9.1 CPU 852-6810/12

LIST OF ILLUSTRATIONS

LIST OF TABLES

9.1 CPU 852-6810/12 IDENTIFICATIONS

P852 CPU-board (CPA) with intergrated Ser. Cu (current loop)
Type-number: see chapter 1: for P6810 and 6812

Test-programs:

CPU	-	CPUTSC
Intgr. CU	-	PERTST

Devices:

PER 3100	-	PTS 6862-001

Power consumption +5V 6A

9.2 INSTALLATION DETAILS

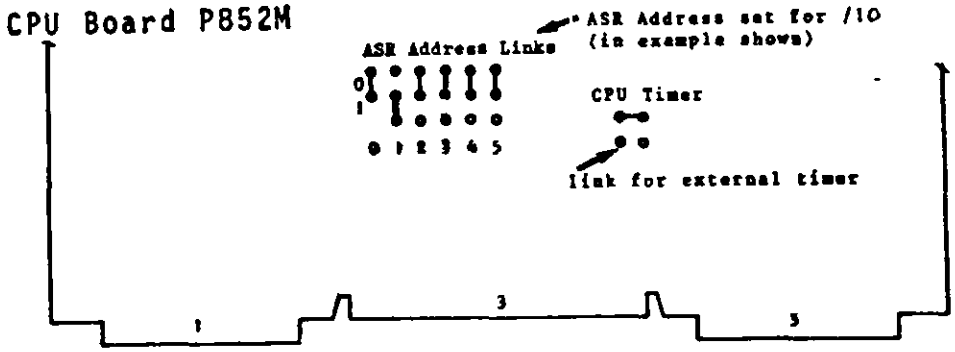

Figure 9.1 STRAPSETTING ON CPU 852 BOARD

9.3 INTERFACE CONNECTIONS

1A01	0V
1A02	PIFN
1A03	CPFN
1A04	ISO2N
1A05	PFFN
1A06	BIEC4
1A07	BIEC2
1A08	BIEC5
1A09	ISO6N
1A10	ISO3N
1A11	ISO1N
1A12	INTASRN
1A13	
1A14	
1A15	
1A16	
1A17	
1A18	
1A19	
1A20	
1A21	
1A22	
1A23	
1A24	
1A25	
1A26	
1A27	
1A28	
1A29	
1A30	
1A31	
1A32	
1A33	
1A34	
1A35	
1A36	
1A37	

1B01	ASR LINE
1B02	RTC AN
1B03	SCEIN
1B04	ISO5N
1B05	ISO4N
1B06	RTCFZ1N
1B07	BIEC1
1B08	BIEC3
1B09	BIEC0
1B10	ISO7N
1B11	ISOON
1B12	
1B13	
1B14	
1B15	
1B16	
1B17	
1B18	
1B19	
1B20	
1B21	
1B22	
1B23	
1B24	
1B25	
1B26	
1B27	
1B28	
1B29	
1B30	
1B31	
1B32	
1B33	
1B34	
1B35	
1B36	
1B37	

Table 9.1 CPU-A, CONNECTOR 1 (ASR CU)

5A01		5B01	
5A02		5B02	
5A03		5B03	
5A04		5B04	
5A05		5B05	
5A06		5B06	
5A07		5B07	
5A08		5B08	
5A09		5B09	
5A10		5B10	
5A11		5B11	
5A12		5B12	
5A13		5B13	
5A14		5B14	
5A15		5B15	
5A16		5B16	
5A17		5B17	
5A18		5B18	
5A19		5B19	
5A20		5B20	
5A21		5B21	
5A22		5B22	
5A23		5B23	
5A24		5B24	
5A25		5B25	
5A26		5B26	
5A27		5B27	
5A28		5B28	
5A29	BIOEKEY	5B29	CPMCN
5A30	UNLOCKN	5B30	IPL
5A31	RUNN	5B31	START
5A32	RCPODN	5B32	CPINT
5A33	LOADRN	5B33	RUNFA
5A34	READSTN	5B34	RCPO1N
5A35	RCPO3N	5B35	RCPO2N
5A36	LOADDMN	5B36	READMN
5A37	READRN	5B37	INSTN

Table 9.2 CPU-A, CONNECTOR 1 (ASR CU)

Signal name	Pin No. (Line Connector P5)	CPU
Transmitted Data (V24)	2	
Received data (V24)	3	
+5V	16	
Output Ground	15	1A01
Output Line	14	1B01
Output Line	13	
Output Source	12	
Input Ground	11	
Input Line	10	
Input Line	9	
Input Source	8	
Ground	6	
Source	5	
Protective ground	1	
Signal Ground	7	

Table 9.3 PER 3100 INTERFACE

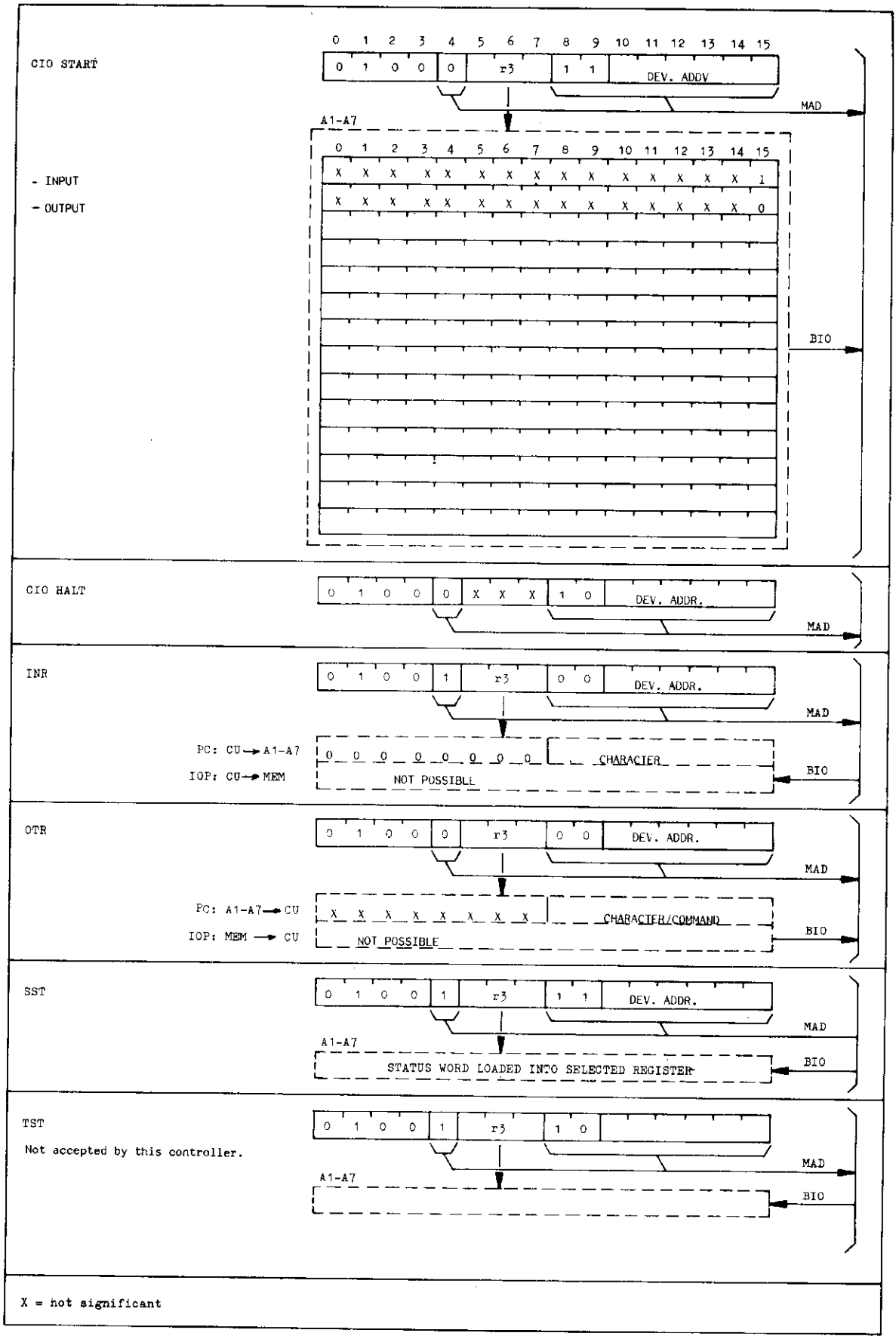

Figure 9.2 INSTRUCTION-/COMMAND-WORD FORMATS

9.4.1 STATUSWORD:

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

No error detection by the Controller

9.5 SHORT DESCRIPTION TESTPROGRAM CPU TSC (REL 2)

The test program CPUTSC Release 2 can be used for testing the CPU functions in the following computers:

- 6805 (CPU: P851)
- 6810/11/12 (CPU: P852)
- 6810/11 upgraded with UK 01 (CPU: P857)
- 6813 (CPU: P857)

Basic testing requires no extra equipment, a cassette or diskette drive and the SOP provide the necessary man-to-machine interfaces.

Program Load & Initiation

When the program has been loaded from a cassette or a diskette drive, it will automatically start a short sequence for initiating timers and identifying the type of CPU. Then it stops and lights the following SOP indicators (marked with 1):

1	2	3	4	5	6	7	8	9	10	11
1	1	0	0	0	X	X	X	0	0	0

0	0	0	: CPU = P852
0	0	1	: CPU = P851
1*	1	0	: CPU = P857

*When testing a 6810/11 that has been upgraded with UK 01, reset this position by operating SOP switch 6. (Changes the parameter '4 ms' to '2 ms', see section 3.1)

Program Run & Error Indications

Start the program by operating SOP switch 1. The program will now run in loop mode until an error is found, or until it is stopped by another operation of SOP switch 1.

Each cycle of the loop takes about 1 ms, and the number of completed cycles is continously counted in binary form on the SOP indicators 1-8.

To test the power on/off handling; switch the computer's power off/on whilst the program is running (ensure that the RTC switch is set in position LOCK).

If the program stops on an error, the three right-most SOP indicators will display the main function that has failed:

9	10	11	
0	0	1	= Power On/Off Error
0	1	1	= Invalid Instruction Code
1	0	1	= Unwanted Interrupt
1	1	1	= Processing Error

PERTST

Codes 40 - 48 see PERTST

ASR, PTS 3100, and DISPLAY

These peripherals and their CU's can be checked with the aid of two small programs called Line, and Echo, if the standard test program either cannot be loaded or if it will not run.

Program Line

Memory Address	Data	Program Instructions		
0080	FFFF		Data	/FFFF
0082	0000		Data	0
0084	207F	Start	HLT	
0086	20BF		INH	
0088	0200		LDK	A2,0
008A	4BD0		SST	A3,/10
008C	42D0		CIO	A2,1,/10
008E	5C04		RB(NA)	* -2
0090	8520	OUTCR	LDKL	A5,/0A0D
0092	0A0D			
0094	4510	OUT	OTR	A5,0,/10
0096	5C04		RB(NA)	* -2
0098	3D68		SRL	A5,8
009A	5C08		RB(NZ)	OUT
009C	4610	OUTCH	OTR	A6,0,/10
009E	5C04		RB(NA)	* -2
00A0	1201		ADK	A2,1
00A2	EA1C		CWR	A2,A7
00A4	5C0A		RB(NE)	OUTCH
00A6	0200		LDK	A2,0
00A8	5F1A		RB	OUTCR

- Load the ASCII character in register A6.
- Load the number of times you wish the character to be repeated into register A7.
- Load the start address of the program into register A0. (/0086)
- Push the RUN button.

Program Echo

Memory Address	Data	Program Instructions		
0080	FFFF		Data	/FFFF
0082	0000		Data	0
0084	207F	Start	HLT	
0086	208F		INH	
* 0088	0201	IN	LDK	A2,1
008A	42D0		CIO	A2,1,/10
008C	5C04		RB(NA)	* -2
008E	4B10		INR	A3,0,/10
0090	5C04		RB(NA)	* -2
0092	4290		CIO	A2,0,/10
0094	4CD0		SST	A4,/10
0096	5C04		RB(NA)	* -2
0098	0200		LDK	A2,0
009A	42D0		CIO	A2,1,/10
009C	5C04		RB(NA)	* -2
009E	4310		OTR	A3,0,/10
00A0	5C04		RB(NA)	* -2
00A2	4290		CIO	A2,0,/10
00A4	4CD0		SST	A4,/10
00A6	5C04		RB(NA)	* -2
00A8	5F24		RB	IN

* change to 0088 0221 in LDK A2,/21 for 856/7

Program echo:

Once loaded and started any input character from the keyboard will be printed, displayed or executed on the device.