

Frequency comparator CH7-1015. Application note #1.

«Working with the device in remote desktop mode»

The CH7-1015 frequency comparator provides remote desktop operation via the virtual network computing (VNC) protocol. In this mode, it provides full control of all device functions simultaneously from different workstations. To operate within a peer-to-peer network, there is no need to change any router parameters. If you need to access the device from another network or need remote access over the Internet, you should provide port forwarding on your router that has access to the external network. This document covers the basic principles of configuring access to the device in the peer-to-peer network. For more complex network configurations, the setup is the similar.

1. Configuring the router.

To configure the router, you need a PC connected to it via a local network with an established connection. Also, you will need administrator rights to access the router. Let us consider setting up the router, for example, on the NetGear Genie router. For other routers, the configuring will be made in the same way. In this case, the device's web interface will be used for configuration. To access the router, launch any Internet browser on your PC and enter the router's IP address into its address bar. If the address is correct, a window will appear to enter the administrator's login and password. After entering them, the web interface will open in the browser window. Find there a tab with the name "Setup" and from the "Internet setup" field, copy or write down the IP address of the router in the external network. Find there a tab with the name «Setup» and from the «LAN Setup» field, copy or write down the IP address and IP Subnet Mask. These data will be needed in the future to set up a connection. Find in the menu a tab with the name «Port Forwarding/Port Triggering». Select the «Port Forwarding» option. Click the button with the name "Add Custom Service" and in the new window enter the name of the new service, for example "CH7-1015 Desktop". Select the protocol - "TCP / UDP" and in the "Internal IP address" field enter the IP address under which the frequency comparator is registered in the network. You can find out it on the tab with the name "Attached devices" using the MAC address of the frequency comparator for identification. You can also find these parameters on the tab with the name "System" of the "Mode" window of the frequency comparator. Enter 5900 in the «Internal port range» field. This port will be used to exchange information between the remote desktop and the frequency comparator. Enter the same value in the «External port range» field if there are no other devices using the VNC protocol. Save the changes by clicking the "Apply" button. From now on, all IP packets arriving at the router

through this port will be forwarded to the frequency comparator, and responses will be sent to the addressee. In case you have several frequency comparators, and all of them require external access via the VNC protocol, and also if there are any other devices using port 5900, you should create an appropriate number of new services with the corresponding IP addresses. You should also assign, if the router provides such an opportunity, to each of these devices a unique external port address through which information will be exchanged with this specific device. Select it from the range of 49152 - 65535. Most likely they will be unused. Save changes and close the router's web interface. Its configuring is complete.

2. Configuring the frequency comparator.

Connect the frequency comparator to the router using the Ethernet cable supplied with the device. Turn on the device and wait for the user interface to load. Open the window with the name "Mode" by clicking the button located in the upper right corner, and go to the "System" tab (Fig. 1).

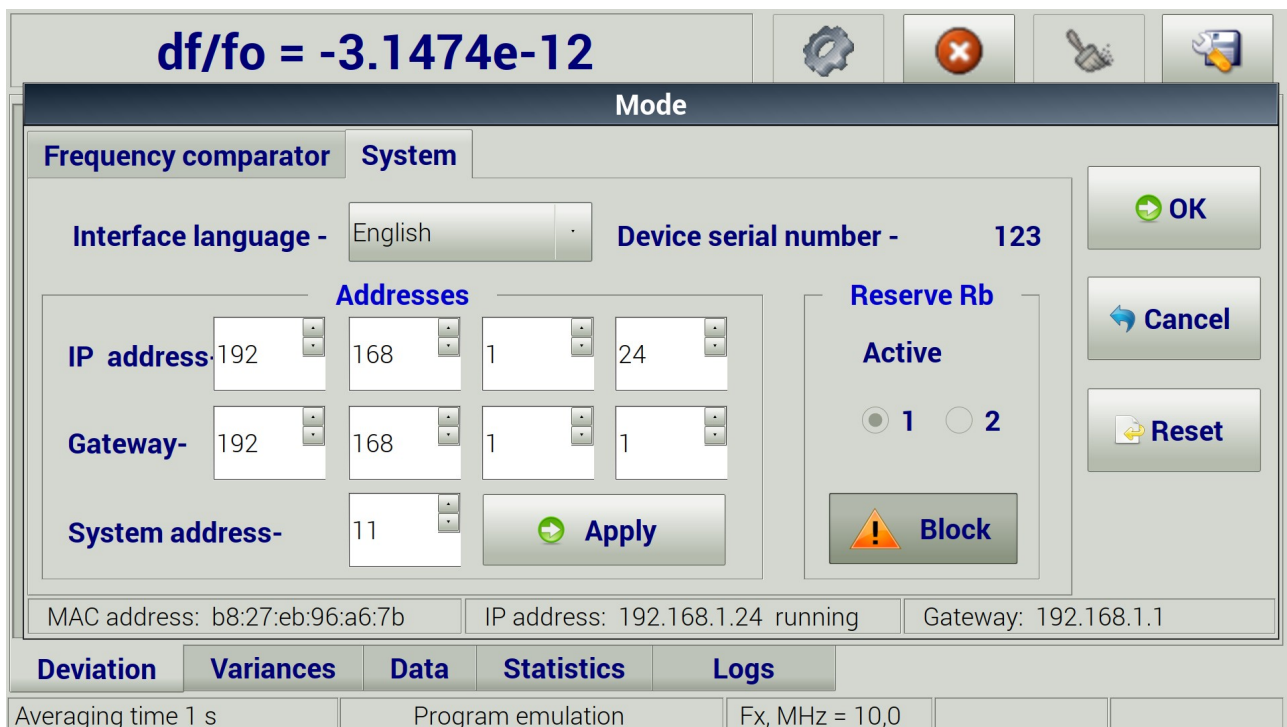


Fig. 1

In the "IP Address" field, input the IP address of the frequency comparator obtained from your system administrator. In the "Gateway" field, input the IP address of the router in the local network. This data could also be obtained at the previous stage "Configuring the router". Click the «Apply» button and check the new parameter values in the window status bar. Close the "Mode" window by clicking the "OK" button. Configuring the device's connection to the local network is completed. These values will be saved and used the next time the frequency comparator is turned on.

3. Working with remote desktop on a Linux PC.

To access the frequency comparator via VNC protocol from a PC, you need to install the client remote desktop software. There are many such software products, most of them are free for users. Some Linux distributions, including Ubuntu and its clones, install Remmina, a remote desktop client, by default. We will use this software as an example. To do this, launch this software from the main menu. The main program window will open on the desktop (Fig. 2).

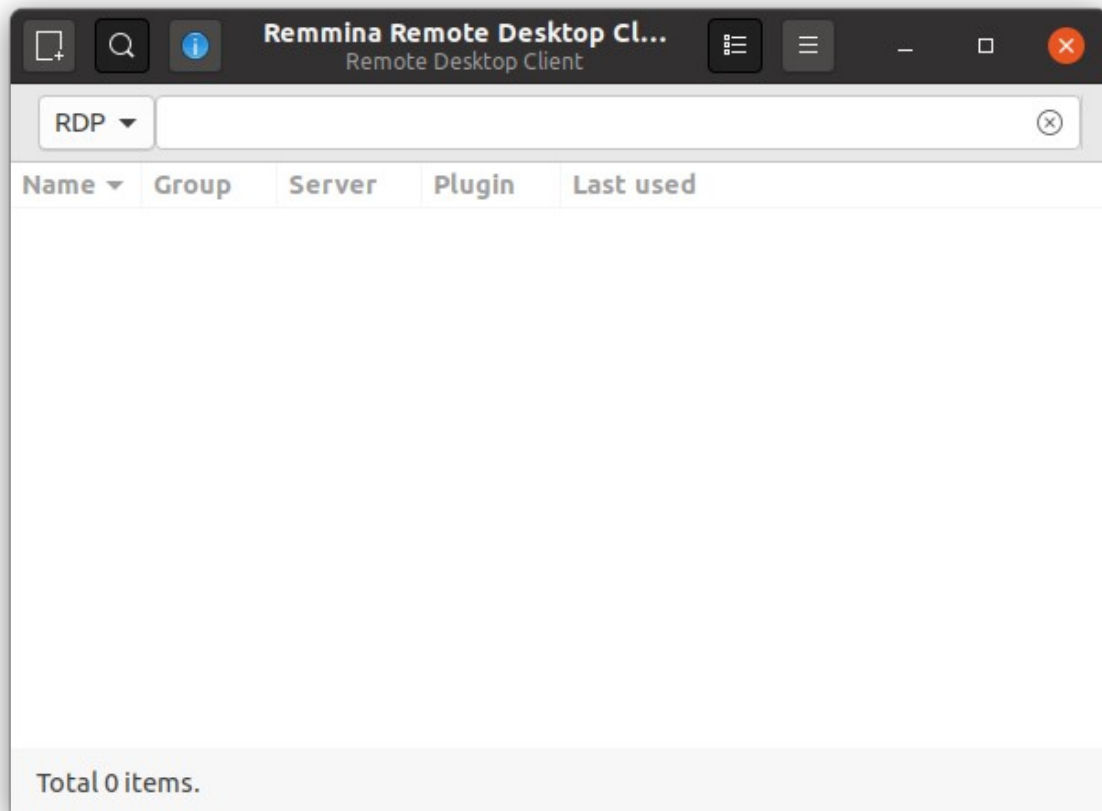


Fig. 2

Select the VNC protocol from the drop-down menu and click the "+" button to create a new profile. In the window that opens (Fig. 3), set the profile name and fill in the fields: protocol - VNC - Virtual Network Computing; Server - IP-address of the frequency comparator in the local network, if they are both in the same network; User password is «ruk nar». All other settings depend on the network and PC capabilities. In case of setting up a connection with a remote PC, in the "Server" field, you must specify the IP address of the router in the external network and the port number that will be used to exchange information in the format: server: port. This data must be obtained at the stage "Configuring the router". Click the "Save and Connect" button. If everything was filled in correctly, the connection will be established and the device's desktop will open (Fig. 4).

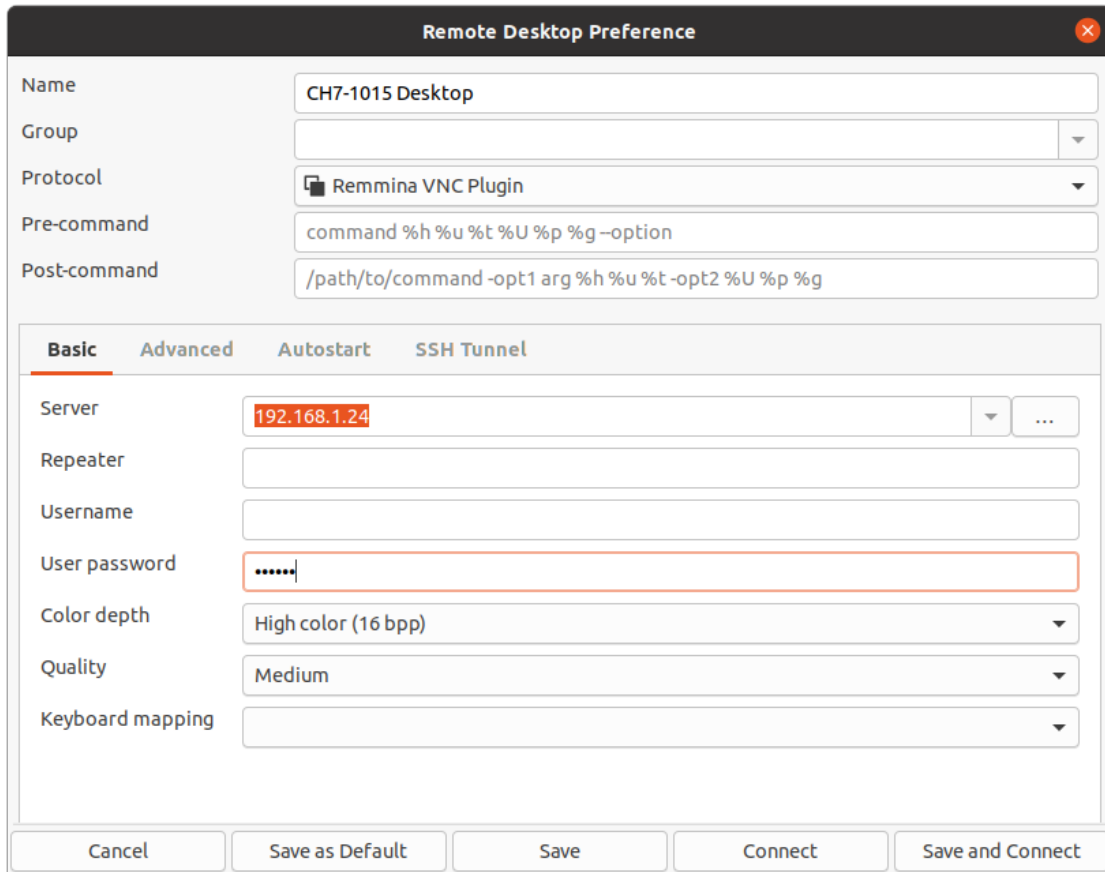


Fig. 3

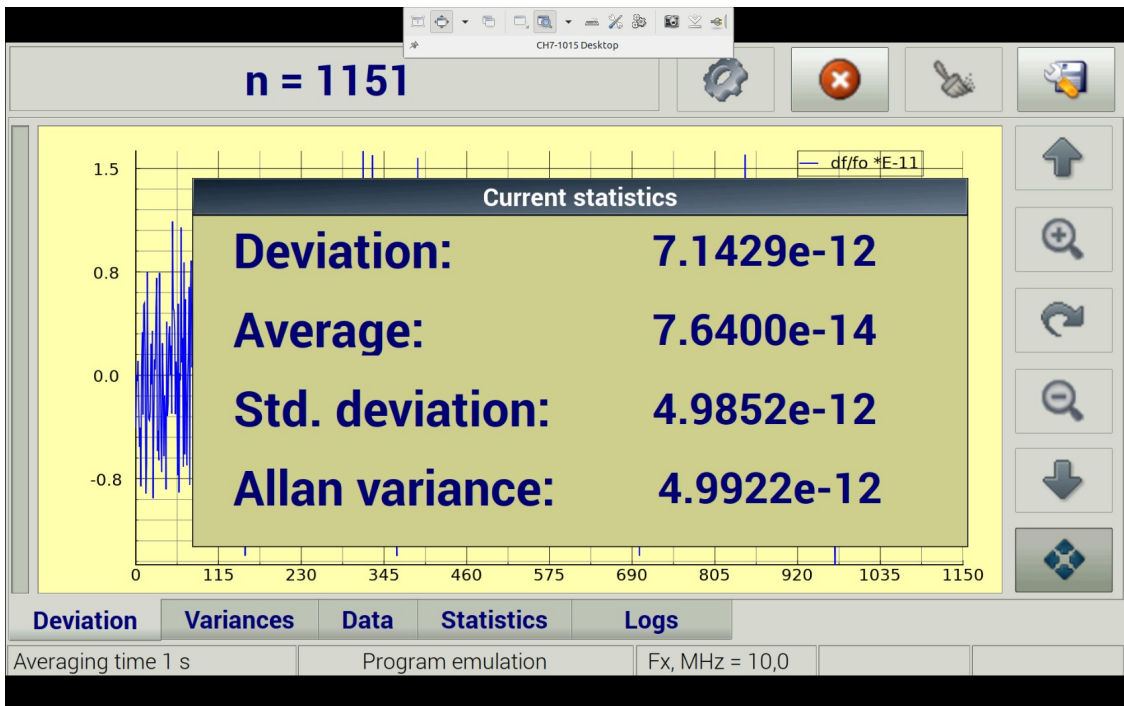


Fig. 4

4. Working with remote desktop on a Windows PC.

As with other operating systems, the client software must be installed to connect from a PC to frequency comparator via VNC protocol. One of the most popular and convenient tools for this purpose is the VNC® Viewer from RealVNC. This software is free to use, requires only acceptance of the terms of the License Agreement, and is developed for all popular operating systems. You can download the software from the official website of the company at the link: <https://www.realvnc.com/en/connect/download/viewer/>.

After successful installation and launch, the main window will open (Fig. 5).

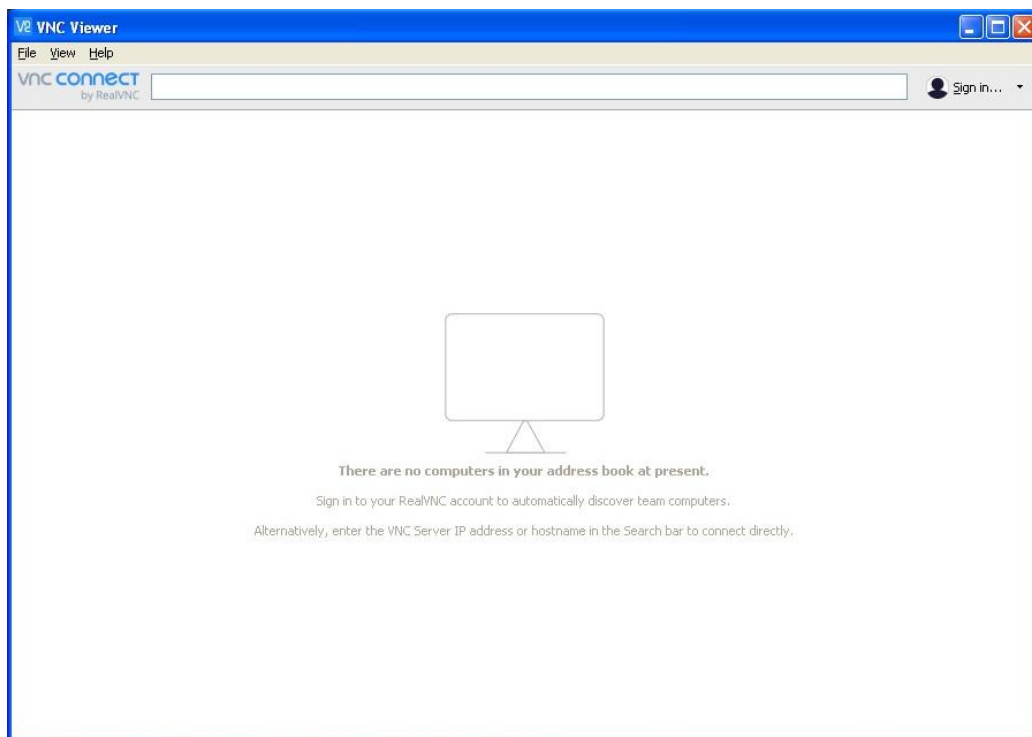


Fig. 5

Select the "New connection ..." item in the "File" menu and in the window that opens (Fig. 6) input the name of the connection in the "Name" field, for example, "CH7-1015 Desktop". In the "VNC Server" field, input the IP address of the frequency comparator in the local network, for example, 192.168.1.24. In case of setting up a connection with a remote PC, you must specify in the «server» field the IP address of the router in the external network and the port number that will be used to exchange information in the format: server: port. In a drop-down menu «Encryption» select the item «Prefer on». Leave the rest of the settings at their default state. You can change them after the connection established. Click the "OK" button to save the profile. After successfully creating the profile, the initial window with the saved profile will open. (Fig. 7).

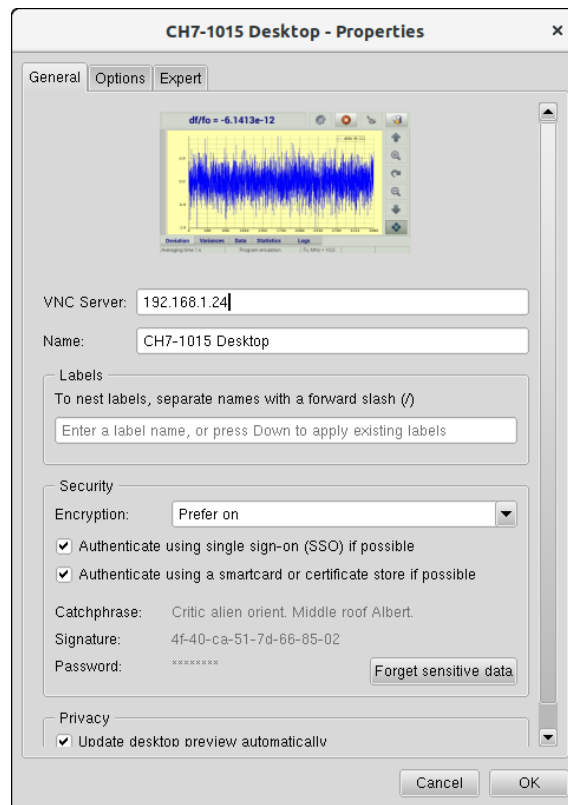


Fig. 6

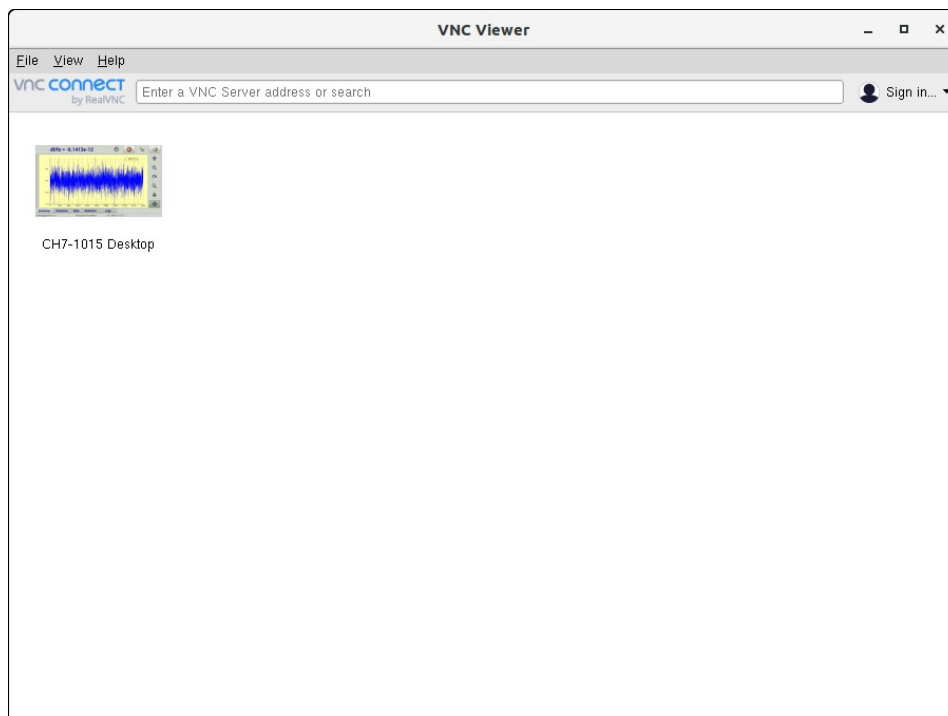


Fig. 7

Double click on the created profile or select "Connect" from the context menu. The user authentication window will open (Fig. 8). Input the access password there - "ruknar" and click "OK". If everything was filled in correctly, the connection will be established and the device's desktop will open (Fig. 9).



Fig. 8

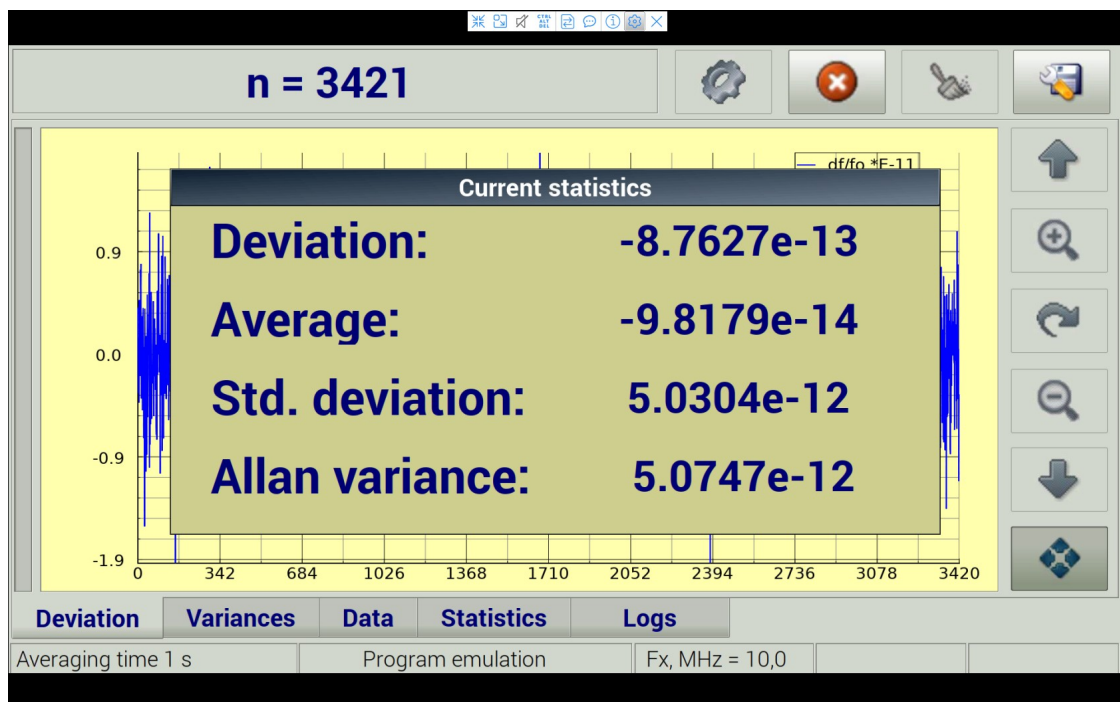


Fig. 9

In the same way, you can configure remote desktop access using VNC® Viewer from RealVNC using smartphones, tablets PC with Google Android and other operating systems.