



### EU Declaration of Conformity

*For the following products*

- IRTrans USB
- IRTrans Serial
- IRTrans IR Bus Module
- IRTrans Translator
- IRTrans Mediacotroller
- IRTrans Ethernet / IRDB
- IRTrans Ethernet PoE / IRDB
- IRTrans LAN Controller
- IRTrans LAN Controller XL

*we hereby declare that they conform to the declarations regarding Electromagnetic Compatibility as defined in*

**EN 55024: 1998 + A1: 2001 + A2: 2003**

# Users Manual



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Informations regarding the Macintosh Software can be found in the Manual shipped with the Macintosh Software.

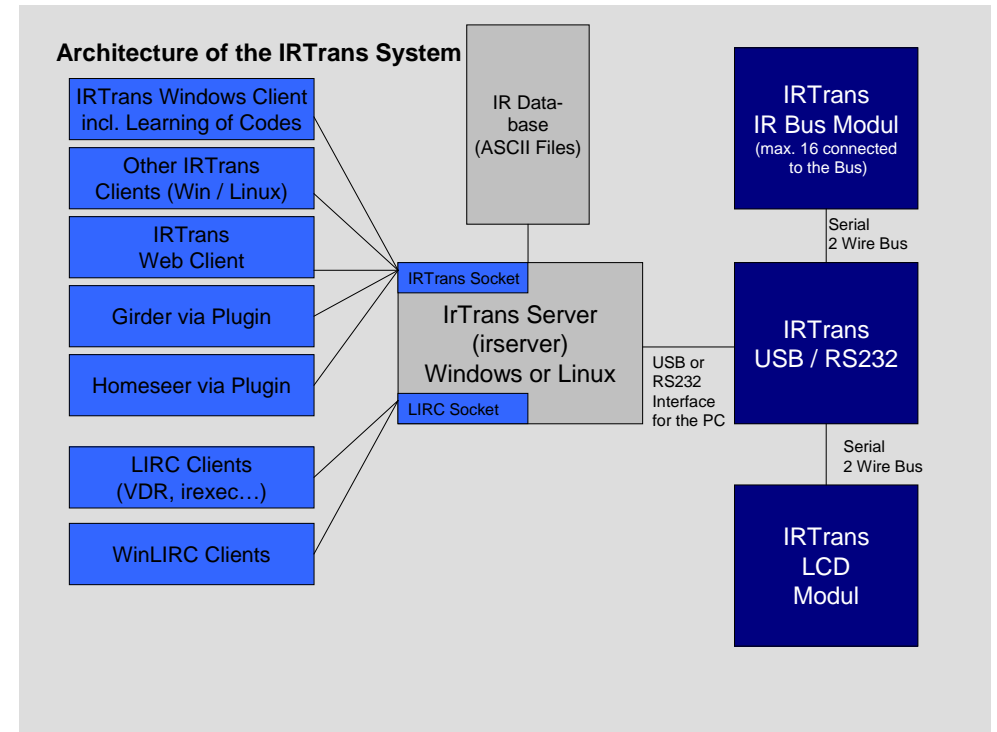


*Damage to the IRTrans, the computer system or even personal property might arise as a result of not following advices marked by that symbol.*



*This symbol marks important tips for handling and using the IRTrans system.*

All trademarks mentioned herein belong to their respective owners.



## Overview of the Architecture of the IRTrans System

The iRed Mac Software uses a different architecture. Please refer to the iRed Manual for details.



Please note that iRed is distributed exclusively via Download. Download instructions are part of the iRed License Mail every new customer gets.

## 1. IRTrans – Quick reference Guide

### 1.1. Installing the Hardware

The Installation of the Hardware is described in detail in Chapter 2 of this manual. When using the USB Version the USB Driver has to be installed, too. This is also described in detail in the corresponding chapter.

### 1.2. Installing the Software

- **On Windows** it is enough to just put the CD into the drive. Windows now automatically starts the installation on the CD. In most cases the default installation is applicable.
- **On LINUX** the script `install.sh` on the CD has to be started. By default the software will be installed in the folder `/usr/local/irtrans`. It can also be copied to other folders:  

```
cd /cdrom
./install.sh
```
- **Installation Instructions for the Mac** can be found together with the Mac Software.

### 1.3. Starting the Server

- **On Windows** the server is started through the Start Menu. The Start Menu uses the `irtranstray` utility, that puts the Server in the Windows Toolbar. Wenn the RS232 Version is not connected to COM1 the Menu Entry has to be modified accordingly.
- **On LINUX** the server is started with the command `irserver <device>`. Device can either be a serial Port (e.g. `/dev/ttyS0`) or `usb` for an USB Device. If the USB device can not be found automatically your LINUX distribution uses non-standard USB device files. Then you need to find out the active USB device node via `cat /proc/bus/usb/devices`.

The `irserver` is TCP/IP based. Therefore it can be accessed by different Clients that can even be installed on different Systems in a Network. Of course it can also be accessed via large, routed Networks or even the Internet. Of course it can be accessed by several Clients at a time that can run on different Operating Systems.



**All IRTrans Clients need a running `irserver`!**

## 2. Installing and connecting the Hardware

### 2.1. General

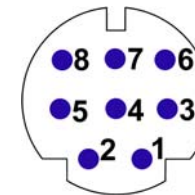
The DIP Switch is used to set the address of the controller on the serial bus. The transceiver connected to the PC should have the address "0". The address is coded in binary. It is possible to set up to 16 different addresses. Every Unit should have a unique ID. When a new USB / RS232 Transceiver (Blue case) is used, the Address is set via Software. The device connected to the PC should in general have the Address "0". All IR Bus Modules have "classic" DIP Switches.



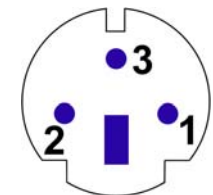
**The Ferrite Core shipped with the IRTrans should be attached to the RS232 / USB Cable as shown in the picture below (*it is no longer needed & shipped for USB Devices with a version  $\geq 3.6$* ):**



There are two different Mini DIN Connectors used to connect external devices. The older versions have a 3 Pin connector, the newer ones 8 Pins. Despite from the different pin configuration both versions are compatible.



Mini DIN 8 Socket



Mini DIN 3 Socket

Both Sockets viewed from front

Pin Configuration of the 3pin MiniDIN Socket:

- 1: Masse / GND
- 2: +8 – 16V= Supply Voltage Serial Bus
- 3: Data I/O

### Pin Configuration of the 8pin MiniDIN Socket:

- 1: Masse / GND
- 2: +8 – 16V= Supply Voltage Serial Bus
- 3: Data I/O
- 4: +5V stabilized Voltage (Input)
- 5: Relay Contact PowerOn (1)
- 6: Output for additional IR Transmitter (Anode / +)
- 7: Output for additional IR Transmitter (Cathode / -)
- 8: Relay Contact PowerOn (2)



**If the additional 5V Input (Pin 4) is used, care must be taken that only a stabilized Voltage of 5V is applied. A wrong voltage on that Pin might destroy the IRTrans.**

This Pin can be used to power the IRTrans via the Standby Voltage of an ATX Power supply. That allows switching on the PC via Infrared together with the PowerOn Option.



**To protect the PC form Short Cuts this Supply Line should be protected by a fuse.  
The output for additional IR Transmitters might get damaged by Shortcuts or applied voltages. Therefore extra care should be taken when connecting external Transmitters.**

If every Transceiver has its own Power Supply only the Pins 1 & 3 are needed to make up the Serial Bus. If the Pins 1, 2 & 3 are used only one IRTrans needs to have a Power Supply connected. It is not possible to power Transceivers connected to the Serial Bus by the USB or RS232 Interface of the PC.



**Every Transceiver connected to the Serial Bus has to be powered. Otherwise Termination Problems and Malfunctions of the Serial Bus may arise.**

The Power Supply connector is used to Power Bus units or PC Units while the PC is switched off. The external Power Supply has to deliver 8-16V= with 50mA for each IRTrans connected to the Bus. The Plus Pole is the inner contact of that Connector.



**Only the DC Connector of the IRTrans should be used to power the Serial Bus. This connector is protected by an automatic fuse. If the power is supplied directly into the Serial Bus Cables a fuse should be used to protect the Bus System from short cuts.**

## 2.2. USB Version



**Before connecting the Device to the PC the Driver CD should be inserted into the CD Drive.**

A USB A-B Cable is used to connect the USB Device to the PC or a USB Hub. After connecting the PC detects the Device and starts the Driver installation. The USB Version is always powered by the PC. However, an external Power Supply might also be connected.

## 2.3. RS232 Version (with DSUB 9 Connector)

To connect the RS232 version to the PC a simple pass-through RS232 cable is needed. (No Null-Modem!) Baud rate and parameters are set automatically. To supply power to the IRTrans unit you need a complete RS232 cable. If an external power supply is used, only GND / RxD / TxD are needed.

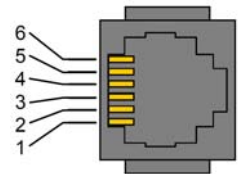
Most PCs deliver enough power using the status lines of the RS232 port to power the IRTrans even while sending. If you discover problems sending codes you need to connect an external power supply.

This power supply needs to deliver 8-16V= with about 250mA. The positive pole has to be connected to the inner contact of the power connector (as usual). If codes are only received, the power delivered by the PC should always be enough to power the IRTrans.

## 2.4. RS232 Version (new Versions with Western Plugs)

The new serial IRTrans Versions use a 6pin Western Connector to connect the IRTrans to the PC. This cable has to be configured as follows:

Signal	Pin No. (PC DSUB 9)	Pin No. IRTrans
GND	5	5
RTS	7	4
DTR	4	6
RxD	2	1
TxD	3	3



Of course a suitable cable may be ordered.

If an external power supply is used, only GND / RxD / TxD are needed.

A power supply is needed for the IRTrans RS232 or Mediacontroller. This power supply needs to deliver 8-16V DC with about 100mA. The positive pole has to be connected to the inner contact of the power connector (as usual).

## 2.5. Connecting the PowerOn Option

An IRTrans Module with PowerOn Option is shipped with a connecting cable. This Cable can be connected to the Power Switch of the ATX PC. To do that the cable is to be connected between the Power Switch and the Main board.

**In no case that Contact might be used to switch high current, high voltage or even Mains!**

The additional (isolated) Cable can be used to power the IRTrans with +5V Standby Voltage. Then no external Power Supply is needed. To allow that, the ATX Power supply has to deliver at least 1A on the Standby Line. Unfortunately in most PCs that Voltage is not readily available on a connector.

**That means that a cable must be tapped. That should only be done when you have the needed equipment (Measurement Tools) and knowledge. Mistakes when connecting the Module (other Voltages than 5V) might damage the IRTrans, Short-Cuts might damage the PC / Power Supply or in the worst case might even cause Fires. To avoid that, the system should always be protected by a Fuse in the Cable.**



**Before making any connections the Mains Connector should always be removed before making any connections because the Standby Voltage is present even when the PC is switched off.**

**If there's any doubt an external Power Supply should be used.**

The Software settings to use the PowerOn Options are done in the Status Page of the GUI or ASCII Client. That is explained in Detail in Chapter 4.5 of this manual.

## 2.6. Building a multizone system

The IRTrans System ist used to control larger homes, too. To do that up to 16 IRTrans devices can be connected using the serial two wire bus. Cables and infrastructure can be freely chosen, no special cables are needed.

- The serial bus has been tested with cables up to 30m long. Depending on the environment larger distances are possible. However, connecting devices in different buildings is not allowed without a galvanic isolation of the two devices.
- No special cables are needed. They do not have to be shielded or twisted. Of course an existing TP wiring can be used.
- The topology can be freely chosen. It is possible to use bus and star topologies. Even combinations are allowed.

If a three wire bus is used, the supply voltage for all units can be transferred over the bus, too. Any of the connected units can be used to power the bus. The power supply has to deliver 8-16V= with about 50mA for each connected module.

**Please also read the general instructions for the IRTrans Bus in Chapter 2.1.**

## 3. USB Driver installation

### 3.1. Windows 2000 / XP

On a windows system you only need to unpack the driver archive into a folder or just put the software CD into your CD-ROM drive. After connecting the transceiver you only need to point the operating system to the driver directory. Using XP it's even enough to just insert the CD into the drive. Windows will find the driver there. Using XP the message informing you, that the driver is not signed can be safely ignored.

### 3.2. Linux

Starting with LINUX Kernel version 2.6.5 / 2.4.26 the USB drivers for the IRTrans are included in the standard kernel.

*For older versions the files `ftdi_sio.c` & `ftdi_sio.h` has to be patched using the supplied `.diff` files. The original drivers can be found in the folder `/usr/src/linux/drivers/usb/serial`. They can be patched with*

```
# patch p0 < patchfile.diff
```

*Afterwards the `ftdi_sio` Kernelmodule has to be compiled & installed. Of course the drivers have to be activated first (see below for details):*

```
# cd /usr/src/linux
# make modules
# make modules_install
```

In the kernel configuration the following USB drivers have to be activated:

- Usbserio
- FTDI\_serio
- USB Subsystem

These drivers should be compiled as modules. If the USB Device daemon is running the system automatically detects the IRTrans and loads the correct driver. There are messages in the syslog documenting that procedure. Now a device will be assigned to the IRTrans (mostly `/dev/ttyUSB0`). If other serial USB devices are connected, that device number may shift. Once more there will be a message in the syslog showing which device was allocated.

## 4. Installing and using the software

### 4.1. IRTrans Server Software

The IRTrans Software uses a client / server structure. Every command is processed by the server (`irserver`). Therefore this server has to run all the time. Right now there are no clients which connect directly to the IRTrans hardware. This makes changes in the firmware and protocol a lot easier as only one application has to be changed. Furthermore every client can access the server and hardware using any TCP/IP network. Even an access using the internet or a VPN is possible. Client and server don't need to run on the same computer. The installation of the server is very simple:

**On Windows** `setup.exe` on the CD will install the complete IRTrans Software. Afterwards there will be an entry in the Start Menu to start the server using the tray utility `irtranstray`. Of course it is also possible to start the server directly – then the server will run in an ASCII window.

The `irtranstray` Program (available only for windows) has got the following additional functions:

- Diagnostics dialog showing the messages of the server
- List of received IR Codes (for debugging)
- Learning of IR Commands (without Client)
- Reload of the IR Database after manual changes
- Sending of IR Commands

**On LINUX** the installation script on the CD (`install.sh`) will copy the LINUX Software into the folder `/usr/local/irtrans`. On LINUX the server will be started in shell window. First the correct device has to be known: USB devices are found automatically using the Pseudo Device "usb". For serial devices the port has to be known. The first serial port is `/dev/ttyS0`. The command `„irserver /dev/tty...“` will now start the server. There will be some output from the server showing the startup procedure.

The following command line parameters are supported by irserver (and irtranstray):

-daemon	Start irserver in the background (only LINUX). Using Windows irserver can be started via the autostart folder. See Chapter 4.3
-debug_code	All received codes are logged
-hexdump	The server prints the complete communication between Server and Hardware. This can be used to debug codes or to record the communication to use the IRTrans with other systems.
-hexfile <file>	The server prints the complete communication between server and device into <file>. This can be used to record the communication to use the IRTrans with other systems.
-baudrate <baud>	Use this baudrate to communicate with an RS232 module
-http_port <port>	Activate the integrated Webserver at port <port>
-learned_only	Only Codes that have been learned are transmitted to the Network clients. NOTE: This option will become default in later versions of the irserver.
-logfile <file>	Location of the logfile
-loglevel	Sets the loglevel for debugging 0 No messages 1 Only fatal errors 2 Only errors 3 Show informational messages 4 Show Debug information
-netmask <mask>	Access control for networked clients. When this option is used at least once, only clients within the specified netmask are allowed to access the Server. The format is ip/bits. That means 192.168.12.0/24 defines a standard class C network. This option can be used more than once to define different networks. A single host can be defined with IP/32. The defined netmasks are used for all IRTrans and LIRC clients.
-no_lirc	Disable the integrated LIRC Client Interface
-no_reconnect	The server does not try to reconnect to the IRTrans device when the device was removed (USB devices only)
-set_id <ID>	Is used to set the Bus ID for new IRTrans Modules. Normally the standard setting "0" is used here. Only in special cases a different address is needed. This setting is stored in the IRTrans Module permanently.
-stat_timeout <to>	Sets the timeout (in s) after that the Cache for the device status is reread from the devices.
-version	Shows the version and the minimum needed version of the IRTrans Firmware
-xap	Enables the built in xAP Interface. It sends and receives standard xAP IR Messages.

## 4.2. Using and testing the software



To make the first Tests, the Server can be started in the Debug Mode. In the Debug Mode it displays detailed Information about all Parameters and the received IR Codes. To achieve that the Server has to be started via `irserver -loglevel 4 -debug_code <device>`. During startup the Server displays Information about the IR Database. Now the receiving of IR Codes can be tested by pressing buttons of different Remote Controls. The Server will show the decoded IR Data. If the command is found in the IR Database the Server will show the Name of the Remote & Command.

**Furthermore the Debug Mode is very helpful when there is a problem learning certain IR Commands.**

**If the server on Windows is started in the tray bar using the irtranstray, this debug information can be accessed via the context menu of the irtranstray utility.**

## 4.3. Starting the Server automatically

After everything has been installed, most users want the server to be started automatically in the Background.

**Using LINUX** that is done via entries in so called rc Files. The Commandline Parameter `-daemon` (Option only available on LINUX) is used to start the Server in the Background. The `-loglevel` Option is used to indicate, where the Logfiles are to be stored by the Server.

**On Windows Systems** simply copy the correct irtranstray Startmenu Item (in the Menu folder IRTrans) to the Autostart folder. If needed, the Options used to start the server can be modified.

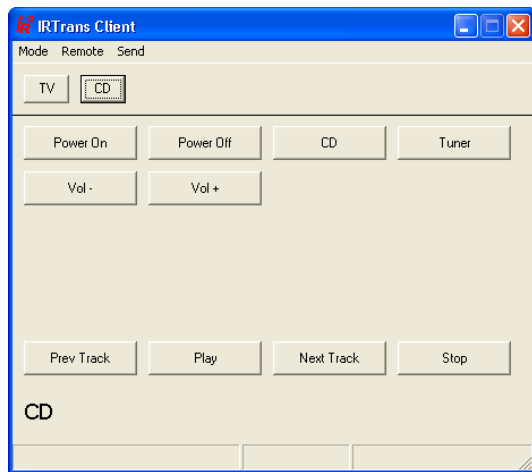


#### 4.5. IRTrans GUI Client

The VB client allows learning of IR Commands. Furthermore IR Commands can be sent and you can set up a simple Remote Control. Even commands that are not included in the simple Remote Control can be sent. In addition, all the parameters of all IRTrans units connected to the serial bus can be configured. The GUI client uses the IRTrans Server Socket (21000) to connect to the server.

The GUI Client is a Windows program, nevertheless via a TCP/IP Network it can also control a system connected to a LINUX Server. When starting the Client the Hostname or IP Address of the IRTrans Server can be entered as a command line Parameter. If it is not entered this setting defaults to localhost.

**Currently the GUI Client supports German and English. The language is selected based on the language of the Operating System.**



Main window of the IRTrans GUI Client

After starting the program the GUI Client shows a sample Remote Control. It is defined in the file *remote.irm* in the working folder of the GUI Client. It can easily be configured by editing this file. Of course that sample Remote Control does not work until the corresponding commands have been learned.

#### The format of the file remote.irm:

```
[MAIN]
[FRMPiX]400,300
[SEP]0,45 [END]500,45

[MOD]10,10 [SI ZE]40,25[PANEL]TV
[MOD]60,10 [SI ZE]40,25[PANEL]CD

[END]

[CD]
[FRMPiX]460,280
[LBL]10,250 [SI ZE]300,30[TEXT]CD[Font]14

[POS]10,10 [SI ZE]100,30[TEXT]Power On [REMOTE]Yamaha [COMMAND]PowerOn
[POS]120,10 [SI ZE]100,30[TEXT]Power Off [REMOTE]Yamaha [COMMAND]PowerOff
[POS]10,50 [SI ZE]100,30[TEXT]Vol - [REMOTE]Yamaha [COMMAND]Vol -
[POS]120,50 [SI ZE]100,30[TEXT]Vol + [REMOTE]Yamaha [COMMAND]Vol +
[POS]230,10 [SI ZE]100,30[TEXT]CD [REMOTE]Yamaha [COMMAND]CD
[POS]340,10 [SI ZE]100,30[TEXT]Tuner [REMOTE]Yamaha [COMMAND]Tuner

[POS]10,200 [SI ZE]100,30[TEXT]Prev Track [REMOTE]Sony [COMMAND]Prev
[POS]120,200 [SI ZE]100,30[TEXT]Play [REMOTE]Sony [COMMAND]Play
[POS]230,200 [SI ZE]100,30[TEXT]Next Track [REMOTE]Sony [COMMAND]Next
[POS]340,200 [SI ZE]100,30[TEXT]Stop [REMOTE]Sony [COMMAND]Stop
[END]
```

This excerpt shows a sample configuration

The „[Main]“ section defines the part of the remote that is always visible. This section should be used to place commands to select different devices or commands that should be available with every device (like Volume +/-).

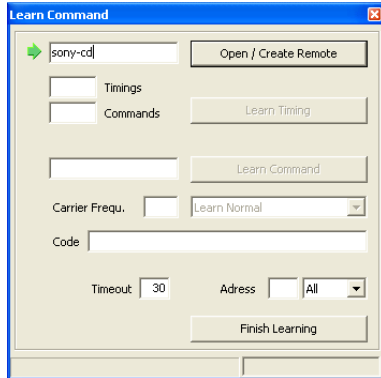
„[MOD]“ lines define commands used to switch between different panels of the remote. In addition these remotes appear in the „Remotes“ menu.

„[FRMPiX]“ is used to define the size of different panels of the remote (in Pixels). That allows to use different sizes for different panels of the remote.

„[LBL]“ allows to insert texts in different sizes.

„[POS]“ finally defines the Remote Buttons itself. They can have different sizes and, of course, a text. „[REMOTE]“ and „[COMMAND]“ are used to assign the remote commands. Commands that are not defined in the current IR Database appear in Gray (disabled).

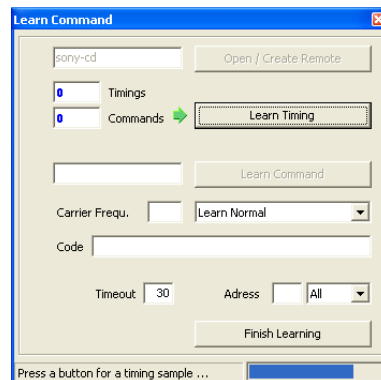
Using the Learn Command in the Mode Menu new IR Commands can be learned. To learn commands a remote control is entered at first. This is the name of the ASCII File used by the database to store the commands of this remote. If the remote control already exists the new commands will be appended.



*First the Name for a new Remote control is chosen and entered. Of course it is also possible to enter the name of an existing Remote. Then the newly learned commands are added to the existing ones.*

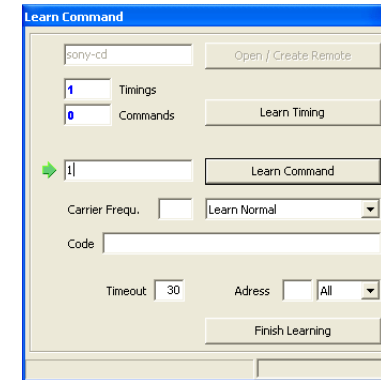
After the remote has been defined, a timing has to be learned. This timing will be the basis for the commands. To learn the timing the remote has to be kept in a straight line with the receiver. The distance does not matter to much but the IR ray should reach the receiver in a direct line and not reflected by walls.

The advantage of the separate learning of the timing is, that the commands can be learned very easily afterwards because the exact timing does not matter. In general it is best to press the key of the remote only once and for a short period of time. If you hold the key depressed for a longer time the recognition of the codes may be compromised by special repeat codes the remote control uses.

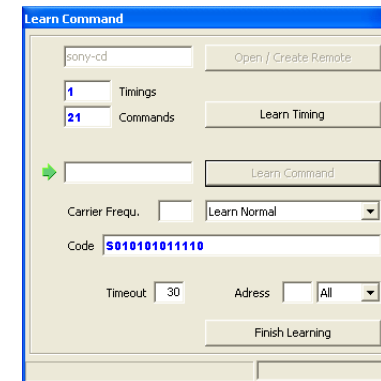


*Now a Timing can be learned. During that procedure the IRTrans measures the Pulse lengths of the IR Codes and analyzes the Protocol. This is done by shortly pressing one of the Remote controls buttons. When learning a timing the Remote control should face the IRTrans directly, not reflected by wall as that might affect the timings learned.*

After the timing is learned, the IR commands can be learned. Every command gets an alphanumeric name that is used to identify the command later on. The normal learn mode is based on the timing learned before. If you relearn a command already in the database, the old command will be replaced by the new one.



*Next the IR Commands are learned. To do that a command name is entered and the learning is started by pressing Learn Command. Now the corresponding Remote Button is pressed. To learn a command the Button of the Remote Control should be pressed very short.*



*This procedure is repeated for every Remote Button. The VB Client always counts the Commands and Timings and shows the Code of the learned Commands.*

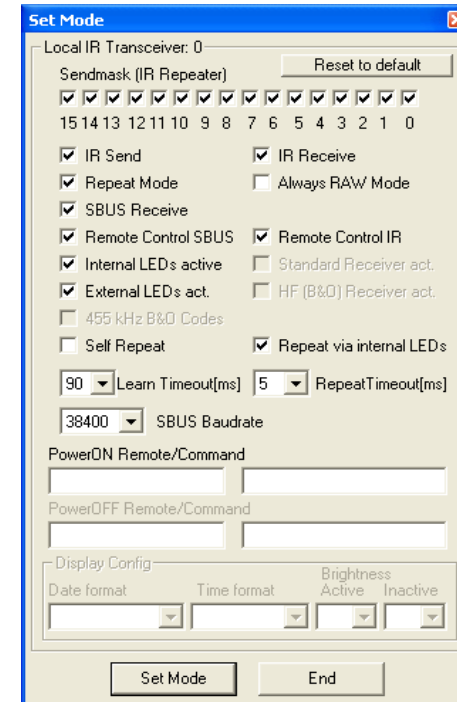
For special purposes there are additional Learn modes:

- **Repeat Code.** This mode learns Repeat Codes. These codes are sent if a key is held depressed. Not all remote systems use repeat codes. You only need to learn them if keeping a button depressed does not work. You only need to learn these codes for keys like “Vol-Up” or other keys you like to hold down. To learn these codes you need to keep the corresponding button of the remote control pressed a little bit longer (like 1s).

- **Learn command with timing.** Some remote controls use different timings for different commands. If some commands can not be learned with the recorded timing, this function allows learning them. The timing for every command is stored individually.
- **Toggle Command.** Some remotes use Toggle bit and command variation. They send different codes every time you press a button. This allows easier detection of keys that are held down. If you use this option you have to learn the same command more than once (normally 2-5 times is enough). Every code is stored individually. You do not need this option for the popular Philips RC5 / RC6 codes. They are recognized by the IRTrans firmware and the firmware takes care of the Toggle Bits. RC5 / RC6 are the only popular systems using Toggle bits.
- **RAW Mode.** Certain remotes use codes, which are very special and can not be decoded by IRTrans on the fly. These codes are rare but some exist. For instance some light control systems use very special codes as the receivers are very simple. Using RAW mode IRTrans can learn almost every Code and send it again. If you want to use RAW Codes to control the PC, the IRTrans has to be set into RAW mode in the status menu. You do not need to do that to learn and send RAW codes. If this mode is activated, only RAW codes can be used to control the PC. However you can still learn and send decoded commands. If the RAW mode is activated, RAW codes are also used on the serial bus. Because there is more data transferred and the recognition of commands is not as safe as in decoded mode the RAW mode of the IRTrans should only be enabled if you need to control the PC using a special remote. You can learn and send RAW codes even without activating the RAW mode.
- **RAW Repeat.** RAW Codes can also be learned as repeat codes. Here you also have to press the key a bit longer.

All learning modes can be used via the serial bus, too. It does not matter, which IRTrans unit is used.

The Status page can be reached through the Menu Option Mode-Device Status. All selections in this Page will be stored permanently in the EEPROM of the IRTrans. If more than one IRTrans Module is connected the correct one has to be selected in the Device list first.



*IRTrans Set Mode Dialog*

**Depending on the Hardware and Firmware Versions of the IRTrans Modules not all Options / Input Fields are active or shown.**

- The **Sendmask** defines which source addresses are accepted as source for IR commands to be repeated.
- **IR Send.** This flag activates the IR transmitter.
- **IR Receive.** This flag activates the IR Receiver.
- **SBUS Receive.** If this flag is set, IRTrans reacts on commands coming through the serial bus.
- **Remote Control IR.** This flag activates the IR Remote control mode for a connected PC.
- **Remote Control SBUS.** This flag activates the Remote control mode for a connected PC through the serial bus.



- **Always RAW Mode.** This mode allows controlling the PC using RAW Codes. It is only needed, if the PC has to be controlled using a remote control that can only be learned in RAW mode. Not all controllers on the serial bus have to use this. Typically only the controller connected to the PC has to use this mode.  
**If you use this special mode, every command that will be used to control the PC has to be learned as a RAW code. Commands that will only be sent can still be learned as decoded commands.**
- **Internal LEDs active.** IR Codes will be sent using the internal IR LEDs integrated in the IRTrans Modules. Using this Option the internal LEDs can be disabled.
- **External LEDs active.** Codes will be sent via the external IR LEDs (if connected).
- **Standard Receiver act.** The 38kHz Receiver (for standard IR Codes) is activated. (This option is only active for the IRTrans Translator).
- **455 kHz B&O Codes.** This option activates receiving of B&O™ IR Codes. Other 455kHz Codes can be received if this option is deactivated. (This option is only active for IRTrans HF modules).
- **Self Repeat.** Received Commands will be repeated by the IRTrans Module. This Repeat is also working if the PC is off. It can be used to relay IR commands into enclosures (using external IR LEDs). To avoid echos the option "Repeat via internal LEDs" should be disabled (see below).
- **Repeat via internal LEDs.** Self Repeat Codes are repeated using the internal IR LEDs. This option allows to use the IRTrans as an IR Repeater extending the range of remote controls. If the devices are also in direct range that might lead to double reception of IR commands.
- **PowerON Remote/Command.** If you want to switch on the PC using the IRTrans PowerOn module, you have to specify the command to use here. (Remote + command to use). If you do not use the Power On module you can leave these fields blank.  
*On USB modules without the PowerOn Option an USB Resume Event will be triggered if this IR Code is received. By that event the PC can be woken up from Standby. To use that function the IRTrans has to be connected to an external power supply. On most Mainboards wakeup from Standby only works from S1 Standby. Using the IRTrans PowerOn Option is a lot more versatile.*  
**If you use the IRTrans in RAW mode this has to be a RAW command, too.**
- **PowerOff Remote/Command.** Using the PowerOn Option with USB modules discrete codes can be assigned to PowerOn and PowerOff. Of course it is also possible to leave out the PowerOff code entirely. The IR Code for PowerOn can then be used in a different way if the PC is running.

- **Learn Timeout.** This value defines how long the IRTrans Module waits for the end of an IR code. The standard value of 90ms is suitable for almost all IR codes.  
**Using shorter values will speed up the reaction of the IRTrans when receiving IR Codes.** Different timeouts may lead to different reception of the same IR Codes. Therefore codes used to control the PC should be learned with the same timeout that will be used to receive the codes. Using the very short timeouts not all IR codes can be received. The 5ms value for example works only with a few IR codes including RC5 / RC6 and Sony™.  
**Aside from the speed of the system lower timeouts also decrease the chance to receive IR noise.**  
Codes that are to be sent again should be learned with the standard timeout of 90ms. To do this there is no need to change this value. The timeout can also be selected when learning IR codes.
- **Repeat Timeout.** The Repeat Timeout controls when the IR receiver tries to find repeated IR codes. When using critical IR codes the alternative value of 25ms might improve the reception of the codes. This option is only rarely used.
- **SBUS Baudrate.** This value sets the baudrate of the IRTrans Serial Bus. The default value is 38400 Baud. When using very long cables or in noisy environments lower values (down to 4800 Baud) can be used. The setting "Classic" allows to use the system together with older IRTrans modules using the first generation of the serial bus.
- **Display Config.** The Display Config values control the configuration of an LCD/VFD display (if used). The Date and Time format and the intensity of the display can be set here.



**If your IRTrans Module does not work correctly (e.g. no IR Receive) you should first check if the options of the Status Page are set correctly.**

#### 4.6. The ASCII / Batch Client

works on Windows and LINUX. When the Server is running on the same System the Client can be started with the Command line `./irclient localhost`. The Client allows Learning and Sending of Commands and the setting of the Status flags of the IRTrans.

Normally it works Menu-Driven but it can also be used to send commands with Programs and scripts. To do that it is started with `irclient <hostname> <Remote> <Command>`. If needed an Adressmask to control multi-zone systems can be used, too. When used it will be the 4<sup>th</sup> parameter.

**i** When using the Menu Driven Mode it can also be used to control the IRTrans Firmware settings.

#### 4.7. Using LIRC Clients

Every LIRC client can be used with IRTrans. The IRTrans server implements a standard LIRC application socket (only LINUX) and a standard LIRC TCP/IP socket to be compatible with LIRC. Every LIRC client can be used with IRTrans. Using LIRC clients you can remote-control your PC and send commands. Only the learning of commands has to be done through the GUI or ASCII client as the LIRC protocol does not support learning of commands.

**i** The `irserver` completely replaces `lircd`. That means that the LIRC server (`lircd`) should not run on the system.

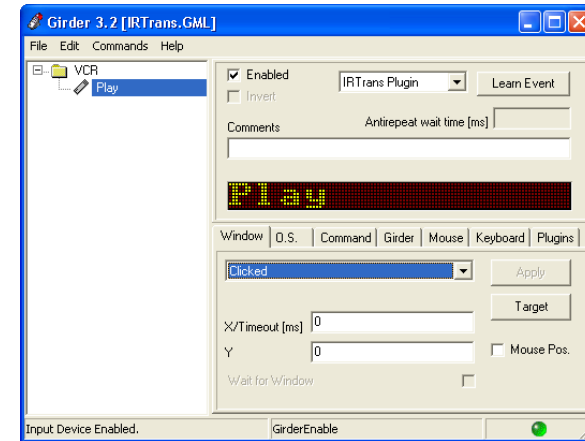
There can be several LIRC and IRTrans clients connected to the server at the same time. The TCP/IP socket allows connections from different clients over the network.

A very versatile client is `irxec`, delivered with LIRC. It allows executing any command triggered by an IR command received by IRTrans. It is also possible to send commands. That can be used to store complex commands: Switch on your Receiver and TV if you start the DVD player on the PC ...

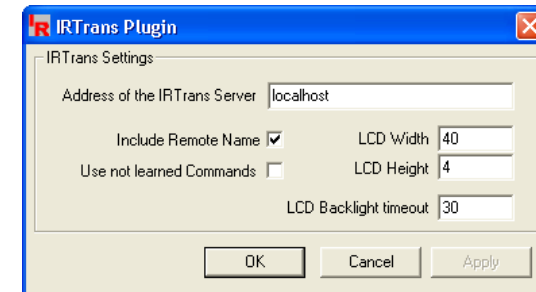
The IRTrans Server is fully compatible with the LINUX VDR system. It is used in the same way as LIRC. Of course you have to learn your commands the right way, because the name of the commands is fixed inside VDR.

#### 4.8. Girder Plug-in

Girder is a very powerful Program to control Windows PCs. Details about Girder can be found at [www.girder.nl](http://www.girder.nl).



The Girder Plugin connects the IRTrans Server and the Girder Software.



In the Settings Dialog for the IRTrans Plug-in the Hostname of the Server is entered. When Client & Server are running on the same machine `localhost` can be used here. After starting Girder the Devices have to be activated. During that procedure the Girder Plug-in is connected to the `irserver`.

Now the commands can be learned with Girder. When the IRTrans Plug-in is selected in the Learn Combo box, the commands will be learned through the IRTrans Dialog and stored in the IRTrans IR Database.

*This procedure also starts by selecting the name for the Remote Control. The Plug-in remembers the current settings. They do not have to be reentered for every command.*

*Now a Timing for that Remote Control is learned and stored. Of course this step is also needed only once. If there is already a Timing stored for that Remote Control this step is skipped automatically.*

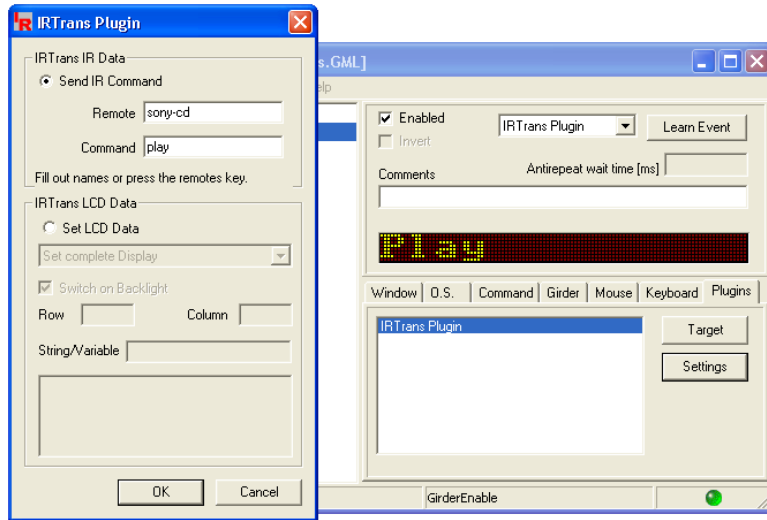
*Now a name for the Command / Event can be entered. This name is used to store the command in the IR Database. Then the Event is handed over to Girder and Stored as an Action.*

*While Learning via the Girder Plug-in the Status and Number of Timings and Commands are displayed continuously by the Plug-in.*

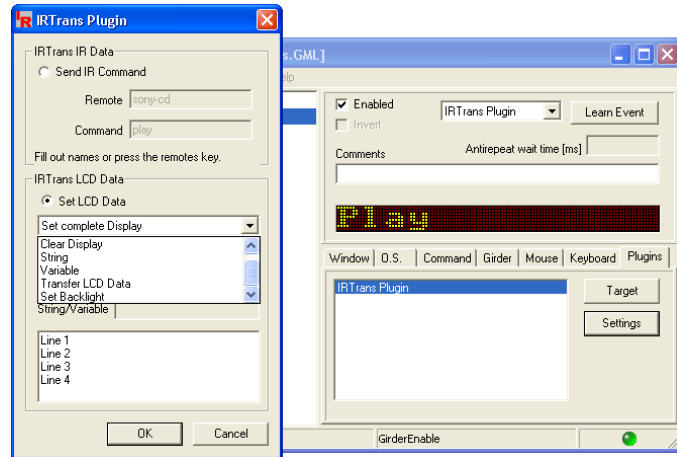


**When the Learning Procedure is canceled via „Cancel Learn“ the irserver will be blocked until the selected Timeout expired. The Standard Setting for that Timeout is 30s.**

Using the Command Dialog that can be found in the Plug-in's Tab IR Commands can be sent by Girder. To do that, the Remote and Command Names have to be entered here:



When the command has already been learned the corresponding Key of the Remote Control can be pressed instead of entering the Names.



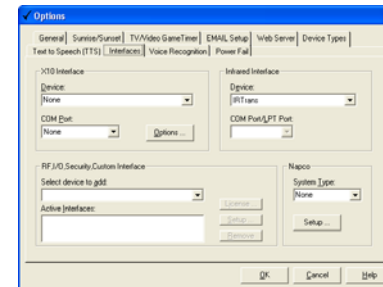
If the IRTrans LCD Module is used, it can be controlled with this Dialog, too.

#### 4.9. IRTrans and Homeseer 1.x

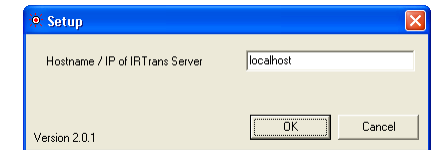
Every IRTrans Module is shipped with a Plug-in for the Home Automation Software Homeseer. That Plug-in allows to Control Homeseer via IR Commands. It also allows to Send Commands using Homeseer.

**For Homeseer 2.x there is a similar plugin available for download from the Homeseer Homepage. Of course it is also freeware. It includes all the needed documentation.**

- Installation**  
 The IRTrans Plug-in (hspi\_irtrans.ocx) located on the IRTrans Software CD or in the plugins folder of the IRTrans installation folder has to be copied into the Homeseer Installation Directory. If Homeseer is installed in the standard path this is done automatically by the IRTrans setup program.
- Setup**  
 As for all IRTrans Clients the irserver has to be running. In the Dialog View-Options-Interfaces IRTrans has to be selected in the Combo box "Device" as Infrared Interface. Now restart Homeseer. In the Event log a message should appear, saying that Homeseer has connected to the irserver. In the Dialog View-I/R Config the Button "Options" allows to set the IP Address of the irservers. Normally (same Computer) this is "localhost".



Homeseer Option dialog



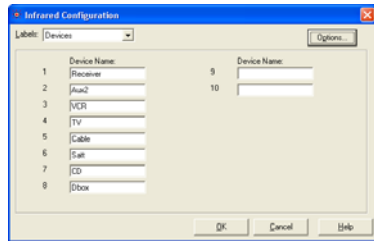
Setup of the IRTrans Parameters



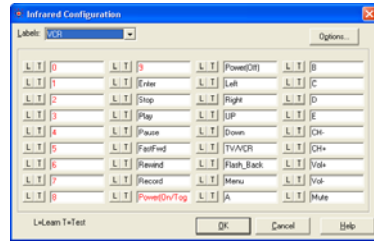
*In one Homeseer Version (1.6.0) there is a problem using IR devices that do not have a direct Interface / Hardware Connection to Homeseer (IRTrans connects to Homeseer through the irserver). If it is not possible to connect to IRTrans it should be checked if there is an entry "ircomport=x" in the Section [Settings] of the file <Homeseer>\config\settings.ini. This entry has to be changed to "ircomport=1". If this entry does not exist at all, please add this line to the Section [Settings].*

**Learning**

The IR Commands are controlled with the Dialog "View-I/R Config". In the Combobox "Labels" "Devices" should be selected first. Here the names for the



Devices Dialog in Homeseer



IR Dialog in Homeseer

Devices are set. To keep the whole system simple, that names should not be changed once commands have been learned. That means one should start by selecting the names of the Devices. Now the Devices can be selected in the "Labels" Combo box (e.g. TV). The Dialog now shows the Commands together with their names. These names might be changed, too.

Using the "L" Button in front of every command the commands can be learned now. Commands that already have a corresponding IR Command are marked in red.

After clicking "L" a learn dialog with Remote and Command appears. By clicking "Start Learn" the Learning process is activated. Now within 30s the corresponding Button of the Remote Control has to be pressed. There is no confirmation of the Learn Process but the learned Buttons will be marked in Red in the IR Dialog. This is how Homeseer works when Learning IR Commands.

The Commands are stored in the IRTrans Database as follows:

- The Remote is called `_hs_<Remotename>`; for example `_hs_TV`
- The command has the same name as the command in Homeseer

With the Button "T" (Test) the learned commands can be tested.

**Using Homeseer with IRTrans**

In the section View-Events new Events can be created. If "By IR Received" is selected as command type, a Combo box with all learned IR Commands appears. In this Combo box now a Command can be selected that triggers this Event.

To send IR Commands in "Infrared Control" IR Commands can be selected to be sent. It is possible to select more then one command here.

## Declaration of Conformity

### According to 47CFR, Parts 2 and 15 for Peripherals Power Supplies used with Class B Personal Computers:

We: IRTrans GmbH

Located at: Einsteinstraße 14, 85716 Unterschleißheim, Germany

Declare under sole responsibility that the product identified herein, complies with 47CFR Parts 2 and 15 of the FCC rules as a Class B digital device. Each product marketed, is identical to the representative unit tested and found to be compliant with the standards. Records maintained continue to reflect the equipment being produced can be expected to be within the variation accepted, due to quantity production and testing on a statistical basis as required by 47CFR §2.909. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation. The above named party is responsible for ensuring that the equipment complies with the standards of 47CFR §§15.101 to 15.109.

Trade Name: IRTrans IR Control System

Types or Model Numbers:  
 IRTrans USB  
 IRTrans RS232  
 IRTrans Translator  
 IRTrans Busmodule  
 IRTrans Ethernet / IRDB  
 IRTrans Ethernet PoE / IRDB  
 IRTrans Mediacontroller  
 IRTrans LAN Controller  
 IRTrans LAN Controller XL

Signature of Party Responsible:

Printed name of Party Responsible: Marcus Müller

Executed on (Date), at (Place): 03-09-05, Dortmund