

INNCOM e7w Thermostat

Troubleshooting Guide

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e7w Smart Wall Plate (SWP) related issues

The e7w display shows SWP and you can't use the e7w



If SWP is permanently displayed and you can't use the e7w, the e7w has never made a connection with its "Smart Wall Plate" (SWP) since batteries were installed into the e7w.

The e7w SWP is physically mounted to the wall or electrical box and the e7w thermostat body snaps onto the SWP and is secured with 2 screws.

Spring loaded pins on the e7w make contact with a memory chip on the SWP that stores the e7w's Room ID, PAN ID and RF Channel after it has been entered during e7w installation. With this information stored in the SWP, you should be able to attach a new replacement e7w to the SWP and the Room ID, PAN ID and RF Channel stored in the SWP will be loaded into the new e7w and stored without having to enter Service Parameter mode on the e7w to enter the values.

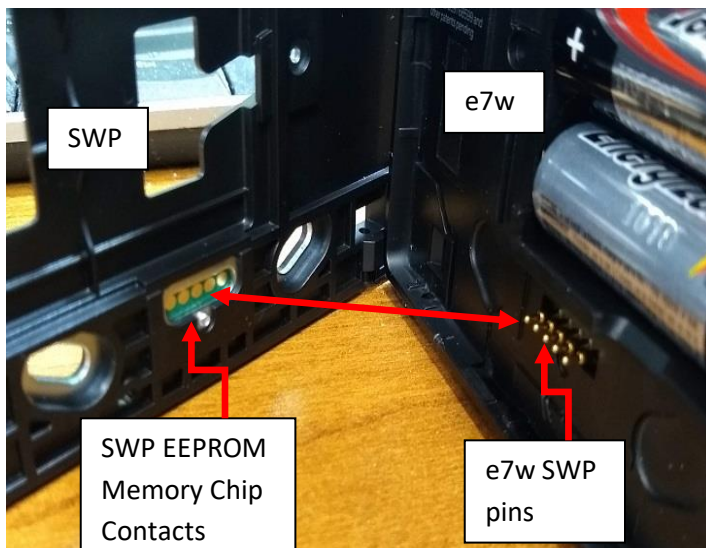


Figure 1 SWP EEPROM Chip and e7w SWP pins

Important: ONLY the e7w's Room ID, PAN ID and RF Channel get stored into the connected SWP. HVAC control settings and other configurations of the HVAC controller partner of the e7w (ie X47) **DO NOT** get copied to the e7w SWP. If you need to replace the HVAC controller partner, you should refer to applicable installation/commissioning documentation for the HVAC controller.

If the e7w is constantly displaying SWP after attaching it to the SWP, perform the following troubleshooting steps:

1. Un-screw the 2 captive screws at the bottom of the e7w that attach the e7w to the SWP and re-fit the e7w to the SWP.
2. Make sure 2 tabs at the top of the e7w are fully inserted into the 2 slots at the top of the SWP, then rotate the bottom of the e7w and push onto the SWP so the 2 tabs at the bottom of the SWP snap into the slots at the bottom of the e7w.
3. Screw in the 2 captive screws to permanently mount the e7w.
4. Wait 10 seconds and see if the SWP indication clears and is replaced by a different indication.
 - If SWP cleared and a temperature value appears, the e7w read the stored Room ID, PAN ID and RF Channel stored in the SWP and began operation. Raise and lower the displayed target temperature and verify the rooms HVAC unit responds as expected.
 - If SWP cleared but 2 horizontal dashes appear , press the F/C button:



- If the 2 dashes clear, followed by all of the display icons appearing briefly , followed by a temperature value , the e7w read the stored Room ID, PAN ID and RF Channel from the SWP and began operation. Raise and lower the displayed target temperature and verify the rooms HVAC unit responds as expected.
- If Parameter , rid and 2 horizontal dashes appear , the e7w is either a brand new and has never been initialized with its Room ID , PAN ID and RF Channel , or the e7w was factory reset and has never been initialized with its Room ID , PAN ID and RF Channel.



You must complete the initialization process. Refer to Appendix 1 of this document

5. If SWP continues to be displayed, repeat steps 1-4 again.

If SWP still continues to be displayed on the e7w after repeating steps 1-4, there is an issue with the SWP or the e7w. The e7w is not able to establish communication with the SWP EEPROM chip. Remove the e7w from the SWP and look at the SWP EEPROM board and the spring loaded pins on the e7w. Refer to Figure 1 on the previous page that shows the EEPROM board and e7w pins.

Is the EEPROM memory board on the SWP missing , or the screw that attaches the EEPROM memory board missing? Do the SWP pins on the e7w look damaged?

If any of the above are true and you want the SWP feature to work, you need to replace the SWP, the e7w or both.

If you need to use the e7w immediately , or there is a guest in the room and the installed e7w needs to work, manually force the e7w out of SWP missing mode by pressing and holding the F/C button for 5 seconds. The following should occur after pressing and holding the F/C button for 5 seconds:

- If the e7w has previously been initialized, it will begin normal operation and you should see a temperature displayed on the e7w. But, if the e7w subsequently has its batteries removed and replaced, due to the issue connecting to the SWP, on startup it will again enter SWP mode and display SWP.
- If Parameter , rid and 2 horizontal dashes appear , the e7w is either a brand new and has never been initialized with its Room ID , PAN ID and RF Channel , or the e7w was factory reset and has never been initialized with its Room ID , PAN ID and RF Channel.

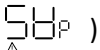
You will need to enter the Room ID , PAN ID and RF Channel as described in Appendix 1. But, if the e7w subsequently has its batteries removed and replaced, due to the issue connecting to the SWP, on startup it will again enter SWP mode and display SWP.

The e7w in a guestroom failed , you have no replacement or spare e7w's , and you want to replace it with an e7w from a different room until you can obtain a new e7w.

When the e7w that you are replacing was initially installed and the Room ID, PAN ID and RF Channel were entered , this was stored in the SWP (Smart Wall Plate) attached to the e7w.

To install the e7w obtained from a different room onto the SWP:


1. Remove the failed e7w from the SWP.
2. If batteries are still installed in the replacement e7w obtained from a different room , you MUST remove at least one AA battery to power down the e7w. Then, re-insert the any removed AA batteries to power up the e7w.

The e7w should display SWP ()

3. Attach the replacement e7w to the SWP in the room where the e7w failed . The instant you attach the replacement e7w , it should read in the stored Room ID, PAN ID and RF Channel from the SWP , store it and begin normal operation.
4. If SWP cleared from the display and a temperature value appears, the e7w read the existing Room ID, PAN ID and RF Channel stored in the SWP and began operation. Raise and lower the displayed target temperature and verify the rooms HVAC unit responds as expected.

If after connecting the replacement e7w to the SWP , "SWP" appears and remains on the e7w display, the e7w is not connecting to the SWP. Go to the **"The e7w display shows SWP and you can't use the e7w"** section on page 3 and follow the steps.

The e7w in a guestroom failed and you want to replace it with a new out of the box e7w

1. Remove the failed e7w from the existing SWP (Smart Wall Plate) attached to the wall or electrical box .
2. Remove the new e7w from the box. You should not need the new SWP provided in the box.
3. Insert the provided AA batteries into the new e7w. It should power up and display SWP ()
4. Attach the new e7w to the existing, installed SWP.
5. The e7w should briefly display all characters on the LCD display, then display a temperature value. This indicates it connected to the SWP and read in the stored Room ID, PAN ID and RF Channel. If desired, you could enter service parameter mode on the e7w and verify the Room ID, PAN ID and RF Channel values are correct. Refer to Appendix 2.

If SWP cleared from the display after attaching to the SWP , **but** 2 horizontal dashes appear instead of a temperature value, press the F/C button and see if the temperature value then appears.

If so, go to step 6.



If the 2 horizontal dashes cleared but were replaced by “Paramater” “rld” and 2 dashes, the e7w failed to read in the stored Room ID, PAN ID and RF Channel from the SWP and is expecting you to enter the required Room ID, PAN ID and RF Channel.

The SWP was never actually initialized with a Room ID, PAN ID and RF Channel , and you must now enter those values. Refer to Appendix 1: Setting the Room ID, PAN ID and RF Channel into the e7w during Initialization. Then , return here and do Step 6.

6. Raise and lower temperature on the new e7w and verify it is controlling the room HVAC unit.

Rebooting the e7w back to Factory Default settings

It is possible to reboot the e7w back to its default Factory settings. Rebooting the e7w does the following:

- Defaults its Room ID to 65535
- Defaults its PAN ID to 0
- Defaults its RF channel to 26
- If connected to a SWP (Smart Wall Plate), erases any stored Room ID, PANID or RF Channel in the SWP

Cases where you would Factory Boot the e7w are:

- You are not sure what the current settings are in the e7w and you want to default it back to known factory settings
- You have connected the e7w to what you think is a configured SWP, but the e7w Room ID, PAN ID and RF Channel are not being set to the correct values that should be stored in the SWP.
- The e7w is not functioning correctly, and it is possible that a factory boot will recover the e7w.

To Factory Boot the e7w :

1. Make sure the e7w is connected to its SWP
2. Enter Service Parameter mode on the e7
3. Press the Up or Down arrow buttons to go to the **rSt** (Reset) parameter
4. Press the MODE button to display the value.
5. Change the value to 255 using the Up or Down arrow buttons.
6. Press the FAN button to initiate the Factory Reboot.
7. The display will go blank, followed by "4" being displayed, followed by all LCD characters being displayed, then finally 2 horizontal dashes. Upon pressing any button, "Parameter", "rid" and 2 dashes will appear, indicating the Factory Boot is completed and the e7w requires initialization where you must enter the required Room ID, PAN ID and RF Channel.

e7w display related issues

e7w display just shows a single temperature value with no Fan Speed or A/C Mode



Possible Reason:

The e7w has entered into “dormant” mode to conserve battery power. This is a normal operation of the e7w. The e7w will automatically enter dormant mode after 4 seconds with no button presses or user interaction and displays the guest selected target temperature.

The instant you press a button on the e7w , it will return to displaying A/C Mode, Fan Speed.

The e7w displays 2 dashes (- -) and when you try to use the e7w there is only rid , PAn and rF options available

Possible Reason:

The e7w is brand new, fresh out of the box and has not been initialized yet , or it has been rebooted back to factory settings and requires initialization. Refer to Appendix 1: Setting the Room ID, PAN ID and RF Channel into the e7w during Initialization

e7w display is blank

Possible Reasons:

- The 4 AA batteries are fully discharged and need replaced
- One of more of the AA batteries is not fully seated and making sufficient contact with the battery terminal
- The e7w has been damaged or is defective

e7w Battery related Issues

A Battery symbol has appeared in the lower right corner of the e7w display in one or more rooms



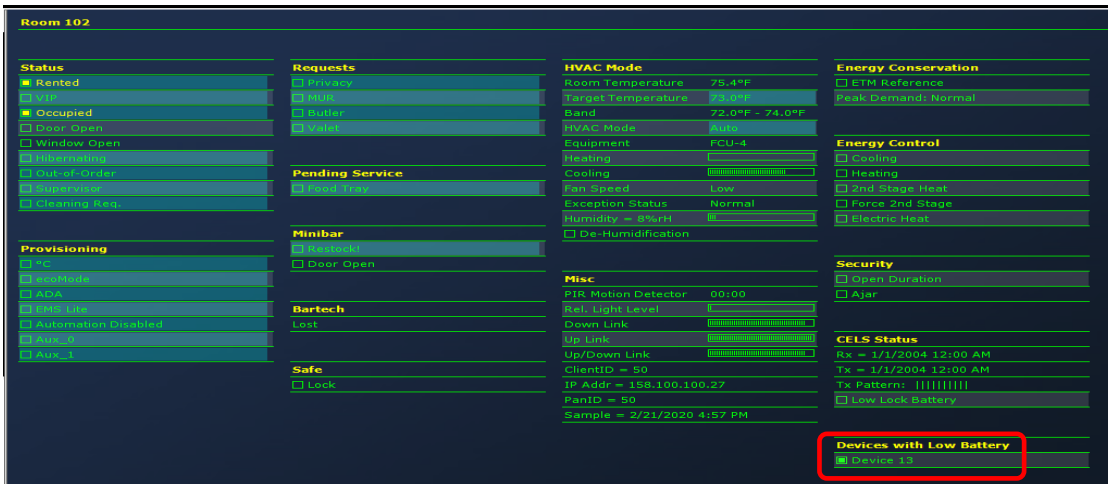
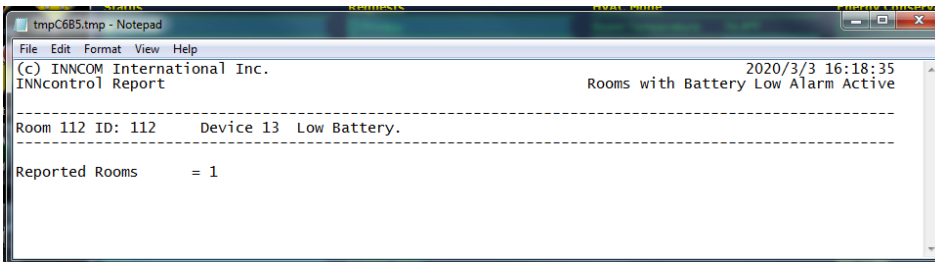
The e7w displays the battery symbol when it has detected the voltage of the installed 4 AA batteries has dropped below 4 VDC. Replace the batteries in the e7w with 4 new alkaline AA batteries. The low battery alarm should clear within 1-2 minutes after replacing the batteries.

The actual battery voltage can be read from the e7w by entering Service Parameter mode and going to the **bAu** parameter and viewing the displayed value. Refer to Appendix 6 of this document for details.

The value is 0 to 6 VDC scaled between 0 and 255. Take the displayed value, divide by 255 and multiply by 6 to get the voltage. A displayed value of 255 indicates 6VDC. A displayed value of 170 indicates 4 VDC

Note: Future versions of the e7w will display its battery voltage in a more user friendly fashion.

In addition to the Low Battery symbol appearing on the e7w display, if the hotel has an Inncom network installed with an Inncom Server running INNControl 3 or INNControl 5, the room should appear in any generated Low Battery reports and a “Device with Low Battery” indication should appear for the room in IC3/IC5.



The Low Battery symbol has appeared in the lower right corner of the e7w display in a room, but no “Device with Low Battery” indication has appeared for the room in IC3/IC5 Room View or no Low Battery alarm occurred in IC3 or IC5 .

Possible Reasons:

- The room the e7w is installed in is not correctly setup to communicate with the Inncom server. There must be a device in the room configured as the room gateway that is communicating through an Edge Router or B576 Floor Bridge to the Inncom server. The e7w must be set to the same Room ID, PAN ID and RF Channel as that room gateway. Verify the Room ID, PAN ID and RF Channel set into the e7w are correct for the particular room and perform a WAN test (see Appendix 7) from the e7w service parameter mode to verify the Room Gateway for the room is online with the server. Verify you can Ping the room gateway device address using the e7w Pn6 (Ping) parameter (see Appendix 8).
- It can take time before the low battery condition of the e7w gets reported to the server.

The e7w only reports its battery state after the e7w connects to its Smart Wall Plate following battery insertion and every 18 hours. It sends a “Device Information” message that includes its battery state that is routed through the Room Gateway to the Inncom server. This message reports the e7w battery status as normal (> 4VDC) or low (< 4VDC).

Therefore, if the voltage of the 4 AA batteries drop below 4VDC during normal operation, the next every 18 hour Device Information message sent by the e7w will report a low battery condition, and the Low Battery indication for the room in IC3 /IC5 will be set and a low battery alarm will occur.

I replaced the batteries in the e7w, but there is still a low battery indication for the room in IC3/IC5

Possible Reason:

- The e7w was not correctly connected back to the SWP (Smart Wall Plate) after replacing the batteries. Verify the e7w is fully connected to its SWP. The e7w would be displaying “SWP” if it was not fully connected to the SWP.
 1. Un-screw the 2 captive screws at the bottom of the e7w that attach the e7w to the SWP and re-fit the e7w to the SWP.
 2. Make sure 2 tabs at the top of the e7w are fully inserted into the 2 slots at the top of the SWP, then rotate the bottom of the e7w and push onto the SWP so the 2 tabs at the bottom of the SWP snap into the slots at the bottom of the e7w.
 3. Screw in the 2 captive screws to permanently mount the e7w.
 4. Wait 10 seconds and see if the SWP indication clears and is replaced by a temperature value. This indicates the e7w connected to the SWP. The low battery indication should clear for the room in IC3/IC5 within 1-2 minutes.

If the low battery indication in IC3/IC5 does not clear, it is possible the message sent from the e7w to the server reporting its battery state after inserting the new batteries and connecting the e7w to the SWP did not reach the Inncom server. It is only sent one time after connecting the e7w to the SWP following battery replacement, and then is sent every 18 hours.

If you want to immediately clear the low battery indication for the room in IC3/IC5 and not wait for the 18 hours to pass, you must remove and install the batteries and reconnect the e7w to its SWP to force the e7w to immediately report its status.

Or, you just have to wait and sometime in the next 18 hours the e7w will report its status and the low battery indication will clear.

e7w Temperature Control related issues

The e7w is not controlling Room Temperature or Fan Speed

Possible Reasons:

- The e7w is set to a Room ID, PAN ID and RF Channel that is different than what is configured into the RF to S5 bus media gateway device (ie PC502) the e7w is supposed to go through to talk to the S5 bus connected HVAC partner (such as an X47).
Verify the e7w and the PC502 are both set to the same Room ID, PAN ID and RF Channel. If required, verify the Room ID, PAN ID and RF Channel set into the e7w is correct and Re-bind the PC502 using the e7w.
- The PC502.4G or other RF to S5 media gateway device used to pass RF messages from the e7w onto the wired S5 bus connected to the X47 (or other S5 bus connected HVAC controller) is not configured or installed correctly.
Verify the PC502 or other device responsible for media gatewaying RF to the S5 bus connected to the HVAC controller is installed and powered and set to the same Room ID, PAN ID and RF Channel as the e7w. If required, verify the Room ID, PAN ID and RF Channel set into the e7w is correct and Re-bind the PC502 using the e7w.
- The HVAC controller partner to the e7w (such as an X47) is not installed, not connected correctly, not powered or not configured correctly.
Verify the HVAC controller is installed and powered, and if S5 bus connected, it is correctly connected to the same S5 bus as the PC502.4G or other RF to S5 media gateway device that allows RF communication with the e7w.

It is common to power the Inncom HVAC controller (typically an X47) from the HVAC unit since the HVAC controller is typically installed inside the HVAC unit. Verify the HVAC unit has power and that transformer or power supply powering the Inncom HVAC controller is installed and connected correctly.

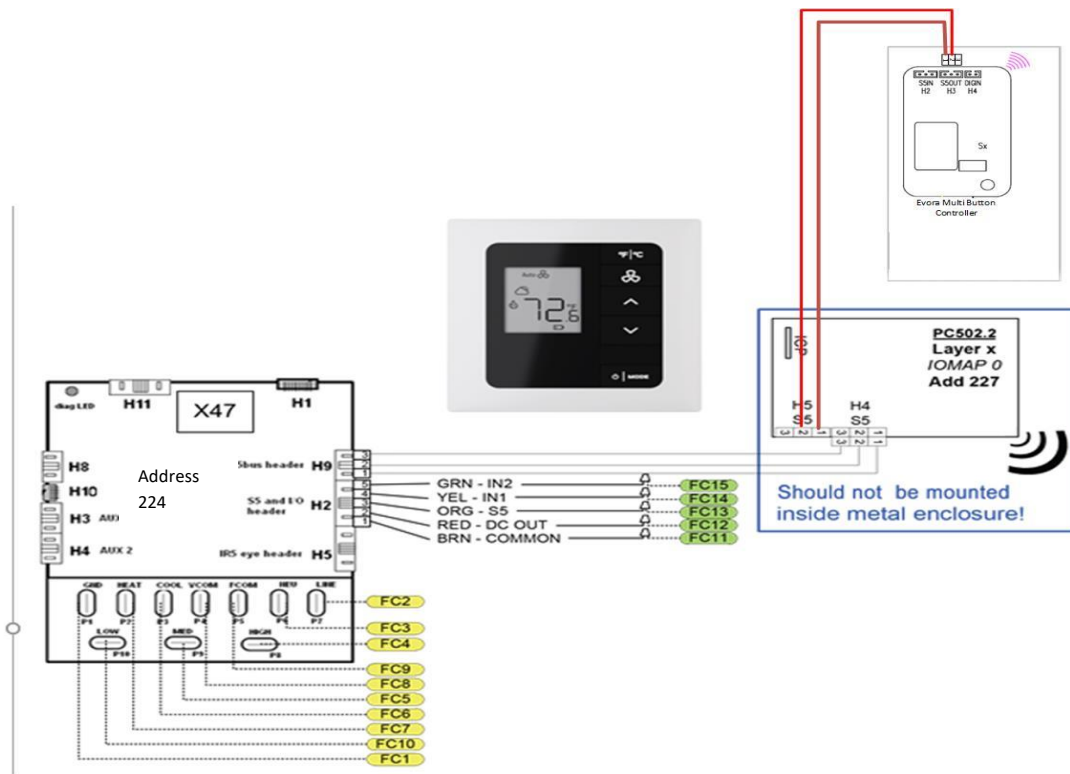
Verify the X47 HVAC controller partner was correctly configured via its required I/O Map or configuration pushed from the EngINN configuration/commissioning tool. Refer to applicable installation/commissioning documentation.

- The HVAC controller partner address used by the e7w is not correct. Anytime you do a temperature control or Fan speed action on the e7w, it will send a message to the HVAC partner address defined by the e7w's "PA" (Partner Address) Parameter. By default, this address is 14, the standard device address of an Inncom thermostat. However, the HVAC partner address can vary depending on the installation. Verify the defined e7w HVAC partner address is correct. Appendix 5 covers the e7w PA parameter and how to view/set its value.
- An "RF Loop" exists. An "RF Loop" refers to a condition where 2 or more Inncom RF devices set to the same Room ID and RF Channel are also connected via wired S5 bus. Anytime one RF device receives a message, it passes the message onto its S5 bus. But then, the other RF device will receive the message via wired S5 bus and send it out via RF to be seen by the original RF device. This will continue on and on in a continuous loop and prevent other messages from being sent either RF or S5 bus. The solution is to NOT connect the orange S5 bus data wire between the 2 RF devices, or disable the S5 Bus

receive and transmit in either of the RF devices Cached NVRAM. It is beyond the scope of this document to cover changing Cached NVRAM. Contact an Inncom Application Engineer.

Troubleshooting Example:

In the below troubleshooting example, a PC502 (Address 227) is used as the RF to S5 Bus gateway to pass HVAC messages between the S5 bus connected X47 (Address 224) and e7w, and the e7w is not controlling room HVAC. There is also an RF Evora button control installed in the room that is powered from S5 bus 12VDC. All devices are powered 12VDC from the S5 bus being supplied from a 120VAC VAC powered X47 installed in the HVAC unit. The HVAC unit is a 4 Pipe FCU.



First verify 2 way communication between the e7w and PC502 and e7w and the X47 using the e7w **Pn6** (Ping) test. Appendix 3 goes over the e7w Ping test. The PC502 address is supposed to be 227 and the X47 is supposed to be 224

If Pinging the PC502 from the e7w fails:

- Verify the PC502 is installed and is getting 12VDC power from the S5 bus connection from the X47.
- Verify the e7w is set to the correct Room ID, PAN ID and RF Channel that the e7w and PC502 should be using. Appendix 2 goes over viewing/changing the e7w Room ID, PAN ID and RF Channel
- If it is installed and powered and you can't Ping the PC502, try re-binding the PC502 using the e7w to set the correct Room ID, PAN ID and RF Channel into the PC502. Refer to applicable commissioning documentation.

- Verify the Orange “S5 Data” wire of the S5 bus was not connected to S5 bus connection of the Evora. The Evora has a radio and if it is S5 bus connected to the PC502 which also has a radio, an “RF Loop” condition will exist that will impact S5 bus communication.

If the PC502 is fine and can be pinged from the e7w but pinging the X47 from the e7w fails:

- Verify the 3 wire S5 bus connection between X47 and PC502 and that the S5 Orange “S5 bus data” wire is connected.
- Verify the X47 address is actually 224. How was the X47 commissioned ? Did it get pushed its configuration from EngINN correctly, or was it set to be 224 via setting an I/O Map into the X47 correctly?
Was it supposed to be Address 224 per the software loaded into it?

As a last resort, you could use the e7w to Teach the X47 Address 224 using the e7w “Adr” parameter , then see if it can be Pinged from the e7w. This would point to incorrect software in the X47 or incorrect commissioning of the x47.

- Verify the Orange “S5 Data” wire of the S5 bus was not connected to S5 bus connection of the Evora. The Evora has a radio and if it is S5 bus connected to the PC502 which also has a radio, an “RF Loop” condition will exist that will impact S5 bus communication.

If both the PC502 and X47 ping correctly with the expected addresses, but the e7w is not controlling Room Temperature or Fan Speed:

- Verify the e7w “PA” (Partner Address) Parameter value. The X47 in this example uses address 224, so the e7w “PA” parameter needs to be set to 224. The e7w default PA parameter value is 14 , so it may not have been changed to 224. Enter Service Parameter mode on the e7w and go to the “PA” parameter and verify it is set to 224 and see if this restores HVAC control from the e7w. Appendix 5 covers using the PA parameter.
- If the e7w PA parameter was correct , it is possible that the X47 was incorrectly configured and is not correctly controlling its 5 output relays properly to control the particular HVAC unit model. Or there is an issue with the HVAC unit itself or the wiring between the X47 and the HVAC unit control terminals.

Use the e7w to problem split the issue. Refer to the “**Using the e7w to read the status of the HVAC Controller’s 5 Output relays**” section of this document to determine if the X47 relays are actually changing in response to e7w Target Temperature changes.

If it is apparent that the X47 is reacting and calling for its relays to change, the issue is most likely the actual HVAC unit or the wiring between the X47 relays and the HVAC units wiring terminals.

If the X47 is never reacting and calling for its relays to change , verify the X47 is not configured to accept HVAC control commands for Heating/Cooling and Fan Speeds from another HVAC controller instead of deciding itself.

This is controlled by the CBL32 Registry 9:6:0:33 HVAC_ControlStrategy setting in the X47.

33 HVAC_ControlStrategy
 This register sets controls how the behavior when multiple HVAC controllers are present in the space.

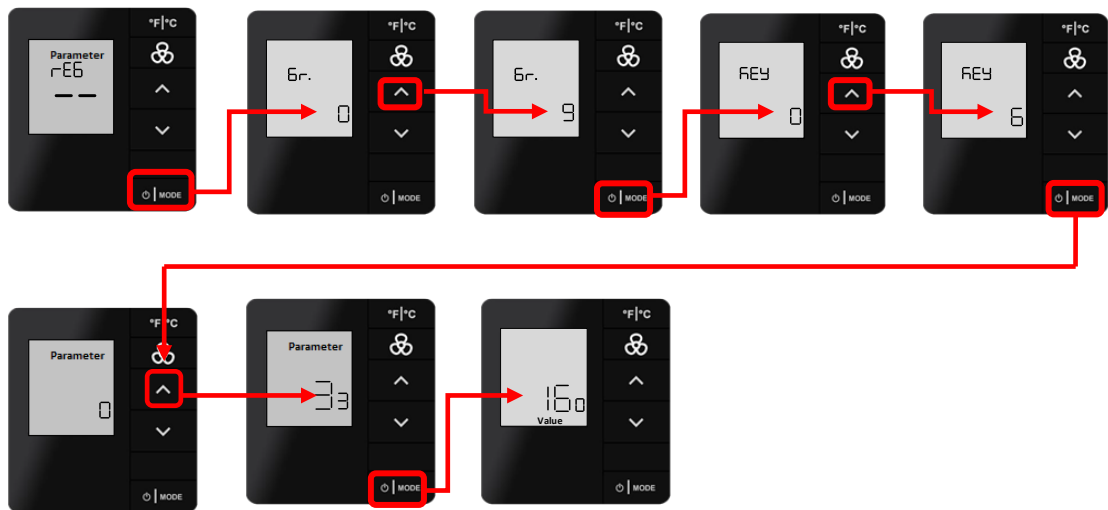
7	6	5	4	3	2	1	0
UIA	0	ACTA	0	0	0	0	0

UIA (Bit 7) - User Interface Accept. When set, the HVAC controller will process HVAC_UI update packets from other thermostats and adopt to its values.
 ACTA (Bit 5) - HVAC Actuator Accept. When set, the software will process VFI 0x001 (X05 image) and VFI 0x03B (HVACACT update) from other stations and the five relay states will be forwarded to the local relay output. To make this work properly, do not enable the HVACACT server at the same time.
 The default value is 0x00.

The default value of this Registry is supposed to be 0 (0x00) which makes the X47 control its built in HVAC relay outputs.

You can verify Registry 9:6:0:33 remotely from the Inncom server or locally using the e7w “rE6” (REG – CBL32 Registry Editor) parameter option to access and read 9:6:0:33 in the X47. Appendix 9 goes over using the e7w CBL32 Registry Editor.

The following steps read Registry 9:6:0:33 from the X47 using the e7w and the current value is 160. 160 decimal is 0xA0 hexadecimal.



This has both the UAI and ACTA bits set, which makes the X47 stop deciding what Relay outputs to control and expects to be told from another HVAC controller. The 9:6:0:33 HVAC_ControlStrategy value needs to be set to 0 and the Registry change committed in the X47.



You cannot change the e7w displayed target temperature, Fan Speed or HVAC Mode and a warning triangle symbol is displayed

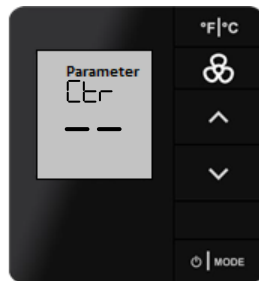


Possible Reasons:

The e7w has been placed into “Contractor” mode. When the e7w has been placed into Contractor mode, it locks its target temperature to a defined value and locks out the e7w buttons. This feature is intended to be used during the hotel construction phase to set the room to a defined target temperature and prevent tampering.

To exit the e7w out of Contractor mode:

1. Enter **SERVICE MODE**
2. Press **UP/DOWN** arrow buttons to select **Ctr “- -”**



3. Press **MODE** button. This action displays “-” and Value.



4. Press **FAN** button to turn off **CONTRACTOR MODE**. After turning off **CONTRACTOR MODE** e7w play beep sound.
5. Press the **°F | °C** button twice to exit **SERVICE MODE**

The alert icon should clear

Using the e7w to read the status of the HVAC Controller’s 5 Output relays

The typical Inncom HVAC controller , such as an X47, has 5 built-in relays that are used to control the HVAC unit’s heating/cooling and fan speed inputs.

The current state of these 5 relays are maintained in Byte # 12 of the 32 byte “Process Image” that is maintained by the Room Gateway and contains the complete status of the room. The e7w’s “PI5” (Process Image) parameter can be used to read and display the current value of any of the 32 PI bytes, including the current requested 5 output relay states in Byte 12.

Refer to Appendix 3 for details of accessing and using the e7w PI5 Parameter menu. Here, we will only focus on using it to read Process Image offset 12. Each PI offset is a 8 bit value 0-255. For PI Offset 12, bits 4 to 0 hold the 5 relay output states. The **typical** functions of each relay is listed below. It is beyond the scope of this document to go over every possible use of the relays. This information just provides the current state of the 5 output relays and it is up to you to know what each relay does for the particular HVAC unit

- Bit 4 – Relay 5 (Heat Call , Reversing Valve can vary depending HVAC unit)
- Bit 3 – Relay 4 (Cool Call , Compressor can vary depending HVAC unit)
- Bit 2 – Relay 3 (High Fan Speed)
- Bit 1 – Relay 2 (Medium Fan Speed / W2 can vary depending HVAC unit)
- Bit 0 – Relay 5 (Low Fan Speed)

i	Par D	Par H	CBL 32	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Description	
12	172	AC	EC	000-Norm 100-DeHum	001-DeIce 101-PipeFlu	010-N/A 110-PipeProbe	011-FanRefr 111-N/A	Relay5 Ht/Rev	Relay4 Cl/Comp	Relay3 Hi Fan	Relay2 Med/W2	Relay1 Low Fan	HLE Mode (7-5) HVAC Actu (4-0)

The typical steps of using the e7w to read the output relay states of the HVAC partner is to use the e7w to set a desired Target temperature , allow the HVAC controller to activate the appropriate relays, then enter the e7w PI5 parameter menu and view PI Offset 12 to see what relay outputs the HVAC controller requested to be activated.

As an example, an X47 is configured to control a 4 Pipe FCU with 3 Fan Speeds and you do not see the actual relays in the HVAC unit activate as you change target temperature in the room. You want to verify the X47 is at least reacting and calling for changes to Heat/Cool and Fan speeds

1. On the e7w, raise the Target temperature to the highest allowed value (typically 80F). You would expect Relay 5 Heat Call, and one of the 3 fan speed relays to turn on (depending on how far away the selected target temperature is away from the actually room temperature) .
2. Access the e7w PI5 menu, and view the value of PI Offset 12.



In this example it is 20. 20 converted to 8 bits binary is 00010100. The 5 Relay states are 10100, so Relay 5 Heat and Relay 3 High Fan are requested to be active. So the X47 is requesting that Relay 5 Heat and Relay 3 High Fan be energized.

3. Now lower the e7w target temperature to its lowest value to request the highest cooling demand. The e7w most likely timed out of the P15 parameter menu and you should be able to lower the target temperature. You may need to wait for the X47 / HVAC controller to stabilize.
4. Access the e7w P15 menu again, and view the value of Offset 12.



The value is 12. 12 converted to 8 bits binary is 00001100. The 5 Relay states are 01100, so Relay 4 Cool and Relay 3 High Fan are requested to be active.

So, the X47 seems to be correctly reacting to room target temperature changes and calling for the correct Relay output states. You should investigate the actual HVAC unit or wiring between the X47 and HVAC unit to understand why it is not actually heating or cooling as requested.

e7w Occupancy detection issues

A room with an e7w installed is constantly reporting the room is occupied in IC3/IC5 even though no guest has been in the room

Possible Reasons:

- There is something occurring in the room that that is constantly making the e7w built-in motion sensor report it has detected motion. The e7w motion sensor is sensitive , and it is possible it is detecting some form of reoccurring non-guest motion such as curtains moving in the room due to air movement.

You can try changing the e7w's motion sensor detection threshold and see if this stops the false motion detection by the e7w. Refer to Appendix 11: Adjusting the e7w PIR Motion Sensor Sensitivity

Use the e7w **Pft** parameter to adjust the sensitivity of the e7w built in PIR motion sensor. The default value is 2. Try changing to value 3 or 4 and see if this reduces the false motion detection.

- Entry door position to the room is not being reported correctly or detected by the e7w

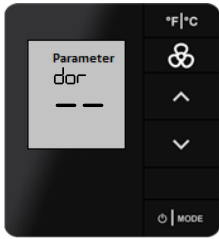
Inncom's typical room Occupancy detection logic will only make the room go un-occupied after it has seen the room entry door shut and has not seen any detected motion for the amount of time defined by the un-occupied timeout setting.

There must be a device in the room monitoring and reporting entry door position, and there must be a device in the room configured as the room Occupancy Server . Typically, an X47 HVAC controller is paired with a PC502.4G and the e7w, and the X47 is configured as the Room Door and Occupancy servers. If un-reliable entry door position is occurring, that could be the reason why a room is constantly reporting that it is occupied.

You can test if the Door position is being reported into the room and if the Door server is reporting door status using the e7w's **dor** (door) test. Refer to Appendix 10: e7w Door Test.

If the e7w Door Test fails, refer to the **e7w Door Test is failing** section of this document.

e7w Door Test is failing



The e7w Door Test only reacts to the entry door position reported by the Door server in the room , not the actual door open/close message reported by the device connected to the door switch (such as an S541.RF or RF Lock).

Therefore , for the e7w Door Test to work:

1. There must be a device in the room that is monitoring and reporting door position via a 0x00028 Entry Door position message such as an S541.RF or RF Door Lock.
2. There must be a device in the room that has its “P5 Door Server” enabled that sends a 0x000298 “Door Server Reports Door Position “ when it sees the 0x00028 Entry Door message.

In the below example trace, an S541.RF is reporting entry door position and an X47 HVAC controller with address 14 has its Door Server enabled and informs other room devices (including the e7w) of the entry door position. It is the 0002981 Door Server Reports door Open message that will make the e7w beep and increment the displayed door open count when performing the e7w Door Test.

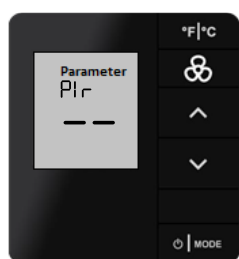
#	Date/Time	Media	RID	RFChan:	PAN	RSSI	Type	Chan	From	To	Payload	Description
1	02/10 11:51:24	RF	102	23:local	-44	5	1	209	0	0002810	Device with address 209 reports Door Open	
2	02/10 11:51:25	RF	102	23:local	-30	5	1	209	0	0002810	Device with address 209 reports Door Open	
3	02/10 11:51:25	RF	102	23:local	-30	5	1	14	0	0002981	Door Server Reports Door is Open	
4	02/10 11:51:26	RF	102	23:local	-31	5	1	14	0	0001505	Occ Server: Add: 14:QuickOcc=GuestOcc NormOcc=GuestOcc	
5	02/10 11:51:27	RF	102	23:local	-44	5	1	209	0	0002810	Device with address 209 reports Door Open	
6	02/10 11:51:27	RF	102	23:local	-32	5	1	14	0	0003AAC0601001D0D	HVAC Cntrl: Room Temp=71 Tgt Lo:69 Tgt Hi:73	
7	02/10 11:51:29	RF	102	23:local	-44	5	1	209	0	0002800	Device with address 209 reports Door Shut	
8	02/10 11:51:29	RF	102	23:local	-43	5	1	209	0	0002800	Device with address 209 reports Door Shut	
9	02/10 11:51:29	RF	102	23:local	-31	5	1	14	0	0003AAC0601001C0E	HVAC Cntrl: Room Temp=71 Tgt Lo:68 Tgt Hi:74	
10	02/10 11:51:30	RF	102	23:local	-31	5	1	14	0	0001501	Occ Server: Add: 14:QuickOcc=Un-Occ NormOcc=GuestOcc	
11	02/10 11:51:31	RF	102	23:local	-42	5	1	209	0	0002800	Device with address 209 reports Door Shut	
12	02/10 11:51:31	RF	102	23:local	-32	5	1	14	0	0002980	Door Server Reports Door is Shut	
13	02/10 11:51:33	RF	102	23:local	-32	5	1	14	0	0002980	Door Server Reports Door is Shut	

If the e7w Door Test is **not** working check the following possible causes :

- There is no Door Server enabled or installed in the room. The Door Server will typically be enabled in the HVAC partner to the e7w, such as the X47. Verify the HVAC partner is powered , is correctly S5 bus connected to the PC502.4G (or designated RF to S5 bus converter if not a PC502) and has the required software installed or had the correct I/O Map activated to have its P5 Door Server enabled.
- If using an S541.RF to monitor and report entry door position:
 - The S541.RF was not bound to the Room ID and RF Channel correctly.
 - The S541.RF was not configured with I/O Map 0 when it was bound. I/O Map 0 configures the S541 to report Room entry Door position.
 - The 2 AAA batteries in the S541.RF need replaced or are installed incorrectly.

- There is an issue with the door switch used or the wiring between the door switch and the S541.RF
- If an RF Door Lock is supposed to be reporting entry door position:
 - The Door Lock and the Inncom in-room Lock proxy device (typically a PC502.4G) were not bound or bound correctly.
 - The Inncom RF lock Proxy device was not configured correctly to support the RF Lock type (ie Saflok, Salto or Timelox)
 - The RF Lock batteries need replaced

e7w PIR motion sensor test is failing



The e7w PIR motion sensor test reacts to motion being detected by the e7w 's built in motion sensor. It is vital that the e7w accurately detects and reports motion being sensed because room occupancy is used to control the room temperature control bands . There can be 2 bad results when testing the e7w motion sensor:

- The e7w is not detecting motion at all, or is not detecting motion when it should be.
- The e7w is detecting motion when it clearly should not be (ie no one is in the room).

Possible Reason:

- The e7w PIR Motion Sensor sensitivity setting is not correct. Enter e7w service parameter mode and go to the **PFt** motion sensor sensitivity parameter and check the value. Refer to Appendix 11.

The default value should be 2.

If the e7w **PIR** motion sensor test is never indicating it detects motion , it is possible the **PFt** PIR sensitivity value is set too low. Set the Pft value to 3 or 4 and retry the PIR motion sensor test.

If the e7w **PIR** motion sensor test is indicating it detects motion when no actually guest movement is occurring , it is possible the **PFt** PIR sensitivity value is set too high. Set the Pft value to the default value of 2 if the current value is different than 2 and retry the PIR motion sensor test.

I am not able to Ping one or more room devices from the e7w Png (Ping) menu

You can't ping ANY room devices from the e7w:

Possible Reasons:

- There is an issue with the S5 bus communication wiring connecting Inncom room devices together. Inspect the S5 bus wiring. Is it properly connected between the devices?
- The e7w is configured with a different Room ID or RF Channel than what the other RF devices in the room are using. If for example there is a PC502.4G with 3 wired S5 bus devices connected to the PC502, the Ping commands sent from the e7w have to travel from the e7w via RF, through the PC502.4G via RF then to the S5 bus devices connected to the PC502.
If the e7w does not have the same Room ID and RF Channel as the PC502, none of the Ping commands will ever reach the PC502 or the other S5 bus connected devices
- The e7w's "P5C" (P5 Channel) is different than the P5 channel being used by the devices you are trying to Ping. The P5 Channel setting exists in all Inncom devices and is used to segregate devices such that only devices set to the same P5 Channel can communicate with each other. It can be set to a value 1 to 7. It was used in the past when Inncom devices used IR (Infra Red) signals to communicate and the only way to prevent cross talk was to assign a different P5 channel to the 2 devices you did not want to be able to communicate.

By default, all devices (including the e7w) are set to P5 Channel 1. It could be possible that either the e7w had its P5 Channel value incorrectly set or the installed room devices are required to be set to a P5 Channel other than 1. In either case, you can use the e7w "P5C" menu to verify P5 Channel being used by the e7w and change if required.

- An "RF Loop" exists. An "RF Loop" refers to a condition where 2 or more Inncom RF devices set to the same Room ID and RF Channel are also connected via wired S5 bus. Anytime one RF device receives a message, it passes the message onto its S5 bus. But then, the other RF device will receive the message via wired S5 bus and send it out via RF to be seen by the original RF device. This will continue on and on in a continuous loop and prevent other messages from being sent either RF or S5 bus.

The solution is to either NOT connect the orange S5 bus data wire between the 2 RF devices, or disable the S5 Bus receive and transmit in either of the RF devices Cached NVRAM. It is beyond the scope of this document to cover changing Cached NVRAM. Contact an Inncom Application Engineer.

You can't ping one or more devices but can ping some devices

Possible Reasons:

- The target device being pinged is not powered or connected to S5 bus correctly. Or there is an issue with the S5 bus wiring connected to that device.
- The target device that is supposed to have a certain address that you are trying to ping was not configured to the correct address. Try re-configuring that device (ie re-I/O Map or re-Push configuration from EngINN) so it has the correct, known address. Then try pinging the device again from the e7w.

- More than one device in the room is using the same Device address. When you ping the address, multiple devices try to respond and these multiple responses collide with one another and result in the e7w not being able to process the response.

For example, if there are more than one of the same type of Inncom light switch in the room, they will all typically have the same default device address. During commissioning, each switch gets assigned a unique device address. If this was not done to each device, there could be multiple room devices with the same address.

The e7w WAN (Wide Area Network) test is failing

If the e7w is installed in a room that is connected to the Inncom server through a wireless or wired network, the e7w WAN test is available to verify the installed Room Gateway device (PC502.4G for example) is connected and communicating with the Inncom server.

Performing the WAN test from the e7w executes the following sequence:

1. The e7w broadcasts a 0x0000C commissioning request message into the room.
2. If the designated Room Gateway device in the room received the request, it forwards the request through its associated Edge Router or Floor Bridge to the Inncom server.
3. If the Inncom server received the request, it sends a command back to the Room Gateway that contains the Room ID value. If the e7w sees this message, it scrolls the defined Room ID value across its display. The Room ID scrolling across the e7w indicates the WAN test passed.

Appendix 7 goes over the e7w WAN test

If you execute the e7w WAN test and do NOT see a Room ID value scroll across the display, verify the following:

- There must be device in the room that is configured to be the Room Gateway. If using an e7w battery thermostat, the room gateway will typically be a PC502.4G. Is the Room Gateway device installed, powered and configured with the correct Room ID, PAN ID and RF Channel?

Was the Room Gateway device correctly configured via EngINN to be the Room Gateway?

Can you Ping the Room Gateway device using the e7w Pn6 (Ping) parameter (see Appendix 8)?

If using a PC502, its address should be 227.

- Is the e7w set to the correct Room ID, PAN ID and RF Channel? If needs to be set to the same Room ID, PAN ID and RF Channel as the PC502/Room Gateway.
- The edge router or floor bridge the room gateway is supposed to communicate through is not powered, not connected to the network connected to the Inncom server or is not configured correctly.

There is a demanding or important guest that wants to be able to set Room Target temperature to a higher or lower value than what is currently selectable on the e7w.

Solution:

Place the room HVAC controller into “Limited Energy Management” (LEM) mode.

Then Incom thermostat/HVAC partner to the e7w supports a “Limited Energy Management” mode where the thermostat turns off most energy savings algorithms and expands the guest selectable upper and lower target temperature range. This can be enabled in a room that has a demanding guest that requires more flexible room temperature control than what is normally allowed for a room.

LEM mode in the e7w HVAC partner can be enabled or disabled from the e7w using a 3 button sequence.

To **Enable** LEM mode in the HVAC partner from the e7w :

1. Press and Hold the **Mode** button
2. Press and Release the **Fan** button
3. Press and Release the **Up**_Arrow button
4. Release the **Mode** button
5. --- followed by **LE.n** (LEM) will appear on the e7w display, indicating the command to enable LEM mode for 72 hours was sent to the e7w HVAC partner.

Note: LEM mode in the HVAC partner will automatically turn OFF after 72 hours. In thermostats/HVAC controllers that have been shipped recently (contact Incom for details) , LEM mode will automatically clear when the room is Checked-Out from the front desk (if the hotel is networked with a PMS system installed).

To manually **Disable** LEM mode in the HVAC partner from the e7w :

1. Press and Hold the **Mode** button
2. Press and Release the **Fan** button
3. Press and Release the **Down** Arrow button
4. Release the **Mode** button
5. --- followed by **nO.r** (normal mode) will appear on the e7w display, indicating the command to disable LEM mode was sent to the e7w HVAC partner.

Appendix 1: Setting the Room ID, PAN ID and RF Channel into the e7w during Initialization

Refer to applicable commissioning documentation for the Room ID, PAN ID and RF Channel to use for the particular e7w.

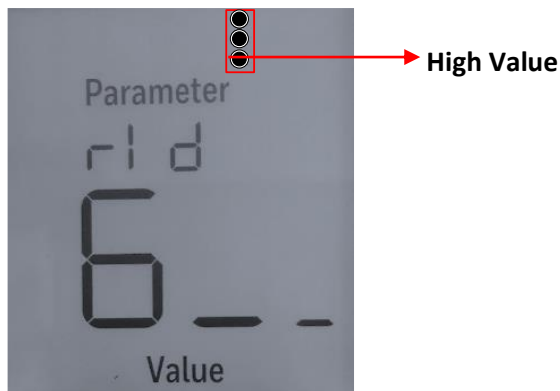
Setting the Room ID during Initialization

1. Once **rid** and -- is displayed, press the **MODE** button. The default 65535 Room ID will scroll across the screen one numerical setting at a time, from highest to lowest (left most to right most value). After the current value finishes scrolling, the 3 vertical Fan speed dots displays indicating the high digit is displayed.

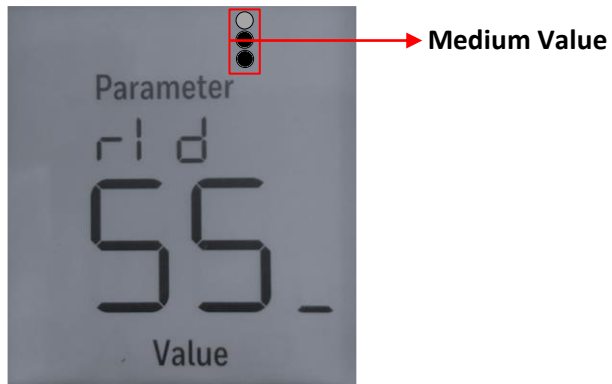


Note: The five-digit number is comprised of three fields: highest digit one, middle two digits, lowest two digits (**HI | MED | LO**)

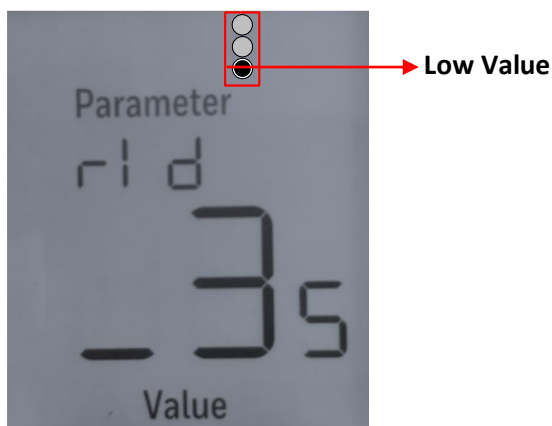
2. Set HI (high) value, check fan speed dots, that indicates high value displayed (06 default value displayed). Use **UP/DOWN** arrow button to change the value (range is 0-6). Press **FAN** to continue.



3. Set MED (Medium) value, check fan speed dots, that indicates medium value displayed (55 default value displayed). Use **UP/DOWN** arrow button to change the value (range is 0-99). Press **FAN** to Continue.



4. Set LO (Low) value, check fan speed dots, that indicates low value displayed (35 default value displayed). Use **UP/DOWN** arrow button to change the value (range is 0-99).



5. Press **MODE** button to store the new Room ID number scrolling across the display. The unit beeps to confirm the value is stored in memory. Once the scrolling is completed, screen display **rld**.

Or

Press **FAN** button to move between three values to verify the Room ID.

6. Press **UP** arrow button to display **PAn** mode or press **°F | °C** to return the **INITIALIZATION MODE**.

Setting the PAN ID during Initialization



1. After **PAn** is displayed, press **MODE** . The default **PAn** value 0 is displayed.
2. Use **UP/DOWN** arrow to change the value to the desired PAN ID(range is 0 to 255).
3. Press **FAN**, the unit beeps to confirm the value stored in the memory and the display changes back to **PAn**.

4. Press **MODE** to check the **PAn** value.
5. Press **UP** arrow button to display **rF** mode or press °F | °C to return the **INITIALIZATION MODE**.

Setting the RF Channel during Initialization



1. After **rF** is displayed, press **MODE** (26 default **rF** value is displayed)
2. Use **UP/DOWN** arrows to change value (range is 11-26).
3. Press **FAN**, the unit beeps to confirm the value stored in the memory and display back to **rF**.
4. Press **MODE** to check the **rF** value.
5. Press °F | °C to return the **INITIALIZATION MODE**.

After returning **INITIALIZATION MODE**, e7w display a Target Temperature value on the display screen. Then e7w begins to communicate with the default address of its HVAC Partner using the defined Room ID, RF Channel and PAN ID. Default INNCOM HVAC partner address is **14**.

Appendix 2: Reading or Setting the Room ID, PAN ID and RF Channel into the e7w after it has been Initialized

RID – Setting e7w Room ID (*rld*)



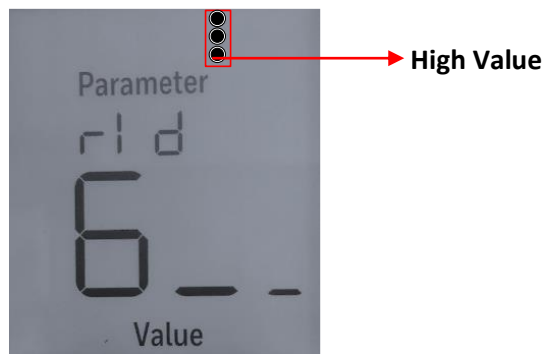
1. Enter **SERVICE MODE**
2. Use the **UP/DOWN** arrow buttons to select **rld** and then press **MODE**.

The current stored Room ID will scroll across the screen one numerical setting at a time, from highest to lowest (left most to right most value). After the current value finishes scrolling, the 3 vertical Fan speed dots displays indicating the high digit is displayed.

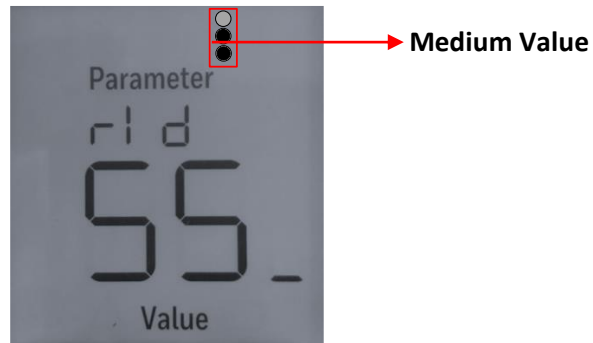
If the Room ID that scrolled was correct, press the °F|°C button to return **SERVICE MODE**. Or, proceed with the below steps the change the Room ID.

Note: The five-digit number is comprised of three fields: highest digit one, middle two digits, lowest two digits (**HI | MED | LO**)

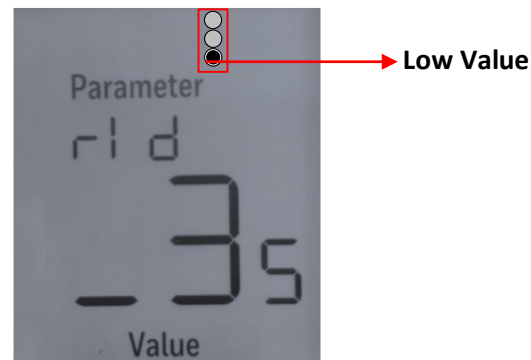
3. Set HI (high) value, check fan speed dots, that indicates high value displayed (06 default value displayed). Use **UP/DOWN** arrow button to change the value (range is 0-6). Press **FAN** to continue.



4. Set MED (Medium) value, check fan speed dots, that indicates medium value displayed (55 default value displayed). Use **UP/DOWN** arrow button to change the value (range is 0-99). Press **FAN** to Continue.



5. Set LO (Low) value, check fan speed dots, that indicates low value displayed (35 default value displayed). Use **UP/DOWN** arrow button to change the value (range is 0-99).



6. Press **MODE** button to store the new Room ID number scrolling across the display. The unit beeps to confirm the value is stored in memory. Once the scrolling is completed, screen display **rld**.

Or

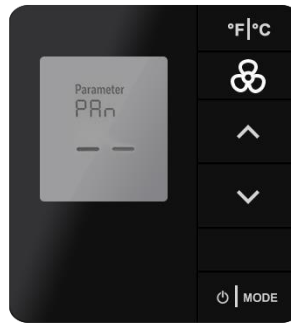
Press **FAN** button to move between three modes to verify the Room ID.

7. Press the **°F | °C** button to return **SERVICE MODE** or press **UP** arrow button to display next mode.

Or

Press the **°F | °C** button twice to exit **SERVICE MODE**

PAN – Setting e7w PAn ID (PAn)

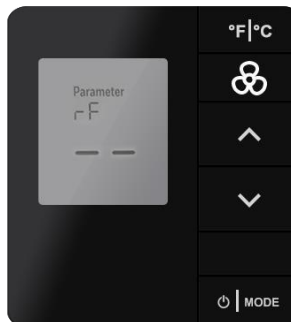


1. Enter **SERVICE MODE**,
2. Use the **UP/DOWN** arrow buttons to select **PAn** and then press **MODE**.
3. The current **PAn** value will be displayed on the screen.
4. Use the **UP/DOWN** arrows to set the desired value ranging from 0 to 255.
5. Press **FAN**, the unit beeps to confirm the value stored in the memory, display will be back to **PAn**.
6. Press the °F|°C button to return **SERVICE MODE** or press **UP** arrow button to display next mode.

Or

Press the °F|°C button twice to exit **SERVICE MODE**

RF – Setting e7w RF Channel (rF)



1. Enter **SERVICE MODE**,
2. Use the **UP/DOWN** arrow buttons to select **rF** and then press **MODE**.
3. The current **rF** channel value is displayed on the screen.
4. Use the **UP/DOWN** arrows to set the desired value between 11 to 26.
5. Press **FAN**, the unit beeps to confirm the value stored in the memory and display will be back showing **rF**.
6. Press the °F|°C button to return **SERVICE MODE** or press **UP** arrow button to display next mode.

Or

Press the °F|°C button twice to exit **SERVICE MODE**

Appendix 3: Using the e7w Ping Feature

PNG – Verifying Device Communication (PnG)

Use the **PnG (Ping)** parameter to Ping a device with the defined address. This allows you test if the device is communicating directly with the e7w via RF, or if the device is communicating S5 bus to an installed RF device. It is a standard practice for any room commissioning to Ping all devices from the thermostat.

1. Enter **SERVICE MODE**
2. Press **UP/DOWN** arrow buttons to select **PnG**.



3. Press **MODE** button. This action will display the **PnG** value and will be 000 by default.
4. Use the **UP/DOWN** arrow button to change the displayed value to the P5 address to be pinged.

For example, refer to

the below figure which shows address 227.



5. Press the **FAN** button to start the Ping.

The e7w will constantly send 4 read commands to read the below values from the target device until the **°F | °C** key is pressed. A successful ping will show the following four parameter values in sequence:

1. Device Type Code
2. Major SW Version
3. Minor SW Version
4. AGC Level of Pinged Device

If no replies to the read commands are received, the display will continue to show the P5 address to be pinged and Value.

6. Press the °F|°C button to stop the Ping.
7. Press the °F|°C twice button to return **SERVICE MODE** or press **UP** arrow button to display next mode.

Or

Press the °F|°C button twice to exit **SERVICE MODE**

Appendix 4: Using the e7w Process Image Viewer

PI5 – Process Image Viewer Parameter (Pi5)

Use **PI5** mode to read any Process Image (PI) offset value 0-31 from the HVAC partner device. The **PI5** Process Image viewer is an advanced feature intended to be used by an INNCOM technician for advanced troubleshooting.

1. Enter **SERVICE MODE**
2. Press **UP/DOWN** arrow buttons to select **PI5**.



3. Press **MODE** button. This action displays the initial **PI5** offset value of 0.



4. Use the **UP/DOWN** arrow buttons to change the **PI5 offset** value over the range 0-31. If going up from 0, the displayed value will roll back to 0 after 31 is reached, if going down from 31, the displayed value will roll back to 31 after 0 is reached.
5. Press the **FAN** button to execute. The e7w sends a 0010000XX (XX=E0-FF) read Process image offset read command to its defined HVAC partner address.

6. If a reply value is received from the HVAC partner, the **PI5** value is displayed in decimal format.



If no reply is received , the selected PI Offset value remains and a warning triangle icon is displayed ().



7. Press the °F|°C button to return **SERVICE MODE** or press **UP** arrow button to display next mode

Or

Press the °F|°C button twice to exit **SERVICE MODE**

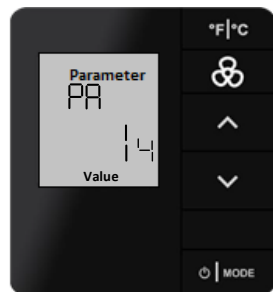
Appendix 5: Setting the e7w “PA” Partner Address

Use **PA** mode to set default address used by the HVAC partner of the e7w. Any messages sent by the e7w are sent to this Address. If the e7w HVAC partner is configured with a different address, you must change the PA value to match that address. For example, if X47 with address 224 is used as the HVAC partner of e7w, then PA value should be changed to 224.

1. Enter **SERVICE MODE**
2. Press **UP/DOWN** arrow buttons to select **PA**.



3. Press **MODE** button. This action displays **PA** value (14 displayed as default PA value).



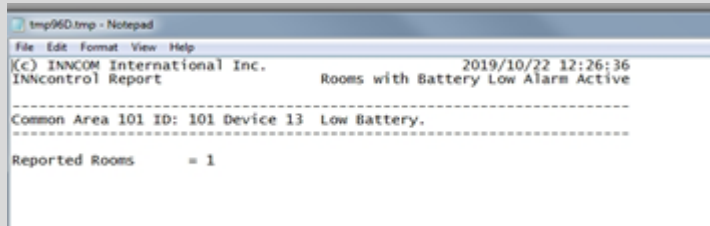
4. Use the **UP/DOWN** arrow buttons to change the **PA** value.
 5. Press the **FAN** button to store the value. The e7w play beep sound.
 6. Press the **°F|°C** button to return **SERVICE MODE** or press **UP** arrow button to display next mode
- Or
- Press the **°F|°C** button twice to exit **SERVICE MODE**

Appendix 6: Using the e7w bAu (Battery Level) Parameter

Use **bAu** mode to view the battery level of the 4 AA batteries installed in the e7w. The value is reported as a 0-255 value, which is scaled to the 0-6.4 VDC of 4 batteries, each with 1.6-volt AA battery.

NOTE

A battery level of 4 volts or less will cause the e7w to display a low battery symbol on its display indicating that the 4 AA batteries need replacement. This condition will also result in a low battery alarm in the INNcontrol software. Refer below image



1. Enter **SERVICE MODE**
2. Press **UP/DOWN** arrow buttons to select **bAu**.



3. Press **MODE** button. This action displays **bAu** value, ranging from 0-255.
4. Press the **°F|°C** button to return **SERVICE MODE** or press **UP** arrow button to display next mode

Or

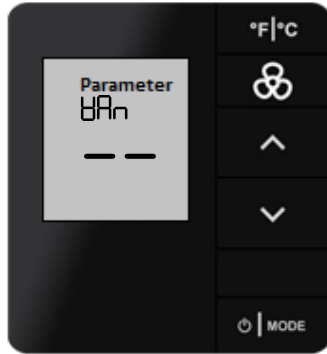
Press the **°F|°C** button twice to exit **SERVICE MODE**

Appendix 7: Using the e7w WAN Test

The **Wan** (Wide Area Network) test is used to verify if the Room Gateway device in the room is connected to the INNCOM Server via its associated B574/B578 Edge Router or B576 Floor Bridge.

NOTE: This test mode only applies to a network or online installation

1. Enter **SERVICE MODE**
2. Press **UP/DOWN** arrow buttons to select **WAn**.



3. Press **MODE** button to start the test.

don (Done) will briefly be displayed, then the e7w broadcasts a Commissioning Request into the room. The device in the room with its Room Gateway function enabled then forwards the request to Inncom server.

4. If the Inncom server received and validated the commission request, it sends a command back to the Room Gateway that contains the Room ID value. If the e7w sees this message that contains 5 digit Room ID value, it scrolls the value across its display to indicate the WAN test passed.

If no Room ID or the incorrect Room ID value scrolls across the e7w display, the WAN test failed. Refer to applicable troubleshooting documentation. Possible reasons for a WAN test failure are:

- No device in the room is configured to be the Room Gwy or the Room Gateway device is not powered or configured correctly
- The edge router or floor bridge the room communicates through is not powered or is not configured correctly

5. Press the **°F|°C** button to return **SERVICE MODE** or press **UP** arrow button to display next mode.

Or

Press the **°F|°C** button twice to exit **SERVICE MODE**

Appendix 8 : Using the e7w PING Test

Use the **PnG (Ping)** parameter to Ping a device with the defined address. This allows you test if the device is communicating directly with the e7w via RF, or if the device is communicating S5 bus to an installed RF device. This is part of commissioning a room to Ping all installed devices from the e7w.

1. Enter **SERVICE MODE**
2. Press **UP/DOWN** arrow buttons to select **PnG**.



3. Press **MODE** button. This action will display the **PnG** value and will be 000 by default.
4. Use the **UP/DOWN** arrow button to change the displayed value to the P5 address to be pinged.
For example, refer to the below figure which shows address 227.



5. Press the **FAN** button to start the Ping.

The e7w will constantly send 4 read commands to read the below values from the target device until the **°F|°C** key is pressed. A successful ping will show the following four parameter values in sequence:

1. Device Type Code
2. Major SW Version
3. Minor SW Version
4. AGC Level of Pinged Device

If no replies to the read commands are received, the display will continue to show the P5 address to be pinged and Value.

6. Press the °F|°C button to stop the Ping.
7. Press the °F|°C twice button to return **SERVICE MODE** or press **UP** arrow button to display next mode.

Or

Press the °F|°C button twice to exit **SERVICE MODE**

Appendix 9 : Using the e7w CBL32 Registry Viewer/Editor

Use the **rEG** parameter to view or modify CBL32 Registry Group 9 Thermo/HVAC and Registry Group 7:X:Y input/output in the HVAC Partner device (i.e. X47) to the e7w.

1. Enter **SERVICE MODE**
2. Use the **UP/DOWN** arrow buttons to select **rEG**



3. Press **MODE**. This action displays **Gr** (Group) value.
4. Use the **UP/DOWN** arrow buttons to change the **Gr** value to the required CBL32 Group.

For example, Group 9 for Thermostat 9: X registries, or Group 7 for 7: X Input/Output registry's.



5. Press the **MODE** button. This action displays **KEY** value (This is the Registry Key value).
6. Use the **UP/DOWN** arrow buttons to change the **KEY** value to the required CBL32 Key.

For example, 9:1 - Group 9: Key 1 Occupancy or 7:3 - Group 7: Key 3 Light Output



7. Press the **MODE** button to continue:

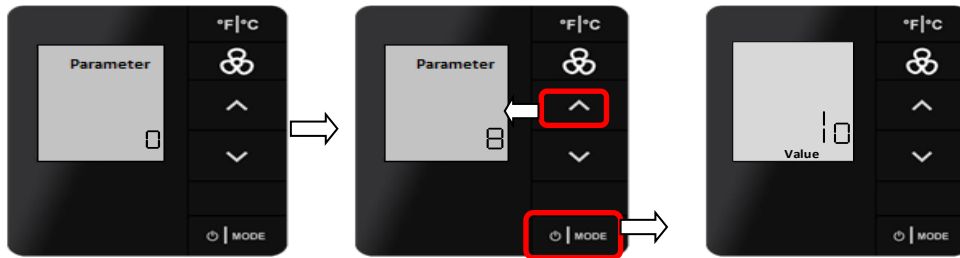
If Group 9 Thermo/HVAC had been selected as the Gr. (Group) in step 4:

Group 9 has no Index values, so the e7w will immediately send a 00018C09YY0000 Read Registry 09:YY Offset 0 command (YY = the Key value defined in step 6) to the address of the HVAC partner to verify the selected Registry 09:YY exists.

- If the selected Registry 09:YY exists in the HVAC partner, the e7w will beep and “Parameter” and 0 will be displayed.
 - a. Use the **UP/DOWN** arrow buttons to select the desired 09:YY parameter offset.
 - b. Press the **MODE** button to read and display the value if the selected offset.

The e7w will send a 00018C09YY0000 Read Registry 09:YY Offset value to the HVAC partner. If a reply is received, the display show “Value” and the value of the selected offset in decimal, and the e7w will beep.

In the below example, Parameter 8 of the selected 9:YY registry has a value of 10.



Use Up button to set parameter value to 8, then press MODE button to view the value

- If the defined Registry 09:YY does NOT exist in the HVAC partner, **nUL** will be briefly displayed, then the e7w will return to displaying the selected **Key** value.



If Group 7 Input/Output was selected as the Gr. (Group) in step 4:

Group 7 registry's have an Index value that must be defined before defining the desired Offset, so after pressing the **MODE** button, **Idx** (Idx or Index) and 0 will be displayed.

- a. Use the **Up/ Down** Arrow buttons to define the desired Index#. "1" in this example.



b. Press the MODE button.

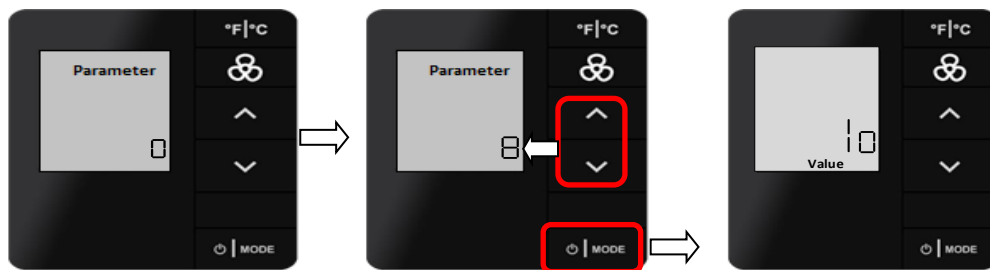
The e7w will send a 00018C07XXYY00 Read Registry 07:YY:XX Offset 0 (YY = the Key value defined in step 6, XX = Index value) command to the address of the HVAC partner to verify the selected Registry 07:YY:XX exists.

➤ If the selected Registry 07:YY:XX exists in the HVAC partner, the e7w will beep and “Parameter” and 0 will be displayed.

1. Use the **UP/DOWN** arrow buttons to select the desired 07:YY:XX parameter offset.
2. Press the **MODE** button.

The e7w will send a 00018C07YYXX00 Read Registry 07:YY:XX Offset value. If a reply is received, the display will change to show “Value” and the value of the selected offset in decimal, and the e7w will beep.

In the below example, Parameter 8 of the selected 7:YY:XX registry has a value of 10.



Use Up button to set parameter value to 8, then press MODE button to view the value

➤ If the defined Registry 07:YY:XX Index does NOT exist in the HVAC partner, **nUL** will be briefly displayed, then the e7w will return to displaying the selected **Index** value.



8. With the value of the defined Registry Offset now displayed, use the Up/Down arrow buttons to change the value if desired. In order for any change to be permanent, you must press the FAN button to store the change.

Upon pressing the FAN button to store the change, a Cloud / Sun icon will begin to blink in the upper left of the display to indicate a change to the Registry of the HVAC partner device has been made.



Press FAN button to store the new value.
Cloud/Sun symbol blinks to indicate registry value has been changed

9. If you desire to make additional changes to the current selected registry or other Registry's:
 - a. Each press of the °F|°C button returns to the previous Group:Key or Group:Key:Index level. Press the °F|°C button as many times as required to back out to the desired Group:Key or Group:Key:Index

For example, if currently viewing Registry 9:1 (Group 9:Key 1) Parameter 8 value:



- b. When the desired level is reached, use the Up / Down arrow buttons to select the desired Group , Key or Index value , then press the MODE button to view the value of the selected Group , Key or Index value.
10. If no further changes are desired, press the °F|°C button as many times as required to back out through the Gr9 menus until **Str** (Store) is displayed. Pressing the FAN button again with **Str** displayed will Commit the registry and permanently store all changes.

The e7w will RESET in order to store the changes and exit out of Parameter mode.

Appendix 10: Using the e7w Door Test

The **dor** parameter is used to verify room entry door position is being reported into the room. With the Door test initiated, the e7w will sound its buzzer when the door is open, and the LCD shows the number of times the door has changed the door position from closed to open.

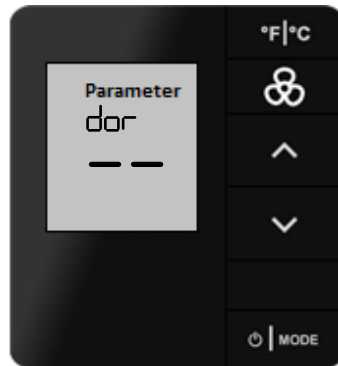
NOTE

There are two conditions to be satisfied for door test:

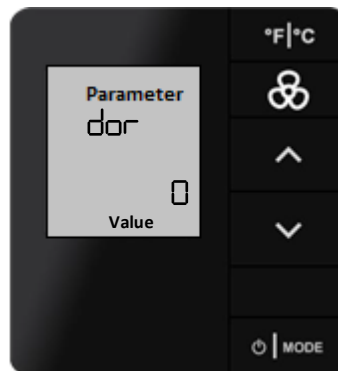
- There is device in the room that is monitoring and reporting door position via a 0x000281 Entry Door Open message such as an S541.RF.
- A device in the room that has its “P5 Door Server” enabled that reports a 0x0002981 “Door Server Reports Door is Open” when it sees the 0x000281 Entry Door Open message. This will typically be the room thermostat.

The e7w watches for the 0x0002981 “Door Server Reports Door is Open” message for its door test.

1. Enter **SERVICE MODE**
2. Press **UP/DOWN** arrow buttons to select **dor**.



3. Press **MODE** button. This action displays **dor** value (0 is the default **dor** value displayed)



4. Open the room entry door. The following sequence should happen:

- a) The device used for reporting entry door position sends a 0x000281 Door open message into the room
- b) The door server in the room sends 0x0002981 Door Server Reports Door Open message into the room.
- c) Upon seeing the 0x0002981 Door Server Reports Door Open, the e7w will sound its buzzer sound and increment the displayed door open count.



5. Close the door. The e7w buzzer stops.
6. Press the °F|°C button to return **SERVICE MODE** or press **UP** arrow button to display next mode.
Or
Press the °F|°C button twice to exit **SERVICE MODE**

Appendix 11: Adjusting the e7w PIR Motion Sensor Sensitivity

Use the **Pf** parameter to adjust the sensitivity of the e7w built in PIR motion sensor.

1. Enter **SERVICE MODE**
2. Press **UP/DOWN** arrow buttons to select **Pf**



3. Press **MODE** to view the value. The value can be between 1 and 4.
 - 1 - Disable PIR filter and apply no filtering to the signal from the PIR sensor.
 - 2 - Report detected motion only after 2 PIR sensor detections occur.
 - 3 - Report detected motion only after 3 PIR sensor detections occur.
 - 4 - Report detected motion only after 5 PIR sensor detections occur.Use the Up / Down arrow buttons to select the desired value.
4. Press the **FAN** button to store the change. The e7w will beep
5. Press the **°F|°C** button to exit **SERVICE MODE**