Mimer ılıl SoftRadio

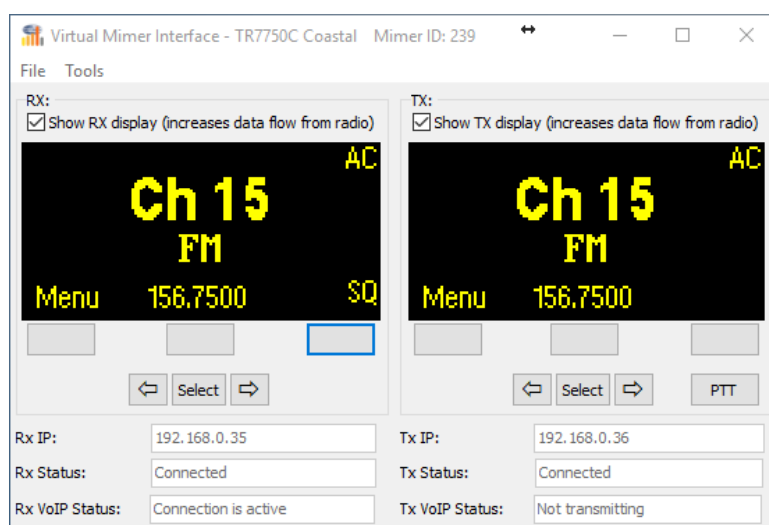## Connecting radios all over the world

How to set-up and use

Mimer Virtual Network Interface

for the Jotron TR7750/TR7750C

Art n:o 3202

Release date May 04, 2023

This guide will help with the setup and use of your **Mimer Virtual Network Interface**.

Please also refer to the standard manuals for Mimer SoftRadio found on: www.lse.se/setup, and the web page: www.lse.se/jotron.

1   Table of Contents

2 General

Mimer SoftRadio is a dispatch system that handles radios, intercoms and phones from a common PC GUI.

Radios are normally connected to the IP network through the use of a hardware Network Interface.

However, with the **Virtual Network Interface** software in a PC or server it is possible to connect Jotron radios, through the ED137 protocol, without using a hardware network interface. ED137 allows for audio in/out and PTT.

In parallel with ED137 there is also a technical connection that handles channel change and more on the radio.

The computer running this software can simultaneously handle up to four instances of virtual interfaces to four radios. The rest of the SoftRadio system can see no difference whether it is a virtual or a hardware interface.

2.1 System example
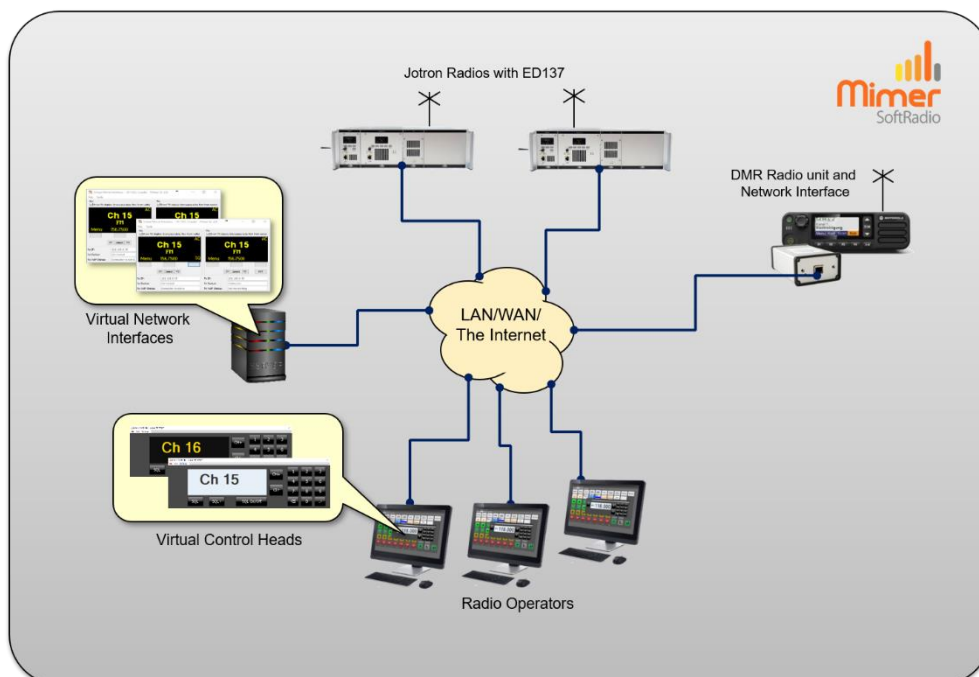
Example system with two radios and three operators. The server computer handles the two Virtual Network Interfaces. In addition there is also a DMR radio connected through a standard Network Interface.

The **Virtual Network Interface** will work both with Jotron TR7750 Airband radios and TR7750C Marine radios that have the ED137 function activated.

As an alternative we also offer a standard hardware Network Interface that can be used with the same types of Jotron radios.

2.2   The operator GUI

The operators will use the standard software **Mimer SoftRadio** to handle the radios connected through the Virtual Network Interfaces as well as other radios, phones and intercoms connected through standard SoftRadio setup.

Example of SoftRadio with both Marine and Airband radios plus DMR and a VoiceLog

3   Virtual Network Interface installation

3.1   Recommended hardware and software

The PC/server running the virtual interface may or may not have Mimer SoftRadio installed.

Mimer SoftRadio needs to be version 3.5.27.0 or higher for the virtual interface to work.

3.2   Software installation

Run the installation from the supplied USB stick or online download.

The installation will setup the virtual interface with default settings.

3.3   Software activation

When starting the option, for the first time, you will be asked for an unlock code. You get the code by emailing your license number and a machine code as asked for on the screen. Your email will be answered with the unlock code.
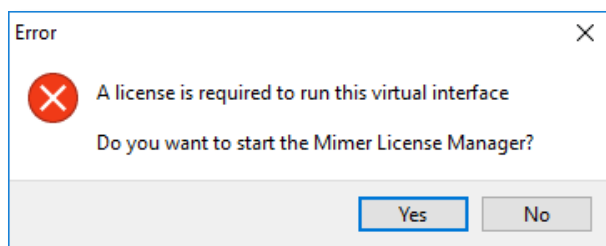
Click the "Yes"-key in the above menu or open the License Manager from the list of programs under C:\Mimer TR7750 Interfaces.
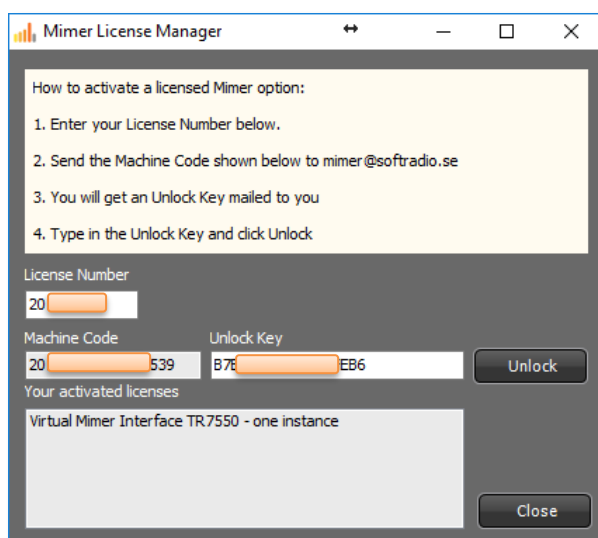
After entering the received unlock code this process is ready and need no further attention until the day you expand the number of interfaces, or reinstall on the same or another PC.

4   Connections

You need to configure a few things in order to connect the Virtual Network Interface to the Jotron radios ED137 interface, and to the TCP remote connection on the Jotron radios.

You also need to set up the connection for the operators SoftRadio software so that it connects to the Virtual Network Interface.

4.1   Protocols to the radio

The **ED137** is a SIP based protocol that gives audio and PTT functionality. ED137 is a de-facto standard frequently used in large Airband radio systems.

The **TCP command** protocol is Jotron proprietary and used for remote control of settings for the transmitter and receiver and for diagnostic functions.

The Virtual Network Interface uses a combination of the two protocols to give a full function remote system.

Both protocols need to be active in the radio and the radios IP address needs to be set.

TIP: After changing IP address on the radio it needs to be rebooted for the change to take effect. If uncertain about the connection, try a PING request. The radio shall respond to this.

## 4.2   User connections to the virtual network interface

In the same way as with the standard hardware Network Interfaces, many operators can connect local, to the interface, when they are in the same LAN subnet.

Over TCP used on the Internet or over a WAN, two operators can connect at the same time to the virtual interface. If more connections are needed a Mimer RadioServer or Mimer NetworkRepeater can be used.
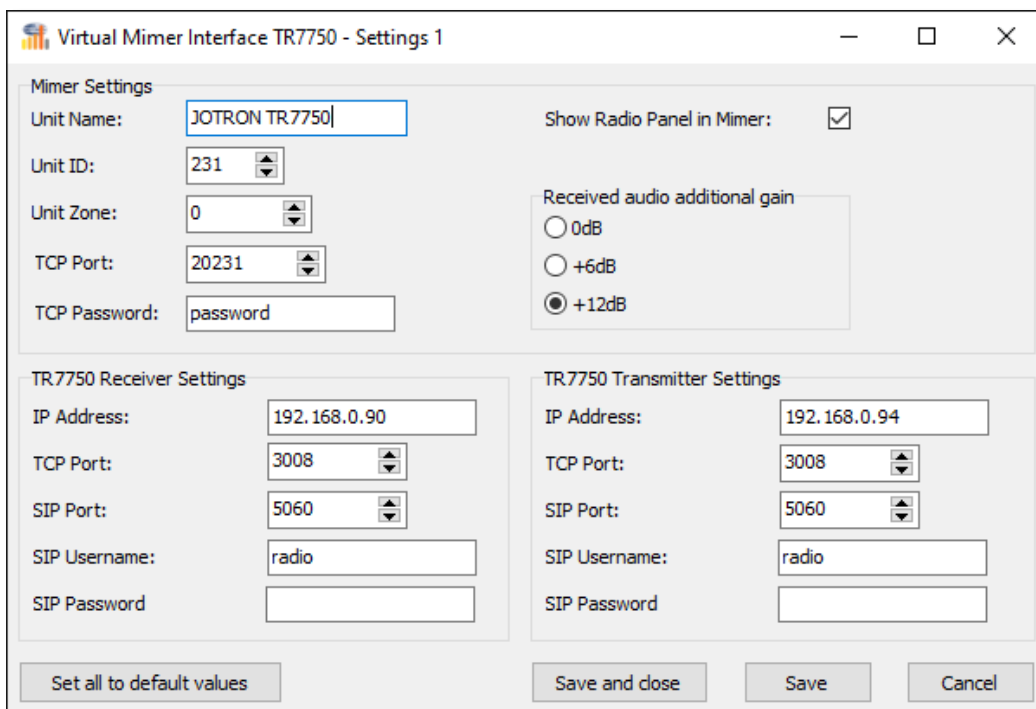
5 Configuration

5.1 Start the application

Open the TR7750 Virtual Network Interface application via the short cut on the desktop, or from C:\Mimer TR7750 Interfaces.
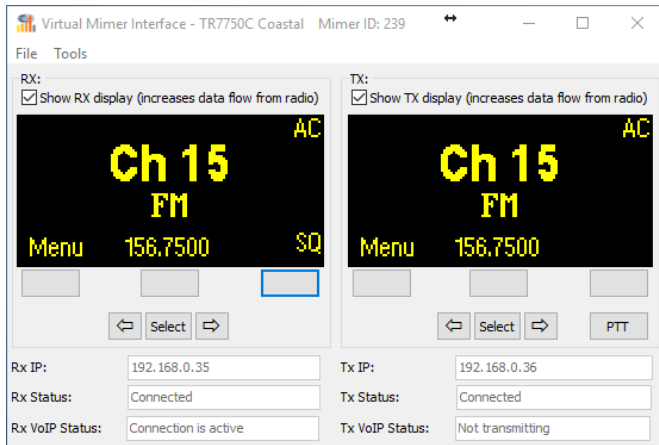
5.2 System settings

Click the "Tools" menu in the Virtual Interface and select "Settings".

Virtual Network Interface Settings

When all settings are done click "Save" or "Save and close".

5.2.1   Mimer Settings

At the top are the settings that defines the Virtual Network Interface so that the operator software, SoftRadio, can connect. Please also see the standard setup manual for SoftRadio.

5.2.1.1   Unit Name

This is the name that shows up in the "name bar" on all the operators' software.

5.2.1.2   Unit ID

This is the ID used in the Mimer SoftRadio system. Each device in the SoftRadio system needs to have a unique ID. Numbers can be from 10-240. Default for the virtual interface is 231.
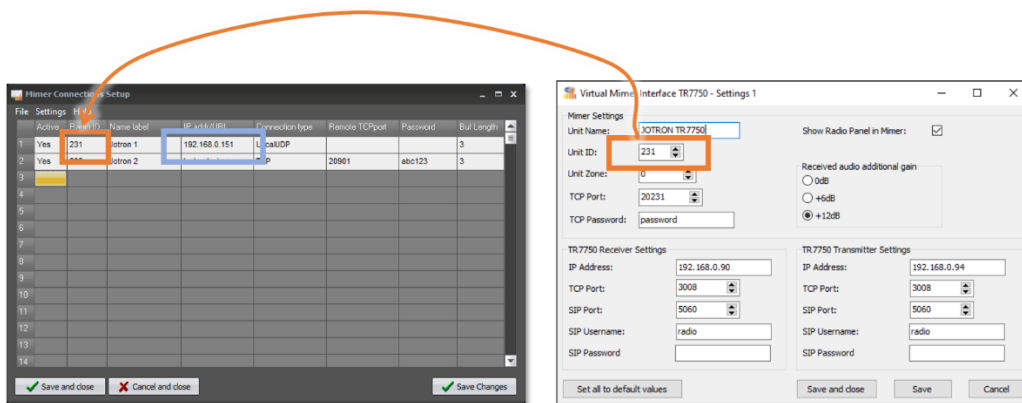
The Unit ID (orange above) in the Virtual Network Interface goes into the "Radio ID" box in Mimer Connections Setup.

The IP address (blue above) in Mimer Connections Setup, is the IP of the PC/Server that runs the Virtual Network Interface.

5.2.1.3   Unit Zone

Zones can be used to build Mimer SoftRadio systems that are larger than 230 nodes. Zones are a way to extend the amount of unique ID numbers. The system can then be divided in many zones, each with up to 230 nodes.

Default, and most common, is Zone 0, which is similar to not using zones.

5.2.1.4   TCP Port

For use over WAN or the Internet a TCP connection is required. Then the TCP server port definition is important. This setting is later entered in Connections Setup at the operator PC, as "Remote TCP port". If several instances of the virtual interfaces are run on the same computer the TCP server port has to be unique for each of them.

In a LAN configuration the server port is not used.

5.2.1.5   TCP Password

If you are going to use this interface via a TCP connection (WAN or the Internet) then you need to enter a password.

In a LAN configuration the password is not used.

5.2.1.6   Show Radio Panel in Mimer

Ticking this box will allow the operators to open a Virtual Control Head for this radio where settings of channel and squelch level can be done.
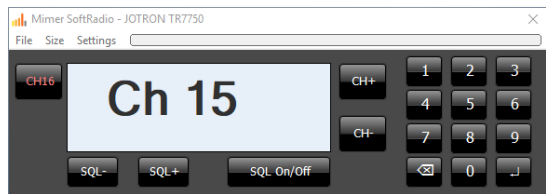
Unticking this box restricts the operators from changing channel and setting the squelch level. (The panel above cannot be opened from the operator GUI).

5.2.1.7   Received audio additional gain

The gain of the audio from the receiver is selectable from 0 to +12dB. The level of ED137 audio data from this receiver is usually lower than what other devices in the SoftRadio system gives. The default is therefore +12dB.

5.2.2   TR7750 Settings

These are the settings needed for the Virtual Network Interface to connect to the radio.

5.2.2.1   TR7750 Receiver settings

Enter the proper IP address, TCP port and SIP credentials as configured in the TR7750 to allow access to the receiver.

If connection is not established, try to change the SIP Username to "900".

5.2.2.2   TR7750 Transmitter settings

Enter the proper IP address, TCP port and SIP credentials as configured in the TR7750 to allow access to the transmitter.

If connection is not established, try to change the SIP Username to "900".

5.3   More than one virtual interface

To start more instances of the virtual interfaces, click the icon on the start menu, on the desktop, or open from C:\Mimer TR7750 Interfaces.

Repeat for the second, the third and the fourth virtual interface.

Your license unlock key for the computer defines the number of virtual interfaces that are possible.

6   Technical Interface

The virtual interface has a control panel as shown below. This panel is meant to be used at setup of the system and if a technician later needs to change settings of the radio in systems where the operators are not allowed to do this.

The control panel is not meant for use by the radio operator!

From the Virtual Network Interface panel the Jotron radio can be remote controlled in the same way as from the front panels of the radios transmitter and receiver. With the only difference that the channel setting cannot differ between the two. Whatever is set on the receiver will automatically be set also on the transmitter.
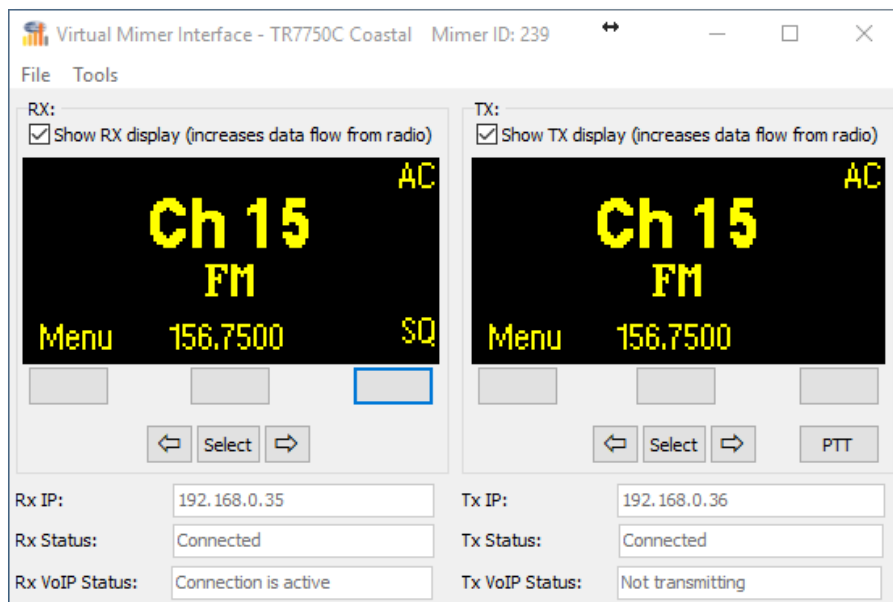
6.1   Show display

Showing the Rx and Tx displays uses a lot of data over the IP network. Therefor it is recommended to untick the boxes after setup, if using a connection that charges extra for high data usage, like a satellite link.

6.2   Function keys

Same functions as the radios front panel. See the Jotron manual for details.

6.3   Select and arrow keys

Same functions as the radios front panel rotary switch. See the Jotron manual for details.

6.4   Information text

At the bottom, information is displayed about the connection state for the receiver and for the transmitter. No settings can be made here.

7   Operator Interface

The operator can open a Virtual Control Head for each radio, where the channel can be selected and the squelch level can be set. This function can also be turned off, so that the operator cannot change the channel.

The Virtual Control Head looks a bit different if it is a Marine radio or an Airband radio. The correct head is opened based on the radio type.
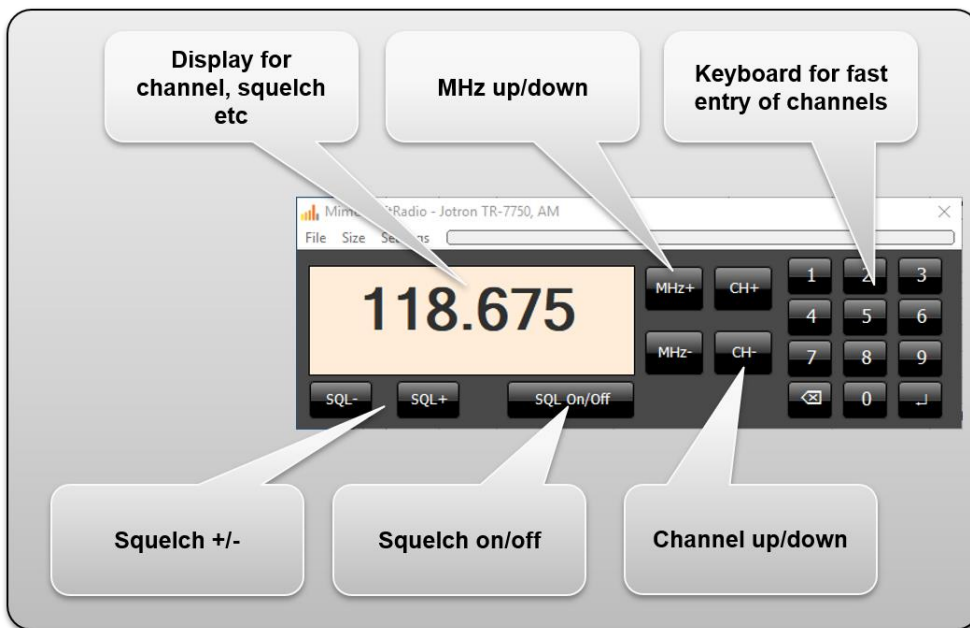
Airband Radio

Marine band Radio

Mimer
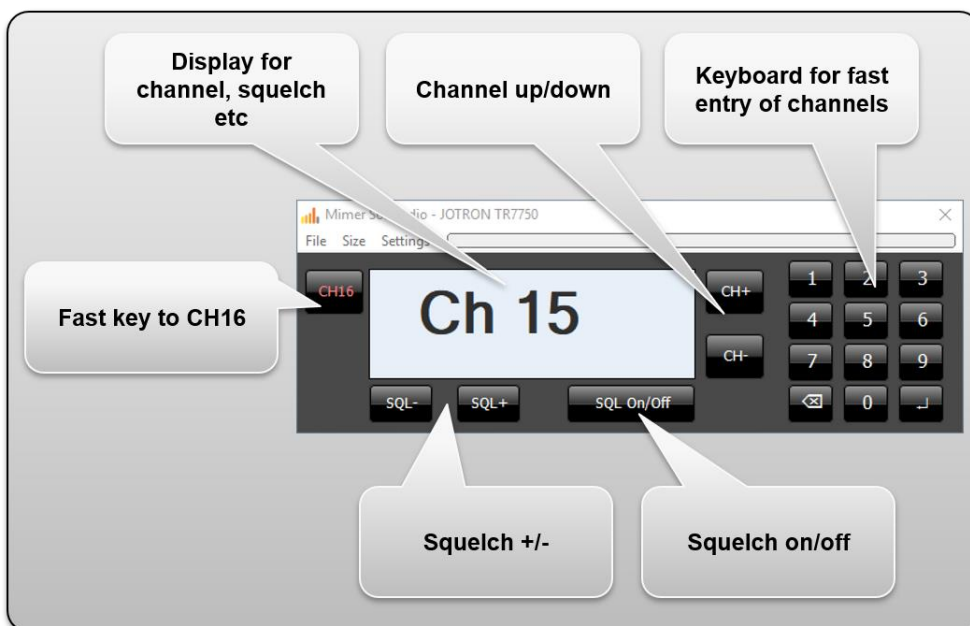
SoftRadio

Proudly made in Sweden by

LS Elektronik AB

www.lse.se

info@lse.se