

Application note

CP600 HMI - Enabling the VNC Server

AN00235

Rev A (EN)

Take advantage of the CP600 HMI's remote connection possibilities to allow a remote PC or mobile device to view and control the HMI via VNC



Introduction

The CP600 range of intelligent HMI panels is able to communicate with other peripherals (e.g. AC500 PLCs, ABB motion products) via a selection of communication protocols. In addition, these units also support a VNC HMI server function which allows for remote emulation of the CP600 project via a wired or wireless network connection. This application note details how these HMIs can be configured to run the VNC server for remote connection purposes.

For general guidance on the use of Panel Builder 600 refer to ABB manual 2CDC159007M0201.

Pre-requisites

To configure a CP600 HMI to run the VNC HMI server requires Panel Builder 600 version 1.90.00.623 (or later) but it is recommended to use v1.91 or later if at all possible. Please contact your local ABB sales office if you need to update your existing version of this software.

Starting from Panel Builder v1.90, the VNC server has been added as a plugin to allow developers of CP600 applications to choose if it should be enabled and downloaded as part of the HMI runtime.

To use a VNC client (i.e. on the remote PC or mobile device) you need a VNC viewer application. Many are available, one of which is the RealVNC viewer which can be downloaded using the following link...

<https://www.realvnc.com/download/viewer/>

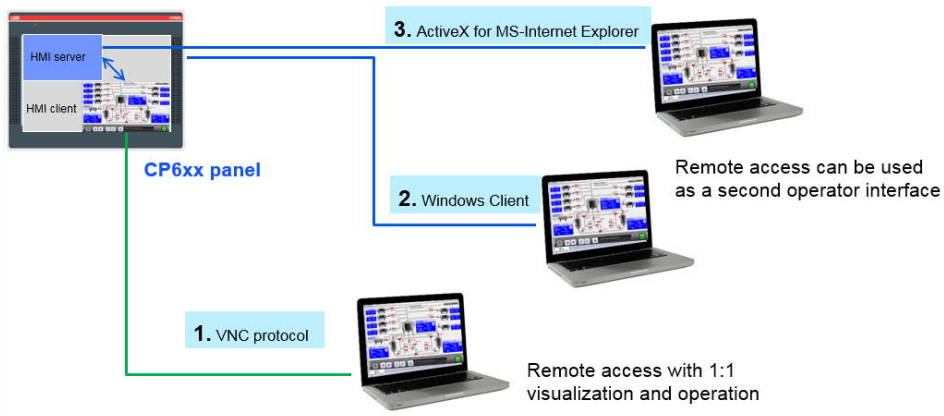
There are downloads available on this website to allow a VNC viewer to run on various mobile devices or PC.

Network

The CP600 range supports many different remote connection possibilities:

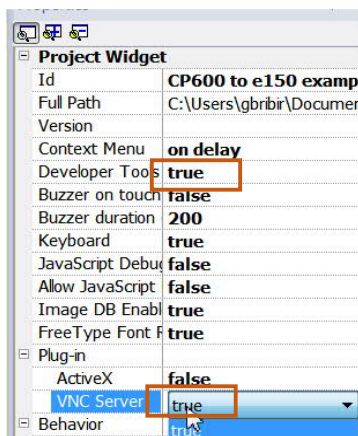
1. VNC connection to the HMI
2. Using the HMI PC client (which is installed as part of the Panel Builder installation)
3. Active X connection (using the ActiveX controls installed as part of the Panel Builder installation)

VNC connection to the HMI is the focus of this application note



Enabling VNC within the HMI project

To enable the VNC client, open a project, go to project properties, this will open the project properties in the window to the left.

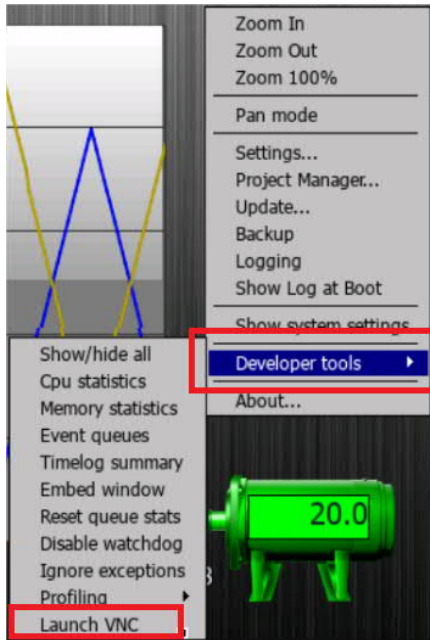


Now select the 'Plug-in' sub menu and set the VNC server option to True to enable it. This will ensure that this is downloaded into the target on the next download.

Also set 'Developer Tools' to True, this will give access to the advanced settings in the HMI's context menu.

Configuring VNC on the CP600 HMI

The first time the HMI restarts after downloading the project with the VNC server plug-in enabled the VNC options dialog will appear automatically. Once this automatic appearance has been disabled (described shortly) to access the VNC server options in future you must access the context menu (press and hold the screen for 3 seconds) and then select the 'Developer tools>Launch VNC' option.



The VNC server options are set via a dialog with a number of tabs...



The more important settings are on the Options and Advanced tabs of this dialog. The 'Options' tab allows you to specify security settings, including a password (which is null by default), that will ensure anyone attempting a VNC client connection can only do so if they provide the correct credentials. The VNC server uses TCP port 5900 so any firewalls in the system will need to allow access to this port (see the 'Firewalling' topic in the Panel Builder help file for further details). The server IP address will match the IP address of the HMI itself.

On the 'Advanced' tab select the 'Autostart' option if you want remote access via VNC to be possible every time the HMI starts up. It is useful to select 'Silent Startup' to prevent the VNC dialog from appearing at HMI startup. Showing a taskbar icon allows debugging of problems in certain situations, in most applications it is recommended to deselect this option.

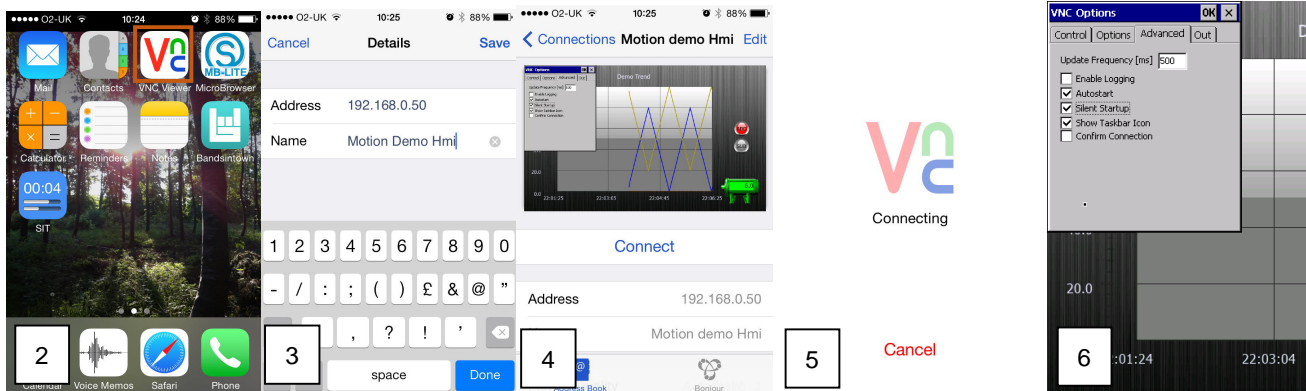
Click the 'OK' button at the top right of the dialog to save any changes.

Testing the connection

Now you have set up and downloaded your CP600 application you can test the connection. If you have a VNC viewer on your PC then a wired or wireless connection to the CP600 HMI's network will allow you to view the CP600 screen as it is shown to the operator. If you have a mobile device typically you can only view the connection wirelessly and thus a wireless router is needed.

As an example the steps below would be used to connect an iPhone to a VNC enabled HMI:

1. Connect your phone to the wireless network that the CP600 is connected to
2. Open the VNC viewer/client application on the phone (e.g. the RealVNC app)
3. Add a new connection – i.e. the IP address of the HMI - and give the connection a name
4. Click the connect icon on your newly created connection
5. Wait for it to connect.
6. You should now see the CP600 screen emulated on your phone



For more information on using the RealVNC applications and connectivity please go to <https://www.realvnc.com/>

Contact us

For more information please contact your local ABB representative or one of the following:

- new.abb.com/motion
- new.abb.com/drives
- new.abb.com/drivespartners
- new.abb.com/PLC

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