How to create a runtime file in TIA Portal

This guide shows you how to create a runtime file in TIA Portal for your HMI project. You compile the project, check the tag counts that licensing requires, save the project, and locate the generated pdata.fwc file. You then open that file in WinCC Runtime Advanced to verify the HMI runtime, and you can copy the project folder to another PC.

Prerequisites

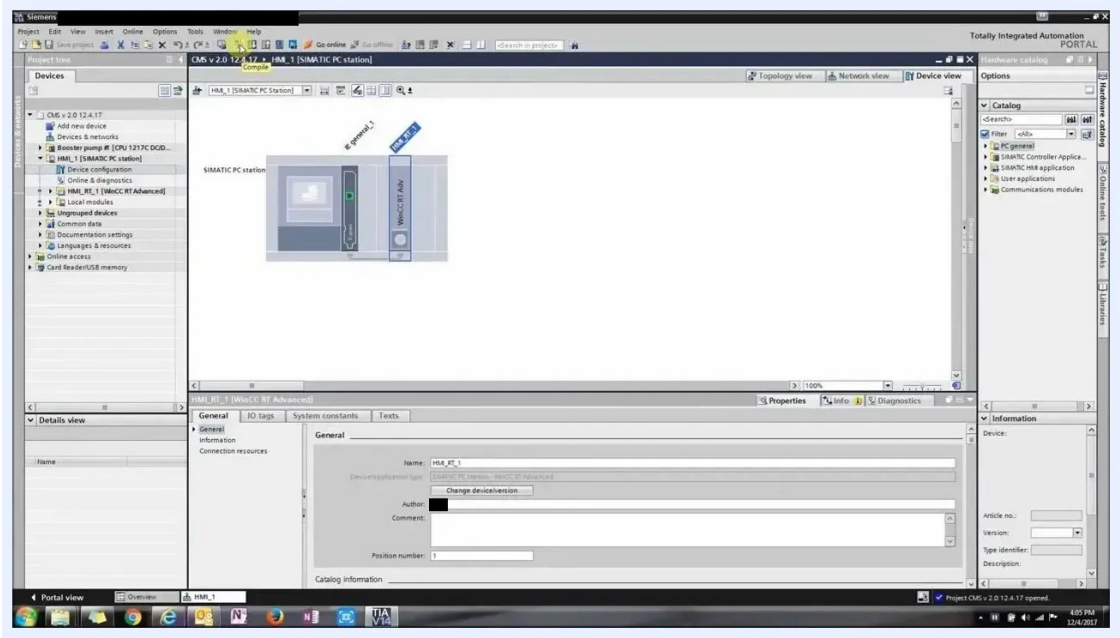
Before you begin, make sure you have:

- A Totally Integrated Automation (TIA) Portal project that contains an HMI device, such as an HMI_1 [SIMATIC PC Station].
- A valid WinCC Runtime license.
- Enough PowerTags for your project.

Open your project and select the runtime module

Step 1: Open your TIA Portal project

Open your project and make sure you are in the main workspace, with the project tree visible on the left.



TIA Portal main workspace with the project tree showing devices and HMI configuration options

Step 2: Locate your HMI device in the project tree

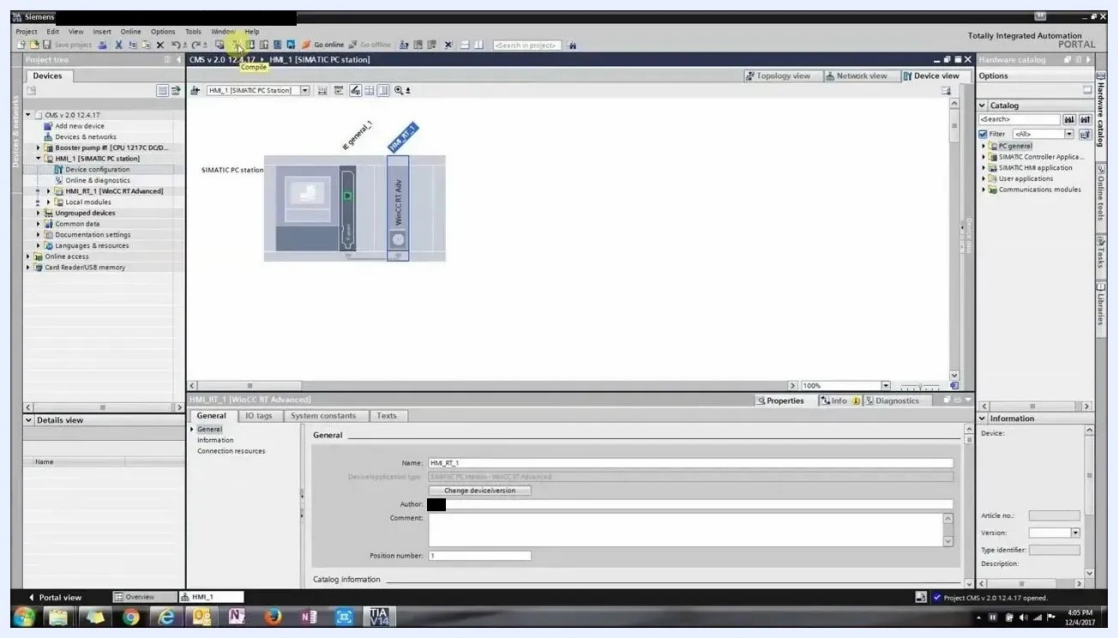
In the project tree, expand your project and find your HMI device. For example, expand "CMS v 2.0.12.4.17" > "HMI_1 [SIMATIC PC Station]" > "Device configuration".

Step 3: Open the device configuration

Click your HMI device configuration. The main window displays the device layout and configuration options.

Step 4: Select the WinCC RT Advanced module

Select the **WinCC RT Advanced** module under your HMI device. Confirm that you are viewing the correct module for runtime configuration.

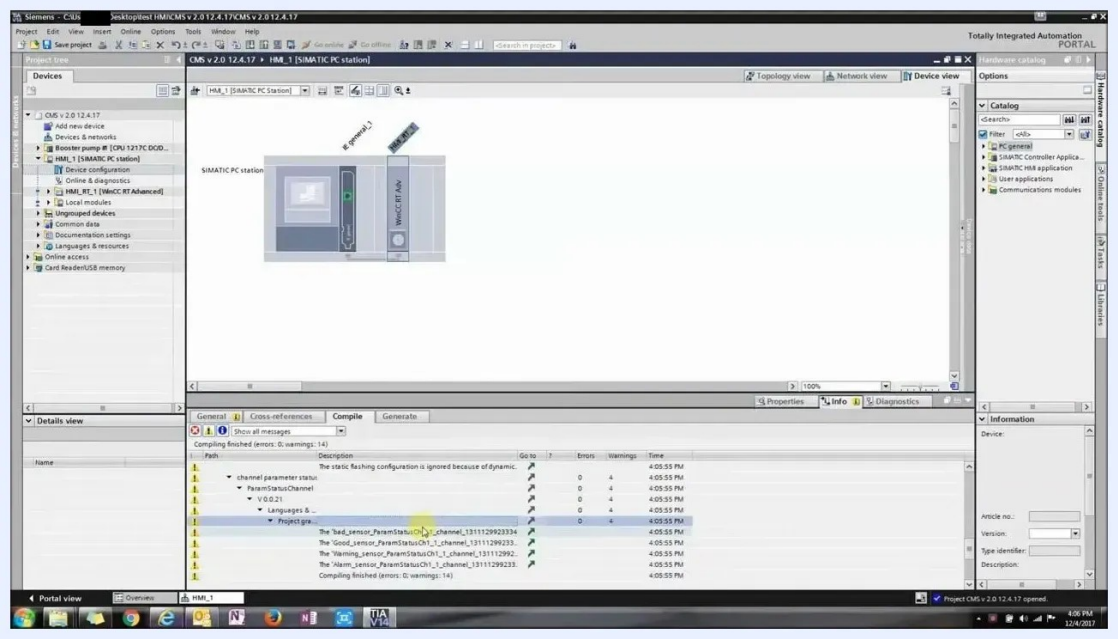


Device configuration screen with the WinCC RT Advanced module selected, showing the hardware layout

Compile your project and check HMI tag usage

Step 5: Compile the project

Click the **Compile** button (checkmark icon) in the toolbar, then wait for the compilation to finish. Make sure there are no errors. Warnings may appear, and you should review them.



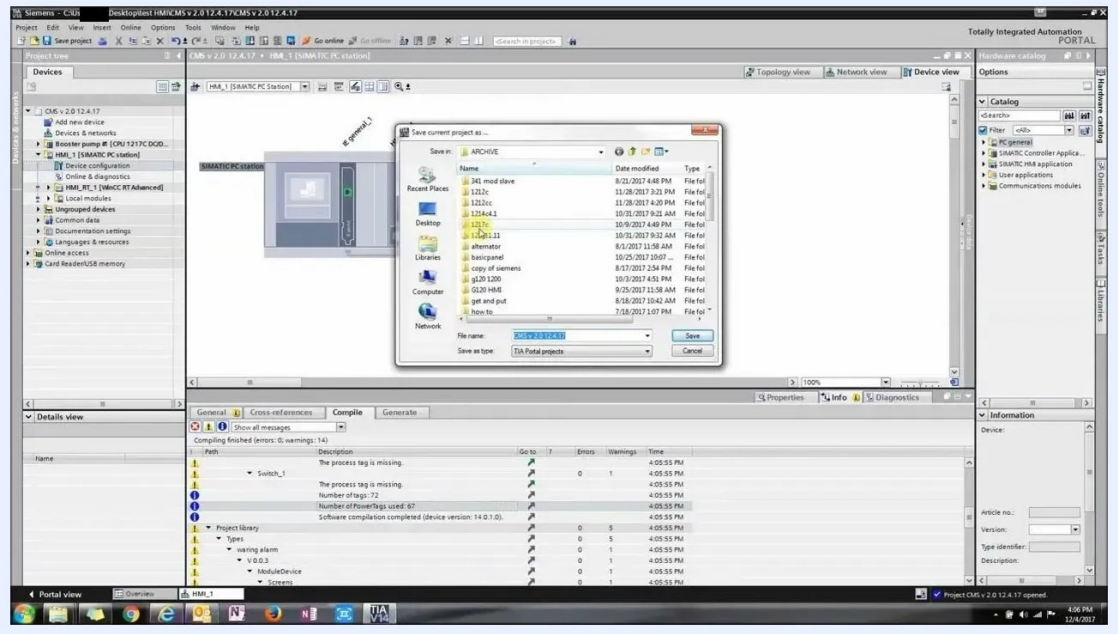
Compile results showing warnings and tag usage in the compile tab

Step 6: Check the number of tags used

In the compile results in the bottom panel, look for these two values:

- "Number of tags: 72"
- "Number of PowerTags used: 67"

Record these values. You need them to license your HMI runtime.



Compile results with the tag counts highlighted: Number of tags 72 and Number of PowerTags used 67

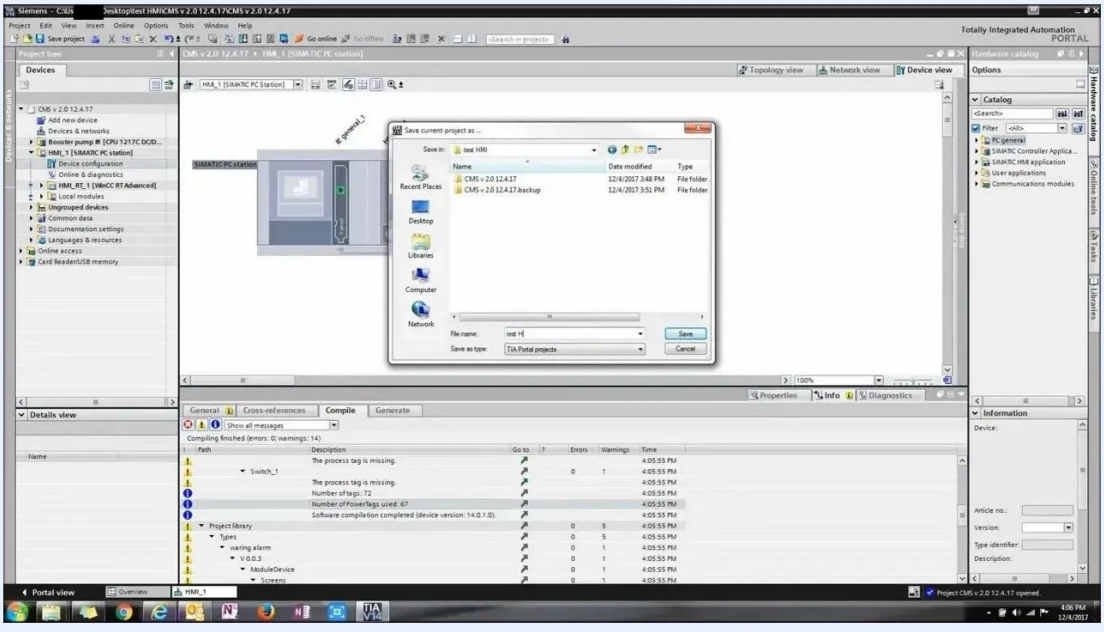
Save your project and locate pdata.fwc

Step 7: Save the project to a known location

Follow these steps:

1. In the menu bar, click **Project** > **Save As**.
2. In the **Save current project as** dialog, select a location, such as the Desktop.
3. Enter a folder name, such as "test HMI".

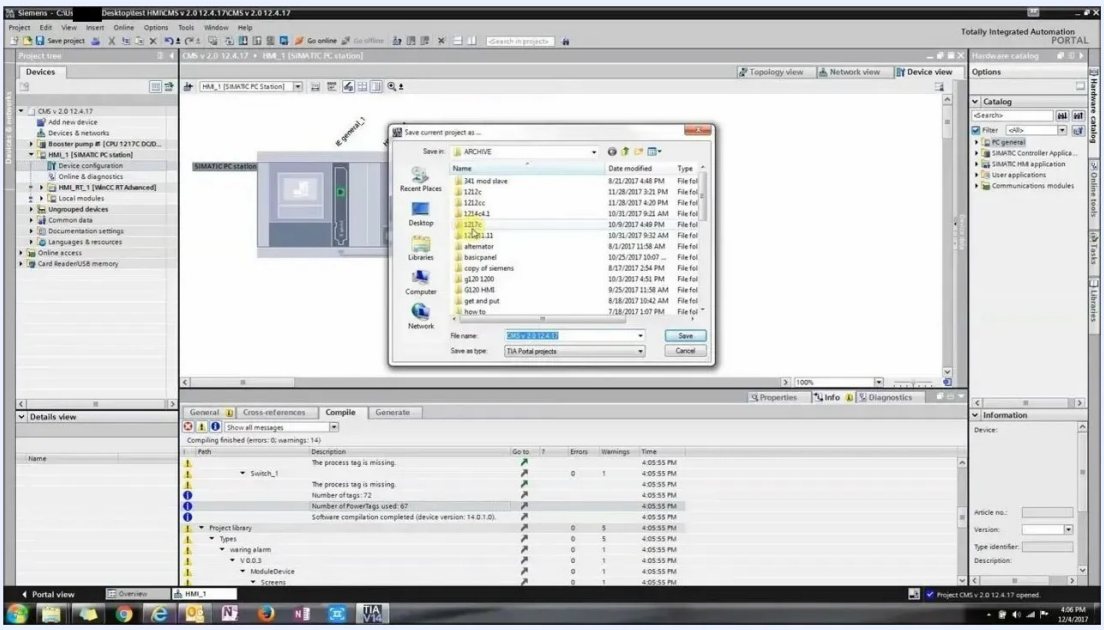
4. Click **Save**.



Save As dialog with folder selection and name entry for saving the project

Step 8: Open the saved project folder

In Windows Explorer, open the folder where you saved your project (for example, "test HMI"). Locate the "IM" folder inside your project directory.



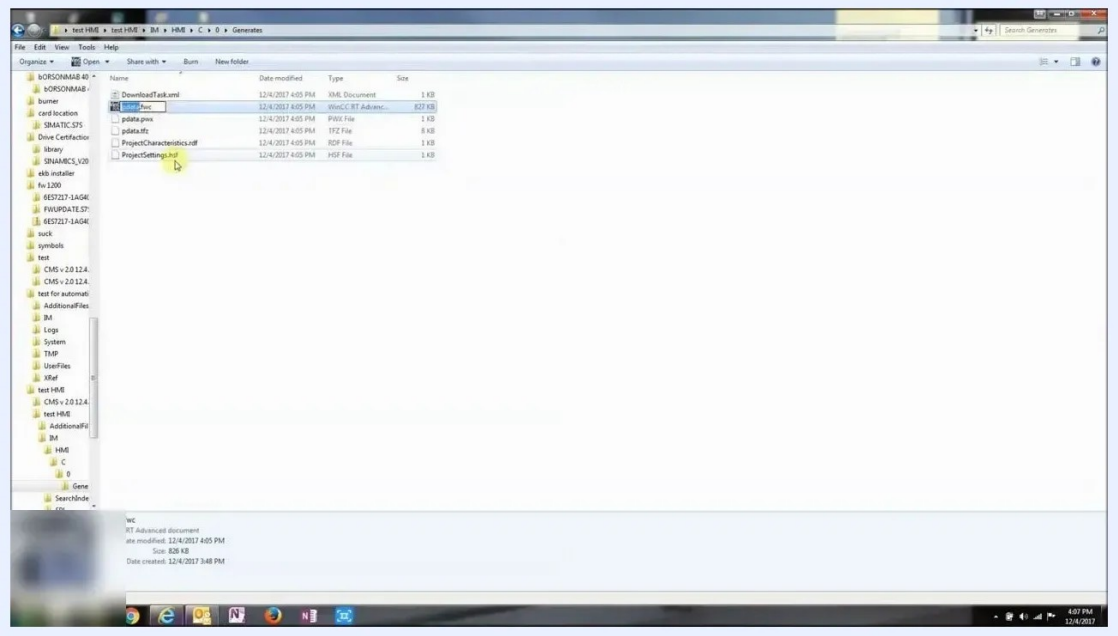
Windows Explorer showing the saved project folder with its subfolders, including IM

Step 9: Drill down to the Generates folder

Open the folders in this order: "IM" > "HMI" > "C" > "0". Inside, find the "Generates" folder.

Step 10: Find pdata.fwc

Double-click the "Generates" folder and look for the file named "pdata.fwc" (WinCC RT Advanced document). This is the file you need for your project or licensing purposes.



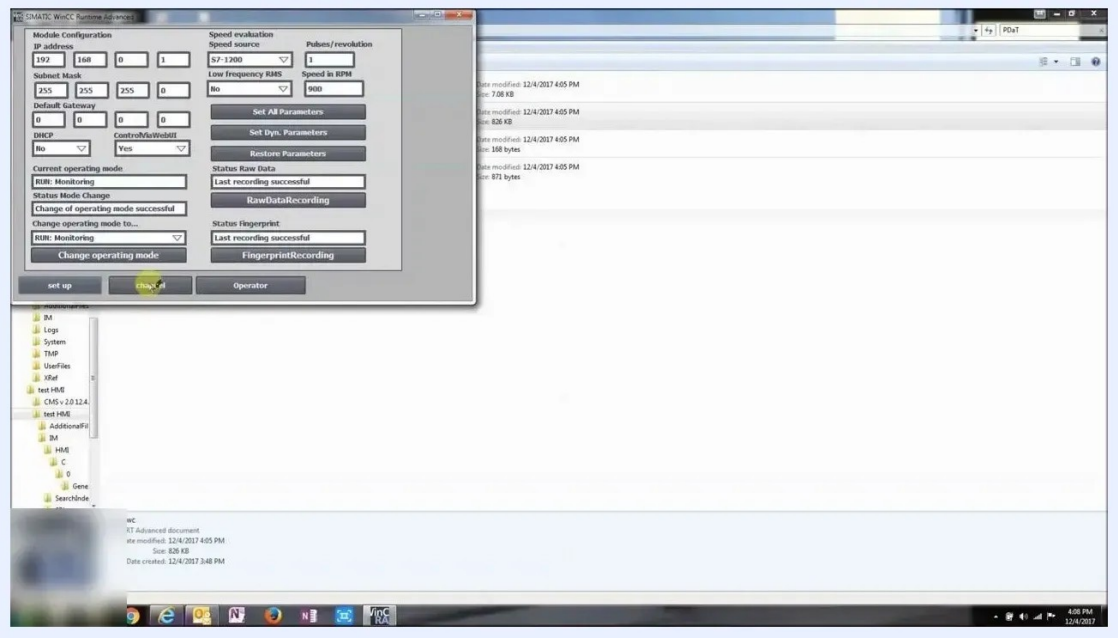
Windows Explorer showing the Generates folder with pdata.fwc and related files

Step 11: Search for pdata.fwc if you cannot find it

If you cannot find the file by browsing, use the Windows search function:

1. Go to your main project folder (for example, "test HMI").
2. Enter "pdata" in the search bar.
3. Look for files named "pdata.fwc" (WinCC RT Advanced document) or similar extensions such as ".fwc" or ".w".
4. Confirm the file path, for example: C:\Users\[YourUser]\Desktop\test HMI\IM\HMI\C\0\Generates\pdata.fwc

The search results display the file location and type.



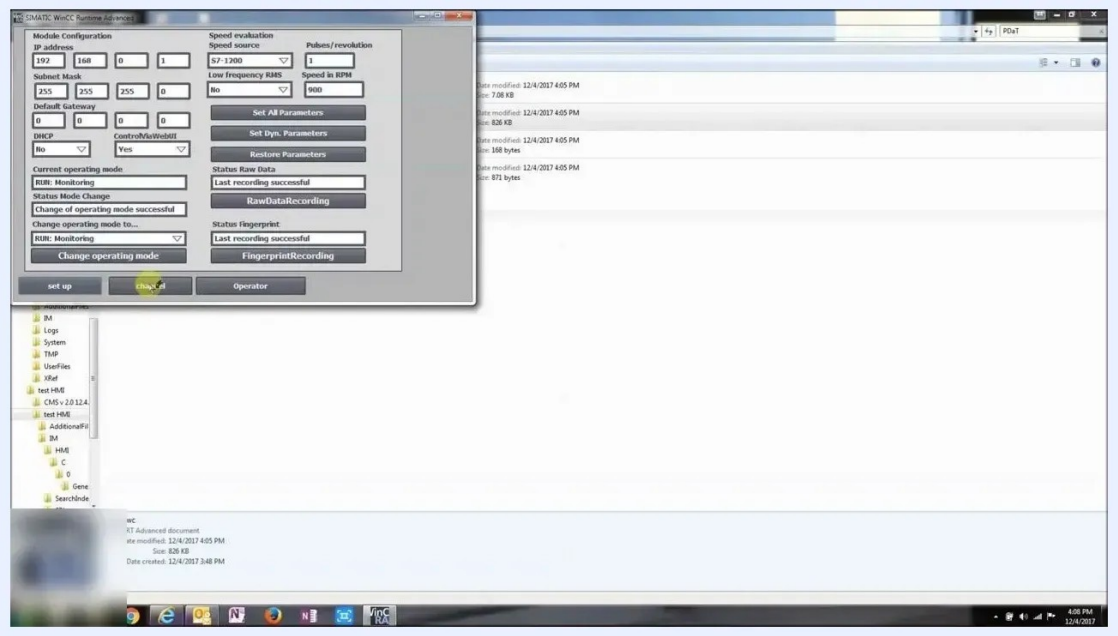
Windows Explorer search results with the pdata.fwc file highlighted, showing its path and type

Open pdata.fwc and verify the HMI runtime

Step 12: Open the runtime file

Double-click the "pdata.fwc" file to open it in WinCC Runtime Advanced. Make sure you have a valid WinCC Runtime license and enough PowerTags for your project.

If both are in place, the HMI runtime launches and connects to your PLC. The HMI interface appears, which confirms a successful connection.



SIMATIC WinCC Runtime Advanced window showing module configuration and status, with Windows Explorer in the background

Step 13: Verify the runtime is communicating with the PLC

Check the runtime window for live data, such as monitoring values (for example, vRMS and aRMS) and sensor states. Confirm that the characteristic values and monitoring states update as expected.

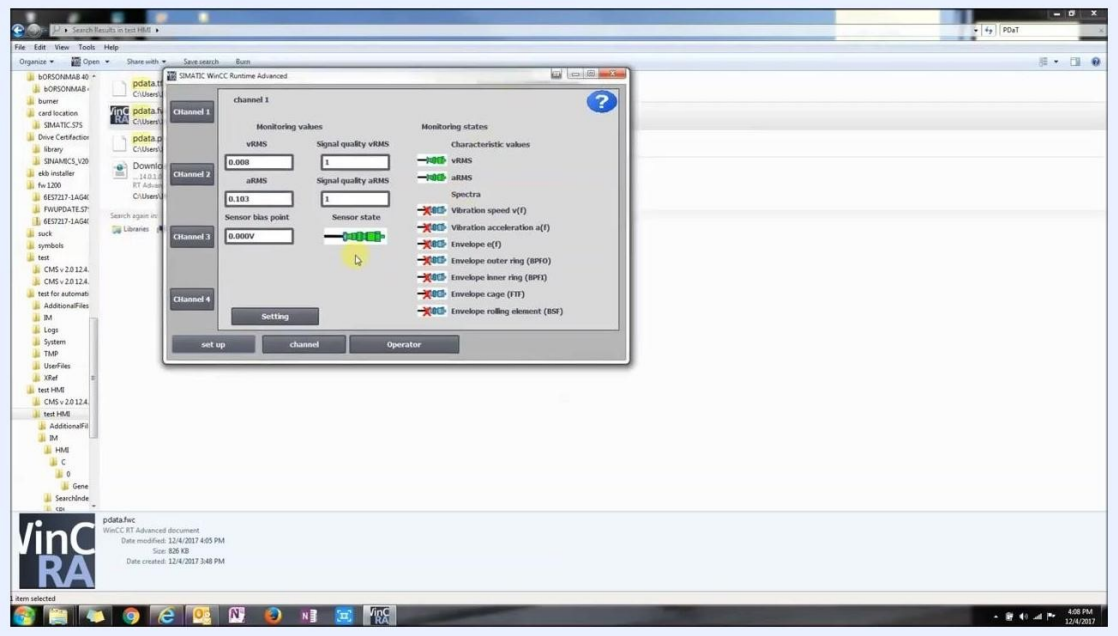
Run the HMI runtime on a different PC

Step 14: Copy the project folder to the target PC

If you plan to run the HMI runtime on a different PC, copy the entire project folder:

1. In TIA Portal, use **Save As** to save your project to a known location.
2. Move the entire project folder (for example, "test HMI") to the target PC.
3. On the target PC, navigate to the same folder structure and locate the "pdata.fwc" file.
4. Make sure the target PC has the required WinCC Runtime license and PowerTags.

5. Open the "pdata.fwc" file to start the HMI runtime.



SIMATIC WinCC Runtime Advanced window with monitoring values and sensor states, and the Windows system tray visible, indicating the runtime is operating

Summary

You now know how to create a runtime file in TIA Portal and use it. You can:

- Locate the pdata.fwc file, using Windows search if needed.
- Launch and verify your HMI runtime with the correct licensing and tag configuration.
- Transfer your HMI project to another PC by copying the entire project folder, as long as the licensing requirements are met.

What's next

Record the tag counts from the compile results and confirm that your WinCC Runtime license and PowerTags cover them before you run the runtime on another PC.