

After concluding your session with PsiWin, it is not absolutely necessary to break the remote-link connection again.

To restart the STG application, see chapter 5.7.

To start a new session with PsiWin, it is not necessary to exit the STG application.

5.2.3 Organization of the READ.HEX File

The READ_E/F.HEX file only contains the pure data which also exist on the MDS. The length of the file is the same as that of the MDS, specified in bytes.

5.3 Functions with the PSION Operating System

You can use the FILE/EXIT menu command to access the operating system level of the hand-held terminal. We will now describe some of the functions which are available with the PSION operating system.

- Simple writing of a batch file to copy MDS data to a memory card (e.g., on drive B:).
- Generation and modification of an AUTOEXEC file to change the time for automatic switch-off or the time for the backlight to save battery power and thus increase operating time for one battery charge.
- Edit the read MOBY data with the PSION editor. Remember that this editor can only be used when the MDS data are in ASCII format.
- Spread sheet function
- Calculator
- Execution of DOS commands

See the manual entitled "PSION Workabout USER GUIDE" for a detailed description of operating system functions and standard programs. This manual can be ordered from PSION. See appendix A.

5.4 Automatic Power Saver Function

The PSION hand-held terminal has an automatic power saver function. This is activated after no keys have been pressed on the PSION for approximately 5 minutes.

In addition, the STG program has another power saver function. The MDS command being executed is interrupted if no MDS is detected 30 seconds after the start of an MDS command or the MDS being processed is moved out of the field for more than 30 seconds. The following message appears.

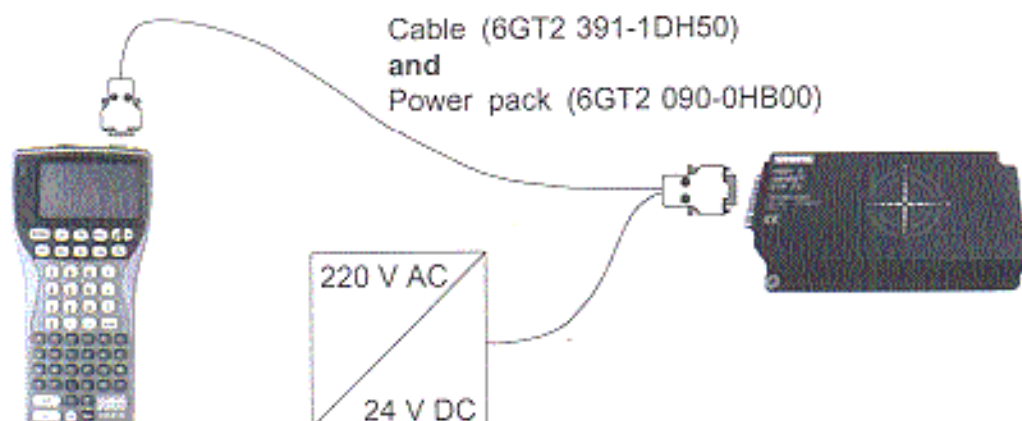


You can now completely terminate the command with ESC or continue with ENTER. If you decide to continue, the interrupted command is continued at the point at which it was interrupted.

5.5 Connecting SIM Devices (MOBY E)

A MOBY E SIM can be connected to the RS 232 interface of the PSION. The following figure shows the connection diagram. Before commissioning, a switch must be made to MOBY E/SIM with the "EXTRAS/COMMUNICATION/PROTOCOL" function.

With this configuration, SIM can be used to work with the "MOBY" program and user applications with the MOBY library. Cf. chapter 5.6.2.



5.6 Developing User Applications

5.6.1 What Do I Need?

The C development package from PSION is required for user applications. For the communication connection, you will also need a 3link interface and the PC cable with a 9-pin sub D and mini DIN plug connector.

Although, in principle, applications can also be developed with the Basic programming language OVAL, the MOBY library cannot be used.

5.6.2 The MOBY Library

A library for MOBY E and MOBY F is available. The library (MOBY E and F) must be ordered under order number 6GT2 381-1AB00. The C library also includes a description of the interface commands.

The table below provides a summary of implemented commands.

The MOBY E library

Function Call	Short Description	Type of Command
CCT_READ_N_BLOCK	Read card data (1 to n data blocks, max. of 96 bytes)	Standard
CCT_WRITE_N_BLOCK	Write card data (1 to n data blocks, max. of 96 bytes)	Standard
CCT_WRITE_SIGNAL	Address digital output, reserved for switching the antenna	Standard
CCT_OFF	Turn off antenna field	Standard
CCT_MODE	Set field mode of the antenna field	Standard
CCT_OPEN	Open logical device	Only for SIM operation via RS 232
CCT_CLOSE	Close logical device	Only for SIM operation via RS 232
CCT_SETKEY	Parameterize read-card/write-card interface	Optional

Function Call	Short Description	Type of Command
CCT_SET_KEY_TEMP	Change temporary key	Optional
CCT_GET_FIELD_STATE	Scan current card indices	Optional
CCT_RESET	Reset read head	Optional - general command

Although the commands of the MOBY E library are the same as those of the standard MOBY E library "CCTWAPI," not all commands of "CCTWAPI" are available on the hand-held terminal.

The MOBY F library

Function Call	Short Description
proloc_ReadBlock	Reads a block from the MDS (16 bytes)
proloc_ReadPage	Reads a page from the MDS (4 bytes)
proloc_WriteBlock	Writes a block to the MDS (16 bytes)
proloc_WritePage	Writes a page to the MDS (4 bytes)
proloc_GetSnr	Reads the TagID from the MDS
nGetTagType	Determines the type of MDS in the antenna field
nMobyFOpen	Opens a serial interface in PSION
vMobyFClose	Closes the opened interface

5.7 System RESET

The hand-held terminal executes a system RESET when the device is turned on for the first time after the batteries have been installed. This RESET is the same as a hardware RESET.

A system RESET can also be triggered by hand. To do this, press the $\surd$ key + Ctrl + Del (Shift + Esc + Del on the PSION with the numerical keyboard) simultaneously.

During the system RESET:

- The MOBY STG application is started again.
- Data stored in flash memory are always retained (drive A: or B:).
- The data in RAM memory (drive "RAMDRIVE:") are retained. However, these data will be lost if all batteries (including lithium cell) of the PSION are removed.

6 The "MOBY" Program with the PSION Numeric Model

The MOBY service and test program also functions without restrictions on the PSION Workabout with numeric keyboard. This PSION model is useful for applications in which only simple and identical applications are performed by untrained personnel. This model of the hand-held terminal can be ordered directly from PSION. See appendix A.

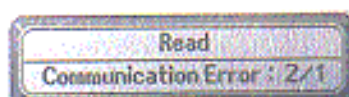
The functionality of the 4 function keys can also be put to good use. The following STG functions can be called directly via function key.

- F1 = Read MDS
- F2 = Write MDS
- F3 = Load data from file
- F4 = Save data in file

Data can only be entered with the numeric keys.

7 Error Messages

The messages in the following table can occur during operation. The messages are indicated in a separate window. A message can have the following format.



The message is coded in several digits, has the format is xx/yy/zz, and is used for precise error analysis. The following table contains all messages in the format xx/yy. The information in /zz is included in some messages. "zz" contains additional error information (e.g., the block in which the error occurred).

Message	Possible Error Causes and Their Correction	Type of Error
1 / 1, 1 / 2	Internal program error	General errors
1 / 3	Interface defective	
2 / 1	- Read device fails to send start protocol. - Read head screwed on? - Does read head match the protocol setting? See menu EXTRAS/COMMUNICATION.	
3 / 20, 3 / 21	Read device fails to send response.	MOBY E errors
3 / 32, 3 / 33, 3 / 34, 3 / 35, 3 / 36 4 / 1, 4 / 2, 4 / 3 5 / 1, 5 / 2, 5 / 3 6 / 1, 6 / 2, 6 / 3, 6 / 32, 6 / 33, 6 / 34, 6 / 36 7 / 34, 7 / 36, 7 / 37	Internal program error	
4 / 20 5 / 20 6 / 20 7 / 20	- Read device fails to send response. - Check parameters in the EXTRAS/COMMUNICATION menu. If SIM operation is being used, "Interface" and "Protocol" must be changed to SIM.	

Message	Possible Error Causes and Their Correction	Type of Error
4 / 21 5 / 21 6 / 21 7 / 21	Read device fails to send response or sends bad response.	MOBY E errors
4 / 25 5 / 25 6 / 25 7 / 32	- Read device sends wrong response. - MDS is not personalized with the MOBY key.	
10 / 40 11 / 40 12 / 40 13 / 40 14 / 40 15 / 10	Read device fails to send response.	MOBY F errors
10 / 41 11 / 41 12 / 41 13 / 41 14 / 41 15 / 11	Read device fails to send response or sends bad response.	
10 / 42 11 / 42 12 / 42 13 / 42 14 / 42 15 / 12	Read device sends wrong response.	
10 / 50 - 67 11 / 50 - 67	Error while reading the tag data	
10 / 52, 10 / 53, 10 / 54, 10 / 55, 10 / 56, 10 / 57, 10 / 67 11 / 52, 11 / 53, 11 / 54, 11 / 55, 11 / 56, 11 / 57, 11 / 67 12 / 52, 12 / 53, 12 / 54, 12 / 55, 12 / 56, 12 / 57, 12 / 67 13 / 52, 13 / 53, 13 / 54, 13 / 55, 13 / 56, 13 / 57, 13 / 67	Internal program error with MOBY read head	

Message	Possible Error Causes and Their Correction	Type of Error
14 / 52, 14 / 53, 14 / 54, 14 / 55, 14 / 56, 14 / 57, 14 / 67 15 / 22, 15 / 23, 15 / 24, 15 / 25, 15 / 26, 15 / 27, 15 / 37	Internal program error with MOBY read head	MOBY F errors
10 / 66 11 / 66 12 / 66 13 / 66 14 / 66 15 / 36	General read/write error of MOBY read head	
10 / 80 11 / 80 12 / 80 13 / 80 14 / 80 15 / 80	Tag type on read device is not supported.	
12 / 1, 12 / 2 13 / 1, 13 / 2 14 / 1, 14 / 2	Internal program error	
12 / 50 - 67 13 / 50 - 67 14 / 50 - 67	Error while writing the tag data	
15 / 20 - 37		
20 / 1, 20 / 2, 20 / 3	Internal program error. Exit STG program, and start again.	Timer error

8 Technical Data

Hardware	
Processor	NEC V30mx, 27.68 MHz, 80C86-compatible
RAM memory	2 Mbytes of which approx. 1.8 Mbytes can be used as desired
ROM memory	2 Mbytes for operating system
User program	256 Kbytes with MOBY service and test program
Monitor screen	Graphic LCD monitor screen with 240 x 100 pixels, gray-stage scale, backlighting can be turned on
Keyboard	Alphanumeric with 57 keys
Sound	Piezo signal encoder
Power supply	NiCd battery pack with 2 type-AA cells (850 mAh) High-speed chargeable, automatic switch-off Operation time: 20 hours (Read head inactive, display not lighted) 4.5 hours (Read head active, display not lighted) 10 hours (Read head inactive, display lighted)
Interfaces	LIF interface (LIF = Low Insertion Force) for battery charging and communication with PC and printer (3link cable not included) RS 232 and TTL interface for connection of a MOBY read head
Security	Locking mechanism for battery and program memory
Software	
Operating system	EPOC/16 multitasking, graphics support, GUI interface, Interpreter similar to MS-DOS
File management	MS-DOS-compatible
Integrated software	MOBY service and test program, spread sheet calculation, data base, pocket calculator, communication

Technical Data	Complete Device (incl. Batteries)	Read Head
Dimensions	260 x 90 x 35 [mm]	90 x 64 x 35 [mm]
Weight	Approx. 440 g	Approx. 110 g
Temperature	Operation: -20 °C to +60 °C Storage: -25 °C to +80 °C (without batteries)	
Relative humidity	0% to 90%, no condensation	
Protection rating	IP 54 (protected against splashed water)	
Shock resistance	Max. falling height on concrete: 1 m	
EMC	EN 55022	
Electrostatic, RF, EFT	IEC 801-2; IEC 801-3; IEC 801-4	
RF read/write head		
MOBY E	13,56 MHz (MIFARE) Max. read distance: 30 mm with MDS E611 18 mm with MDS E600 10 mm with MDS E624 5 mm with MDS E623 3 mm with MDS E623, Mounted in metal	
MOBY F	125 kHz (HITAG) Max. read distance: 80 mm with MDS F125 50 mm with MDS F415 60 mm with MDS F124	

A Appendix

Ordering components for expanded functions

The expanded functions of the MOBY STG hand-held terminal require components which are not available from Siemens A&D SE.

If you need these components for your MOBY application, please contact PSION directly or its representative in your country. You will find addresses and order lists from PSION on the Internet under www.pSION.com/industrial/. The PSION representative in your country is also located under this Internet address.

The following components are required for the STG application as options.

Ordering Designation	Remarks
3link interface for wall and vehicle holder	
Dual AT/XT connection cable for the PC	
PsiWin software (for Win 95/NT)	Also available free of charge under the PSION Internet address
User's guide for PSION Workabout	Ask your PSION representative.
Additional Components required for writing your own applications	
C development package for Workabout	
Manual for C development package	

Ask PSION or its representative directly for information on the following PSION components.

- OVAL programming environment
- Memory expansion
- High-speed charging devices
- PSION Workabout with numeric keyboard

These components are not required for the STG application. They are only of importance if you want to program your own identification application on the hand-held terminal.

**THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.
OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND
(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED,
INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.**

**NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO
OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS
TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE
USER'S AUTHORITY TO OPERATE THE EQUIPMENT.**