

IR-Master

An Infrared Control Device For Amiga Computers
Version 2.6

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1 What is IR-Master

The IR-Master project consists of two software components and a control hardware, which is connected to the joystick port of your Amiga.

At first you start editing your *virtual* remote control with the IR-Editor, See Chapter 3 [IR-Editor], page 3. This one is saved to disk then. And you activate the IR-Runner, See Chapter 4 [IR-Runner], page 11.

Your edited remote control opens as a window on the workbench. With this window you can interactively control your device[s], you can use the IR-Runner's **ARexx-port** for programming your devices, See Section 4.3 [ARexx Port], page 11. Finally you can send infra red codes from within other applications or edit scripts which will automatically control e.g. your video recorder.

Since version 2.5 of the IR-Master two new features were introduced: You can directly send commands to **LControl** and **Rapid**. This allows you to control video cameras supported with an **LANC/Control-Interface** and video recorders supported with an **GSE-Rapid-interface**. For more information, please consult Section C.4 [LControl & Rapid], page 19.

2 Installation

Requirements:

`req.library`

may not be included in this package, but can be easily found - it's freely distributable and written by Colin Fox (Pyramid Designs) and Bruce Dawson (Cygnus Software), See Section C.1 [`req.library`], page 17.

Kick/WB 1.x

for the poor and old (but working!) version look at 'Readme13'

Kick/WB 2.x/3.x

for the fine and new (also working :-)version.

Installation:

1. Copy the '`req.library`' to your '`LIBS:`' drawer of your boot disk.

A patch (like `RTPatch` from Nico Francois) is recommended to patch the `req.library` calls to the much better looking `reqtools.library` (also from Nico Francois ->thanks). See Appendix C [Other Software], page 17.

2. Create a directory for the IR-Editor and the IR-Runner and copy them to this directory. However, it is not needed for the two programs to be in a certain drawer. No assigns are needed.

Note:

Your IR-Runner should be placed in a directory that is in the workbench search path (which is declared in your '`startup-sequence`' right before '`loadwb`'), e.g. '`C:`' or '`sys:utilities`'. So the projects will surely find the default tool.

3. If you use WB 2.1 or higher:

Copy the languages-catalog you want to use from '`catalogs/<language>`' to '`LOCALE:catalogs/<language>`'. At the moment there is only german and english (built-in).

3 IR-Editor

With the IR-Editor you can create a remote control on your Amiga screen.

3.1 The Menus

3.1.1 Project

Load...	Pops up a requester to load a saved project.
Save	Saves the current set of gadgets.
Save as...	Pops up a requester to save the current project.
<hr/>	
Info	Gives some information about the used memory etc.
About	Credits...
<hr/>	
Save Prefs	Saves the current settings, like position of the toolbox, size of project window...
Iconify	Closes screen, frees memory and puts an app icon onto the workbench
<hr/>	
Quit	Quits the editor.

3.1.2 Edit

Cut	Cuts the selected Gadgets to a internal buffer. That means they will be deleted in the projectwindow and they can be pasted back anywehere.
Copy	Copies the selected Gadgets to a internal buffer. With "paste" you can insert this gadgets wherever you want. <i>Note: If the buffer is not empty and you cut/copy gadgets than the gadgets already in the buffer will be overwritten!</i>
Paste	Paste back gadgets in the internal buffer.

Info Gives an information of the gadgets which are stored in the buffer.
Flush Clears the internal buffer.

3.1.3 Arrange

Note: The reference gadget is always the **first** selected. That means, if I first select a big gad and than two small gads and I select **clone size** then all gadgets will be big...

Align Gadgets

aligns the selected gadgets

Left by the left edge or

Top by the top edge

Spread Gadgets

Horizontally

pops up a requester which asks how many pixels

Vertically should be placed between each of the selected gadgets in the selected direction...

Clone Size

Clones the sizes of the selected gadgets.

Coordinates

Opens/Closes the coordinates window. Only if one (!) gadget is selected the coordinates will be shown an can be directly edited.

3.1.4 Environment

Palette Pops up the standard palette requester.

Font Brings a font requester to the front. The selected font will only be used for the editor's screen. To change the font of the gadgets you have to use the font gadget in the toolbox.

Screenmode

Pops up a screenmode requester.

On Public Screen

Tries to close the IRMaster screen and reopen on the default public screen (mostly the wb).

Make Screen Public

Tries to close the current IRMaster GUI and reopen it as a public screen. The screen's name is "IRMaster".

Show IR-Code

Shows the IR-Code of the current gadget (if learned). It is designed like an oscillator, so you can easily decide if the last learn action was successful!

Length specifies the amount of memory which is used to send this command. The percentage shows how much of the memory reserved for this command is used.

Show Configuration

Shows the IR-configuration of the current gadget. For more information about the ir-configuration, See Section 3.4 [Learning IR-Commands], page 8.

3.2 The Toolbox

3.2.1 NewGadget

shortcut F1

This function brings you to the "new gadget mode". You can see a border attached to your pointer. With a mouseclick you can place the new gadget. A new gadget is always named 'New' and its size is 50 x 20 pixels.

3.2.2 Move Gadget(s)

shortcut F2

If you have some gadgets selected and you press the move button or the move shortcut the selected gadgets will be represented by borders which stick to your mouse pointer. With a click you can put the gadgets to their new position.

3.2.3 Attache Grafic To Gadget

shortcut F3

For each of the selected gadget a file requester pops to the front, asking you for an icon/brush. This image will be used as gadget imaginary.

3.2.4 Attache Text to Gadget

shortcut F4

Pops a text requester to the front (for each gadget). You can type any text. The length is not checked! It doesn't have any serious consequences if the text is too wide for the gadget - it simply looks awful.

3.2.5 Learn IR data

shortcut F5

With this gadget you can switch to the learn mode. The pointer will remind you being in this mode. If you click a gadget, the Amiga is frozen and waits for input to the IR-Sensor, see also Section 3.4 [Learning IR-Commands], page 8.

3.2.6 Kill Gadget(s)

shortcut F6

Removes all selected gadgets **without warning!** They are unrecoverably lost.

3.2.7 Size Gadge

shortcut F7

Switches to the size mode. A border is drawn - the lower right corner sticks to the pointer. After a mouseclick the gadget will be resized and the text/graphic will be centered in the gadget.

3.2.8 Load Background Grafik

shortcut F8

Pops up a requester. Here you can select any '.ilbm'-picture to be used as background grafik for your remote control. This grafik's name and path will be set in the tooltypes of the project when it is saved.

Therefore the grafik must exist when the project is run. The palette of the picture won't be used! I'm sure you like your wb-colors more!

To clear the background again, click this gadget (or press F8) and select cancel in the filerequester.

3.2.9 Change Font

shortcut F9

Pops up a font requester. The selected font will be used for all the selected gadgets. Make sure that this font is also available to the IR_Runner.

3.3 Test IR Data

shortcut F10

Switches to the test mode. The pointer reminds you being in the test mode. *Note:* To test ir commands, they must be learned before. To test LControl or Rapid commands, LControl/Rapid must be running. See Section C.4 [LControl & Rapid], page 19.

3.4 Learning IR-Commands

Learn ir-commands:

- toggle to learn mode by pressing **F5** or the equivalent gadget
- click on the gadget whose function you want to *learn*
 ↳ pointer is frozen...
- point your remote control to the ir-sensor
 (distance ca. 1-15 cm)
- hold the button down 'till the pointer can be moved again

Test ir-commands

- switch to test mode by pressing **F10** or the equivalent gadget
- hold transmitter in direction to the ir-receiver of the implement with a distance of 1-30 cm.
- click on the gadget you want to test
 ↳ command will be sent

Important notes

1. It is possible that the implement (like CD, Videorecorder, TV set,...) won't react on the ir-master the first time. In this case you have to change the parameters in the `config-window`, See Section 3.1.4 [The Menus], page 4.

To get to the configrequester you must:

- click on the gadget the config should be changed
- open the config window

All the changes (but not wobblecode) can be tested without learning it again.

Config menu:

- Configuration

- | | |
|-----------------|---|
| <i>37 kHz</i> | Carrier frequency of the ir signal is 37 kHz, matches for ca. 70% of all implements |
| <i>45 kHz</i> | Carrier frequency is 45 kHz, matches for ca. 10% |
| <i>66 kHz</i> | Carrier frequency is 66 kHz, matches for some implements |
| <i>Unpulsed</i> | no carrier frequency, ca. 8% |
| <i>LControl</i> | Directly sends commands to LControl to control video cameras via LANC, See Section C.4 [LControl & Rapid], page 19. |

Rapid Directly sends commands to Rapid to control video recorders via GSE-Rapid-Code, See Section C.4 [LControl & Rapid], page 19.

Command Executes a DOS-Command. The text is interpreted as a line in the shell.

Relais-Card

The IR-Master is also able to control a relai-card (special support for the relai-card which can be accessed by Konrad Electronic, Hirschau, Germany, art-nr: 192252-55 + 174025-55).

This is a 4 channel ir receiver. With this receiver you can control any devices (like lamps, motors, etc.). Die ir-codes are already learded in by the IR-Master, so you do not have to relearn them.

There are 2 number fields: The "RL:"- and "CH:"-field. The first is the bitcoded address of the relai(s) you want to activate and the second field is for the bitcoded address for the channel(s) you want to access. The "address" of the relai is 4 bit wide and the "address" of the channel is 6 bit wide. Each relai is represented by one bit (also the channels).

Example

- If you want to activate the relais 2 and 3 on channel 0 you have to type the value of binary %1100 (which is 12) into the relai field and 0 into the channel field.
 - If you want to activate relai 1 on the channels 2,3 and 4, you have to type 1 into the relai field and the value of %11100 (which is 28) into the channel field.
- Send command slider This indicates how often the ir command should be sent. Normally 2-5 times is enough.
 - *Wobbelcode* This is a special form of ir code. An implement which uses *Wobbelcode* (e.g. Grundig tools) sends *code A* the first time and the next time it sends (for the same function) *code B*. In this case you have to learn twice. To learn this type of code you must click on *Wobbelcode* in the config window and then click on learn and follow the messages in the status bar. You can recognize *Wobbelcode*-implements when the implement reacts the first time at once but the second time it does nothing or it reacts very late.
 2. The learning of ir commands depends on the distance between remote control and ir sensor. After a faulty try you should attempt it again with different distances between 1 and 20 cm.
 3. If the batteries of the remote control are weak you should use new batteries.
 4. In general **all** impements can be controlled exept Telefunken. For this type of implements we offer a special hardware - simply contact us and describe your implement.
 5. Finally: The parameters in the **config window** are the most common but if it does not work - use trial and error. You can't damage your hardware by changing the parameters... believe me ;-)

If you own a Akai, Blaupunkt, Fisher, Technics, Philips, Grundig, Panasonic, Sony... you can learn the command set by nearly 100%. (tested very (!) often...)

YOU CAN ALSO USE UP TO 5 (WITH Y-ADAPTERS) IR TRANSMITTER IN YOUR JOYSTICKPORT.

3.5 Drag & Drop

'Drag & Drop' is a Feature of AmigaDOS 2.04 and above which enables you to drag an icon and drop it onto a special window causing a special action. This is - of course - only possible when the applikation has windows opened on the workbench. To open your ir-editor on the workbench, See Section 3.1.4 [The Menus], page 4.

This feature is implemented in the following way:

You can drag an `iff-ilbm`-picture onto the project/toolbox-window. This picture will be loaded as background grafik. You can also drop a project's icon onto the window. Then, this project will be loaded at once.

The file type recognition works via the file name. If the name's suffix is '`.iff`', '`.ilbm`' or '`.brush`' the editor assumes a picture file. If the suffix is '`.irm`' the editor tries to load a project.

4 IR-Runner

If you have created a remote control and saved it you surely want to use it...

4.1 Starting The IR-Runner

There are different possibilities to start a project:

1. Shell/Cli

```
1> IRRunner <project.irm> LEFT=20 TOP=20 PUBSCREEN=TERM
```

2. Workbench

- Click on IRRunner (once) + shift-doubleclick on the project's icon
 - Make sure that the IR_Runner is in the workbench searchpath (the path set up before 'loadwb' is called in the 'startup-sequence', e.g. 'C:', 'sys:utilties')
- Doubleclick the project's icon. (default tool must be correctly set)
- If you doubleclick the ir-runner a filerequester will appear...

4.2 IR-Runner Menus

Each remote control has its own gui and its own menu:

About Gives you VERY important information about you, god and the universe.

Hide Closes the gui. The arexx port will still be available.

Fix Position

Saves the current IR-Runner window position to the project's icon (as tooltypes).

Quit Quits this remote control.

4.3 ARexx Port

The IR-Runner has it's own rexx port. The port name depends on the project's name:

Project name: CD_Player.irm \mapsto port name: CD_Player_rexx

Now the commands:

IR_Send The IR_Send command needs one parameter:

- Either the gadget number (the number shown in the editor when the gadget is selected)
- or: the gadget's text (if it is no grafic!) Therefore you must specify a \$ followed by the gadget text.

From the shell this could look like this:

```
1> rx "address 'CD_Player_rexx' IR_Send 3"
```

or in a rexx script:

```
/* cd player -> play */

address 'CD_Player_rexx'
IR_Send '$Play' /* assuming that the gadget's text is 'Play' */

exit
```

IR_Move With the IR_Move command you can move the window (if opened). This command needs two arguments, the x and y coordinate of the new window position.

Example:

```
IR_Move 100 120
```

IR_Quit Quits the application.

IR_Disappear

Closes the gui without closing the rexx port. It acts like selecting hide from the menu/clicking hide in commodities exchange. No arguments are needed.

IR_Appear

Opens the gui (if cosed) and (if cosed) reopens the rexx port. No args.

IR_Disable

Acts like IR_Disappear but the rexx port is closed, too. More memory is freed again. No args.

IR_Enable

Reopens (if closed) the rexx port and reopens (if closed) the gui. No args.

4.4 Tooltypes

The IR-Runner recognizes the following tooltypes, when given in the project icon:

CX_POPKEY="string"

Here you can specify a hotkey - with this shortcut, you can activate this IR-Runner project

Example: **CX_POPKEY=1alt f10** If you hold **left-alt** and press **f10**, this IR-Runner project will be activated.

CX_POPUP=YES|NO

If you specify **NO**, no window will be opened when starting this project. You can control this project only via **ARexx** and **Commodities-Exchange**. However you can open the project's window by **ARexx/Cx**.

LEFT=xxx Here you can specify the default left coordinate of the window. This tooltype is automatically generated when selecting **fix position** in the menu.

TOP=yyy The default top coordinate of the window.

BACKGROUND=name

Here the background grafik is specified.

PUBSCREEN=name

name is the title of a public screen on which the IR-Runner should open its gui.

5 Hardwaretuning

The normal range of the IR-Master is ca. 1-2 m. In the most cases this is enough. For those people who need more:

- exchange R2 with 150 Ohm \mapsto ca 3 m
- exchange R2 with 100-120 Ohm \mapsto ca 4 m *)
- 2 * D1 in row, R2:100 Ohm \mapsto ca 5 m
- 2 * D1 in row, R2:82 Ohm \mapsto ca 6 m *)
- exchange D1 with LDR 273 or SFH 485 (e.g. Konrad Elec.) and R2 : 75 - 100 Ohm \mapsto up to 10 m

Important

The configurations which are marked with a '*' must only be plugged in when the port is initialized, that means when IR-Editor/IR-Runner is already started. IF NOT, THE IR-SENDER WILL BE DAMAGED AFTER A WHILE.

Now have fun.....

Appendix A Support & Bugreports

A.1 Support

New revisions of the IR-Master can always be found in:

Jesolo, BBS of AFR (Amiga Freunde Ries)
+49-906-28851 (8N1 - 2400-19200)
24H online, Tel: +49 906 28851

look in '/PD_Pool/PD-Anwendungen/ANW-Sonstiges'

Or send a disk + stamps to

Michael Watzl
Konradstr. 11
86609 Donauwoerth
Tel: +49 906 5834
Fax: +49 906 28851
Germany

or

Juergen Frank
Wittelsbacherweg 7
86609 Donauwoerth
Tel: +49 906 1057
Germany

The new version will be immediately sent back.

A.2 Bugreports

Please send bugreports or suggestions to the same addresses or via EMail:

Z-Netz:

SYSOP@JESOLO.zer for Michael Watzl
or HACKER@JESOLO.zer for Juergen Frank

Make sure, that the bugreport describes the bug AND your configuration as well as possible.

Appendix B Registration

REGISTRATION FORM

COMPANY: -----
 NAME: -----
 STREET: -----
 CITY: -----
 POSTALCODE: -----
 COUNTRY: -----
 TELEPHONE: -----

I want to become registered user of the IRMaster. Therefore I

- o enclose a cheque (if from foreign countries - drawn on a german bank)
- o transfer payment to Michael Watzl:
 - Raiffeisen-Volksbank Donauwoerth eG
 - 86609 Donauwoerth
 - Acc.: 4185455 Bank Code: 722 901 00
 - for payment reference use: "IRMASTER REGISTRATION"

Please send me:

- o newest version of this package + documents for the hardware
for the price of: \$15 / DM 25
- o newest version of this package + hardware pieces (incl. docs)
for the price of: \$25 / DM 40
- o newest version of this package + complete hardware (incl. docs)
for the price of: \$40 / DM 60

date, locality

sign

Appendix C Other Software

C.1 req.library

Taken from "req.doc" (description on req.library):

"The req.library is a run time re-entrant library that is designed to make it easier for programmers to use powerful, easy to use requesters for communicating with users. The requester library includes such functions as a color requester, file requester, message display requester and many functions to make the creation of gadgets for your own custom requesters easier.

Req.library was written by Colin Fox (of Pyramyd Designs) and Bruce Dawson (of CygnusSoft Software). Req.library is a freely distributable library that may be used in commercial products without paying any royalties. We encourage you to use the requester library in all of your programs, to make them easier to write, and to use.

Req.library is not public domain. The requester library and all documentation and example programs are all copyright 1989."

C.2 RTPatch

Taken from RTPatch.doc:

"The programs and files in this distribution are freely distributable, but are also copyright (c) Nico François. They may be freely distributed as long as no more than a nominal fee is charged to cover time and copying costs. No commercial usage is permitted without written permission from the author. Everything in this distribution must be kept together, in original unmodified form. The above is generally known as freeware.

If you have suggestions or remarks about this program, or if you find any bugs, please let me know.

Contacting the author:

Fido: 2:292/603.10 (Nico Francois)

Internet: nico@augfl.be

Mail: Nico François
Corbielaan 13
B-3060 Bertem
BELGIUM

If you can please use e-mail. That way you'll stand a much better chance of getting a reply quickly."

C.3 reqtools.library

Taken from reqtools-distribution's readme file:

"reqtools.library is a standard Amiga shared, runtime library. The purpose of ReqTools is to make it a lot quicker and easier to build standard requesters into your programs. ReqTools is designed with Commodore's style guidelines in mind, all requesters have the look-and-feel of AmigaDOS Release 2.

If you use ReqTools in your programs you do not have to worry about requesters too much. You'll have a lot more time to concentrate on the really important stuff your program does.

The library has been inspired by req.library (by Colin Fox & Bruce Dawson) and Commodore's own asl.library. You will find it shares a lot of the features with these two libraries, while it has some additional ones as well. While asl.library was great in look-and-feel I felt it lacked quite a bit in the power department. This power is mostly available in req.library, but this doesn't fit in too well with AmigaDOS Release 2. So the idea for a new requester library was born.

I tried to make all requesters in ReqTools very powerful, easy to use and with a very nice new-look 3D interface. Efficiency was also considered very important. The 2.0 version of the library is about 38K large. I'm sure you will agree this is not too much considering what ReqTools offers.

ReqTools features the following requesters: a query requester, a string requester, a number requester, a file requester, a font requester, a palette requester and new in release 2.0 of ReqTools a volume requester and a screen mode requester."

C.4 LControl & Rapid

LControl and Rapid are other programs by Juergen Frank and Michael Watzl.

LControl Lcontrol is a program which allows you to control a video camera (supportet with a LANC/Control-L interface). The control hardware is rather simple to construct. The hardware is connected to the parallel port of the Amiga.

LControl has an ARexx port and is a commodity.

Rapid If you own a video recorder which is supplied with an GSE-Rapid interface than you can use your Amiga and Rapid to control it! At the momemt rapid is not yet finished (it is still in the β -phase). If you want to know more about the Rapid-project contact the authors.

Rapid uses the serial port.

C.5 IR-Master History

- V1.0 First Released Version (version for OS 1.3)
- V2.0 Big rewirte for 2.x/3.x
Many features added:
 - arrangement funtions
 - environment menu
 - font support for gadgets
- V2.01 Bugs fixed:
 - OS3.0 menu new look added
 - several little bugs removed
 Using asl requesters in stead of req requesters
req.library is only used for GetString();
- V2.02 Bug fixed:
 - Coords used system default font in stead of topaz 8
 Features added:
 - Screen can be made public

- V2.05 Some minor bugfixes...
Features added:
 - locale is supported + german cataloges added
 - can open on a public screen
- V2.06 IR_Runner features added:
 - Now supports fixing window position
IR_Runner bugs removed:
 - No more gurus when sending IR commands
- V2.07 IR_Runner bug removed:
 - Big stack bug removed!
IR_Editor
 - minor bug in "project-changed" removed
- V2.07+ Docs: Harware tuning infos added
- V2.08 IR-Editor
 - IR-Code window added
 - Brushs can be used for gadget imaginary
IR-Runner
 - Arexxport improved
- V2.09 IR-Editor
 - Background gfx now supported!!!
 - IR-Config window redone
- V2.1b IR-Editor
 - new icons in toolbox :-)
 - bugs in asm-code removed
IR-Runner
 - better handling of multiple runners
 - tooltype handling improved
- V2.11 IR-Editor
 - Drag & Drop added
 - better tooltype handling
IR-Runner
 - Bug in Filerequester removed
 - Arexx-port improved
 See Doc: IR_Send for importand changes!
 - better tooltype handling
- V2.2 IR-Editor
 - Cut/Copy/Paste added
- Docs:
 - DVI/TeX-Docummentation added (only german so far)

- V2.21 IR-Editor
 - Bug in wobbelcode learn removedIR-Runner
 - Bug in wobbelcode send removed

- V2.22 IR-Editor
 - PubScreen Name is now "IRMaster"

- V2.50 IR-Editor/IR-Runner
 - New Gadgettypes:
 - > Direkt LControl and Rapid support
 - > DOS/ARexx-Kommands on GadgetsIR-Editor
 - Bugs in "Paste" removedIR-Runner
 - Enforcerhits detected and traced down...

- V2.60 IR-Editor/IR-Runner
 - New Gadgettype: Relais-Card
 - This type has a already lernd in systemcode to control the Relais-Card by Conrad-Electronics [for more, read the Docs]
 - Bug removed: If you use different Fonts in the IR-Editor & Runner, the display now won't get confused.

- V2.61 Minor Bugfixes in the Config-Window

- TODO:
 - arexx-script generator

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