Verve IPAC Plug-in Wireless AC Module

Wireless Linking & Configuration Guide

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Automating Energy Savings since 2008

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IPAC Configuration Settings

Configuration Settings Reference Table

Table 1. Modifiable configuration parameters of the HVAC controller

Address (Hex)	Read Size (bytes)	Parameter Name	Parameter Description	Parameter Range*	Default Value (Hex)	Decimal Translation
0x7DF2	0x01	Entry Door Timeout	After an "Entry Door Closed" wireless signal is received (only when changing state from "Entry Door Opened" event); the IPAC will "listen" for motion sensor signals. If "Motion Detected" telegram is not received during the Entry Door Timeout period, the IPAC relay will open (Turn the window AC unit OFF).	0 - 65535 (secs)	0xAF	8 mins
0x7DFE	*0x01*	*Entry Door Prop Timeout* *(future release)*	*This parameter enables the system to go into Unoccupied / Energy Savings Mode, even if motion is detected. This parameter defines the amount of time after an Entry Door Open event occurs to elapse before overriding motion-driven Occupied / Comfort Mode.*	0 - 65535 (secs)	*0xBC*	*14 mins 56 sec*
0x7DF7	0x01	Relay On Delay	Time delay that elapses before the relay changes state from Off to On (ie., hotel keycard switch inserted, entry door opened, or motion detected)	0 - 65535 (secs)	0x00	No delay
0x7DF8	0x01	Relay Off Delay	Time delay that elapses before the relay changes state from On to Off (ie., hotel keycard switch removed or outside door/window opened)	0 - 65535 (secs)	0x88	30 secs
0x7DF5	0x01	Relay minimum "on" time	Short Cycle Prevention - After the controller switches state from Off to On - this is the amount of time that must elapse before the unit can change states again.	0 - 65535 (secs)	0xA9	4 min 48 sec**
0x7DF6	0x01	Relay minimum "off" time	After the controller switches state from On to Off - this is the amount of time that must elapse before the unit can change states again.	0 - 65535 (secs)	0x00	No delay
0x7DFA	0x01	Room Refresh (Max Unoccupied Temperature)	Temperature threshold at which the IPAC AC Module will turn on when in Unoccupied / Energy Savings Mode.	Disabled, 70° - 90° F	0xB1	82° F
0x7DFB	0x01	Room Refresh Cycle (Timer-based)	The amount of time that elapses when in Unoccupied / Energy Savings Mode, this is before turning On the IPAC AC Module.	Disabled, 50° - 70° F	0x00	Disabled
0x7DFC	0x01	Room Refresh Cycle On Runtime	IF "Room Refresh Cycle (Timer-based)" is enabled, this is the amount of time the IPAC AC Module will stay on before going back into Unoccupied / Energy Savings Mode".	0 - 65535 (secs)	0xA9	4 min 48 sec

* Refer to the IPAC Product Programming Guide for a complete list of the increments of time available of time-based parameters. Settable parameters are selectable in increments of 32 seconds.

** Changing 0x7DF5 default (Relay minimum "on" time) to 0xA6 (3 mins 12 secs) - this will increase energy savings w/out diminishing guest comfort or risking a short cycle.

Software Setup

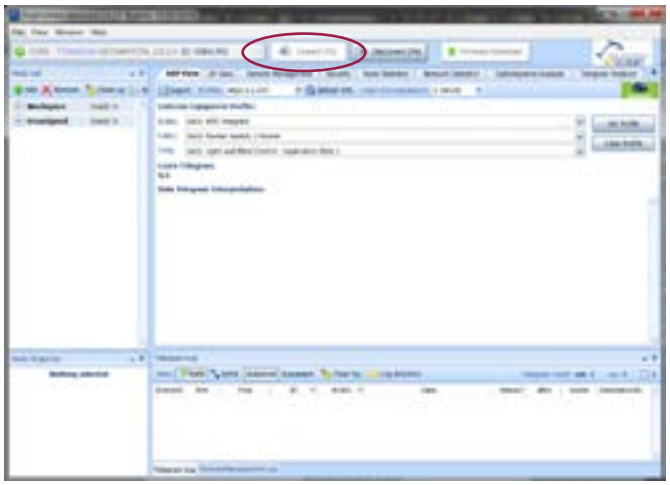
DolphinView Software

The configurations made to the HVAC controller in this guide are accomplished using EnOcean DolphinView Software & USB300 wireless USB stick. The DolphinView software provides a software user interface for configuring wireless products and software. The USB300 transmits and receives EnOcean wireless signals between a Windows-based PC and the EnOcean Wireless Controls.

Begin by downloading and installing the DolphinView Software.

1. Download DolphinView Software (free, but requires registration with EnOcean) http://www.enocean.com/en/download/
2. Install DolphinView by double-clicking the downloaded executable file and following the prompts of the installation screens - use all default values (Requires MS Windows XP, 7 or 8)
3. Insert EnOcean USB Transceiver into a PC or laptop USB port
4. Start Dolphin View

>>> Select Connect Button



5. Clean up "Workspace" section (top of left column)

   IF any controls are already in the Workspace section (ie., from a previous session), remove them from this section of already assigned controls.

   a. Select Control
      >>> Each control must be removed individually, one-at-a-time.
   b. Select "Remove" button

Identify & Isolate Wireless Controls

Preparations

Charge the Solar-powered Sensors

Solar-powered sensors need light in order to perform (natural or indoor). Before configuring solar-powered sensors, remove the sensors from their boxes and place them where they can collect light (natural or man-made). Optionally, batteries can also be added to provide immediate power to the solar-powered sensors.

Visualize Relay Switching > Connect IPAC to a Table or Floor Lamp

(Optional) Even though the relay can be heard audibly when switching; connecting the relay to a table or floor lamp add visual indications of product configuration settings during commissioning.

Restore Factory Settings

To make certain the Plug-in AC Module is operating using its default factory settings and is not linked to any other wireless controls:

Restore Plug-in AC Module to its Factory Settings

1. Press and Hold the LNK button until the AC Module relay switches ON & OFF repeatedly; then release the LNK button.
2. While relay is switching ON & OFF, press & hold the "CLR" button for 3 seconds (until the relay begins the switching pattern again).
3. Wait for module to timeout on its own (30 secs.).
   (for advanced users familiar with Plug-in Module behaviors: press and hold the Link button between 1-2 seconds to exit LNK Mode (Warning > holding the button too short or too long will not achieve the desired result)

Transmit LINK Signals

For the wireless controls to be viewed through the DolphinView interface, you must manually press the physical LINK buttons located on sensors and switches. These wireless signals are received through the EnOcean USB Transceiver. Each control will automatically appear in the "Unassigned" section of the DolphinView UI after their signals are sent.

HINT: Look for an "EEP" icon next to the controls in the "Unassigned" section to distinguish controls - This helps the controls you are commissioning stand out from other EnOcean wireless controls that might be with range of the USB Transceiver.

Exceptions: IKCS & EHSM currently do not show the EEP label

How to Manually Send Linking Signals

IPAC Wireless Plug-in A/C Module
Press "LNK" Button (top button on side of Plug-in AC Module)

EOSW & EOSC Motion Sensors
Press Flat "Menu" Button (on bottom base, the button with a flat surface w/ small circle indent)

EDWS Door/Window Sensor (same for both Entry or Outside DWS)
Press button on the side of sensor

ERTS Remote Temperature Sensor
Press button on the side of sensor (Same as DWS)

IKCS & EKCS Hotel Keycard Switches
Insert/remove a hotel keycard into / out of the switch 1x

Isolate Controls in the DolphinView "Workspace" section

1. Add controls to the "Workspace" area by double-clicking each control in the "Unassigned" area that will be linked or programmed.

Add Labels to Help Identify Controls

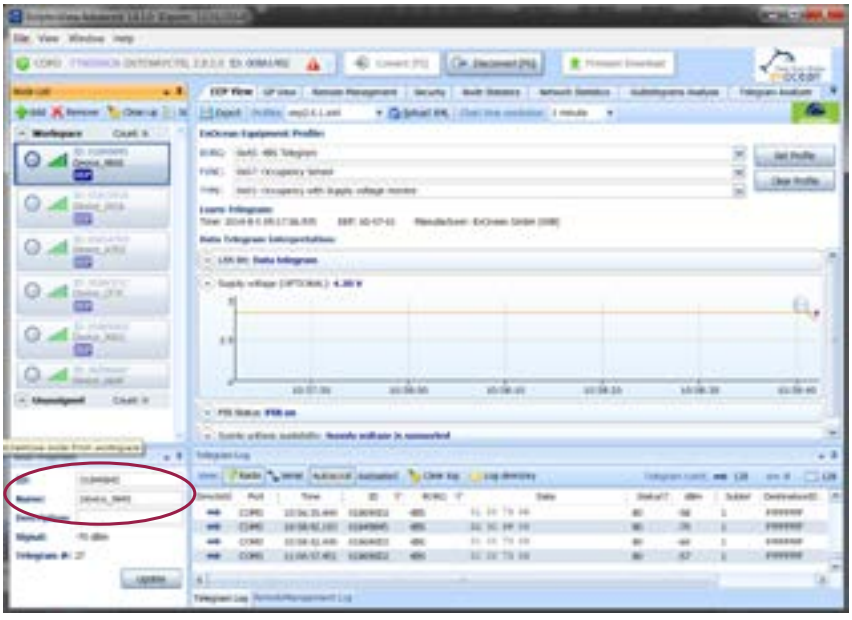
Since the controls are not immediately recognizable by their unique IDs, descriptive names of the wireless controls can be entered in the "Name" fields ("Node Properties" section in the left column.

Capture Device IDs for Future Reference

In the "Node Properties" section, the unique ID for each control is displayed. Copy and store the IDs in a location for future reference (ie., in an MS Excel Spreadsheet).

Tricks for identifying controls:

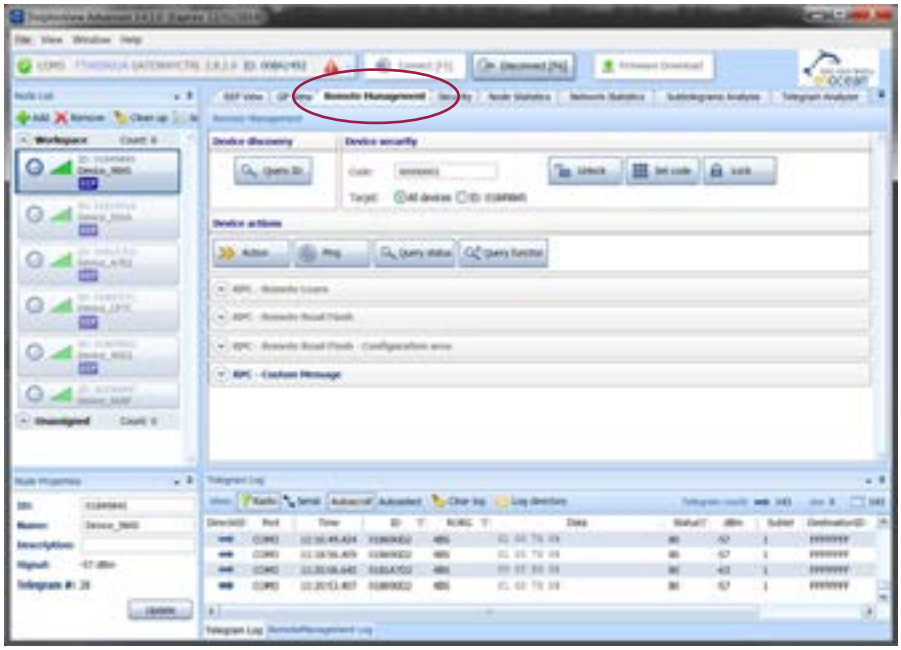
- The the LINK buttons are pressed to transmit radio signals, the circles next to control info will turn red when the signal is received (Left column "Workspace" section)
- In the "Type" field in the "EEP View" tab, you will see a text description of the control
  warning - not all of the descriptions are intuitive - for example, both the key-card switch & Plug-in AC Module are described as a "Gateway".
  - "Single Input Contact" = DWS Door/Window Sensor (Entry or
  - "Temperature Sensor Range 0C-40C" = RTS Remote Temperature Sensor
- Use DolphinView filters (single-click the "ID" column heading, then select the devices you wish to isolate)



- Employ Naming Convention
  - Example: A115-KCS2 ("Floor#Room#-Device#" (more than one of same device is in a single kit)

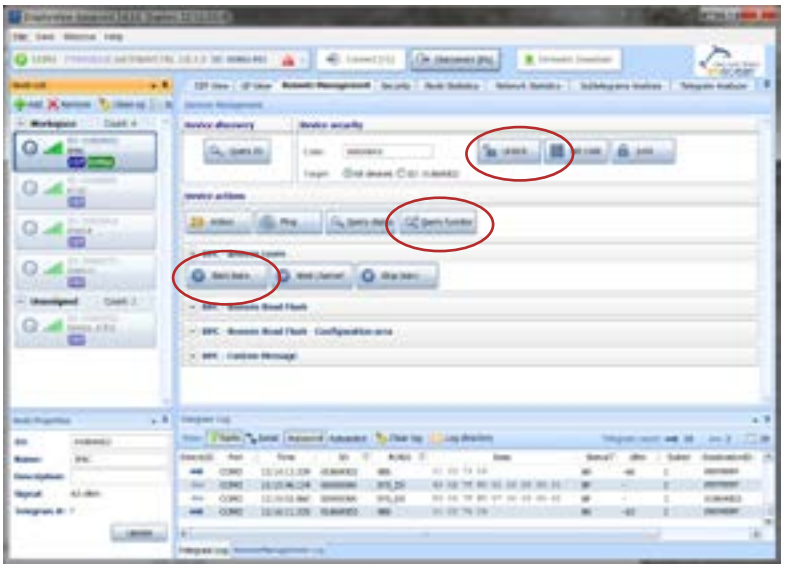
Link Wireless System Controls

Remote Linking



1. Go to the “Workspace” section
   a. Single-click the Plug-in AC Module - the controller stores all links and settable configuration parameters.
2. Select the “Remote Management” tab
   a. Select “Unlock” button
   b. Select “Query Function” Button
   c. Select “Start learn” button - The AC Module is now ready for linking (relay will begin toggling on and off).

   (If you cannot see the “START LEARN” button - your session may have timed out. Select the “Unlock” & “Query Function” buttons again to enable linking.)



d. One at a time, LINK the sensors and switches into the memory of the IPAC Plug-in AC Module by sending LINK Signals from each control (manually press the Link buttons on each of the sensors and switches) -

   After linking a device, the IPAC will pause toggling ON & OFF to indicate a successful link. Wait for the relay to begin toggling ON & OFF again before proceeding to the next device.

   EXCEPTION: IKCS Hotel Keycard Switches
   WHEN LINKING AN ILLUMRA HOTEL KEYCARD SWITCH (IKCS) - LINK ALL OTHER DEVICES FIRST BECAUSE THE HOTEL KEYCARD SWITCH MUST BE LINKED ON A DIFFERENT CHANNEL

   i. HOW TO LINK AN ILLUMRA HOTEL KEYCARD SWITCH....

      > After linking all of the other controls 1st; select the "NEXT CHANNEL" button
      > Send LINK Signal from IKCS by inserting/removing a hotel keycard into/out of the switch **3x**

e. After all the controls have been linked - Select the "STOP LEARN" button

Configure IPAC Parameter Settings

Save Changes

In order for modified parameters to be saved – You must RESET the AC Module using 1 of the following methods:

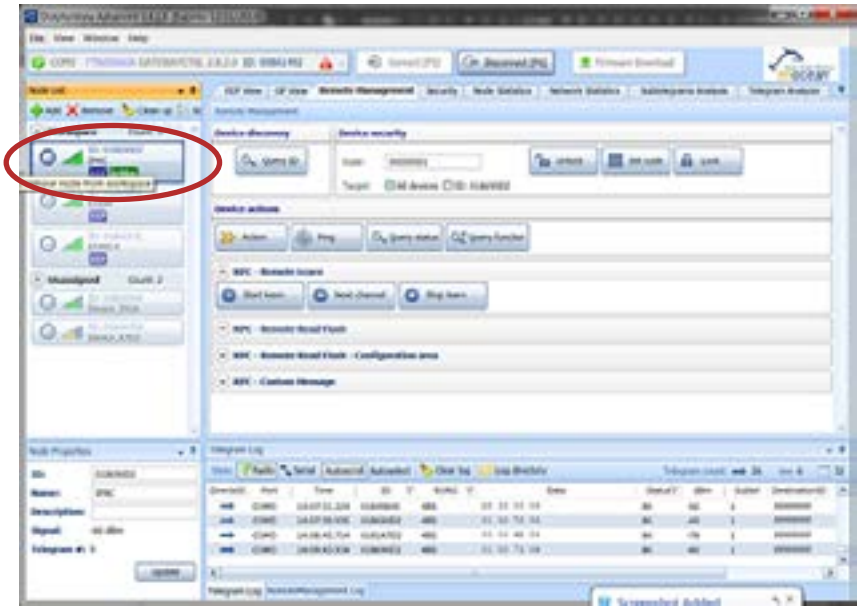
NOTE: this is not necessary after linking - it is only necessary when modifying settable parameters.

- For plug-in controllers:
  Power Cycle (Physically unplug / plug-back-in the device)
- For in-line controllers:
  Enter LRN MODE, then EXIT LRN MODE

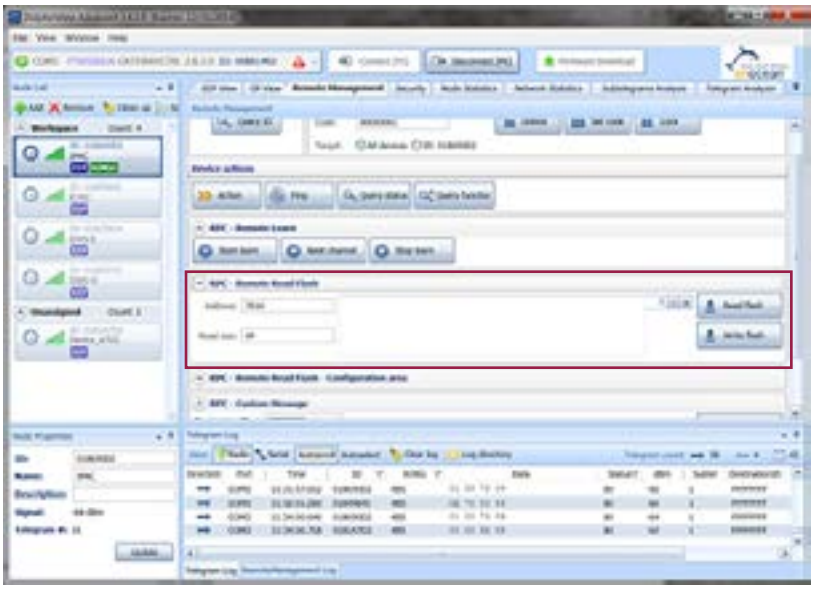
Go Configure

In order to modify any of the settable parameters of the IPAC Plug-in AC Module; go to the Remote Management tab and edit the AC Module memory slots associated with the desired function. Take the following steps in order to get to the point where you can edit features and functions.

1. Ready the Plug-in AC Module for programming (in the same manner you would ready the device for linking).
   a. Single-click the Plug-in AC Module located in the "Workspace" section
   b. Select the "Remote Management" tab
   c. Select the "Unlock" button
   d. Select the "Query Function" button



2. Read the memory slots of the linked sensors & switches
   a. Expand the "RPC - Remote Read Flash" section by clicking the text heading or the arrow next to the text heading.
   b. Change the "address" from the default 0x7E00 to the address the is specific to the feature or function you are editing (the feature-specific addresses are listed in the following sections.)



c. Change the read size according to the function or feature being modified. You can increase or decrease the read size according to the number of devices in the workspace. Here are some examples:

   0x1 will show 1 byte (ie., “01”)
   0x9 will show 9 bytes (memory allocated to 1 linked device)
   0x1B will show 27 bytes (memory allocated to 3 linked devices)
   0x24 will show 36 bytes (4 linked devices)

d. Select the “Read Flash” button to view memory slots of each linked device.

   NOTE: If nothing happens, it is likely your session has timed out. This can be remedied by re-selecting the “Unlock” button.

   Each device is 9 bytes long (each byte = 2 digits)
   >>> The 1st 4 bytes = Device ID
   >>> The next 5 bytes = Parameter Settings

3. Now you are ready to edit feature and function-specific parameter values. Refer to the next sections to enable HVAC-specific functions on the IPAC.

Enable Functions & Modify Parameter Values

Entry Door Timeout

Address: 0x7DF2
Read Size: 1
Default = 0xAF (8 mins)

After an "Entry Door Closed" wireless signal is received (only when changing state from "Entry Door Opened" event); the IPAC will "listen" for motion sensor signals. If "Motion Detected" telegram is not received during the Entry Door Timeout period, the IPAC relay will open (Turn the window AC unit OFF).

The unit will remain in "Energy Savings / Unoccupied Mode" until one of the following events occurs:

- "Motion Detected" signal is received from the EOSW or EOSC Motion Sensor
- "Room Refresh Cycle (temperature-based)" - The ambient room temperature values received from the ERTS equals or exceeds the setpoint value (the AC unit will remain on until the ambient temperature is below the setpoint).
- "Room Refresh Cycle (timer-based)" - The timer expires (the AC unit will turn on for the amount of time dictated by the "Room Refresh Cycle On Runtime" parameter).
- "Entry Door Opened" signal is received from the EDWS-E

To modify the timeout value:

1. Ready the IPAC for configuring.
    a. Single-click the IPAC Plug-in AC Module in the Workspace Section
    b. Select the "Remote Management" tab
    c. Select the "Unlock" button
    d. Select the "Query Function" button
    e. Open the "RPC Remote Read" section
2. Change Address to "7DF2"
3. Change Read Size to "1"
4. Select "Read flash" button (currently stored value appears in the text window)
    a. Enter the desired timeout value (must enter a hex value, this is amount of time AFTER receiving an "Entry Door Closed" signal before opening the relay (turning off the AC Unit due to a "No Motion Detected" signal received).

    Examples (refer to the table in the Appendix for more values):
    >>> 0xAA = 5 min. 20 secs.
    >>> 0xAF = 8 min. 0 sec.
5. Select "Write flash" button
6. Select "Read flash" button to verify the new value was saved
7. Save changes by power cycling the AC Module (unplug and plug it back in).

Entry Door Prop Timeout

Future Release

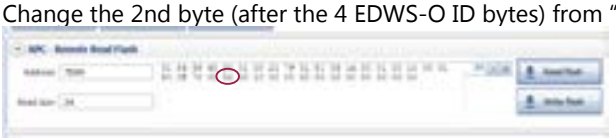
Address: 0x 7DFE
Read Size: 1
Default = 0xBC (4 min 48 sec)

DWS-O Outside Door/Window Sensor

Address: 0x7D00 (lists DWS-O and other linked devices)
Read Size: 0x24

By default, the AC Module will automatically interpret signals coming from any Door/Window Sensor as an "Entry Door Sensor". To configure as an EDWS-O.

1. Ready the IPAC for configuring.
    a. Single-click the IPAC Plug-in AC Module in the Workspace Section
    b. Select the "Remote Management" tab
    c. Select the "Unlock" button
    d. Select the "Query Function" button
    e. Open the "RPC Remote Read" section
2. Change Address to "7D00"
3. Change the Read Size to "24".
4. Select "Read Flash" button.
5. Identify the EDWS-E Entry Door Sensor that should be converted to function as an EDWS-O Outside Door/Window Sensor
6. Change the 2nd byte (after the 4 EDWS-O ID bytes) from "01" to "02".



7. Select the "Write Flash" button
8. To verify modification was successfully saved, select the "Read Flash" button and view the modified value.
9. Save changes by power cycling the AC Module (unplug and plug it back in).

Relay Off Delay

Time delay that elapses before the relay changes state from On to Off (ie., hotel keycard switch removed or outside door/window opened)

Address: 0x7DF8
Default = 30 seconds (0x88)

To modify delay...

1. Ready the IPAC for configuring.
    a. Single-click the IPAC Plug-in AC Module in the Workspace Section
    b. Select the "Remote Management" tab
    c. Select the "Unlock" button
    d. Select the "Query Function" button
    e. Open the "RPC Remote Read" section
2. Change Address to 7DF8
3. Change Read Size to "1"
4. Select "Read Flash" button
5. Enter the desired hex value of time (ie., 0x88 = 32 seconds)
6. Select "Write Flash" button
7. Select "Read Flash" button to verify change was recognized
8. Power Cycle the Plug-in AC Module to save changes

Enable ERTS Remote Temperature Sensor

Address: 0x7D00
Read Size: 0x24 (increase if needed according to the number of LINKED devices)

Even if an RTS was successfully linked to the IPAC AC Module, the IPAC will not recognize the RTS data until it is configured to recognize HVAC-specific data. To take advantage of the temperature-based room refresh - the control must be moved from the "main" channel to the "temperature override" channel.

To enable freeze and/or overheat protection.

1. Ready the IPAC for configuring.
    a. Single-click the IPAC Plug-in AC Module in the Workspace Section
    b. Select the "Remote Management" tab
    c. Select the "Unlock" button
    d. Select the "Query Function" button
    e. Open the "RPC Remote Read" section
2. Change Address to 7D00
3. Change Read Size to "24"
   (increase if needed according to the number of LINKED devices)
4. Select "Read Flash" button
5. Identifying the RTS Remote Temperature Sensor bytes; then change the 2nd byte (after the ID bytes) from "01" to "04"
6. Select the "Write Flash" button
7. To verify modification was successfully saved, select the "Read Flash" button and view the modified value.
8. Save changes by power cycling the AC Module (unplug and plug it back in).

Room Refresh (Max Temperature)

Address: 0x7DFA (Max Unoccupied Room Temperature)
Default: 0xB1 (82° F)

To set the Max Temperature when Room is Unoccupied

1. Ready the IPAC for configuring.
    a. Single-click the IPAC Plug-in AC Module in the Workspace Section
    b. Select the "Remote Management" tab
    c. Select the "Unlock" button
    d. Select the "Query Function" button
    e. Open the "RPC Remote Read" section
2. Change Address to "7DFA"
3. Change Read Size to "1"
4. Select "Read Flash" button
5. Modify the value in the text window to the desired setting.
   <<< Example parameter settings
6. Select the "Write Flash" button
7. To verify modification was successfully saved, select the "Read Flash" button and view the modified value.
8. Save changes by power cycling the AC Module (unplug and plug it back in).

Example Temperature Parameter Settings:
0x9F = 78° F (25.6° C)
0xAA = 80° F (26.6° C)
0xB1 = 82° F (27.75° C)
0xB4 = 83° F (28.3° C)
0xB8 = 84° F (28.9° C)
0xC0 = 86° F (30° C)
0xC6 = 88° F (31.1° C)

Conversion Formula: 255 * ((temperature in degrees C)/40); then convert the result to Hex.

Room Refresh Cycle (Timer-based)

Address: 0x7DFB
Default: 00 (Disabled)

To enable the timer-based room refresh
(ONLY USE WHEN ERTS / TEMPERATURE-BASED CYCLING IS **NOT** ENABLED)

1. Ready the IPAC for configuring.
    a. Single-click the IPAC Plug-in AC Module in the Workspace Section
    b. Select the “Remote Management” tab
    c. Select the “Unlock” button
    d. Select the “Query Function” button
    e. Open the “RPC Remote Read” section
2. Change Address to “7DFB”
3. Change Read Size to “1”
4. Select “Read Flash” button
5. Modify the value in the text window to the desired setting.
   Sample setting: 0xCB = 46 min 56 sec
6. Select the “Write Flash” button
7. To verify modification was successfully saved, select the “Read Flash” button and view the modified value.
8. Save changes by power cycling the AC Module (unplug and plug it back in).

Room Refresh Cycle On Runtime (Timer-based)

Address: 0x7DFC
Default: 0xA8 (4 mins 48 secs)

To modify this setting:

1. Ready the IPAC for configuring.
    a. Single-click the IPAC Plug-in AC Module in the Workspace Section
    b. Select the “Remote Management” tab
    c. Select the “Unlock” button
    d. Select the “Query Function” button
    e. Open the “RPC Remote Read” section
2. Change Address to “7DFC”
3. Change Read Size to “1”
4. Select “Read Flash” button
5. Modify the value in the text window to the desired setting.
6. Select the “Write Flash” button
7. To verify modification was successfully saved, select the “Read Flash” button and view the modified value.
8. Save changes by power cycling the AC Module (unplug and plug it back in).

Appendix

Hex Equivalents for Decimal Time Parameters

0x00 - 0 sec	0x69 - 4 sec	0x6A - 5 sec	0x6B - 6 sec
0x6C - 6 sec	0x6D - 6 sec	0x6E - 7 sec	0x6F - 8 sec
0x70 - 8 sec	0x71 - 8 sec	0x72 - 9 sec	0x73 - 10 sec
0x74 - 10 sec	0x75 - 10 sec	0x76 - 11 sec	0x77 - 12 sec
0x78 - 12 sec	0x79 - 12 sec	0x7A - 13 sec	0x7B - 14 sec
0x7C - 14 sec	0x7D - 14 sec	0x7E - 15 sec	0x7F - 16 sec
0x84 - 16 sec	0x85 - 20 sec	0x86 - 24 sec	0x87 - 28 sec
0x88 - 32 sec	0x89 - 36 sec	0x8A - 40 sec	0x8B - 44 sec
0x8C - 48 sec	0x8D - 52 sec	0x8E - 56 sec	0x8F - 60 sec
0x90 - 64 sec	0x91 - 68 sec	0x92 - 72 sec	0x93 - 76 sec
0x94 - 80 sec	0x95 - 84 sec	0x96 - 88 sec	0x97 - 92 sec
0x98 - 96 sec	0x99 - 100 sec	0x9A - 104 sec	0x9B - 108 sec
0x9C - 112 sec	0x9D - 116 sec	0x9E - 120 sec	0x9F - 2 min 4 sec
0xA4 - 2 min 8 sec	0xA5 - 2 min 40 sec	0xA6 - 3 min 12 sec	0xA7 - 3 min 44 sec
0xA8 - 4 min 16 sec	0xA9 - 4 min 48 sec	0xAA - 5 min 20 sec	0xAB - 5 min 52 sec
0xAC - 6 min 24 sec	0xAD - 6 min 56 sec	0xAE - 7 min 28 sec	0xAF - 8 min 0 sec
0xB0 - 8 min 32 sec	0xB1 - 9 min 4 sec	0xB2 - 9 min 36 sec	0xB3 - 10 min 8 sec
0xB4 - 10 min 40 sec	0xB5 - 11 min 12 sec	0xB6 - 11 min 44 sec	0xB7 - 12 min 16 sec
0xB8 - 12 min 48 sec	0xB9 - 13 min 20 sec	0xBA - 13 min 52 sec	0xBB - 14 min 24 sec
0xBC - 14 min 56 sec	0xBD - 15 min 28 sec	0xBE - 16 min 0 sec	0xBF - 16 min 32 sec
0xC4 - 17 min 4 sec	0xC5 - 21 min 20 sec	0xC6 - 25 min 36 sec	0xC7 - 29 min 52 sec
0xC8 - 34 min 8 sec	0xC9 - 38 min 24 sec	0xCA - 42 min 40 sec	0xCB - 46 min 56 sec
0xCC - 51 min 12 sec	0xCD - 55 min 28 sec	0xCE - 59 min 44 sec	0xCF - 64 min 0 sec
0xD0 - 68 min 16 sec	0xD1 - 72 min 32 sec	0xD2 - 76 min 48 sec	0xD3 - 81 min 4 sec
0xD4 - 85 min 20 sec	0xD5 - 89 min 36 sec	0xD6 - 93 min 52 sec	0xD7 - 98 min 8 sec
0xD8 - 102 min 24 sec	0xD9 - 106 min 40 sec	0xDA - 110 min 56 sec	0xDB - 115 min 12 sec
0xDC - 119 min 28 sec	0xDD - 2 hr 3 min	0xDE - 2 hr 8 min	0xDF - 2 hr 12 min
0xE4 - 2 hr 16 min	0xE5 - 2 hr 50 min	0xE6 - 3 hr 24 min	0xE7 - 3 hr 58 min
0xE8 - 4 hr 33 min	0xE9 - 5 hr 7 min	0xEA - 5 hr 41 min	0xEB - 6 hr 15 min
0xEC - 6 hr 49 min	0xED - 7 hr 23 min	0xEE - 7 hr 57 min	0xEF - 8 hr 32 min
0xF0 - 9 hr 6 min	0xF1 - 9 hr 40 min	0xF2 - 10 hr 14 min	0xF3 - 10 hr 48 min
0xF4 - 11 hr 22 min	0xF5 - 11 hr 56 min	0xF6 - 12 hr 30 min	0xF7 - 13 hr 5 min
0xF8 - 13 hr 39 min	0xF9 - 14 hr 13 min	0xFA - 14 hr 47 min	0xFB - 15 hr 21 min
0xFC - 15 hr 55 min	0xFD - 16 hr 29 min	0xFE - 17 hr 4 min	0xFF - 17 hr 38 min

Memory ID Slots

Resulting memory structure, as read by ReMan:
Memory ID Slots (9 bytes each, 25 entries):
==========

0x7D00: FF A0 AD 18 00 01 00 21 7F (Slot 0 - Occ Sensor)
0x7D09: FF A0 AD 19 00 01 00 21 7F (Slot 1 - Occ Sensor)
0x7D12: FF A0 AD 24 00 01 00 1C 00 (Slot 2 - Door/Window Sensor)
0x7D1B: FF A0 AD 25 00 01 00 1C 00 (Slot 3 - Door/Window Sensor)
0x7D24: FF A0 AD 26 00 01 00 59 00 (Slot 4 - Temp Sensor)

Other Configuration Parameters:
==========

0x7DE1: 00 (Invert output channels: 0x01 for main, 0x02 for
0x7DE2: 00 (Repeater control: 0, 1, or 2 level)
0x7DE3 - 0x7DEB: 9 Unused bytes
0x7DEC: 00 (Power on mode: state memory, default on, default off)
0x7DED: 01 (Status Packet type)
0x7DEE: 00 00 00 01 (ReMan unlock code)
0x7DF2: BC 00 00 (Timeouts for the three channels- Main, room temp override, and outside window) (compounded time definition)
0x7DF5: 00 (Relay minimum “on” time) (compounded time definition)
0x7DF6: 00 (Relay minimum “off” time) (compounded time definition)
0x7DF7: 00 (Relay “on delay” time) (compounded time definition)
0x7DF8: 00 (Relay “off delay” time) (compounded time definition)
0x7DF9: 2D (Minimum unoccupied room temperature 0x00= 0 deg C; 0xFF= 40 deg C, default 0x2D is 7 C)
0x7DFA: C0 (Maximum unoccupied room temperature 0x00= 0 deg C; 0xFF= 40 deg C), default 0xC0 is 30 C)
0x7DFB: 00 (Room Refresh time between cycle starts--“off” time) (compounded time definition) if zero, it won’t do a refresh
0x7DFC: A9 (Room Refresh cycle time--”on” time)
0x7DFD: 01 (Hospitality Mode -- on by default -- changes interior door and occupancy sensors to a “latching” behavior when occupancy is detected, starts a timeout when the outside door opens)
0x7DFE - 0x7DFF: Unused 2 bytes (FF FF)