

DCF77English

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Chapter 1

DCF77English

1.1 DCF77 Manual

RGR

DCF77: Receiver software for the German time signal

Version 3.0

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1.2 Introduction

Introduction

DCF77 is the time signal transmitter in Mainflingen, Germany (near Frankfurt/Main). The signal can be received in the most European countries.

This driver software is a commercial product. So I was not sure where to put it to Aminet - biz/demo or util/time? But this demo has only a small restriction (you must change one tool type entry each month) and you get some additional tools without restriction, and so this software is more usable as some shareware products and you can find it in util/time.

This DCF77 receiver software is the only professional solution for using the DCF77 information at Amiga at the moment.

This short and rough English translation of the product's documentation is made by me, the program's author, and not a professional translation, because the current Amiga market seems to be too small to make such a product a commercial success. Nevertheless I hope, you will find all necessary information for the usage of the programs. Sorry for all mistakes I have made.

In this release I have only translated the most important things; a lot of chapters are empty. A complete manual will follow later if I get any response from non-German users.

DCF77 is designed as commodity and can be used on all Amigas with Amiga OS version 37 (Kickstart 2.04) or better. It has very complex routines for the usage of a wide variety of receivers (dynamic adaption to time constants) and safe error detection.

Some things are only in German, but the important parts are bilingual (English/German with all strings built in).

DCF77 (the main program) has in this distribution only one restriction:

The program adds the current month in hours to the time - so your system time will be disadjusted by some hours. You can correct this by adapting the tool type entry `OFFSET_HOURS` (for example in May `OFFSET_HOURS=-5`), but naturally this must be changed each month.

The program files of this distribution are

DCF77 The receiver software commodity (restricted)

DCF77-1.2 Receiver software for Kickstart 1.2 or better

(without restriction; only gameport)

DCF77 Diagnosis check reception

GClock Clock program (displays receiver state)

TimeSignal Acoustic time signal (commodity, needs Amiga OS 3)

WaitForDCF77 Shell command, waits for DCF77 time

WaitDCF77ifCrash Shell command, waits if battery clock is corrupt

The drawer "Developer" contains the sourcecodes of `WaitForDCF77.c` and `WaitDCF77ifCrash.c` and a German developer documentation.

The English developer documentation will follow later.

1.3 About DCF77

About the DCF77 time signal

Sorry, nothing here yet.

1.4 About program

About this program

Sorry, nothing here yet.

1.5 Installation und Programmstart

Installation and start

Install DCF77 by running the install script. The programs DCF77, GClock and Time Signal will be copied in your WBStartup drawer.

You can start the programs by clicking on the icons. No additional libraries or drivers are necessary.

The default language is German. English requires the Locale Library (Amiga OS 2.1 or better).

1.6 Desinstallation

Desinstallation

The installation of the programs can be cancelled with the "Uninstall" script. It will remove all installed files.

1.7 Characteristics

Characteristics

Sorry, nothing here yet.

1.8 Operating mode

Operating mode

You can select the operating mode of DCF77 by changing the following tool types:

SAFETY_LEVEL

TASK_PRIORITY

LOCALE

UPDATE_LOCALE

DST

UTC

GMT

PAUSE

ONE_TIME

OFFSET.HOURS

OFFSET.MINUTES

OFFSET.SECONDS

OFFSET.MICROSECONDS

QUIT_AFTER_TRIALS

SAVE_DST

SAVE_UTC

MAX_TIME_DIFFERENCE

ALLOWED_TIME_DIFFERENCE

TIMER

PORT

PIN

ALLOCATE_RESOURCES

SCAN_PORTS

SUPPRESS_SCAN_MESSAGE

CONTROL_GAMEPORT_HARDWARE

CONTROL_PARALLEL_HARDWARE

CONTROL_SERIAL_HARDWARE

SCAN_RATE

1.9 SAFETY_LEVEL

SAFETY_LEVEL Default: SAFETY_LEVEL=1

DCF77 accepts the transmitted information only if the time of repeated receivings is identical.

SAFETY_LEVEL controls the number of repetitions.

1.10 TASK_PRIORITY

TASK_PRIORITY Default: TASK_PRIORITY=0

Selects the task priority of DCF77.

1.11 LOCALE

LOCALE Default: LOCALE=YES

YES: Use time zone of the locale library. If you need a special time zone, it may be necessary to disable the Daylight Saving Time **DST**.

NO: Use MET.

1.12 UPDATE_LOCALE

UPDATE_LOCALE Default: UPDATE_LOCALE=YES

YES: Read time zone before setting system time.

NO: Read time zone only one time.

1.13 DST

DST Default: DST=YES

(DST - Daylight Saving Time)

YES: Use the chosen time zone with DST while MEST (Middle European Summer Time).

NO: Use the chosen time zone without DST.

1.14 UTC

UTC Default: UTC=NO

(UTC - Universal Time Coordinated)

YES: Use UTC.

This is the same like

LOCALE=NO

DST=NO

OFFSET.HOURS=-1

If UTC=YES then DCF77 ignores **LOCALE** and **DST**, but the **offsets** are used.

NO: Use the chosen time zone.

1.15 PAUSE

PAUSE Default: PAUSE=0

Sleep some time (in seconds) after setting the system time.

1.16 ONE_TIME

ONE_TIME Default: ONE_TIME=NO

YES: Set system time only one time.

NO: Run continuously.

1.17 OFFSETS

OFFSET.HOURS Default: OFFSET.HOURS=0

OFFSET.MINUTES OFFSET.MINUTES=0

OFFSET.SECONDS OFFSET.SECONDS=0

OFFSET.MICROSECONDS OFFSET.MICROSECONDS=0

The offsets are added to the received time.

This works for ± 68 years if the result is in the range of the Amiga system time:

to Amiga-OS 2.1 1.1.1978 00:00:00 - 19. 1.2046 03:14:08

from Amiga-OS 3.0 1.1.1978 00:00:00 - 31.12.2099 23:59:59.

1.18 QUIT_AFTER_TRIALS

QUIT_AFTER_TRIALS Default: QUIT_AFTER_TRIALS=0

If you enter zero, then DCF77 runs continuously.

If you enter any other value, then DCF77 makes the given number of trials to receive and afterwards it quits if the receiving was not successful.

The internal timeout is about 2 seconds. So you can use QUIT_AFTER_TRIALS=90 to stop DCF77 after 3 minutes of work without a receiver.

1.19 SAVE_DST, SAVE.UTC

SAVE_DST Default: SAVE_DST=YES

SAVE.UTC Default: SAVE.UTC=NO

These tool types are for future compatibility:

You may need one of it, if a new Amiga operating system supports daylight saving time.

1.20 MAX_TIME_DIFFERENCE

MAX_TIME_DIFFERENCE Default: MAX_TIME_DIFFERENCE=1

Maximum difference between system time and time of battery backed up clock.

Only needed for Amigas with bad clock chip.

1.21 ALLOWED_TIME_DIFFERENCE

ALLOWED_TIME_DIFFERENCE Default: ALLOWED_TIME_DIFFERENCE=0

DCF77 sets the system time only if the difference between the radio clock and the system time is greater than this value (in microseconds).

1.22 TIMER

TIMER Default: TIMER=GAMEPORT_DEVICE

Selects DCF77 timer for gameport 2, pin 6.

You can use

TIMER=GAMEPORT_DEVICE or

TIMER=TIMER_DEVICE.

Try timer device if you have compatibility problems with other gameport hardware.

In timer device mode DCF77 consumes much more processor time and you should increase the **TASK_PRIORITY**.

If **PORT** and **PIN** specifies not gameport 2, pin 6 then DCF77 works always with the timer device and direct hardware access.

1.23 PORT

PORT Default: PORT=GAMEPORT_2

Selects port for DCF77 receiver.

Current choices are

PORT=GAMEPORT_1

PORT=GAMEPORT_2

PORT=SERIAL

PORT=PARALLEL

Use **PIN** to select the pin for the receiver signal.

1.24 PIN

PIN Default: PIN=6 (for PORT=GAMEPORT_2)

PIN=5 (for PORT=GAMEPORT_1)

PIN=3 (for PORT=SERIAL)

PIN=2 (for PORT=PARALLEL)

Selects the pin for the receiver signal of the port selected with **PORT**.

Choices are:

if PORT=GAMEPORT_1 then you can use pin 5,

if PORT=GAMEPORT_2 then you can use the pins 1 to 6 or 9,

if PORT=SERIAL then you can use the pins 3 or 8,

if PORT=PARALLEL then you can use the pins 2 to 9 or 11.

1.25 ALLOCATE_RESOURCES

ALLOCATE_RESOURCES Default: ALLOCATE_RESOURCES=YES

YES: Allocate selected **PORT**.

NO: Do not allocate selected **PORT**. This operating mode does not comply with the developer guidelines. Use it only if absolutely necessary.

1.26 SCAN_PORTS

SCAN_PORTS Default: SCAN_PORTS=YES

YES: Scan all supported Ports for the DCF77 receiver.

NO: DCF77 expects the receiver on the port selected with **PORT** und **PIN**.

1.27 SUPPRESS_SCAN_MESSAGE

SUPPRESS_SCAN_MESSAGE Default: SUPPRESS_SCAN_MESSAGE=NO

YES: DCF77 will inform you of allocated ports while scanning the ports for the radio clock receiver.

NO: DCF77 will not report allocated ports while scanning.

1.28 CONTROL_GAMEPORT_HARDWARE

CONTROL_GAMEPORT_HARDWARE Default: CONTROL_GAMEPORT_HARDWARE=NO

YES: DCF77 writes to the control register of the gameport (POTGO) for gameport 2, pin 5 or 9 and timer device mode. Only the current bit is affected.

NO: DCF77 changes no registers. It may work in the most cases, because the operating system sets the ports to input. This may be useful to avoid conflicts, if the gameport is shared with other programs.

The default is NO to avoid this effect: The writing to the POTGO register causes an interrupt and the gameport device will interpret it as click of the right mouse button.

1.29 CONTROL_PARALLEL_HARDWARE

CONTROL_PARALLEL_HARDWARE Default: CONTROL_PARALLEL_HARDWARE=YES

YES: DCF77 sets the control registers of the parallel port to input. Only the current bit is affected.

NO: DCF77 do not change the registers. Because the data bits of the parallel port are set to output by the operating system, DCF77 can only work, if you control the port by an other program.

1.30 CONTROL_SERIAL_HARDWARE

CONTROL_SERIAL_HARDWARE Default: CONTROL_SERIAL_HARDWARE=YES

YES: DCF77 writes to the control registers of the actual port:

For the serial port, pin 3 (RxD) the power supply for the receiver via RTS and DTR is activated.

For the gameport 2, pins 5 or 9 and timer device the entire control register (POTGO) is set to input.

NO: DCF77 changes no registers.

This may be useful to avoid conflicts, if other programs should control the port selected for DCF77.

1.31 SCAN_RATE

SCAN_RATE Default: SCAN_RATE=23

Minimum: 1 Maximum: 40

1.32 Accuracy

Accuracy

Sorry, nothing here yet.

1.33 Error detection

Error detection

Sorry, nothing here yet.

1.34 Dongle compatibility

Dongle compatibility

No problems with Scala dongles.

Brilliance 1.0 not possible, but you should use anyway Brilliance 2.0.

1.35 Incompatibilities

Incompatibilities

Sorry, nothing here yet.

1.36 Future abilities

Future abilities

Sorry, nothing here yet.

1.37 Connect receivers

How to connect receivers

Sorry, nothing here yet.

1.38 Trouble shooting

Trouble shooting

The most frequent problem is an incorrect time caused by a wrong time zone in Prefs/Locale of your Workbench.

1.39 DCF77-Diagnosis

DCF77-Diagnosis

Sorry, nothing here yet.

1.40 Utilities

Utilities

GClock

TimeSignal

WaitForDCF77

WaitDCF77ifCrash

1.41 GClock

GClock

Analogous clock program. Displays time, date and DCF77 receiver state. Try it.

1.42 timesignal

TimeSignal

Acoustic time signal.

For example try the following tool types entries:

MINUTES=1

BACKGROUND=Background_Audio

VOLUME3=55

FREQUENCY2=1353

START_BACKGROUND_SEC=50

START_SEC=57

AUDIO_FILTER=OFF

And if you don't have a radio clock or DCF77 is not running:

CHECK_DCF77=NO

TimeSignal - Tool Types

1.43 timesignal - characteristics

TimeSignal - Characteristics

Sorry, nothing here yet.

1.44 timesignal - tool types

Tooltypes for TimeSignal:

MINUTES

BEEP1

BEEP2

BACKGROUND

VOLUME1

VOLUME2

VOLUME3

AUDIO_FILTER

START_BACKGROUND_SEC

START_SEC

ONE_TIME

FREQUENCY1

FREQUENCY2

DURATION1

DURATION2

CHECK_DCF77

TASK_PRIORITY

1.45 timesignal - minutes

MINUTES Default: MINUTES=60

Difference between time signals.

1.46 timesignal - beep

BEEP1 Default: (BEEP1)

BEEP2 Default: (BEEP2)

Optional Audio Samples.

1.47 timesignal - background

BACKGROUND Default: (BACKGROUND)

Optional Audio Sample for Background.

1.48 timesignal - volumes

VOLUME1 Default: VOLUME1=64

VOLUME2 VOLUME2=64

VOLUME3 VOLUME3=50

0 (no sound) ... 64 (maximum volume)

1.49 timesignal - audio_filter

AUDIO_FILTER Default: AUDIO_FILTER=ON

AUDIO_FILTER=OFF causes TimeSignal to switch off the Amiga audio filter while playing.

1.50 timesignal - start_background_sec

START_BACKGROUND_SEC Default: START_BACKGROUND_SEC=50

Start second of background audio sample selected with **BACKGROUND**.

Value must be 19 to 55 and less than **START_SEC**.

1.51 timesignal - start_sec

START_SEC Default: START_SEC=56

First second of time signal.

Value must be greater than **START_BACKGROUND_SEC**.

1.52 timesignal - one_time

ONE_TIME Default: ONE_TIME=NO

NO: Only one time signal.

YES: Continuously.

1.53 timesignal - frequency

FREQUENCY1 Default: FREQUENCY1=1000

FREQUENCY2 Default: FREQUENCY2=1000

Frequency for internal generated sound (in Hertz).

If samples used for BEEP1 or BEEP2 then FREQUENCY1 or FREQUENCY2 are ignored.

1.54 timesignal - duration

DURATION1 Default: DURATION1=100

DURATION2 Default: DURATION2=1000

Duration (in ms) of internal generated sounds.

The maximum of DURATION1 is 999.

1.55 timesignal - check_dcf77

CHECK_DCF77 Default: CHECK_DCF77=YES

YES: TimeSignal works only if DCF77 has received the time.

NO: TimeSignal ignores DCF77.

1.56 timesignal - task_priority

TASK_PRIORITY Default: TASK_PRIORITY=1

Priority of the TimeSignal task.

1.57 waitfordcf77

WaitForDCF77

Shell command. Waits for received time by DCF77.

1.58 waitdcf77ifcrash

WaitDCF77ifCrash

Shell command. Waits for received time by DCF77 if the time of the battery backed up clock has been corrupted by a software crash.

1.59 Copyright

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1.60 Distributor

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