

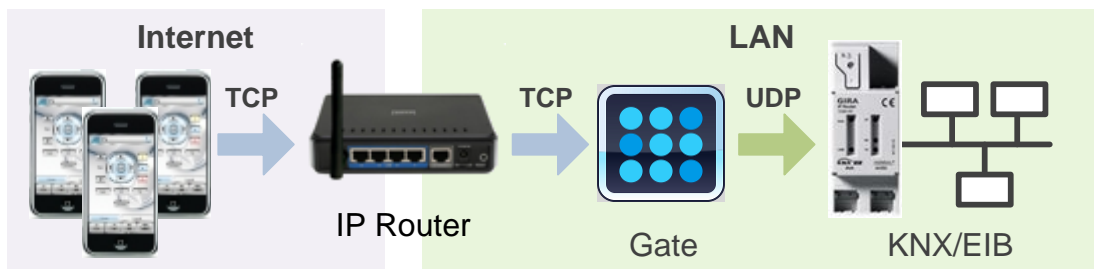
**iRidium  
mobile**

**KNX/EIB control  
via the Internet**

**MANUAL:**  
Instructions for Controlling  
KNX/EIB Equipment via the Internet

Operation via the Internet allows you to control the equipment of the KNX/EIB bus when being out of the local network of your automation object. The connection to the KNX/EIB equipment is performed by the UDP protocol. The use of the UDP protocol is associated with some difficulties and iRidium Gate serves as an intermediate joint which allows you to connect the control device to the equipment of the KNX/EIB bus when operating via the Internet.

**iRidium Gate** is an application which allows you to connect to the KNX/EIB bus via the Internet. The operation principle of the application is the conversion of commands TCP2UDP received from the control device and sending them to the KNX/EIB bus:



Capabilities of the iRidium Gate bus for KNX/EIB: suppose that you use a JUNG IPR 100 REG IP Router to control the KNX equipment. There are some limitations when using such type of connection:

1. It is impossible to connect clients to the equipment connected to the PC COM port via Wi-Fi or 3G
2. Only one connection is possible. You need to add additional KNX/EIB IP routers if you want to add the second or third iPhone/iPad.
3. При некорректном разрыве соединения IP Router в течение нескольких минут не реагирует на команды управления. After incorrect breaking of connection the IP-router does not respond to control commands for several minutes.

iRidium Gate provides stable connection between iPhone/iPod/iPad and a KNX/EIB system (after losing connection KNX/EIB IP-router cannot reconnect for 1-2 minutes without iRidium Gate). It also copes with the limitations for a number of control devices which are connected simultaneously.

iRidium Gate can be installed on any PC under Windows XP / 7. It provides simultaneous connection via a single IP-router and is responsible for stability of the connection. This makes control from iOS devices stable and considerably reduces the cost of adding the second, third or more control devices as additional IP-routers are not required.

## Setting up the project for operation via the Internet consists of the following stages:

1. Setting up the connection to the iRidium Gate gateway in iRidium GUI Editor project.
2. Setting up the router to enable data exchange with remote devices.
3. Setting up the iRidium Gate gateway for connection to the KNX/EIB bus.

### *Setting up the Connection to the iRidium Gate Gateway in iRidium GUI Editor Project*

Initially the settings of the project for controlling equipment of the KNX/EIB bus are made for operation via UDP and look as follows:

The screenshot shows the 'PROJECT DEVICE TREE' with a 'UDP Gateway' component. Underneath it is 'Gateway out' (UDP), which contains an 'EIB/KNX' component. This component has three 'Channels', each with an 'EIB/KNX Command'. Below the tree is the 'CHANNEL PROPERTIES' table:

CHANNEL PROPERTIES	
Name	EIB/KNX
Host	192.168.0.100
Port	3671
Parameters	120000,0

For setting up of the connection to the KNX IP-router you should indicate the IP-address of the router, UDP connection port (it is always 3671 for KNX/EIB) and Time-out (ms) of the connection at the loss of communication.

When operating via the Internet Iridium Client will communicate to the iRidium Gate server application (not to the KNX/EIB IP-router) for sending commands and receiving feedback from the KNX/EIB equipment. Besides communication of Gate and Client application (iRidium for KNX) is performed by TCP, not UDP. And that also requires additional connection settings.

To add a new component to the Device Tree – Gate TCP to UDP - which will enable the retranslation of KNX/EIB commands through iRidium Gate, select UDP Gateway (UDP transport used when operating in the local network) and then select «Insert Gate» in the right-click menu:

The first screenshot shows the 'PROJECT DEVICE TREE' with 'UDP Gateway' selected. A right-click context menu is open, and the 'Insert Gate' option at the bottom is highlighted with a blue box. A blue arrow points from this menu to the second screenshot.

The second screenshot shows the 'PROJECT DEVICE TREE' after the 'TCP to UDP Gate' component has been added. The tree structure is: 'TCP Gateway' (TCP) -> 'Gateway out' (TCP) -> 'TCP to UDP Gate' (TCP) -> 'UDP' (UDP) -> 'EIB/KNX (IP Interface/IP Router)' -> 'Commands' -> three 'EIB/KNX Command' items. Below the tree is the 'CHANNEL PROPERTIES' table:

CHANNEL PROPERTIES	
Host	192.168.0.66
Port	10005
Parameters	
Gate	1

As a result you get a new level in the Device Tree (TCP Gateway) where you can set the connection of iRidium Client to the iRidium Gate server for transferring data to the addresses of the lower level (UDP Gateway) which are indicated when setting up the operation in the local network.

Properties of connection to Gate:

- **Host** – an external IP-address of the PC network with running iRidium Gate (you can use [Internet service](#) to find your external IP-address).
- **Port** – TCP port of connection to iRidium Gate. It can be set at random (the random port in the example is 10005). When setting the Gate application make sure that you select the same connection port which is indicated in your iRidium GUI Editor project.

### Setting up the Router to Enable Data Exchange with Remote Devices

To enable the command transfer from the Internet to the local network of the object (to PC with running iRidium Gate), set the data exchange between Gate and the Internet on the router which enables the access to the Internet from the local network. Setting up of the data exchange can be performed with the use of Port Forwarding – it is a recommended way of setting the communication between Gate and remote devices.

Port Forwarding enables data exchange with local PC through the fixed port. You should forward the TCP port, indicated in the design properties (TCP port 10005 in the example); the same port is indicated in the Gate settings. You can see the example of setting up the port forwarding for communication between Gate and Client via the Internet, D-Link DIR-300 router:

Product Page : DIR-300 Hardware Version : B1 Firmware Version : 2.01

**D-Link**

DIR-300 // SETUP ADVANCED MAINTENANCE STATUS HELP

**ADVANCED PORT FORWARDING RULES**

The Advanced Port Forwarding option allows you to define a single public port on your router for redirection to an internal LAN IP Address and Private LAN port if required. This feature is useful for hosting online services such as FTP or Web Servers.

Save Settings Don't Save Settings

**24 - ADVANCED PORT FORWARDING RULES**

Remaining number of rules that can be created: 14

		Port	Traffic Type
<input checked="" type="checkbox"/>	Name Smart-Bus <<< Application Name	Public Port 6000 ~ 6000	TCP
	IP Address 192.168.0.11 <<< Computer Name	Private Port 6000 ~ 6000	

**Helpful Hints..**

- Check the **Application Name** drop-down menu for a list of pre-defined applications that you can select from. If you select one of the pre-defined applications, click the arrow button next to the drop-down menu to fill out the appropriate fields.
- You can select your computer from the list of DHCP clients in the **Computer Name** drop-down menu, or enter the IP address manually of the computer you would like to open the specified port to.
- This feature allows you to open a range of ports to a computer on your network. To do so, enter

## Setting up the iRidium Gate Gateway for Connection to the KNX/EIB Bus

**iRidium Gate** is an application enabling the connection to the KNX/EIB IP-router via the Internet. It is a component of the standard [iRidium software package](#). Creation and setting up of a gateway for operation with KNX/EIB:



By pressing the «Add Gate» button you can create a new gateway for converting and transferring data to the KNX/EIB bus via UDP.

Properties of the new gateway have several setting sections. You can see the information about each of them below.

*Gate (general information about the created gateway):*

- **Name** – a gateway name
- **Comment** – additional information about the gateway
- **Auto start** – autostart of the gateway when opening the iRidium Gate application

The screenshot shows a dialog box titled "Gate Properties" with a close button (X) in the top right corner. Inside the dialog, there is a section labeled "Gate" containing three fields: "Name" with the text "KNX/EIB Gate", "Comment" with the text "TCP to UDP Gate", and a checked checkbox labeled "Autostart".

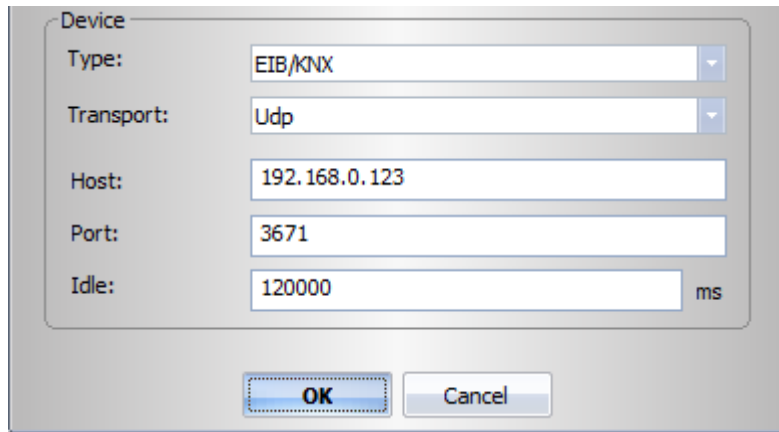
*Server (settings of connection between remote clients and the gateway):*

- **Type** – equipment which commands are transferred from remote Clients to the gateway
  - **Transport** – a type of transport which is used by remote Clients while connecting to the gateway
  - **Port** – an external gateway TCP-port, which iRidium KNX/EIB Clients are connected to. You should indicate the same port you indicated in the settings of the iRidium project in the GUI Editor.
  - **Max Connection** – maximum number of Clients connected to the gateway concurrently.

The screenshot shows a dialog box titled "Server" with a close button (X) in the top right corner. Inside the dialog, there are four fields: "Type" with a dropdown menu showing "EIB/KNX", "Transport" with a dropdown menu showing "Tcp", "Port" with the text "10005", and "Max Connection" with the text "5".

Device (connection properties of the Gate application to the equipment of the KNX/EIB bus):

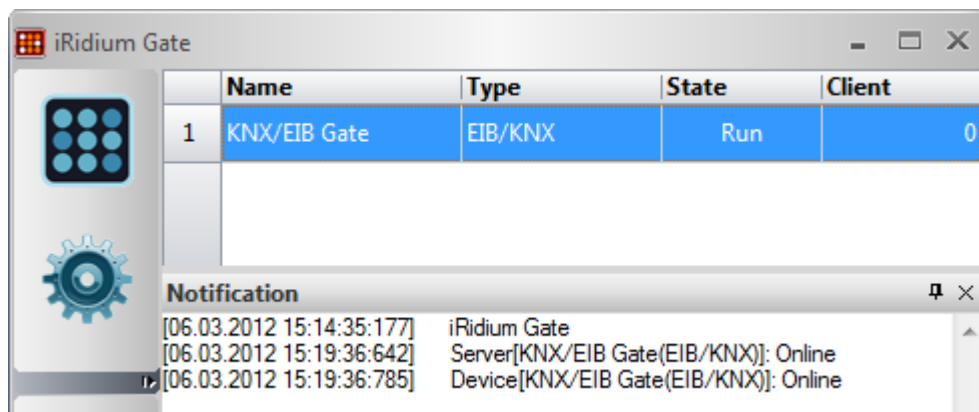
- **Type** – a type of equipment which the gateway will send the received commands to
  - **Transport** – a type of transport which is used by the gateway for sending data
- **Host** – an IP-address of the KNX/EIB router
- **Port** – a UDP port used by KNX/EIB for exchanging data with Clients (3671)
- **Idle** – Time-out of reconnection to the router in case of communication loss



Device configuration dialog box showing the following settings:

- Type: EIB/KNX
- Transport: Udp
- Host: 192.168.0.123
- Port: 3671
- Idle: 120000 ms

When the gateway is set, save it. In the iRidium Gate window it looks as follows:



Enabling and disabling of the gateway is made in the application menu (buttons on the left). The gateway must be running for connection with the gateway Clients:

**State: Run**

The number of the connected Clients at the current moment is displayed in the “Client” line.

To start the iRidium Gate application automatically at the start of your PC, move it to the Autostart folder and mark “Autostart” in the gateway settings (Gate Properties).