

Operating instruction for the Reader Terminal program

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1 Installation, System

- System: Made for Windows 10, 8, 7, Vista, XP, 2000, NT or 9x.
- Installation: Not necessary.
- Start: Program can be started directly from the CD, or can be copied to the hard disk of your PC (Please copy the whole application folder).





2 Connection

- Turn on the reader you want to communicate with. Choose the operation mode that supports communication. These are for ARE H5 readers operation modes "Online", "Online H" (handshake), "Read/Transf." and "Database/PC". For ARE H9 these are "Online/USB", "Online/USB H", "Database/USB", "Online/BT", "Online/BT H" und "Database/BT".
- Connect the reader with the PC. Plug in the communication cable or pair the devices via Bluetooth interface.
- Start the PC program "Reader Terminal".
- Open the "Settings" dialog by choosing the menu point "Settings" \rightarrow "Port".
- Choose the right COM port reader and PC are connected with. For help to find the right COM port you can start the device manager directly with "Settings" → "Device Manager". Of course you can take the way via the control panel as well. There the COM port has to be listed in "Ports (COM & LPT)". That applies to RS232 ports that are listed since installation on your PC. USB devices get listed after plugged in. Bluetooth devices are listed after pairing.
- The communication parameters are 19200/8/1/None: Baud rate 19200, 8 data bits, 1 stop bit, no parity (Exceptions can be special reader versions. Please check this in the reader documentation. Old ARE H5 readers communicate via the IRDA interface with 9600 baud.).

Settings				×
Com Port Settings	Keyboard	d Simulation		
Com Port: COM1	•	HEX Invert	HEX -> DEZ	
Baudrate: 19200	•	Γ	8 HEX -> 8 DEZ	
Databits: 8	-	Γ	HEX -> 10 DEZ	
Parity: None	-	Γ	HEX -> 10 DEZ Motorola	3
Stopbits: 1	•	Γ	HEX -> Byte 03 HEX	
CTS:		Γ	HEX -> Byte 03 HEX>	> DEZ
RTS:		Г	HEX -> ISO	
Protocol		Γ	HEX -> BDE	
Image: STX> <data> <crc> <etx< p=""></etx<></crc></data>	> ad	d start replace		add end
○ <data> <cr></cr></data>	1.	from	to	
C <data></data>	2.	from	to	
	3.	from	to	
	4.	from	to	
	5.	from	to	
	use <0 charac	R>, <lf>,<stx>,<etx>,< ters</etx></stx></lf>	(ACK>, <nak>,<tab>,<f1)< td=""><td>2> instead of non-printabel</td></f1)<></tab></nak>	2> instead of non-printabel
				Abbrechen OK



• Depending on the reader the suitable protocol can be selected. The "Protocol" refers to the "To Send:" line in the main view of the Reader Terminal program. <Data> describes the string from the edit field. With the button "Send" <Data> is completed as described in the protocol and sent via the selected interface.

"<STX> <Data> <CRC> <ETX>" is the telegram format ARE H5 and ARE H9 use in database mode ("Database/PC", "Database/USB", "Database/BT"). If there is edited the text "SV" (version request) in the "To Send:" line, the telegram <STX> SV <CRC> <ETX> is sent when pressing the "Send" button. The <CRC> is a 4-digit cyclic redundancy check. Its calculation is described in the document for data transmission attached to the reader. The reader is answering with <STX> <Version text> <CRC> <ETX>.



<STX> V2.40000 CAB7 <ETX> in this example. "CAB7" is the CRC of the version text "V2.40000".



<Data> <CR> is the adequate protocol for our command controlled readers as the ARE i2 or the ARE DT1. If there is edited the text "VER" (version request) in the "To Send:" line, the telegram VER <CR> is sent when pressing the "Send" button. <CR> is the carriage return character. The reader is answering with <Version text> <CR>.

Reader Terminal		3
Edit Settings DB	Config Online ?	
	Terminal	
To Send: VER	Li Send I	
Sent Data:	Received Data:	E.
		A State A state of the state

AEG ID A17 V3.201 <CR> in this example. In this case "AEG ID A17 V3.201" is the version text.

• The part "Keyboard Simulation" affects the "Online" menu point of the Reader Terminal. It is described in chapter "Menu" → "Online".



• With "OK" input is confirmed. The "Settings" mask is closed. The COM port is opened. We are ready to communicate.

If there is connected a handheld reader in online mode (ARE H5 in operation mode "Online", "Online H", "Read/Transf." or ARE H9 in operation mode "Online/USB", "Online/USB H", "Online/BT", "Online, "Duty", "Duty, "Duty

Reader Terminal	Theorem	No. of Concession, Name	
Edit Settings DB	Config Online ?		
		Terminal	
To Send:			Send
Sent Data:		Received Data:	4
		1000000999000000005008	
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3 Menu

3.1 DB – read and write Data Base of the reader

With the menu "DB" the data base of the reader can be read or overwritten. Attribute text or text associated to the transponder code can be written to the reader.

Reader Terminal					
Edit Settings DE	3 Config Online ?				
		Termir	al		
To Send:		10111			Send
Sent Data:		B	eceived Data:		
					1
					17
					10
					1.2
		1			<u> </u>
		DB			
Read):\tmp\db_read.xls				Path
Write	2:\tmp\db_write.xls				Path
Clear					
Test				Dataset	



With the "Read" button the data base from the reader is uploaded, and saved to the corresponding path. "C:\tmp" is the first suggestion or choose an existing path with the "Path" button. The file is opened automatically with Excel.

	Reader Term	inal			
Ed	it Settings	DB Config Onl	ine ?		
			Te	rminal	
	To Send:	sv			Send
	Sent Data:			Received Data:	
	SV			V2.40000	
	BN			Z1204171406489000732DD14FFFFFF3Adam	
	BN			Z12041714065190998000001FFFFFBBernd Z1204171406539E998000009EEEEEEACaesar	
				Z120417140657904202D1F03FFFFFF2Dirk	
				Z1204171405358000F200000F51C71Elke Z120417140702F8000F580003F5F006Fritz	1
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			1	DB	
	Read	C:\tmp\db_read.xls			Path
	Write	C:\tmp\db_write.xls			Path
	Clear	1			
	Test			Dataset	8
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	Reader Te	minal	a	
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	To Send	sv		Send
	Cont Data:	107	essived Data:	
	wZ12041 wZ12041 wZ12041 wZ12041 wZ12041 wZ12041 wZ12041	1406489000732DD14FFFFF3Adam / 140651300938000001FFFFF8Demd / 14065330E 938000009FFFFFACaesar / 140657804202D1F03FFFFFACaesar / 140657800072D01009F51C71Elke / 1405988000755000F51C71Elke / 140704B291A63A82D6FFFFF4Gabi / 1407083202A2D6722FFFFFF5Holger /	ecerea Daa: // ACK // ACK // ACK // ACK // ACK // ACK // ACK	
		DB		
	Read	C:\tmp\db_read.xls		Path
	Write	C:\tmp\db_write.xls		Path
	Clear			
	Test		Dataset	
		1		1

With the "Write" button the data base from the corresponding path is sent to the reader.

Writing the database to the reader is acknowledged by the dialogue on the bottom. Success or failure of every single work step is commented.

AEG_ID_Terminal		×
't' 'EC' 'WP' 'w'	Write Attributes Clear Eeprom Init Pointer Write Records	ок ок ок ок
		OK



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1		fleisch		2	zimt	12.04.17	14:07:04	291A63AB2D6F					_	Datamars	Gabi
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Older reader versions probably don't support the attribute column.

The best way to create your own database you want to write to the reader is to read a database from the reader first. Keep the format and add data sets, attribute- and transponder-textes.

With the "Clear" button, the data base on the reader is deleted.

With the "Test" button it is checked if the reader database is empty, or if it contains transponder data.



3.2 Config – Reader configuration

With the menu "Config" the reader can be configured. Internal and menu parameters of the reader can be read and written.

For this purpose the connected reader has to be in database operation mode (ARE H5 "Database/PC", ARE H9 "Database/USB" or "Database/BT").

Edit Settings DB Config Online ?
Terminal To Send: Sent Data: Received Data:
To Send: Send Sent Data:
Sent Data:
Sent Data: Received Data:
J
Conversion
Command
Software Version> SV>
Liet I ag> GT>
Algorithm>>
Date, Time> read >
Exit Communication> XT>
Factory Default>

Each line from the "CONFIG" block represents one command. On the left side the meaning in plain text. The button in the middle names the command. In the text field on the right side the received answer is shown.



With the first line software version is read.

With the 2. line a transponder can be read remote controlled by the PC.

In the 3. line reader specific parameters can be read or written. In the left combo box parameters of the connected reader are listed. Choose the parameter you are interested in. If the 2. combo box is left empty, and the button in this line is pushed, the chosen parameter is read. The value of the parameter is shown rightmost in this line. In the "Received Data: " field the from the reader received telegram is commented with its meaning.

	Reader Terminal		-				
Edi	t Settings DB	Config Online	?				
				Terminal			
	To Send: S012						Send
	Sent Data:			Received	Data:		4
	SV GT S012			V2.40000 1000000 01 // on) 999000000	005008	
	Command			CUNFIG	>	Receive	
	Software Version			SV	>	V2.40000	
	Get Tag		>	GT	>	100000099900000000500	8
	Buzzer 💌	-	>	S012	>	01	
	Algorithm>	•	>		>		
	-		>		>		
	Date, Time>	read	>		>		
	Exit Communication		>	XT	>		
	Factory Default		>		>		

In this example the value of the buzzer function is requested (command <STX> S012 <CRC> <ETX>). The ARE H5 answers <STX> 01 <CRC> <ETX>. "01" means buzzer function is on.



If in the second combo box a value for the selected parameter is chosen the button sends a write comma	und. J	[f
the reader has successfully changed the parameter it is sending an acknowledge.		

15	Reader Terminal	2					x
Edi	it Settings DB	Config Online	?				
				Terminal			
	To Send: \$01200			r onningi		Send	
	Sent Data:			Beceived	Data:		
	s01200			// ACK	<u></u>		- 🎽
							2
							715
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	Command		>	Send	> Receive		
	Software Version		>	SV	>		
	Get Tag		>	GT	>		
	Buzzer 💌	off 🗾 👻	>	s01200	> // ACK		
	Algorithm>	_]>		>		<u> </u>
	-	÷	>		>		
	Date, Time>	read	>		>		
	Exit Communication		>	XT	>		
	Factory Default		·····>		>		

In this example the buzzer function is disabled (command <STX> s01200 <CRC> <ETX>). The ARE H5 answers <STX> <ACK> <ETX>. The value change of the parameter was successful.

The same principle is valid for the following lines. If the 2. argument stays empty a request telegram is created. If a value is selected it is written to the reader.

With the next line the supported algorithms of the reader / the transponder types the reader can read can be requested or changed. By default all algorithms are active. Single algorithms can be masked out or even only one can be used.

The next line is about parameters with numerical values. Parameter and no value = request. Is a numerical value is specified the parameter value is overwritten.

With the line "Date, Time" - "read" the realtime clock of the reader can be read. If "read" is switched to "write", the realtime clock of the reader is set to PC system time.

With the command "Exit Communication" the reader is leaving database mode.





"Factory Default" is setting all parameter back to the default values. Be carefully, all individually set values get lost.



3.3 Online

Reader Terminal				
Edit Settings DB Co	nfig Online ?			
		Terminal		
To Send:				Send
Sent Data:		Received Data:		
		8000F9C000001390		
				5
				t i i i i i i i i i i i i i i i i i i i
				1
1				
				(
Double Codes		ONLINE		
Keyboard Simulation	800059000001390		-	

With the menu "Online" the program can be used to receive transponder data.

In this view the Reader Terminal supports a handshake communication to the reader. The reader can expect an acknowledgement for a successfully transferred transponder code. This the case when ARE H5 in operation mode "Online H" and ARE H9 is in operation mode "Online/USB H" or "Online/BT H". If the reader has read a transponder it is first of all sending empty telegrams (<STX> <ETX>) until they are acknowledged (<STX> <ACK> <ETX>) by the communication partner (in this case the Reader Terminal). Not till then the data telegram (<STX> <transponder number> <ETX>) is sent. This as well has to answered with the acknowledgement telegram otherwise the reader starts again with empty telegrams.



In online view received telegrams are transcribed to keyboard simulation. With this function the transponder code read by the connected reader can be written directly to your PC application. For this purpose the Reader Terminal has to be in online view and has to be open in the background. Then the transponder number is typed just like a manual input with the keyboard to the cursor position in your application in the foreground.

The check box "Double Codes" allows or prevents to transcribe received identical codes to keyboard simulation.

The by the Reader Terminal received data via the selected interface can be transcribed one-to-one to keyboard simulation or they can be manipulated first. Such changes can be made with the "Settings" mask in the frame "Keyboard Simulation".

Settings		- Teacher	at an		×
Com Port Settings		Keyboard Simulation			
Com Port: C	OM1 👻	HEX Invert	🗌 HEX -> DE	Z	
Baudrate: 19	9200 💌		🗌 8 HEX -> 8	B DEZ	
Databits: 8	•		□ HEX -> 10	DEZ	
Parity: N	one 💌		🗌 HEX -> 10	I DEZ Motorola	
Stopbits: 1	•		🔲 HEX -> By	ite 03 HEX	
CTS: 🗖	1		🔲 HEX -> By	te 03 HEX> DEZ	
RTS: 🗆			HEX -> ISI	0	
Protocol			🔲 HEX -> BD	DE	
	(CRC> (ETX)	add start	replace		add end
◯ <data> <cr></cr></data>		1. Header	from	to	
○ <data></data>		2.	from < <u><cr></cr></u>	to	
		3.	from < <u><lf></lf></u>	to <u><tab></tab></u>	
		4.	from	to	Comment
		5.	from	to	<u><cr></cr></u>
		use <cr>,<lf>,<stx> characters</stx></lf></cr>	, <etx>,<ack>,<nak< td=""><td><pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre></td><td>of non-printabel</td></nak<></ack></etx>	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	of non-printabel
				Abbreche	en OK

There can be added characters at the start and at the end of the received telegram. Characters can be deleted or replaced. Additional there are diverse conversion methods available.

In this example the ARE H5 is reading ISO transponders in hexadecimal format. The telegram sent from the reader to the Reader Terminal consists of the transponder code (16 hexadecimal characters) followed by an carriage return (<CR>) and a line feed (<LF>).

With the settings in this example the hex data are converted to ISO decimal data. The text "Header " is added in front. The <CR> at the end of the telegram is deleted. The <LF> at the end of the telegram is replaced by a tabulator <TAB>. The text "Comment" and a carriage return <CR> is added at the end.



- 0 X

	🔠 Re	ader Term	inal				30.00	
I	Edit	Settings	DP	Config	Online	2		

In the Reader Terminal this looks this way:

dit Settings DB Con	ifig Unline ?				
	Tau	nin el			1
	Ten	ninai			
To Send:				Send	
Sent Data:		Received Data:			E
		8000F9C000001390			
		8000F9C000000001			
					U
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,		,			
		IN F			-\
Dauble Cadas	UNI	LINE			
Double Lodes	J\$				
Keyboard Simulation	Header 999 00000000001Comment		•		
					1

If Excel is in the foreground you get the following result:

I I								
Datei Start Einfügen Seitenlayo Calibri v 11 v Einfügen V Zwischena G Schriftart	ut Formeln	Daten Über	P F % 000 % 000 Form	ht Team Y atvorlagen Z	Cellen τ Bear	₽ X3		
A4 + (***	f _x					~		
A	В	С	D	E	F			
1 Header 999 00000005008	Comment							
2 Header 968 000000547368	Comment							
3 Header 999 000000000001	Comment							
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4 Notification of changes

Date	Description of Change	Version	Author
04/23/01	First edition	01	MK
01/21/04	Change of Protection Class	03	MK

5 Contacts

To improve our products, as well as its documentation is our permanent effort. For any questions, feedback or comments please call:

Tel.: ++49 (0)731-140088-0

Fax: ++49 (0)731-140088-9000

e-mail: <u>sales@aegid.de</u>

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