Player61A

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Player61A

1.1 The Player 6.1A

```
        The Player ® 6.1A 610.1 / 08.01.95
        Copyright © 1992-95 Jarno Paananen
        Guru / Sahara Surfers
    A Sahara Surfers Product 1995
```

```
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1.2 The Player® 6.1A: Foreword

```
1. Foreword:
```

This little utility was first started just for fun about two years ago and was meant just to my own use, but when I noticed that there weren't a GOOD Protracker-compatible replay available and after I saw a few tries to fix this (ProPacker, Prorunner, etc.) I decided to give other people a chance to play their Protracker-tunes FAST!

When designing the moduleformat, I also included packing and this 6.1 packing method is the most efficient I've seen for this purpose (6.1 is even better, although not ready yet...)

Afterwards features like the two delta-formats have been introduced to keep this player on the edge of development.

I also made a converter to make it easier to use PT-modules. It uses Reqtools and Powerpacker libraries (both by Nico François) so it can also load Powerpacked modules. The converter is made as easy as possible to the user.

1.3   The Player® 6.1A: Distribution and copyrights

2. Distribution and copyrights:

  This program and all other stuff coming in this package are
          FULLY copyrighted by

    Jarno Paananen / Guru of Sahara Surfers.

With the exception of Reqtools and Powerpacker libraries © by Nico François (You have made a big favour to all programmers on the Amiga!)

BUT!:
You're allowed to make additions or modifications or what so ever to fit the playroutine to your own needs. That's why the sources are here. But, please: credits for the author and a copy to myself, if possible, so I can add your new features to the future releases!

Contents of this package:

P61Con   - The converter
P61Con.info   - Da icon
(P61   - The player)
(P61.info   - Another icon)
Player61A.guide   - Amigaguide format docs, this file
Player61A.guide.info   - More same stuff
Player61A.doc   - ASCII format docs
Player61A.doc.info   - Do we have to take all these?
Player61A.changes   - History of changes, bugfixes etc.
610.1.G   - The main thing, Replay source
(610.1_devpac2.asm   - Same for DevPac2)
(610.1_devpac3.asm   - And for DevPac3)
610.1.bin   - Binary version
CIA_Example.G   - An example of how to use the CIA-version
Player61.i   - Include file

```
Vibtab        - Vibrato table
Periods       - Periodtable with finetunes
Periods.nft   - Same with no finetunes
```

( ) = Not included (= not up to date)

The normal disclaimer:

The author cannot be held liable for the suitability or accuracy of this
manual and/or the program it describes. Any damage directly or indirectly
caused by the use or misuse of this manual and/or the program it describes
is the sole responsibility of the user her/him self.

A few words about distribution:

This program is freeware. You can distribute it as long as ALL files
are included and not more than a nominal fee for copying is asked. This
program can NOT be used for commercial purposes without written
permission from the author and a contribution for development costs (like
Coca-Cola :-). If you have suggestions or remarks about this program, or if
you find any bugs, please let me know.

THIS MEANS: IF YOU ARE GOING TO USE THIS IN COMMERCIAL SOFTWARE YOU SHOULD
AT LEAST ASK ME FIRST AND I WOULD BE GLAD TO RECEIVE SOMETHING AS A
COMPENSATION FOR THE TROUBLE THIS THING HAS CAUSED ME, BECAUSE MAKING THIS
HASN'T BEEN JUST FUN AND SUNSHINE...

This was meant especially to software houses using this without my
permission, like Team 17: From where the hell did you get that P41 you used
in Super Frog?!? It was never released due to P50. I just gave it to some
friends for beta testing... If you want to clear your conscience, contact
me.

To everyone: If you're going to use this player in your commercial
software, you should know, that the one released is never the newest version
and is always somewhat cut down. If you contact (and pay...) me, you get
misc stuff like sound effect engines with it, if you want. And tidy
conscience...

The black list (programs using The Player without my permission (nor
money :)

All are using the beta of P41A:

- Super Frog from Team 17 (see ya at Assembly'95...)
- OverDrive from Team 17
- Impossible Mission 2025 from MicroProse

At _least_.

Thanks to these firms for contacting me before using The Player:

```
Bloodhouse - Stardust (Hi Everyone!)
         - Super Stardust
Core Design - Banshee (Hi Søren!)

Why is this list shorter?
```

1.4   The Player® 6.1A: Requires

```
3. Requirements:

- An Amiga computer (for PC use MIDAS!)
- Reqtools and Powerpacker libraries
- about 30 kB of memory for the converter, and if converting, 2 * (number
  of patterns * 1024 + 1084) bytes for buffers
- Works on 512kB machines, more memory recommended, especially for
  converting.
- Kickstart 1.2 or greater.
- Kickstart 2.0-style colors recommended (looks better)
```

1.5   The Player® 6.1A: Features

```
4. Features:

- a very efficient method to pack the pattern data and play it VERY fast in
  realtime

- cut-down header compared to the original one (4 bytes info, 6 bytes/sample,
  8 bytes/pattern, 1 byte/position plus one byte for stopmark)

- removes all names, unused patterns, samples, data after loops, empty data
  after unlooped samples, commands with no use and some smaller things

- Delta format samples!  Samples have the same quality, but packing
  efficiency is better with for example Imploder or Powerpacker.  Look below
  for some stats!

- 4-bit delta packing!  Packs samples in ratio 1:2 with very little loss of
  quality.  Try it!

- nearly impossible to rip without finding the call to the init routine,
  except if the optional 'P61A'-sign is used

- works on every Amiga, under KS1.2-3.1, from WB or CLI/Shell, detaches
  itself from CLI, supports WB icons, etc...

- loads files packed with Powerpacker, FImp or XPK (all references to
  Powerpacked files also apply to FImp and XPK files)

Should support modules with 100 patterns (At least in PT2.x from Noxious)
IF patterns are packed under 64kB in PASS 1... (pointers are only words)
```

Commands implemented at the moment:
  - NoiseTracker 2.0 commands (0-6,A-F)

  - Tremolo (7), Sample offset (9), Fine slides (E1/E2), Set finetune (E5),
    Pattern loop (E6), Retrig note (E9), Fine volume slides (EA/EB),
    Note cut (EC), Note delay (ED), Pattern delay (EE), Invert loop (EF)

  - finetune and tempo

  - NOTE!:Patternbreak (D) does NOT support break to a specified
    line, linenumber is just ignored! This is due to my packing system.

Comparision to other players:

Tunes: 1. (alcoholic score)
  2. enigma year bkh-nhp
  3. knulla kuk !!!
  4. menuloader
  5. scrambled mind

Note that these are random tunes picked out from about 80Mb I
have, and everyone should be able to test these results.

Tune: 1 2 3 4 5

Original: 121024 249550 160218 23390 163738
P61A: 88704 204588 120062 16644 130650
P60A: 90118 205984 121834 16992 131420
NoisePacker 3.0: 93576* 214148* 128940* 17588 132736
NoisePacker 2.02: 104560* 227770* 138218* 18292 140614
ProPacker 1.0:   108028 226326 147302 20414 148742
ProRunner 2.0:   98974 218588 132894 19338 143136
Promizer 4.1:   103608 224778 136710 19762 147114
TrackerPacker 3.0: 90992 209900 124434 17074 131578

* = lacks some features (finetune, commands etc.)

Obvious? TrackerPacker gets quite close sometimes, but...

Some notes concerning this:

(After reading the docs of Prorunner 2.0 I thought that maybe I should also
write some advertisement bullshit here, but I decided to stay in the
facts...)

- P61A is the fastest replay of these...
- Has the best packing as seen above...
- 4- and 8-bit delta samples (the first one to have these)...
- Fully system friendly if needed (allocates channels, CIA's etc.)...
- Works on all Amigas (the first released one to check the VBR)...
- Supports CIA-tempos (the first one with no processor waits)...
- Fully PC-relative replay (released before Cosmos...)
- Has the so-much-praised master volume control...

- Usecode-system
- User-friendly converter (unlike NP2.0, PP1.0 and PRU2.0)...
- Versions for Asm-One, DevPac3 and DevPac2...

Enough? If you still want to use some of those other players, feel free...

IF SOMEONE COULD SEND ME PROPACKER 2.x, PLEASE DO!

Delta vs. normal samples:
Tune: (((the war))) by Audiomonster / Melon Dezign

Original P61 tune: 260182

       Normal Delta Diff.
FImp: 184828 168650 16178
PP: 184812 162612 22200
xpkNUKE: 187340 166684 20656
xpkSQSH: 148600 144124 4476

Make your own conclusions.

1.6   The Player® 6.1A: P61con, the Converter

                   5. P61con, the Converter:

Note!: Do _NOT_ merge hunks in this file, because it uses two SEPERATE
code hunks for detaching. If you do, it crashes straight away...

Shell usage: P61con [-q][filename]

-q Be quiet. The only way to stop playing is to give CTRL-C-signal to
  the DETACHED piece of code. Use TaskX or similar.
filename to play. No checkings made, so be sure it IS a P61-module!

WB usage is normal. Double clicking on a modules icon or click on module,
shift and click on P61con to play it.

    1.
                 Converting ProTracker-modules
                   2.
                 Playing modules
                   3.
                 Converting back to Protracker
                   4.
                 Sample packer-selector
                   5.
                 Preferences

1.7   The Player® 6.1A: P61con, the Converter, Converting Protracker-modules

```
                     1. Converting Protracker-modules:
```

First a normal Reqtools filerequster asks you to select one or more
(supports batch-processing) modules. If you select multiple modules, the
directory for the modules to be saved is asked. Then loading with the
Powerpacker library. If you chose one module, the name and path for the
save are asked. As the packing starts, an info requester with some bars and
statistics pops up. If you are converting only one module and have sample
packing on,
```
                Sample packer-selector
                 appears.  When the job
```
is done, save and some statistics about the efficiency are shown. If you
have converted only one module, also the
```
                Usecode
                 is here.
```

1.8   The Player® 6.1A: P61con, the Converter, Playing modules

```
  2. Playing modules:
```

First the converter asks for a module and then loads it using the
Powerpacker library so it can also be packed with the Powerpacker :)
DOES NOT SUPPORT FILES WITH SAMPLES IN OTHER FILE! If it finds P61
from the memory, it informs it to play the module. If not, a requester is
shown with the name of the file and a stop gadget below. The play routine
is the system friendly tempo one, allocates channels with priority 127, a
CIA-timer and returns if it couldn't get something. Should work with every
system friendly program.

1.9   The Player® 6.1A: P61con, the Converter, Converting back to Protracker

```
  3. Converting back to Protracker:
```

There is in fact the good old P50-ripper with support for 4-bit deltas.

This option is disabled to partly because I want to give people some
peace from Perverter and alike ie. protect their modules from ripping.
(I of course have my own version, which has this option implemented and
enabled...) So you have to make your own reconverter is you want to
listen the modules in PT-format.

If you're clever enough you can enable the option, but it can only
reconvert P60-modules :)

Usage is easy, just load P60A-module and save it as Protracker-module. Be
sure it IS a P60A-module, otherwise I can't quarantee the result...

In this version this feature is enabled, in request of Nemesis1 (Hi!)

1.10   The Player® 6.1A: P61con, the Converter, Sample packer-selector

```
                4. Sample packer-selector:

When you have
              sample packing-option
               on, a requester appears when you
convert only one module.  It is used to select which samples are to be packed
with
              4-bit delta packing
               and has the following functions:

Original  -Plays the original sample.  Stop with right mouse button!
Packed    -Plays the sample after packing and depacking it.  This
     sounds same as the final packed sample.  Stop with right
     mouse button!
Pack    -Marks the sample to be packed.
Pack rest -Marks this and the rest of the samples to be packed.
Don't pack  -Marks the sample NOT to be packed.
Don't pack rest -Marks this and the rest of the samples NOT to be packed.

Use of keyboard shortcuts is highly recommended!
```

1.11   The Player® 6.1A: P61con, the Converter, Preferences

```
  5. Preferences:

Default loading directory:  The directory converter first gives you,
      when you load Protracker modules.

Default saving directory: The directory converter first gives you,
      when you save ONE P61 module.

Default batch directory:  The directory converter first gives you,
      when you save multiple P61 modules.

Prefices:    These are used to mask files in file-
      requesters and put to the beginning of the
      filename when saving.  Can be up to 7 chars
      long.

Two files:     If you want samples and rest of the tune to
      be saved in separate files.

P61A sign:     If you want the P61A sign to be inserted in
      the beginning of the module.

No samples:    If you're converting multiple modules with
      same samples, this disables the saving of
      samples.

Tempo:       Whether the player should use tempo or not.

Icon:      If you want the icon to be saved with the
```

           module.

Delta: If you want to use 8-bit delta samples.

Sample packing: If you want to pack samples to 4-bit delta.

1.12   The Player® 6.1A: P61, the Player

6. P61, the Player:

This program was under work (and still is...) for quite a lot time. The
idea came from Simply / Parallax, due to the fact that Multiplayer can't
play P50-modules without GMOD-header and that makes modules about 6kb
larger... So I had to get working. Two days before Assembly'93 I rewrote
this program completely in a big hurry, so please forgive me those bugs
that will appear. Present program is the same, but plays P61-modules.

The interface is now quite neat, small is beautiful? Under KS3.0 those
proportional gadgets are quite nice. Functions should be familiar to all
who have used some player program (Multiplayer, Smartplay etc.). The only
special feature is that if you try to load a Protracker module and you
have P61con in memory waiting in its mainmenu, P61 gives this module to it
to be packed. P61con saves it to the ram-disk and informs P61 to load it.
After loading P61 deletes the module from the ram-disk.

1.13   The Player® 6.1A: Using The Player in your own programs

            7. Using The Player in your own programs:

NOTE: The instructions for the binaryfile-versions expect you to have
loaded the file to a label called "Player"

The versions are in the same file and these topics describe the various
possible versions to compile the source. Also the binary versions have
their instructions here.

Completely PC-relative!

    1.
            Normal VBlank-version
              2.
            Non-lev6-version
            (too slow. Contact me if interested)
    3.
            CIA-version with tempo
              4.
            68020-versions
              5.
            Player61.i

1.14   The Player® 6.1A: Using The Player in your own programs, VBlank

```
                 1. Normal VBlank version:

Options:
  CIA = 0
  system = 0
  lev6 = 1

  Exec = 1 if ExecBase is valid and 0 if not
```

This should be easy for all you who've used the ugly Protracker routine or
one of the millions of others.

Call "P61_Init" with the address to the module in A0 and the address to the
samples in A1 or if they are in the same file, clear A1. If you have a
module with samples packed, put address to the sample buffer in A2. Uses
all registers, so preserve them if you're going to use them afterwards.

IF YOU ARE USING INVALID EXECBASE:

Check the Base yourself and put it to P61_VBR or Player+P61_UseVBR. You
can also get the VBR there, if using valid ExecBase.

TO CHECK IF MODULE HAS PACKED SAMPLES:

Check bit 6 ($40) of the offset 3 from the beginning (excluding optional
sign). If it is set, the module has packed samples. Size of the required
buffer is then at offset 4.

To play the music, call P61_Music every frame (with NTSCs who want to play
the tune in PAL-speed or vice versa, use the
                CIA-version
).

To end the music and turn the DMAs off, call P61_End.

With system option = 1, allocation of channels and lev6-timer are included.
Returns non-zero in D0, if couldn't allocate something.

With the binary file, P61_Init is Player+P61_InitOffset, P61_Music is
Player+P61_MusicOffset and P61_End is Player+P61_EndOffset.

The source-version can be compiled with at least Asm-One 1.09 by T.F.A.
(the Best assembler around!) but it should compile with nearly any
assembler with incbin-command.

The maximum rastertime taken is under 6 lines on a normal 68000 Amiga.
Fast? Invert loop can take it beyond that, though. Everything has its
costs.

1.15   The Player® 6.1A: Using The Player in your own programs, Non-lev6

```
                    2. Non-lev6 version:

Options:
  CIA = 0
  system = 0
  lev6 = 0

This routine is basically the same as the
                lev6-version
                , but you have to
call P61_Setloop about 7 raster lines after P61_Music.  This system is done
to enable the use of those 7 lines.  So if have a routine, which fits to
these 7 lines, do it while waiting...

This is not too much slower compared to the lev6-version, but I'd still
advise you to use it if possible.  It makes your life a hell lot easier...
```

1.16   The Player® 6.1A: Using The Player in your own programs, CIA

```
                    3. CIA version with tempo:

Options:
  CIA = 1
  system = 0/1
  lev6 = 1

  Exec = 1 if ExecBase is valid and 0 if not

The first tempoplayer I know, which uses only the lev6-int and does NOT
use those fucking processor loops.  As fast as the normal
                lev6-version!
                Otherwise normal init, but info for the setting of CIA is needed  ←
                  in D0:
0 - Autodetect, if PAL/NTSC, uses ExecBase->VBlankFrequency.
1 - Force PAL.  If you've destroyed the ExecBase, detect the timing
    yourself and use these force modes.
2 - Force NTSC

No further actions needed.  Returns non-zero in D0, if it couldn't allocate
something.  The player starts playing right away, so do NOT call P61_Music.

To end call the normal P61_End.

To enable using of tempo, set P61_UseTempo to some non-zero value.

If system is set to 1, allocations for timer and channels are included.
Use if possible.

NOTE: If you want to use this in your own program that needs synchronizing
to the beam, do one of these:

1. Do your routine in VBlank-interrupt.
```

```
2. Do your routine in copper interrupt.
3. If you do NOT have to wait for a specific line, wait for VBlank bit in
   INTREQR ($1e) and clear it afterwards.
4. If you have to wait for some specified line, disable Copper-interrupt
   from INTENA ($9a), set Copper-interrupt bit in INTREQ ($9c) with Copper
   at the specified line and wait for the bit in INTREQR ($1e) in our own
   routine. Clear it afterwards.
```

```
See the examples supplied.
```

```
Otherwise this WILL steal some frames from you time to time...
```

1.17   The Player® 6.1A: Using The Player in your own programs, 68020

```
  4. 68020-versions:
```

```
Options:
  opt020 = 1
```

```
These are a bit optimized versions for the 020+ machines.  The difference
to the 000/010-versions is only a slight one and because those versions
take only a half of a rasterline on a 25mhz A4000, I think these are nearly
useless.  But if you really want to make a 020+ program or AGA-only stuff,
this is for you...
```

```
Can be compiled at least with Asm-One 1.15 by T.F.A.
```

```
Interface is similar to the 000/010-versions.
```

1.18   The Player® 6.1A: Using The Player in your own programs, Player6.i

```
  5. Player61.i:
```

```
This is the include file of all the structures needed, if you're going to
compile the source.  Also if you are making some additions to this player
(like quadrascopes, etc.  (these kind of things are maybe coming, I already
have quite a bunch of 'em linked to this player)) you can look for the
information there.  First I was going to release this only as a binary
version, but after thinking a few more moments, I decided to make this
include file and release the source, just to make supporting and developing
of this product possible.
```

1.19   The Player® 6.1A: The Usecode-system

```
8. The Usecode-system:
```

```
This system was created for fun on a sunny afternoon.  I got a crazy idea
of putting a code of which features a module needs to the beginning of the
source and let conditional compiling take care of the rest.
```

The main idea is to reduce the lenght of this massive player to the real
needs of the module. So only the commands the module needs are saved to
the player. Also if the module doesn't use finetune, a smaller periodtable
is used. And finally if the module doesn't use vibrato or tremolo, the
512 bytes long vibrato table is left out.

What you have to do is:

Take down the Usecode shown in the requester after the converter has packed
your module (if only one module is being processed or from the filenote)
and put this code to the beginning of the source into the place for it.
Compile and you have a customised version for this module only. Usecode -1
leaves all features ie. compiles the full version.

for example:
  use = $9f0f

1.20   The Player® 6.1A: Bugs?

9. Bugs?:

Some of you might still remember (in horror...) the previous versions of
this marvelous :) player. Those 4.x-versions were all more or less beta-
versions and that showed... (previous versions weren't even released,
thank god..)

This version hasn't gone through quite a hell of beta-testing, by myself, my
Good friends Janne Juhola (Simply/Parallax Designs), Steffan Schumacher
(Metal/Parallax Designs), Kari-Pekka Koljonen (Moonstone/Hippopotamus
Design), WDO/Carillon (never remember your name...Mikko?) and some
others, but seems to work ok ;)

1.21   The Player® 6.1A: Hellos

10. Hellos:

A bit more hellos than in the converter to:

To all who make those nice multiformat-player-programs (Multiplayer,
Smartplay, etc.): If you want some information about this format to be
included in your program, or anything else, just let me know!

To Turbo and Marley of Infect (authors of Exotic ripper): You did it! I
just ask how?!? You say it's deep search and it surely is. Fab prog!
The pattern format changed once again... Some peace from Perverter and
a like...

And hellos especially to:

- Janne Oksanen / Stratos of Sahara Surfers -
Nothing special to say, but hello.

– Petteri Kangaslampi / Alfred of Sahara Surfers –
LIVE rules... Thanks for help with the new format! Hopefully Midas
comes off great!

– Kari-Pekka Koljonen / Moonstone of Hippopotamus Design –
Great sendings (when coming...). Happy with this?
HiP is Really Cool!

– John Hinge / Shayera of Spoon –
Sorry for huge delay, but hopefully this gives some compensation...

1.22   The Player® 6.1A: Contact address

11. Contact address:

I'm improving this utility for my own use (they made me release this!),
but send me some $$$ (Finnish marks, please) or two disks with a return
envelope WITH stamps (or International Response Coupon) and I'll send you
the newest version (Mention which version you have, so I won't send the
same version!) Also for licences for commercial use!

      TO: (NO swapping!)
                J.Paananen
             Puskalantie 6
              37120 Nokia
          Finland

        Or by phone: +358-31-3422147 / Jarno

           Or preferably via Internet:

         Jarno_Paananen@sonata.fipnet.fi
           (NO UUENCODES!)
            or
       jpaana@freenet.hut.fi
       (redirected to freeport)

NOTICE!!!

My freeport account (gurus2@freeport.uwasa.fi) died at new year
so use either one of the others until I get myself a new account.