked to insure positive connection to interfacing equipment.

Pricing

All work is done at our Standard Service Rates.