

The Punched Paper Project

```
/driver/FACIT-MANUAL.txt
```



- [Home](#)
- **The Paper Tape Project**
 - [Start](#)
 - [In a nutshell](#)
 - **Abstract**
 - [Subproject overview](#)
 - [To Do](#)
 - [Using Windows](#)
 - [Data](#)
 - [Perl tools](#)
 - **Labeling and Fonts**
 - [Generating Labels](#)
 - [Font Files](#)
 - **Devices**
 - [Facit Tape Punch](#)
 - [Ghielmetti Tape Reader](#)
 - **Driver framework**
 - [Legacy reader documentation](#)
 - [Legacy puncher documentation](#)
 - [Legacy old puncher documentation](#)
 - [Visualisation](#)
 - **Web Frontend**
 - [Abstract](#)
 - [Generating Paper Tapes online!](#)
- **Various**
 - [Using PCI I/O cards](#)

The Punched Paper Project website has moved.

This website is from 2008 and the information is most likely quite outdated. Please see the [technikum29 Labs](#) for the new website. You might also want to check the [technikum29 Computer Museum main website](#).

-- Sven, July 2013

Contents of driver/FACIT-MANUAL.txt

FACIT 4070 Tape Punch 75-CPS

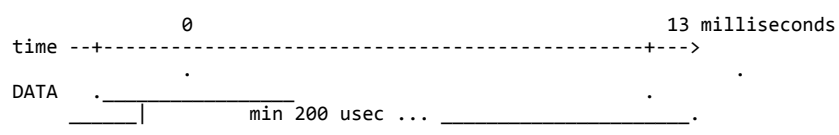
The FACIT 4070 Tape Punch (from FACIT Data Productions) is a parallel port puncher. It has been manufactured long before the so called "centronics port" has been standardised as IEEE 1284. Therefore it's a bit complicated to connect this puncher to today's PCs. Of course, the PC must be some years old, because *real* high end Computers today no more feature a parallel port (so called "LPT" port in DOS days).

I've got a really detailed manual for the FACIT puncher. It was printed in October 1979, and at these days electronics were quite well explained everywhere.

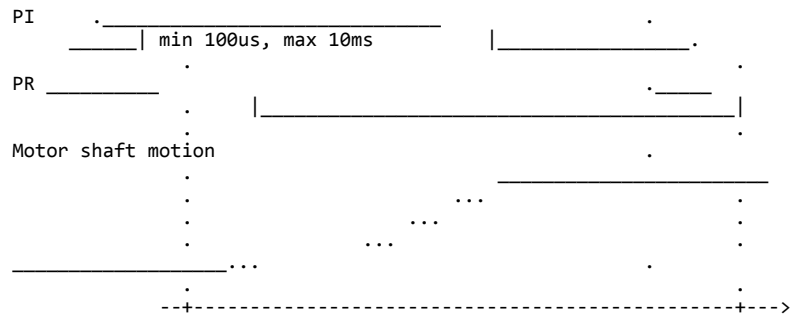
I won't go very much in detail, but at first, the most important part is to take a normal parallel port cable (with about 15 wires) and connect it like this:

FACIT 4070	signal direction	PC pin and name	PC Reg Bit	Function Notes (for FACIT pins)
1	Ch1 <-----	2 Data0	D0	\ 8 Data Out registers, to be set from the computer
2	Ch2 <-----	3 Data1	D1	
3	Ch3 <-----	4 Data2	D2	
4	Ch4 <-----	5 Data3	D3	
5	Ch5 <-----	6 Data4	D4	
6	Ch6 <-----	7 Data5	D5	
7	Ch7 <-----	8 Data6	D6	
8	Ch8 <-----	9 Data7	D7	
+--- 9	Ch9			/
^ 10	SD			Feed hole channel (logic 1 => always feed hole)
11	PI <-----	1 -Strobe	C0-	Stepping Direction signal, leave as is
12	PR ----->	11 +Busy	S7-	Strobe = -Punch Instruction
o 13	-			Busy signal = Still punching
n 14	-			\ not used at FACIT site
n 15	-			
e 16	-			
c 17	-			
t 18	-			/
19	EXT			EXT: external data switch, leave as is
V 20	ERR1	+-- 20	Ground	ERR1: Error signal, not important
21	TL	21	Ground	TL: Tape Low Signal, not important
+-- 22	+24V	22	Ground	+24V from internal power supply (log. 1)
23	-	23	Ground	
24	+6V (5V)	24	Ground	+6V from internal power supply
25	0V -----+	25	Ground	Signal ground, not connected to chassis ground

Now I'll go into detail with the FACIT pins. I've got a block diagram and electronic description. Here you get the light edition with the most important things:



The Punched Paper Project / driver/FACIT-MANUAL.txt



As you see, we need only 1 control pin, 1 signal input pin and 8 data pins for the workflow. Unfortunately, the strobe (PI) and busy (PR) don't behave like expected in today's days. Therefore we cannot simply use commands like "cat \$file > /dev/lp0" at Linux or "copy FILE.TXT LPT0:" in DOS/WINNT, but we need an own driver.

In this subproject, we have implemented the diagram above as program logic. To keep it more simple, we didn't develop kernel driver, but userspace / user mode drivers, using ppdev at linux and the third party library "WinIo" at Windows NT.

Sven Koppel,
documentated at 02. September 2008

This page was last modified at Fri, 26 Jul 2013 11:33:56 +0200
Further reading: dev.technikum29.de | Paper-Tape-Project WebSVN | koeppel.homeunix.org