INTERRA

ITR901-001 – KNX IP ROUTER

Product Manual

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1.) PRODUCT DESCRIPTION

The ITR901-001 Interra KNX IP Router works as a KNX line/area coupler to provide a bi-directional data connection between KNXnet/IP line (main line) and KNX TP line (subline). KNX IP and KNX TP are coupled having a galvanic isolation in between. The flexible ITR901-001 can be used as a KNX TP line coupler to connect several KNX TP lines but also as a KNX TP area coupler to connect several TP areas or different KNX TP installation systems via an IP Backbone/Ethernet/Internet.

Telegram filtering is accomplished according to the installation place in the hierarchy (Physical Telegrams) and according to the built in filter tables for group communication (Group Telegrams). For detailed diagnosis all operational modes/states are shown by a duo-LED display.

With the ETS (or compatible commissioning tool) ITR901-001 also works as the KNX programming interface having no KNX communication objects for itself. Connecting a personal computer to the KNX TP bus can ideally be done via Ethernet/Internet. For Tunnelling and Routing up to four tunnelling addresses can be used. To ease commissioning and troubleshooting the Manual Function for short-time telegram filter switch-off and special routing/repetition/confirmation settings are available. A comfortable Web front-end to watch the busload history, to identify ITR901-001device in a network and to update the firmware via IP is provided.

1.1.) Front Panel
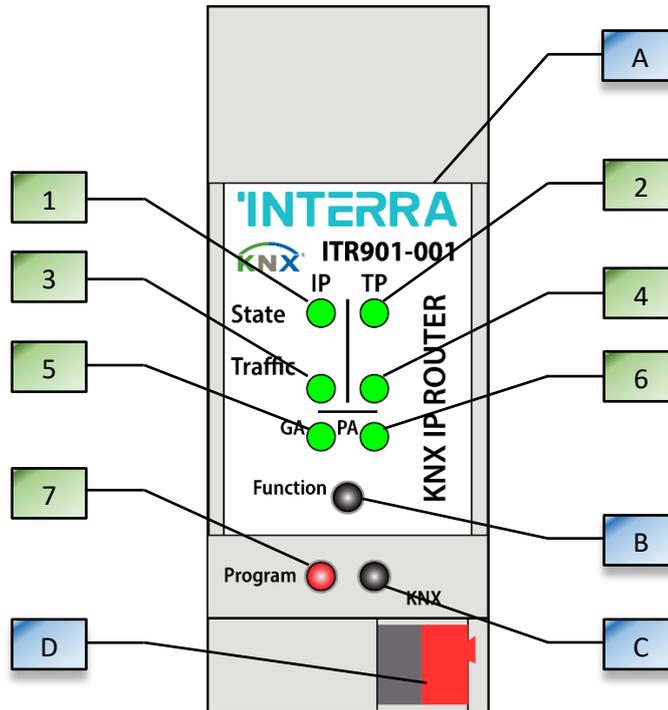
Fig 1: Front View of Device

LED	BUTTON / CONNECTOR
1. State IP (Main Line)	**A.** Ethernet Connector
2. Bus State KNX TP (Subline)	**B.** Function Button
3. Telegram Traffic IP (Main Line)	**C.** Program Button
4. Telegram Traffic KNX TP (Subline)	**D.** KNX TP Connector
5. Group Address(GA) Routing (0....13)	
6. Physical Address(PA) Routing	
7. Programming	

Tablo 1 : LEDs and Buttons Definitions

In the above figure, a front view of the device is shown. Also, the table 1 shows the indicators and features on the device.

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1.2.) LED Indicators

NUMBER	LED	COLOUR	DESCRIPTION
1	State IP(Main Line)	Green	IP line OK.
		Red	Manual Function active.
		Off	No IP connection.
2	Bus State KNX TP (Subline)	Green	Subline OK.
		Off	Subline not connected.
3	Telegram Traffic IP (Main Line)	Blinking Green	Telegram traffic extent indicated by blinking. (Speed up to 10Mbit/s)
		Blinking Red	Transmission error.
		Off	No telegram traffic.
4	Telegram Traffic KNX TP (Subline)	Blinking Green	Telegram traffic extent indicated by blinking.
		Blinking Red	Transmission error.
		Off	No telegram traffic.
5	Group Address Routing	Green	Filter table active.
		Orange	Route all.
		Red	Block all.
		Off	Routing of Group Telegrams is different on main line and subline.
6	Physical Address Routing	Green	Filtering active.
		Orange	Route all.
		Red	Block all.
		Off	Routing of Physical Telegrams is different on main line and subline.
7	Programming	Red	Program Mode / Boot Mode active.
		Blinking Red	No IP connection.
		Off	Program Mode / Boot Mode not active.

Note: If the device is used as IP Router without physical address x.y.0, the "physical address routing" named LED 6 (PA) works not like described at table 1.

1.3.) Device Commissioning

The default settings of the device are :

➢ All telegrams are blocked due to the filter table is not defined.
➢ The Manual Function switch-off time is 120 min.
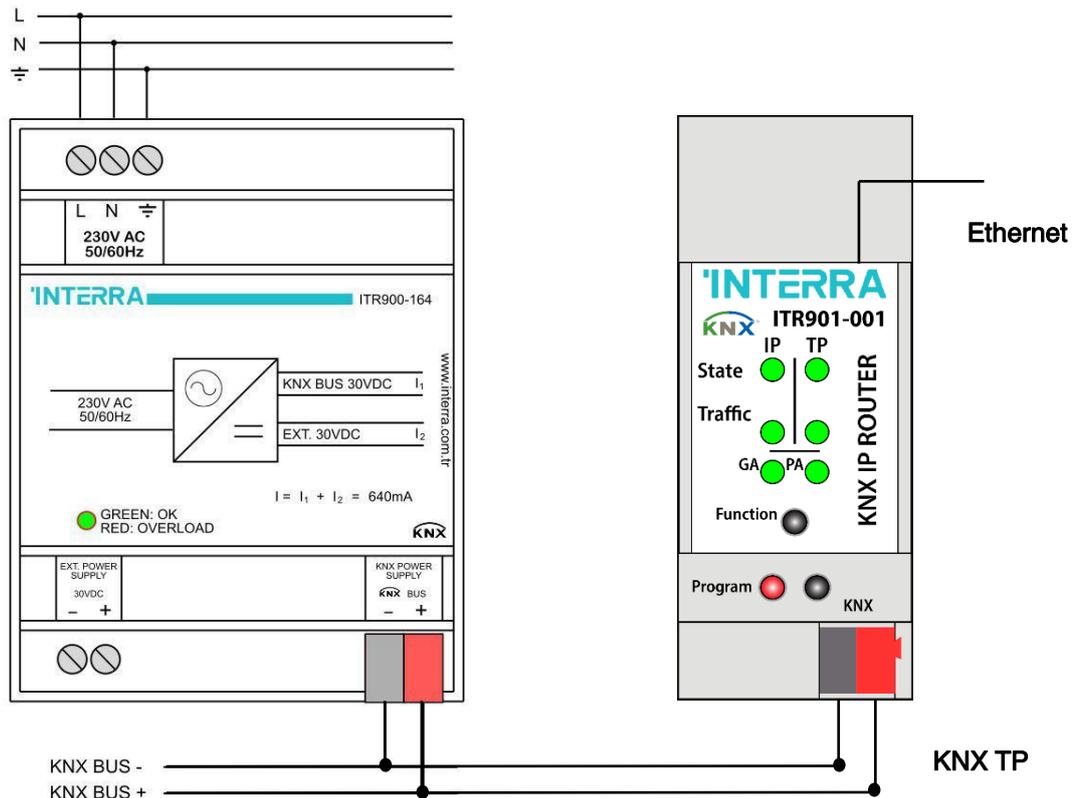➢ Physical address is "15.15.0".
➢ Never connect the device to 230 V.

Fig 2: Connection Scheme

1.4.) General Features

➢ ITR901-001 KNX IP Router supports extended frames and long telegrams up to 240 bytes APDU length.
➢ ITR901-001, favourably replaces a common TP line/area coupler. The great advantage is using KNX IP as a fast KNX backbone medium (for sending telegrams between lines and areas).
➢ ITR901-001 works without external power supply.
➢ Providing IP Tunnelling to the ETS connection interface (also other tools to enable commissioning and monitoring) the additional tunnelling addresses are not the same used for ETS connection. Four different tunnelling connections with a separate address for each can be realized in parallel.
➢ ACK sending on sent out messages is ETS configurable.
➢ When there is no IACK response on the subline the Interra KNX IP Router is able to repeat messages up to three times. Repetitions can be configured for both Physical Telegrams and Group Telegrams via ETS (to ease

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troubleshooting). After an IACK response no repetition is following and the negative IACK/BUSY failure mechanism is maintained.

➢ Automatic function for switching back to run-time telegram filtering after configurable suspension period. This avoids forgetting the reactivation of filtering.

➢ For an ETS configurable time period, it is possible to switch off telegram filtering by only pressing a button on the device front panel. Without additional ETS download filtering is suspended. This is necessary for running fast diagnostics on site.

➢ Temporarily suspending telegram filtering eases commissioning and debugging. Without ETS download temporary access to other lines becomes possible.

➢ UPnP is available to discover the device within the IP network. This can only be realized by a proper network installation in terms of topology. With use of KNXnet/IP ETS is able to recognize the communication interface device.

➢ Updating the firmware can easily be accomplished by a Web browser. The available Web front-end provides informative settings and enables to switch the device into Program Mode without use of the Program Button.

➢ In networks with high busload the internal amount of communication buffers are capable of smoothing peeks in the communication load course.

➢ ITR901-001 device's ETS database entries are available for ETS4 and later.

➢ ITR901-001 supports KNXnet / IP, ARP, ICMP, IGMP, HTTP, UPnP, UDP/IP, TCP/IP, DHCP and AutoIP.

2.) KNXNET / IP

ITR901-001 is a KNX IP router and KNX IP routers are highly similar to TP line couplers. The only difference is that they use the IP communication medium as main line and the KNXnet/IP communication protocol. However, KNX end devices can be integrated directly via IP. This makes the Ethernet a real KNX medium.

As documented in the KNXnet/IP protocol specifications, KNX telegrams can also be transmitted encapsulated in IP telegrams. Ethernet networks as well as Internet can be used to route or tunnel KNX telegrams. In this way, IP interfaces and IP routers are an alternative to USB data interfaces and TP line/area/backbone couplers. In the latter case, the normal TP backbone is replaced by a fast Ethernet based line.

2.1) IP Tunnelling

The presence of the Internet Protocol (IP) has led to the definition of the KNXnet/IP protocol. KNXnet/IP offers the possibility for point-to-point connections for the ETS (KNXnet/IP Tunnelling) and/or between supervisory system and KNX installation. The KNXnet/IP device management enables KNXnet/IP device configuring via the KNX network in order to reduce the time required for complete network configuration.

2.3) IP Routing

IP Routing is the way of interconnecting KNX lines and areas by IP network(s) via KNXnet/IP. In IP networks the KNXnet/IP Routing defines the way of KNXnet/IP router communication.

2.4) IP Bootloader / Boot Mode

The IP bootloader function is used to completely rewrite the flash memory content and is not just a simple application download. Both communication stack and application software are downloaded. The download tool is a separate tool independent from ETS.

The firmware update procedure via IP is executed by a Web front-end and makes use of special messages to speed up the process. To be protected, their contents are encrypted.

Note : Entering Boot Mode is equivalent to activating the IP bootloader function.

3.) OPERATIONAL DESCRIPTION

In network installations ITR901-001 can be used as KNX IP area coupler or KNX IP line coupler. With its default settings the device operates as is supposed to.

3.1) IP Coupler Application

When ITR901-001 receives telegrams (for example during commissioning) that use physical addresses as destination addresses, it compares the physical addresses of the receiver with its own physical address and decides on that whether it has to route the telegrams or not.

When ITR901-001 receives telegrams that use group addresses as destination addresses, it reacts in accordance with the parameter settings. During normal operation (with default settings), ITR901-001 only routes telegrams whose group addresses are entered in the filter table.

If ITR901-001 routes a telegram and does not receive an acknowledgement, or if a bus device discovers a transmission error, the coupler repeats telegrams up to three times (depending on the corresponding parameter that is set by ETS). With the parameters „Repetitions if errors...", this function can be set separately for each line. It is recommended to use the default parameter setting.

IP Coupler is designed for use in 10/100 BaseT networks compliant to IEEE802.3. The AutoSensing function sets the baud rate (10 Mbit or 100 Mbit) automatically. IP address can be received from a DHCP server. For this, the ETS automatic assignment setting of the IP address is required. If no DHCP server is found by this setting device starts an AutoIP procedure and autonomously assigns the IP address. The IP address that ITR901-001 receives during its start-up (via DHCP or AutoIP) is retained until next start-up (e.g. due to power off or reprogramming). If the IP address of the device is supposed to have a fixed assignment a fixed IP address (as well as subnet mask and standard gateway) can be set by ETS.

Note : ETS does not provide an unload procedure for applications.

3.2) IP Network

ITR901-001 sends telegrams from/to the TP network to/from the IP network in accordance with the KNXnet/IP protocol specification. According to the default setting these telegrams are sent as multicast telegrams to the multicast IP address 224.0.23.12 port 3671. The multicast IP address 224.0.23.12 is the defined address for the KNXnet/IP by KNX Association in conjunction with the IANA. It is recommended to use this default address as defined. Only if it becomes necessary due to the existing network, the address can be changed as shown in chapter 4.3 KNX Multicast Address.

Key Notes :

➢ All KNX IP devices that are intended to communicate with each other via IP must have the same IP multicast address.

➢ Multicast IP address 224.0.23.12 may need to be changed in respect of the network type and of the network components´ settings.

➢ IGMP (Internet Group Management Protocol) is used for IP configuration to establish multicast group belonging.

➢ If the IP address is changed from the IP side it may happen that ETS does no longer recognize the device and connection cannot be maintained (tunnelling uses IP addresses).

➢ It is recommended to trigger a restart and to change IP addresses only from TP side.

➢ If problems occur for IP address assignment please ask your network administrator.

➢ According to the topology, the Tunnelling addresses always have to be assigned in the range of subline addresses. For more information about additional physical addresses for tunnelling please check the section 5.5.

➢ Programming devices of another line different to which the device used for (re)programming is connected the use of a correct topology is mandatory.

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3.3) KNX Network Installation:

For line coupler functionality in a KNX network the ITR901-001 device has to use the correct physical address of a line coupler (X.Y.0, 1≤X & Y ≤15). In ETS up to 225 addresses can be defined (from 1.1.0 to 15.15.0). For area coupler functionality in a KNX network ITR901-001 has to use the correct physical address of an area coupler (X.0.0, 1≤X≤15). In ETS up to 15 areas can be defined.

If ITR901-001 is used in a KNX system for both purposes, it is only necessary to ensure that the ITR901-001 used as a line coupler has a line coupler address assigned from a free addressing area. Following figure illustrates the ITR901-001 router topology for KNX lines and KNX areas.
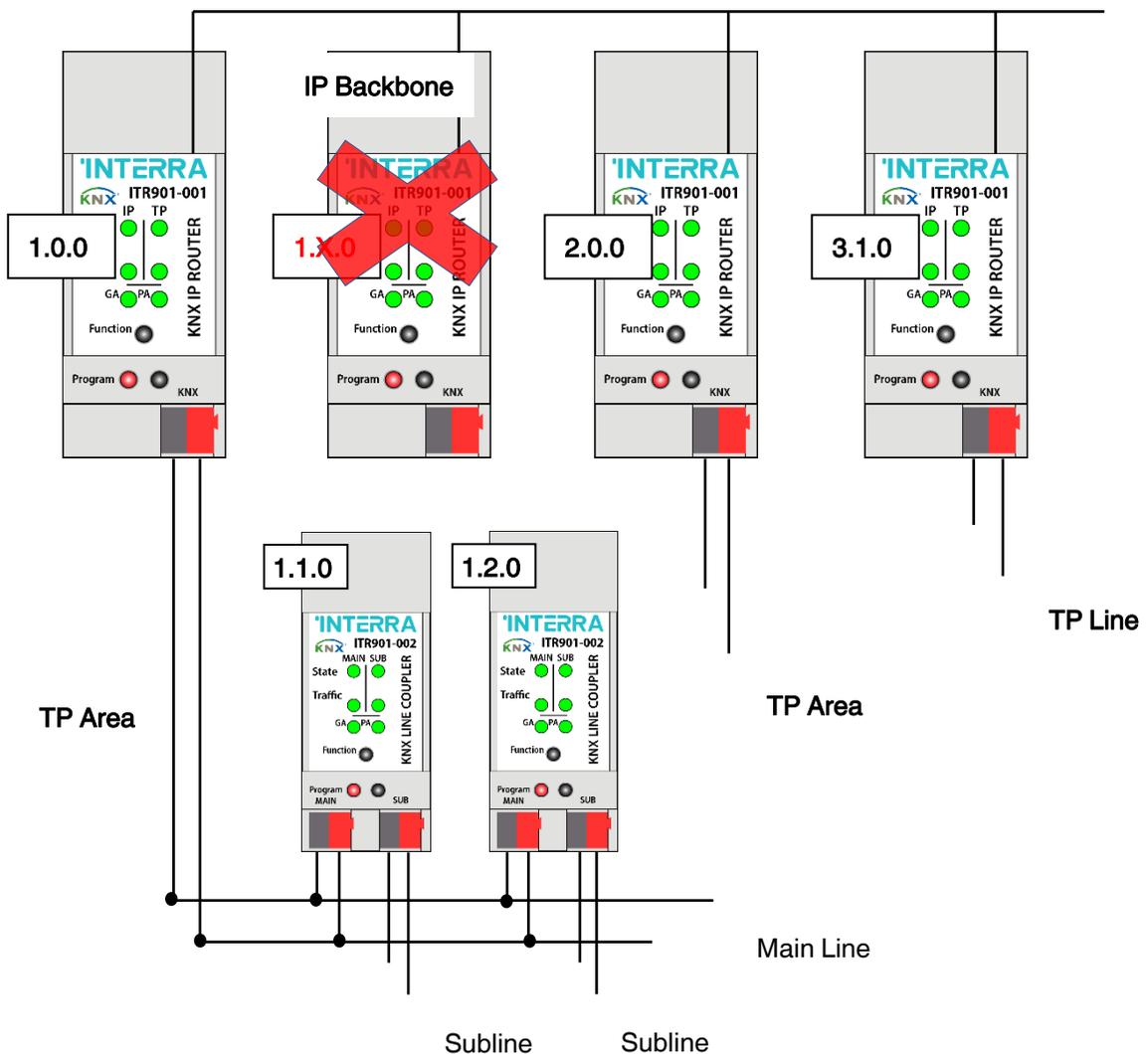

Fig 3: Interra KNX IP Router Network Topology

Example: If an IP router with address 1.0.0 already exists on the backbone no IP router with address 1.X.0, 1≤X≤15 can be added here. Even if no line coupler with address 1.1.0 exists on the subline of the 1.0.0 IP coupler. Vice versa, if a line coupler with address 1.1.0 already exists in the installation no IP router with address 1.0.0 can be added.

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3.4) Programming

To download the desired physical address or an ETS setting the Program Button must be pressed first. Successive pressing the Program Button will turn on and off the Program Mode. LED 7 lighting in red colour indicates Program Mode is active. When Program Mode is active ETS recognizes the device of interest for downloading.

Not: A blinking red Programming LED indicates that the Ethernet cable is not connected properly.

Not: Even when Boot Mode is active successive pressing the Program Button will turn on and off Program Mode and Programming LED.

3.4.1) Physical Address Assignment

To commission the ITR901-001 Interra KNX IP Router device an interface connection (IP, USB) to the KNX bus system is required. The device is supplied with the individual physical address 15.15.0. The KNX product database entry(available for ETS4 and higher) can be downloaded from the Interra web site and from the KNX Online Catalog.

With the ETS the physical address can be assigned to the device by setting the desired address in the properties window of the ETS. After starting the ETS download and then pressing the Program Button the device restarts itself.
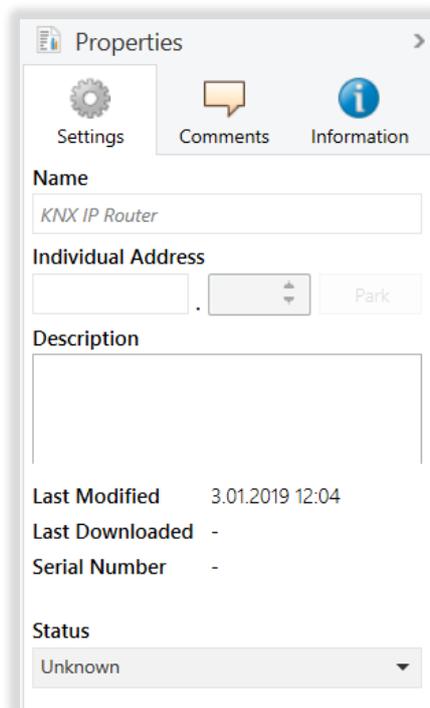
Fig 4: ETS Properties Window

Note: The term "physical address" means the KNX physical address as well as the ETS individual address. Both terms are used by the KNX organisation interchangeably.

3.5) Function Button

The Function Button activates the ITR901-001's special functions Manual Function, Factory Reset and Boot Mode. When the function button is pressed, special functions to be used depend on time / number / status.

3.5.1) Manual Function

A rather short press ($\approx$ 3 sec) of the Function Button activates the Manual Function during normal operation. With a second short button press it can be deactivated before the Manual Function Switch-off time is expired.

When the Manual Function is active either all Physical Telegrams or all Group Telegrams or both pass the device without filtering.

After the Switch-off time period has elapsed ITR901-001 automatically switches back to normal operation. To configure the Manual Function and set the Switch-off time use the parameter tab General like shown in chapter 4.1 General. After switching back from Manual Function to normal operation the latest downloaded parameter setting / filter table entries are active again.

3.5.2) Restore Factory Settings

A long press ($\approx$ 15 sec) of the Function Button soon followed by a second press for some seconds executes the Factory Reset. After the first press the LED display lights different (see table 3). After the second press all parameters will be set to factory default (incl. physical address). Subsequently, LEDs show the normal display again.

When Boot Mode is active the Function Button executes the Factory Reset in a different way. After pressing the Button for about five seconds the LEDs light with green colour. After second press (about two seconds) the parameters will be set to factory default (includes physical address) and LEDs again display Boot Mode is on.

3.5.3) Boot Mode Activation

For Boot Mode activation the firmware update process must be executed. During the process, the Function Button must be pressed to enter Boot Mode (see chapter 5.4). The numbers in the tables shown below are based on Table 1.

3.5.4) LED Status Display

NUMBER	LED	COLOUR	DESCRIPTION
1	State IP	Orange	Lights red if not connected.
2	Bus State KNX TP	Green	
5	Group Address Routing	Orange	
6	Physical Address Routing	Orange	

Table 2 : LED Status Display for Manual Function

NUMBER	LED	COLOUR	DESCRIPTION
1	State IP	Orange	Lights red if not connected.
2	Bus State KNX TP	Orange	
5	Group Address Routing	Orange	
6	Physical Address Routing	Orange	

Table 3 : LED Status Display for Factory Reset After First Button Press

NUMBER	LED	COLOUR	DESCRIPTION
1	State IP (Main Line)	Green	
2	State KNX TP (Subline)	Blinking Green	
3	Telegram Traffic IP (Main Line)	Blinking Green	not the same tempo as LED2.
7	Programming	Red	

Table 4 : LED Status Display for Boot Mode

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4) ETS DATABASE PARAMETERS

All images described in this chapter are retained from the relevant ETS configuration pages of the ITR901-001. The device database file is compatible with ETS4 and later versions.

4.1) Genel

If the host name is changed by a download in ETS4, a manual device restart (bus disconnection, reset of the line etc.) is recommended to take over this change.
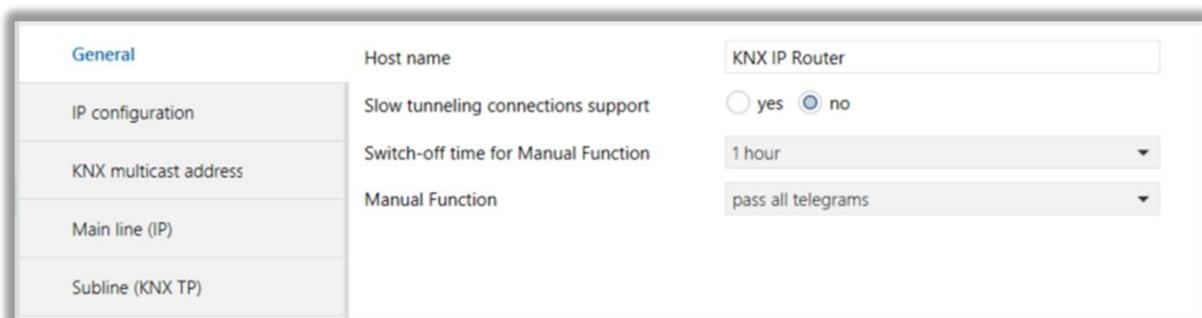

Fig 5 : General Page Parameters

4.1.1) Parameters List

PARAMETER	DESCRIPTION	VALUES
Host name	Field to enter the device name providing an easy search of the device by ETS, by Windows Network and by KNXnet/IP visualisation systems.	30 Characters allowed (**KNX IP Router**)
Slow tunnelling connections support	Enable to support slow tunnelling connections.	yes **no**
Switch-off time for Manual Function	After expiry of this time period the Manual Function is switched off automatically.	10 mins **1 hour** 4 hours 8 hours
Manual Function	Configuration setting for telegram routing when the Manual Function is active.	disabled dass all telegrams pass all Physical address telegrams pass all Groups address telegrams **pass all telegrams**

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4.2) IP Configuration

After an ETS download IP addresses are not updated. It is essential to execute a manual device restart(bus disconnection, reset of the line) to get IP configuration data updated.
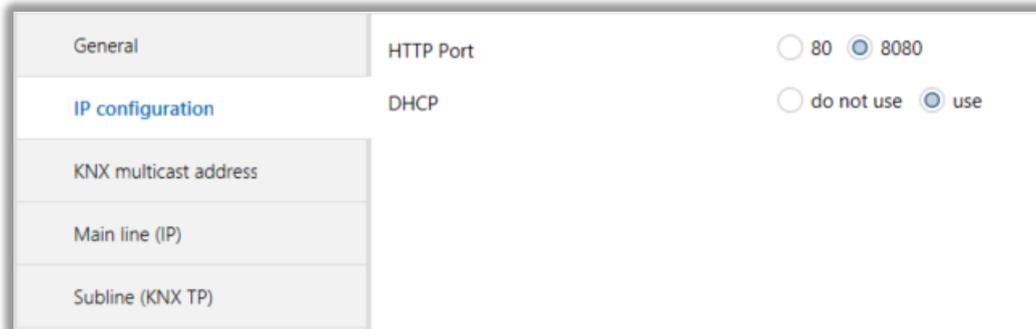

Fig 6 : IP Configuration Tab Parameters

4.2.1) Parameters List

PARAMETER	DESCRIPTION	VALUES
HTTP Port	Select one of the two official system ports.	80 **8080**
DHCP	If DHCP is used, no further IP parameters have to be set.	do not use **use**
IP address*1	Due to each part is 1 byte, the values should be adjusted by entering between 0 and 255.	0-255.0-255.0-255.0-255 **[0.0.0.0]**
Subnet mask*1	Due to each part is 1 byte, the values should be adjusted by entering between 0 and 255.	0-255.0-255.0-255.0-255 **[0.0.0.0]**
Default gateway*1	Due to each part is 1 byte, the values should be adjusted by entering between 0 and 255.	0-255.0-255.0-255.0-255 **[0.0.0.0]**
DNS server*1	Due to each part is 1 byte, the values should be adjusted by entering between 0 and 255.	0-255.0-255.0-255.0-255 **[0.0.0.0]**

*1This parameter, is only visible when the "DHCP" parameter is set to "do not use".

4.3) KNX Multicast Address

For KNXnet/IP the multicast address "224.0.23.12" is the defined address from KNX Association in conjunction with IANA. Change this address only if it becomes necessary due to the existing network.

Make sure that during commissioning all KNX IP devices intended to communicate with each other via IP use the same multicast address. After downloading a new multicast address a manual restart has to be executed.
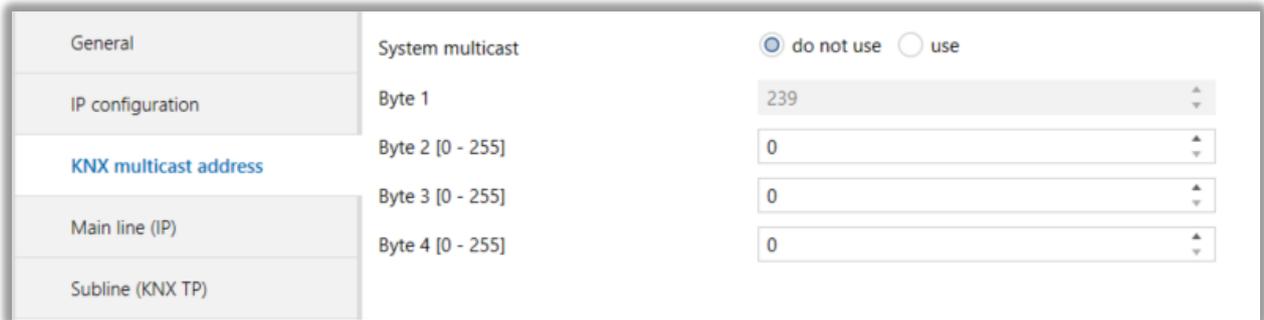

Fig 7 : KNX Multicast Address Parameter Page

PARAMETER	DESCRIPTION	VALUES
System multicast	System default multicast address is "224.0.23.12". If system multicast is not used the multicast address has to be defined manually.	do not use **use**
Byte 1*[1]	If system multicast address is used "**224**" is set permanently. Otherwise "**239**" is set permanently.	224(System) **239**
Byte 2*[1]	Set manually if system multicast address is not used.	**0** (0-255)
Byte 3*[1]	Set manually if system multicast address is not used.	**0** (0-255)
Byte 4*[1]	Set manually if system multicast address is not used.	**0** (0-255)

*[1]This parameter, is only visible when the "System multicast" parameter is set to "do not use".

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4.4) Main Line (IP)

For Group Telegrams and Physical Telegrams the setting "transmit all" is intended only for testing purposes. Please do not use for normal operation.
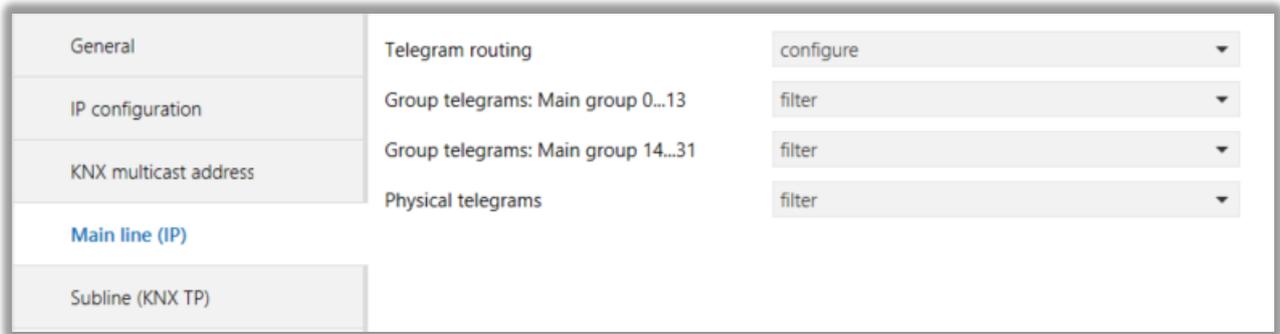

Fig 8 : Main Line (IP) Parameter Page

PARAMETER	DESCRIPTION	VALUES
Telegram routing	**block:** No telegrams are routed. **filter:** Telegrams entered in the filter table are routed. **route:** All telegrams are routed. **configure:** The following parameters must be set manually.	Group: filter, Physical: block **Group and Physical: filter** Group: route, Physical: filter Group and Physical: route configure
Group telegrams : **Main group 0...13*¹**	**transmit all:** Group telegrams (Main group 0...13) are all routed. **block:** Group telegrams (Main group 0...13) are all blocked. **filter:** Group telegrams (ana grup 0...13) are routed if entered in the filter table.	transmit all (not recommended) block **filter**
Group telegrams : **Main group 14...31*¹**	**transmit all:** Group telegrams (Main group 14...31) are all routed. **block:** Group telegrams (Main group 14...31) are all routed. **filter:** Group telegrams (Main group 14...31) are routed if entered in the filter table.	transmit all (not recommended) block **filter**
Physical telegrams	**transmit all:** Physical telegrams are all routed. **block:** Physical telegrams are all blocked. **filter:** Depending on the physical address, physical telegrams are routed.	transmit all (not recommended) block **filter**

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4.5) Subline (KNX TP)

For Group Telegrams and Physical Telegrams the setting "transmit all" is intended only for testing purposes. Please do not use for normal operation.
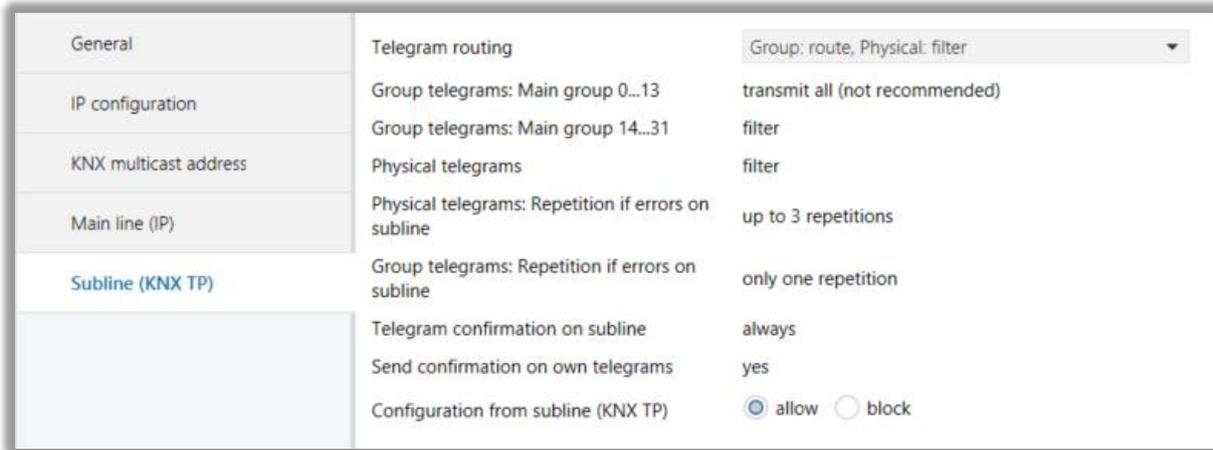

Fig 9 : Subline (KNX TP) Tab Parameters

PARAMETER	DESCRIPTION	VALUES
Telegram routing	**block :** No telegrams are routed. **filter :** Telegrams entered in the filter table are routed. **route :** All telegrams are routed. **configure :** The following parameters must be set manually.	Group: filter, Physical: block **Group and Physical: filter** Group: route, Physical: filter Group and Physical: route configure
Group telegrams : **Main group 0...13*¹**	**transmit all :** Group telegrams (Main group 0...13) are all routed. **block :** Group telegrams (Main group 0...13) are all blocked. **filter :** Group telegrams (Main group 0...13) are routed if entered in the filter table.	transmit all (not recommended) block **filter**
Group telegrams : **Main group 14...31*¹**	**transmit all :** Group telegrams(Main group 14...31) are all routed. **block :** Group telegrams(Main group 14...31) are all routed. **filter :** Group telegrams (ana grup 14...31) are routed if entered in the filter table.	transmit all (not recommended) block **filter**
Physical telegrams	**transmit all :** Physical telegrams are all routed. **block :** Physical telegrams are all blocked. **filter :** Depending on the physical address, physical telegrams are routed.	transmit all (not recommended) block **filter**

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PARAMETER	DESCRIPTION	VALUES
Physical telegrams : **Repetition if errors on subline**	After subline transmission error(e.g. due to missing receiver) Physical telegrams : **no :** Are not repeated. **up to 3 repetitions :** Are repeated max. 3 times. **one repetition :** Are repeated once.	no **up to 3 repetitions** one repetition
Group telegrams : **Repetition if errors on subline**	After subline transmission error(e.g. due to missing receiver) Group telegrams : **no :** Are not repeated. **up to 3 repetitions :** Are repeated max. 3 times. **one repetition :** Are repeated once.	no **up to 3 repetitions** one repetition
Telegram confirmation on subline	**if routed :** Routed telegrams to IP main line are confirmed by an ACK on the subline. **always :** Each telegram on the subline is confirmed by an ACK.	**if routed** always
Send confirmation on own telegrams	**yes :** Telegrams sent out to the subline are confirmed by added ACK. **no :** No ACK confirmation.	yes **no**
Configuration from subline (KNX TP)	If blocked an ETS download to the device can occur only via IP main line.	**allow** block

5.) WEB FRONT-END

The Web front-end can be used to readout MECip´s actual device parameters (HTTP port, IP address, MAC address, …), to update its firmware and to adjust the (additional) tunnelling addresses. To identify a particular ITR901-001 of a KNX network the Programming LED/Program Mode can be remotely switched on without pressing the Program Button.

Note: To switch back from Boot Mode to normal operation it is necessary to run the firmware update procedure.

5.1) Accessing the Device Web Front-End

There are three ways to access the Interra KNX IP Router. It can be accessed like a Microsoft Windows UPnP network device (Windows7 or later) and by a web browser. For access by a web browser either the IP address or the MAC address, together with the HTTP port, have to be known. How to use IP address and MAC address with the browser´s URL bar is described in the following.

Not 1: For access via web browser the HTTP port that is set by ETS (or the factory default parameter value) has to be used.

Not 2: ITR901-001 is able to use both official HTTP system ports (80 and 8080).

Not 3: Factory default HTTP port is 8080.

5.1.1) Access via Windows Network UPnP

When the UPnP network function is enabled, ITR901-001 Interra KNX IP Router appears in the Windows Network. A click on the ITR901-001 network device opens the Web front-end with the standard web browser. If Interra KNX IP Router is not visible as an UPnP network device a manual restart is recommended. After that, the device becomes visible in the list of network devices.

5.1.2) Access via IP Address

When IP address and HTTP port (80 or 8080) are known, this information is sufficient to access the ITR901-001 Web front-end by a web browser. The actual IP address is shown in the ETS list of Discovered Interfaces.

<div style="text-align:center; border:1px solid #000; padding:10px;">

http://[IP address]:[HTTP port]/

</div>

The above box shows how to enter the IP address and HTTP port in the URL bar.

Ex 1 : DHCP is not used. With the latest ETS download the IP address was set to 192.168.1.32 and HTTP port was set to 80. In the browser´s URL bar has to be entered "http://192.168.1.32:80/".

Ex 2 : With the latest ETS download HTTP port was set to 8080 and DHCP was activated. The DHCP server assigned a free IP address to MECip and ETS shows this IP address to be 192.168.1.201. In the browser´s URL bar has to be entered "http://192.168.1.201:8080/".

5.1.3) Access via MAC Address

When NetBIOS is installed (by default on Windows systems and Linux systems containing SAMBA) the MAC address that is printed on a label on the side of the ITR901-001 housing can be used. Due to name resolution is mandatory to establish communication by Host name, activation of NetBIOS is necessary.

Use the MAC address in the form of AA-BB-CC-XX-YY-ZZ and the pre-set HTTP port to be entered in the browser´s URL bar as described here (without brackets):

<div style="text-align:center; border:1px solid #000; padding:10px;">

http://knx-iprt-[XXYYZZ]:[HTTP port]/

</div>

Ex : On the housing side ITR901-001 is labelled with MAC address D0-72-59-55-44-66 and the pre-set HTTP port is 8080. Then, in the web browser´s URL bar has to be entered "http://knx-iprt-554466:8080/".

Note : The values to be entered in the browser bar are the values inside the quotation mark.

5.2) Device Info

After accessing the Web front-end the Device Info tab is shown. All general information about the current device settings is visible.
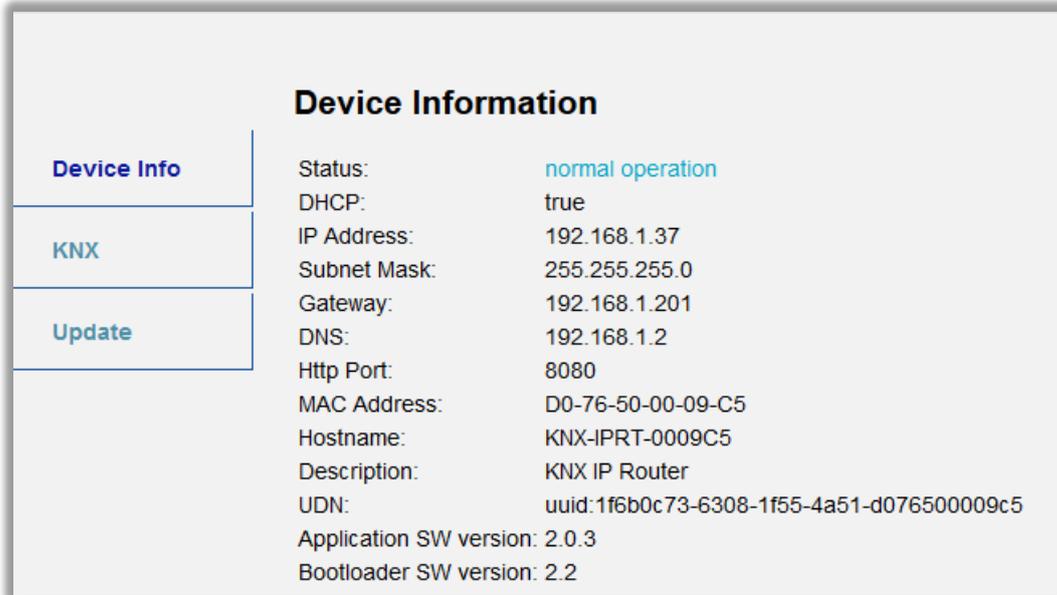
Device Information

Status:	normal operation
DHCP:	true
IP Address:	192.168.1.37
Subnet Mask:	255.255.255.0
Gateway:	192.168.1.201
DNS:	192.168.1.2
Http Port:	8080
MAC Address:	D0-76-50-00-09-C5
Hostname:	KNX-IPRT-0009C5
Description:	KNX IP Router
UDN:	uuid:1f6b0c73-6308-1f55-4a51-d076500009c5
Application SW version: 2.0.3	
Bootloader SW version: 2.2	

Tabs: Device Info, KNX, Update

Fig 10: Device Info Tab

5.3) KNX

With a simple click on "On" or "Off" Program Mode can be switched on/off. This function is equivalent to a Program Button press. Together with the Device Info tab it is easy to distinguish the regarded device (with a certain IP address or MAC address or serial number) from other similar devices in the same IP network. Also, setting changes can easily be checked.

Four tunnelling addresses can be set. ETS sets the first tunnelling address. With a click on "Set" the remaining ones are set. Moreover, routing multicast address, serial number of the device and a last-60-minutes KNX busload diagram are visible. The red curve shows the maximum busload history and the green one shows the average busload history both of the TP side.
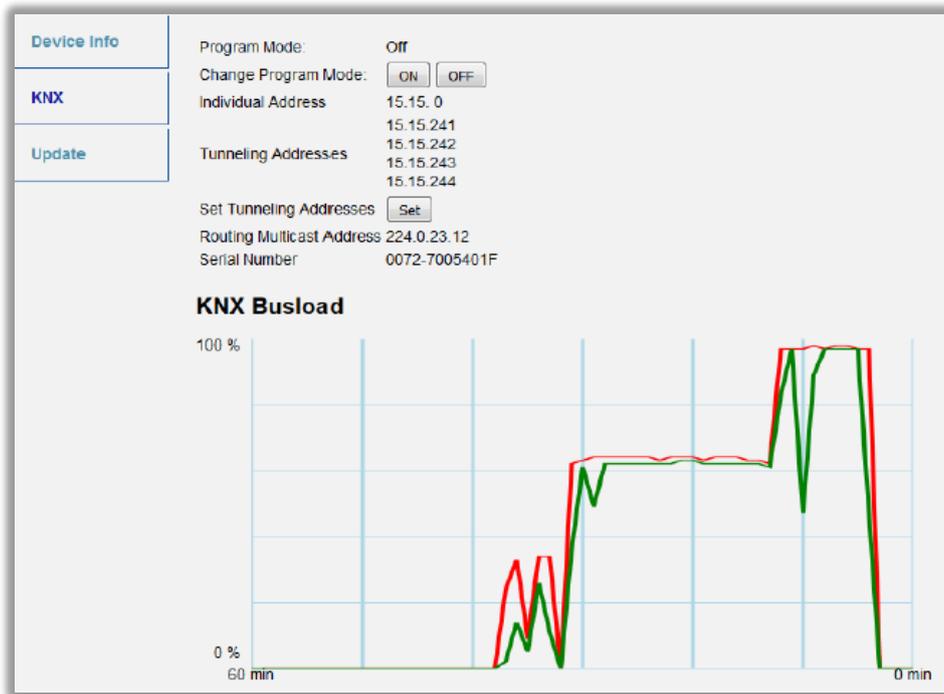
Fig 11: KNX Tab

Note: The web browser used has to support SVG graphics.

5.4) Firmware Update & Boot Mode

Under the Update tab the ITR901-001 firmware can be updated like described in following steps 1 to 5. During the firmware update process MECip enters Boot Mode. Then LEDs 1, 2, 3, and 7 have states as described in Table 4.

Note 1: If Boot Mode is already active only the Web front-end instructions from step 3 to step 5 must be followed (refresh, request update).

Note 2: Boot Mode is still active after device reset and after factory reset.

To exit Boot Mode it is necessary to enter the Update tab of the Web front-end. Then either the firmware update has to be completed (if a new firmware is available) or the firmware update process has to be stopped by a click on the "Abort" button. After that the device restarts and continues with normal operation.

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Step 1: Open the Update tab of the Web front-end.
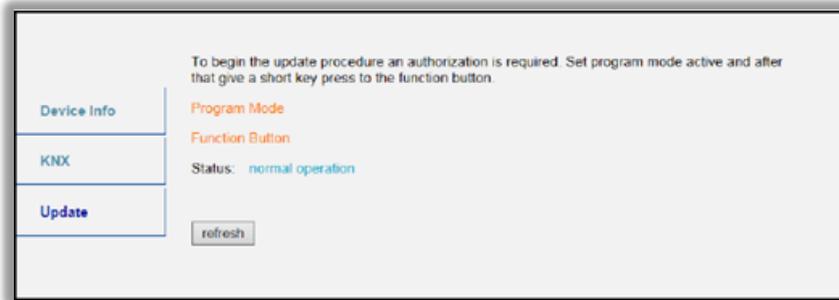
Fig 12: Update Tab

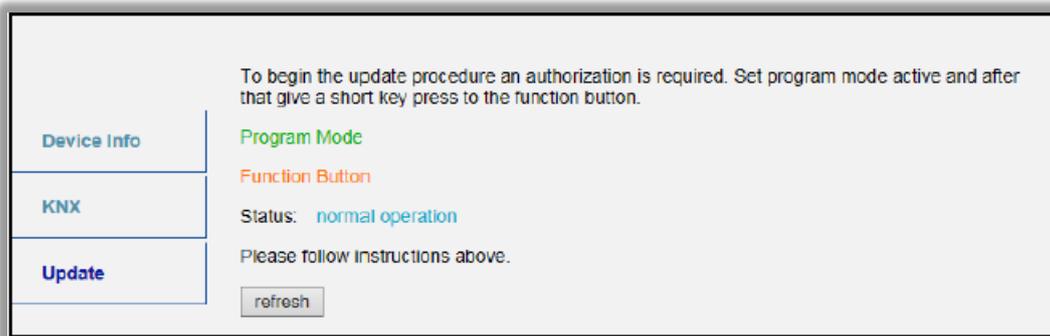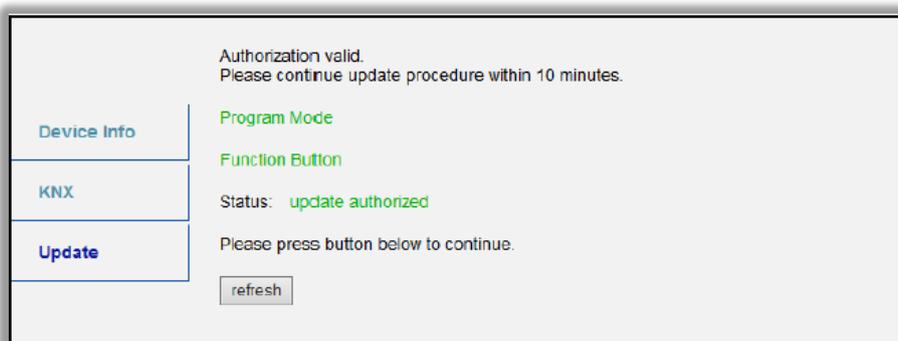**Step 2:** Activate Program Mode (at the KNX tab or by Program Button Press).

Fig 13: Update Tab and activated Program Mode

Step 3: After Program Mode activation give a short press to the Function Button. Then click on the "refresh" button(alternatively, refresh the browser).

Şekil 14: Update Authorized

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Step 4: When the "request update" button appears it has to be pressed to select the update file and enter "Boot Mode".
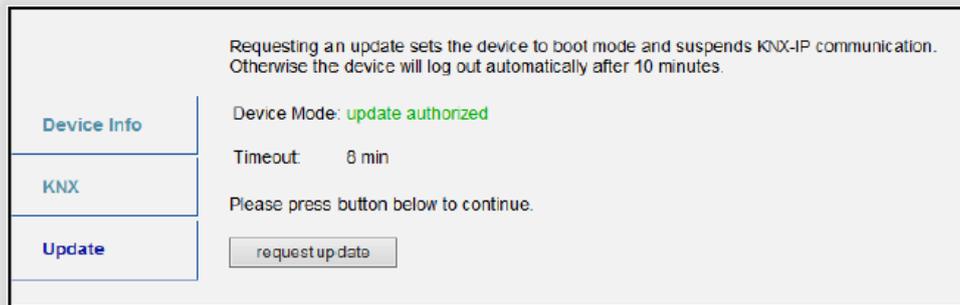
Fig 15: Request Update

Step 5: The update file can be selected and uploaded. Clicking on the "Abort" button cancels the firmware update procedure and the device exits "Boot Mode".
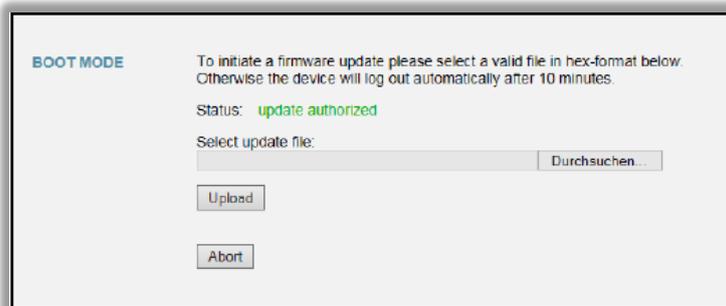

Fig 16: Select Update File

5.5) IP Tunnelling Address Assignment

According to the host's physical address assignment the first tunnelling address (additional physical address) of the Interra KNX IP Router can only be set by ETS.

Note : The additional physical addresses for tunnelling and the host´s physical address have to be different.

Step 1 : Open the ETS Bus tab and select the device as the "Current Interface". In the "IP Tunneling" window the already assigned host physical address can be read.
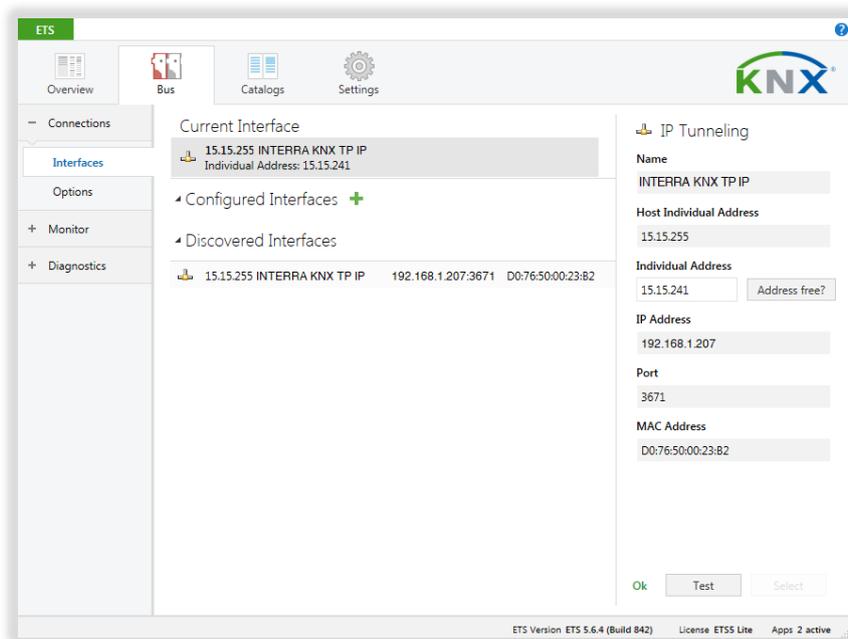
Fig 17: First Additional Physical Address (First Tunnelling Address) Assignment

Step 2: Set the first additional physical address by the "Individual Address" field. Click on the "Test" button. If the green Ok appears, the first tunnelling address is set.

Step 3: Now open the KNX tab of the Web front-end. Click on the "Set" button to set the remaining three tunnelling addresses basing on the first tunnelling address as follows.
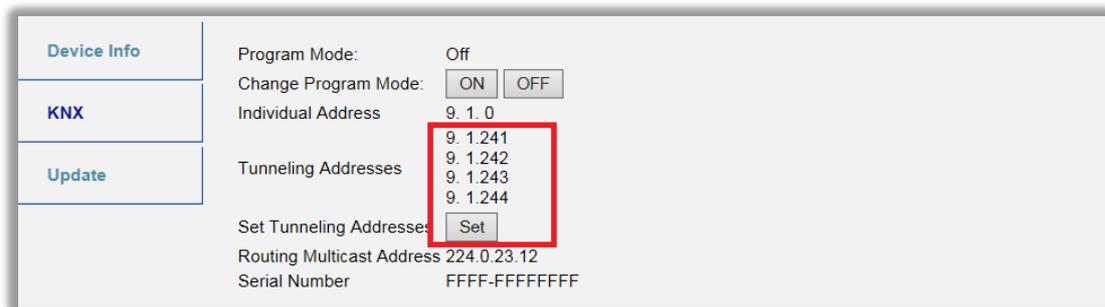

Fig 18: Additional Tunnelling Address Assignment in the Web Front-End

6.) TECHNICAL DRAWINGS

All dimensions shown here are specified in mm. The total device width is standard 2 modules.
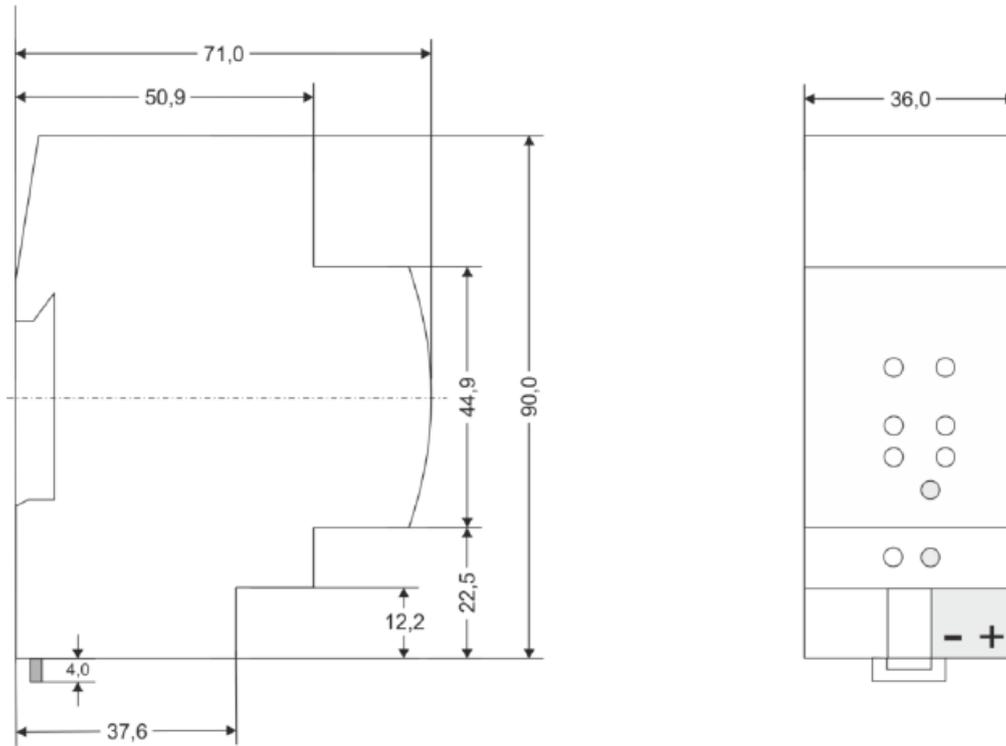

Fig 19 : Drawings and Dimensions of the Device

THE INTERRA WEB SITE

Interra provides documentation support via our WWW site www.interra.com.tr. This web site is used as a means to make files and information easily available to customers. Accessible by using your favorite Internet browser, the web site contains the following information:

- Information about our products and projects.

- Overview of Interra company and values.

- Product Support: Data sheets, product manuals, application descriptions, latest software releases, ETS databases and archived softwares.

Europe, Turkey

KNX IP Router - Product Manual

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