Programming RF components with the RFIO² protocol / repeating using RFAF

After connecting the RFAF key fob to the PC open the software called RF analyzer.
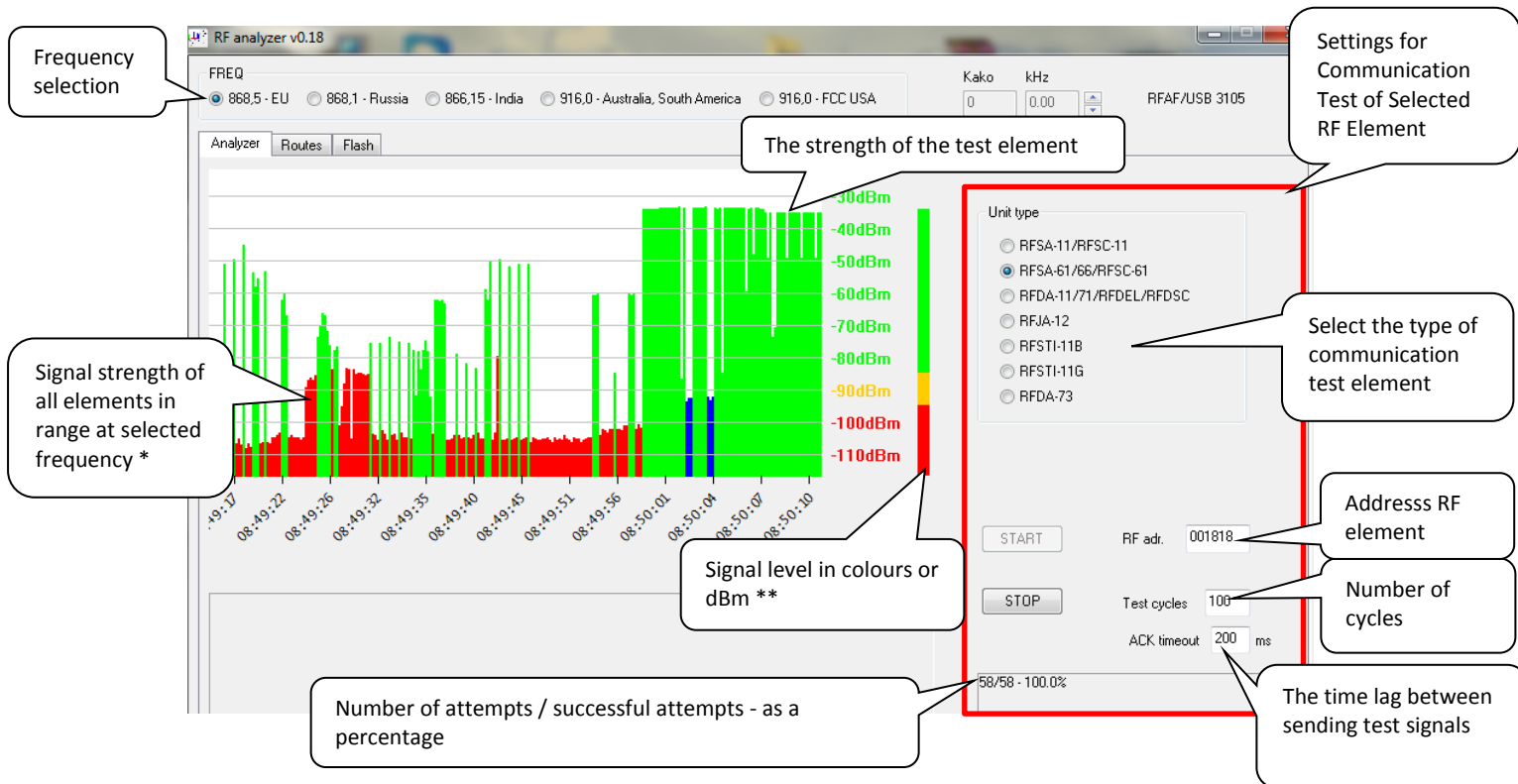
You will be offered bookmarks:

• Analyzer: Used to detect the signal strength of RF elements in range.

• Routes: option to set another RF element as an auxiliary repeater.

• Flash: Used to record FW to RF elements.

Analyzer tab

First set the desired frequency, it must match the transmit frequency of the RF elements (the frequency is shown on each RF element):
• 866 MHz India
• 868 MHz EU, Ukraine, Russia, Middle East
• 916 MHz North and South America, Australia, New Zealand

The signal strength of all units is displayed within range in the set band.

Frequency selection

The strength of the test element

Settings for Communication Test of Selected RF Element

Select the type of communication test element

Signal strength of all elements in range at selected frequency *

Signal level in colours or dBm **

Addresss RF element

Number of cycles

Number of attempts / successful attempts - as a percentage

The time lag between sending test signals

Test communication with one (desired) element..
  • Select the type of RF element (Unit type)
  • Enter the RF element address (RF address)
  • set the number of test cycles and the time delay between the test lead (ACK timeout)
  • Press the Start button to start the Communication Test of the desired RF element (in green with a signal of approx. 35 dBm).

  * red - frequency noise, green - receivers, blue – drivers

  ** signal level in the range: -110-95 dBm - not applicable, -95-85 dBm - boundary, -85-30 dBm - optimal value

Routes tab

If an RF element is out of range, (eLAN-RF, RF Touch, RF Pilot), another RFIO[2] tag can be set in the Routes tab as a repeater. This setting does not affect any of the set RF functions used as a repeater.

In the **Repeater field** 1, enter the RF address of the element you want to use as a repeater.
In the **Unit Address** box, enter the address of the unavailable RF element that needs to be repeated.
If the signal is still inadequate, you can use another Repeater as a Repeater to write the address to the Repeater2 field.
In case of ingestion of two repeaters, you must observe the following order: Master - **Repeater 2** (element closer to the master) - Repeater 1 (element more distant from the master (closer to the repaired element) - repeatable element.

If you use only one auxiliary repeating RF element between the Master and an unavailable RF element, change the first number (usually zero) to 1 at the beginning of the address you are writing to the Master.
If two RF repeating RF elements are used between the Master and an unavailable RF element, change the first number (usually zero) to 2 at the beginning of the address you are writing to the Master.

Example:
Actual address of inaccessible RF element: 01B3C4
If one repeating RF element is used, change the master address to: 11B3C4.
If the two repeating RF elements are used, change the master address to: 21B3C4.

In the **Unit Type** menu, select the type of inaccessible RF element.

Click the **Route test** button to display a signal strength listing between the auxiliary and unavailable RF element.
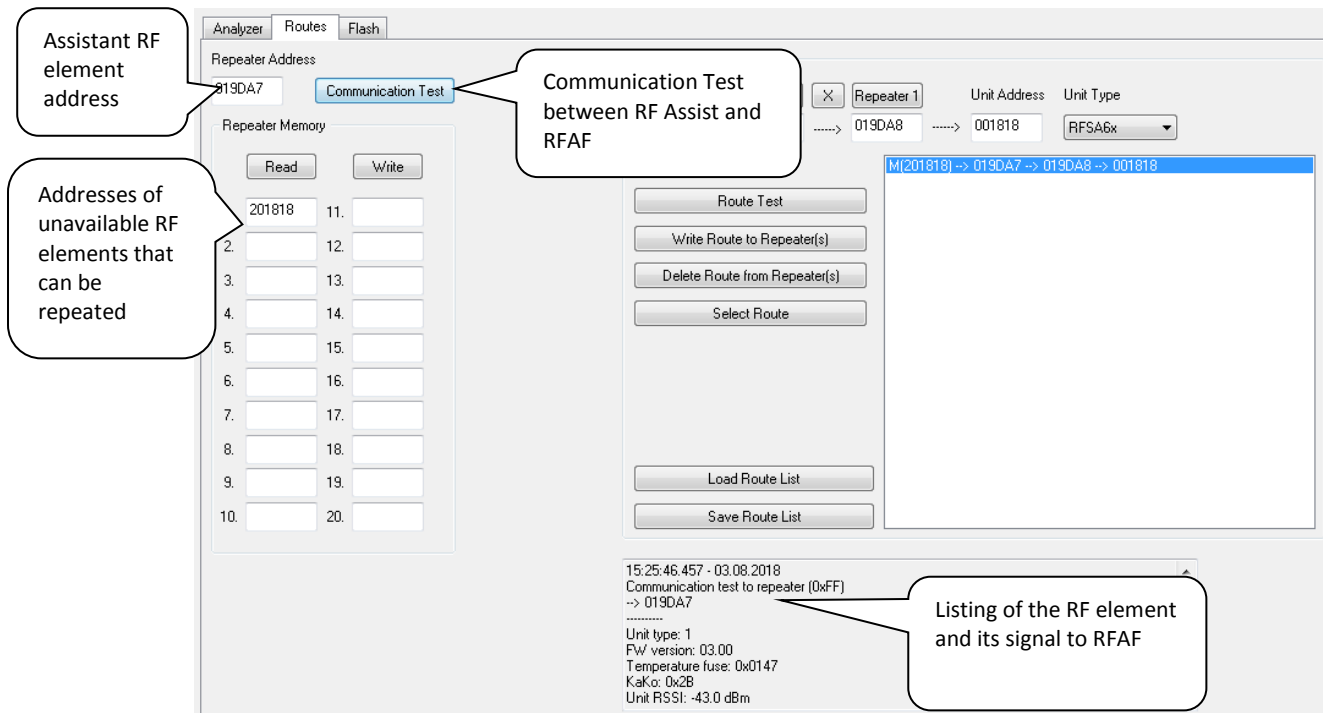
If the signal is sufficient for proper operation, confirm this setting with the **Write Route to Repeater (s)** key to write to auxiliary RF elements and store the setting for a repeatable (inaccessible) RF element.

Entry Confirmation

Delete entry

Select Route

After writing the settings to the auxiliary RF elements, a sequence of addresses will be recorded
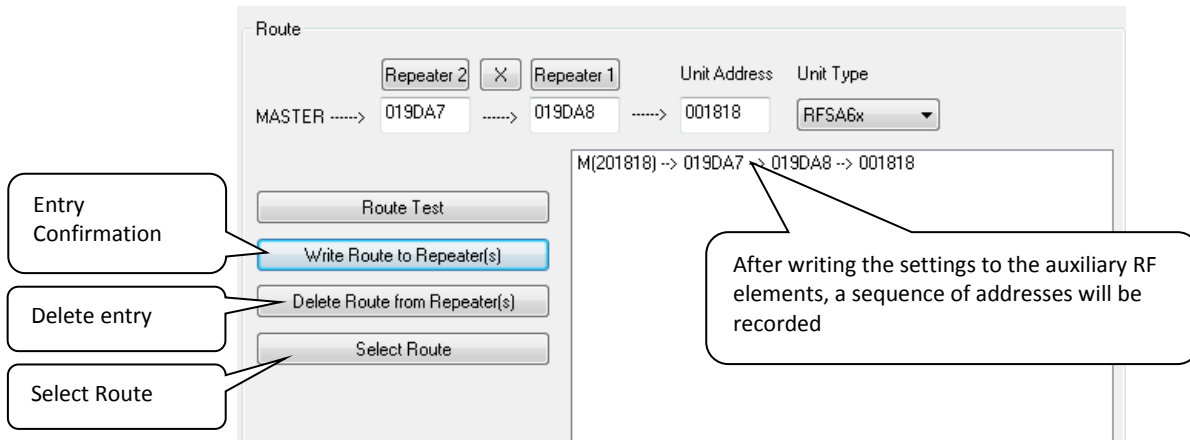
The **Delete Route to Repeater** button (s) is used to delete records and repeatable (inaccessible) RF elements from auxiliary repeating RF elements.

Use the **Select Route** button to select the desired entry for RF elements.

To find out if an RF feature is available in the RF component, enter its address under Repeater address into the free field and press the Read button. This displays a list of all unavailable RF elements that are written in that RF element. With one auxiliary RF element, you can repeat up to 20 inaccessible RF elements.

Assistant RF element address

Addresses of unavailable RF elements that can be repeated

Communication Test between RF Assist and RFAF

Listing of the RF element and its signal to RFAF

Use the **Communication Tes**t button to check the current signal between the RF and the auxiliary element.

Flash tab

Select the type of RF element and enter its address in the RF address field (none of the specified element types are listed in the Unit type box for a RF battery-powered element such as RFATV-1 etc.).

Press the **Open** button to display the FW selection. Select the desired FW and confirm the FW write to the unit.