RackLink™ Control Protocol

Support for
INFOCOMM 4:2012 Audiovisual Systems Energy Management Standard

The INFOCOMM 4:2012 Audiovisual Systems Energy Management Standard defines and prescribes processes and requirements for ongoing power-consumption management of the audiovisual (AV) system.

Middle Atlantic Product's RackLink™ products meet this standard via an available firmware update.

In order for RackLink™ to support the INFOCOMM 4:2012 Audiovisual Systems Energy Management Standard various internal functions were enhanced. As a result some new Control Protocol commands are now available to track the energy management state of connected devices. Additionally, log entries now include the energy management states.

For those customers that have implemented or will implement a control system in conjunction with RackLink™ sample projects for Crestron and AMX systems are available on the Middle Atlantic Products website. These sample projects include support for the INFOCOMM 4:2012 Audiovisual Systems Energy Management Standard.

Listed below are the details of the enhancements made to the RackLink™ Control Protocol.

The existing command to retrieve Log Entries (0x80) was enhanced to include the Occupancy and Outlet Energy Management States. The Log Entry command is now 78 bytes long. Both the control system and RackLink™ need to be using the 78 byte version of the Log Entry command. Below are the details of the Log Entry command.

NOTE: Both the RackLink Firmware and the Control System code must support INFOCOMM 4:2012 in order for the Control System to display the power management enhancements. Sample code is available at www.middleatlantic.com for Crestron and AMX.

Log Entry (Get)

- Byte 1 – Byte 4
    - Beginning Log Entry
    - ASCII Encoded Decimal
    - Valid Range: "0001" – "2000"
- Byte 5:
    - Valid Value: "|" (Pipe)
- Byte 6 – Byte 7
    - Return Count
    - ASCII Encoded Decimal
    - Valid Range: "00" – "99"

Log Entry (Response, Log Alert)

- Byte 1 – Byte 2
    - Request Item Number (referenced from the count)
    - ASCII Encoded Decimal
    - Valid Range: "00" – "99"
- Byte 3:
    - Valid Value: "|" (Pipe)
- Byte 4– Byte 5
    - Quantity Items to Receive
    - ASCII Encoded Decimal
    - Valid Range: "00" – "99"
- Byte 6
    - Valid Value: "|" (Pipe)
- Byte 7 – Byte 10
    - Log Entry Number
    - ASCII Encoded Decimal
    - Valid Range: "0000" – "2000"
- Byte 11
    - Valid Value: "|" (Pipe)
- Byte 12 – Byte 13
    - Log Entry Category
    - ASCII Encoded Decimal
    - Valid Range: "00" - "09"
        - Value: "00" (Normal)
        - Value: "01" (Over Voltage)
        - Value: "02" (Under Voltage)
        - Value: "03" (Over Current)
        - Value: "04" (Under Current)
        - Value: "05" (Over Temperature)
        - Value: "06" (Under Temperature)

- Value: "07" (Surge Fault)
- Value: "08" (Auto Ping Fault)
- Value: "09" (RS-232 Ping Fail)
- Value: "10" (EPO Initiate)
- Value: "11" (EPO Recovery)

- Byte 14
  - Valid Value: "|" (Pipe)
- Byte 15 – Byte 78
  - Log Data
  - Various ASCII Data
  - Descripton:

  MM/DD/YYYY HH:MM:SS,TTT,WWWW,F.F,VVR,CC.R,LLLL.L,O,1,2,3,4,5,6,7,8

  1. MM Is Month
  2. DD is Day
  3. YYYY is 4 digit Year
  4. HH is Hour
  5. MM is Minutes
  6. SS is Seconds
  7. TTT is Temperature in Fahrenheit
  8. WWWW is Wattage
  9. F.F is Power Factor
  10. VVR is RMS Voltage
  11. CC.R is RMS Current
  12. LLLL.L is Thermal Load
  13. O is Occupancy
  14. 1 is Outlet 1 Energy Management State
  15. 2 is Outlet 2 Energy Management State
  16. 3 is Outlet 3 Energy Management State
  17. 4 is Outlet 4 Energy Management State
  18. 5 is Outlet 5 Energy Management State
  19. 6 is Outlet 6 Energy Management State
  20. 7 is Outlet 7 Energy Management State
  21. 8 is Outlet 8 Energy Management State

New commands have been added to track the Energy Management State of each Outlet. These new commands are listed below.

Power Outlet Device Energy Management State (0x23):
Power Outlet Device Energy Management State (Get)

- Byte 1:
    - Dry Contact Number: 0x1 – 0x8

Power Outlet Device Energy Management State (Set, Response)
- Byte 1:
    - Dry Contact Number: 0x1 – 0x8
- Byte 2:
    - Energy Management State
        - Value: "D" (Disconnected)
        - Value: "S" (Standby)
        - Value: "I" (On)
        - Value: "O" (Off)
        - Value: "U" (Unknown)

Current Energy Management State (0x60)
Current Energy Management State (Response)

- Byte 1
    - Occupancy State
        - Value: "U" (Unoccupied)
        - Value: "O" (Occupied)
- Byte 2
    - Outlet 1 Energy Management State
        - Value: "D" (Disconnected)
        - Value: "S" (Standby)
        - Value: "I" (On)
        - Value: "O" (Off)
        - Value: "U" (Unknown)
- Byte 3
    - Outlet 2 Energy Management State
        - Value: "D" (Disconnected)
        - Value: "S" (Standby)
        - Value: "I" (On)
        - Value: "O" (Off)
        - Value: "U" (Unknown)
- Byte 4
    - Outlet 3 Energy Management State
        - Value: "D" (Disconnected)
        - Value: "S" (Standby)

- Value: "I" (On)
        - Value: "O" (Off)
        - Value: "U" (Unknown)
  - Byte 5
    - Outlet 4 Energy Management State
      - Value: "D" (Disconnected)
      - Value: "S" (Standby)
      - Value: "I" (On)
      - Value: "O" (Off)
      - Value: "U" (Unknown)
  - Byte 6
    - Outlet 5 Energy Management State
      - Value: "D" (Disconnected)
      - Value: "S" (Standby)
      - Value: "I" (On)
      - Value: "O" (Off)
      - Value: "U" (Unknown)
  - Byte 7
    - Outlet 6 Energy Management State
      - Value: "D" (Disconnected)
      - Value: "S" (Standby)
      - Value: "I" (On)
      - Value: "O" (Off)
      - Value: "U" (Unknown)
  - Byte 8
    - Outlet 7 Energy Management State
      - Value: "D" (Disconnected)
      - Value: "S" (Standby)
      - Value: "I" (On)
      - Value: "O" (Off)
      - Value: "U" (Unknown)
  - Byte 9
    - Outlet 8 Energy Management State
      - Value: "D" (Disconnected)
      - Value: "S" (Standby)
      - Value: "I" (On)
      - Value: "O" (Off)
      - Value: "U" (Unknown)

Occupancy State (0x61)
Occupancy State (Set, Response)

  - Byte 1
    - Occupancy State
      - Value: "U" (Unoccupied)
      - Value: "O" (Occupied)