

Stollmann E + V GmbH	TA+USBA Technical Overview
-------------------------	--------------------------------------



TA+USBA

Technical Overview

Stollmann E + V GmbH	TA+USBA Technical Overview
-------------------------	-------------------------------



Note

This device was developed for the purpose of communication in an office environment. It is intended solely for our industrial clients for physical integration into their own technical products after careful examination by experienced technical personnel for its suitability for the intended purpose. The device was not developed for or intended for use in any specific customer application. The firmware of the device may have to be adapted to the specific intended modalities of use or even replaced by other firmware in order to ensure flawless function in the respective areas of application. Performance data (range, power requirements, etc.) may depend on the operating environment, the area of application, the configuration, and method of control, as well as on other conditions of use; these may deviate from the technical specifications, the Design Guide specifications, or other product documentation. The actual performance characteristics can be determined only by measurements subsequent to integration. Variations in the performance data of mass-produced devices may occur due to individual differences between such devices. Device samples were tested in a reference environment for compliance with the legal requirements applicable to the reference environment. No representation is made regarding the compliance with legal, regulatory, or other requirements in other environments. No representation can be made and no warranty can be assumed regarding the suitability of the device for a specific purpose as defined by our customers. Stollmann reserves the right to make changes to the hardware or firmware or to the specifications without prior notice or to replace the device with a successor model. Of course, any changes to the hardware or firmware of any devices for which we have entered into a supply agreement with our customers will be made only if, and only to the extent that, such changes can reasonably be expected to be acceptable to our customers. No general commitment will be made regarding periods of availability; these must be subject to individual agreement. All agreements are subject to our Terms and Conditions for Deliveries and Payments, a copy of which is available from Stollmann.

Copyright © 2005-2006 Stollmann E+V GmbH

Trademarks

The Bluetooth® word mark and logos are owned by the Bluetooth SIG, Inc. and any use of such marks by Stollmann E+V GmbH is under license. Other trademarks and trade names are those of their respective owners.

Author: cl	Date of Saving: 28.03.07	Ref: TA+USBA_TechnicalOverview_V1.01_en.doc	Revision: 1.01	Page 2 of 7
------------	--------------------------	---	----------------	-------------

Stollmann E + V GmbH	TA+USBA Technical Overview
-------------------------	-------------------------------



Table of Contents

1	Notes to Readers.....	4
1.1	Technical Overview.....	4
1.2	AT Command Reference.....	4
1.3	Hardware Reference.....	4
1.4	User Guide.....	4
2	Applications.....	4
2.1	Modem.....	4
2.2	TCP/IP Packet Transmission.....	4
2.3	Point-of-Sale Applications/X.25.....	5
2.4	Voice Communications.....	5
2.5	Special Applications.....	5
3	Serial Transmission via USB.....	5
3.1	Virtual Serial Device Drivers.....	6
3.2	Application Software.....	6
3.3	AT Commands.....	6
3.4	Data Flow Control.....	6
4	History.....	7

Stollmann E + V GmbH	TA+USBA Technical Overview
-------------------------	-------------------------------



1 Notes to Readers

The documentation for Stollmann products consists of several parts:

1.1 Technical Overview

Contains general information on the underlying technology and typical interfaces as well as application examples, none of which are limited to a specific product.

1.2 AT Command Reference

Contains a description of the AT commands supported by the products and of management functions. These are not limited to a specific product.

1.3 Hardware Reference

Contains product-specific information on the hardware and interfaces as well as a simple installation guide.

1.4 User Guide

Contains product-specific notes on configuration and on the use of the product in specific applications.

2 Applications

2.1 Modem

An important ISDN application is the transfer of data from a serial port (COM-Port) over a telephone line. Compare to analog telephone lines and modems, ISDN has the advantage of higher data rates, faster connections, and more stable data transfer. From the point of view of the application, ISDN terminal adapters “look” like analog modems and can be controlled in the same way using AT commands.

2.2 TCP/IP Packet Transmission

TCP/UDP/IP packets can be transmitted via ISDN. To achieve this, the data are packaged serially using the point-to-point protocol (PPP). It is possible to bundle (trunk) the two ISDN B channels (ML-PPP), resulting in speeds of up to 128 kbps.

Author: cl	Date of Saving: 28.03.07	Ref: TA+USBA_TechnicalOverview_V1.01_en.doc	Revision: 1.01	Page 4 of 7
------------	--------------------------	---	----------------	-------------

Stollmann E + V GmbH	TA+USBA Technical Overview
-------------------------	-------------------------------



2.3 Point-of-Sale Applications/X.25

Not least because connections can be established quickly, ISDN is often used for transmitting accounting or credit card data. The protocol used is generally X.25, which can be transferred via ISDN using the X.31 specifications. Transmission can be affected by the ISDN D channel or an ISDN B channel. The V.110 protocol is also used occasionally.

2.4 Voice Communications

ISDN supports the direct bidirectional synchronous transmission of telephone-quality speech data. If you would like to use the TA+USBA for one of these applications, please contact Stollmann directly.

2.5 Special Applications

Combined speech/data applications are not part of the specifications of the standard devices. If you want to develop and run applications in this area, please contact Stollmann directly.

3 Serial Transmission via USB

There are applications in which the application software requires serial communications, even though a physical serial interface is either not present or should not be used (e.g., in PCs with ISDN PC or ISDN USB adapters). In this case, the serial data can be sent via a USB interface.

Compatibility with the application software is ensured by a special system device driver that accepts the application's data at a virtual serial port and forwards it to the ISDN adapter via USB. This virtual device driver for serial port must be integrated into the system, and the application software must be able to communicate with a virtual serial port.

The serial data are transmitted via the USB interface in a standardized manner. The USB ISDN terminal adapter treats these data in the same way as data from a physical serial interface. In this way, data transmission via the USB interface differs only minimally from data transmission via a physical serial interface.

Author: cl	Date of Saving: 28.03.07	Ref: TA+USBA_TechnicalOverview_V1.01_en.doc	Revision: 1.01	Page 5 of 7
------------	--------------------------	---	----------------	-------------

Stollmann E + V GmbH	TA+USBA Technical Overview
-------------------------	-------------------------------



3.1 Virtual Serial Device Drivers

The device driver is used to transmit the serial data via USB are specific for each operating system and must match the USB controller on the ISDN terminal adapter. Stollmann makes the appropriate device drivers available for all popular operating systems. If your operating system is not among those supported, please contact Stollmann directly.

3.2 Application Software

VCOMM port standard software on PCs under Windows operating systems includes:

- HyperTerminal

A simple terminal emulation program for serial communications. Once a serial connection is defined and established, data can be entered in the terminal window that are then displayed on the receiving device.

- Dial-Up Network

Creates a network connection between your PC and the host over an ISDN network.

3.3 AT Commands

ISDN terminal adapters generally use AT commands for the control of ISDN connections. These AT were originally developed for analog modems. AT commands can be sent to the ISDN adapter from any program, such as a terminal emulation program. They can establish terminate connections and define parameters on the ISDN adapter.

While a data transfer is active, AT commands cannot usually be entered, since the ISDN adapter will be in the so-called transparent mode. To be able to issue commands again, the adapter must first be returned to command mode, e.g. by issuing the Break command (<one-second pause>+++<one-second pause>). This sequence of characters will stop the data transfer and re-enable the entry of AT commands.

The AT Command Reference contains a list of the available AT commands.

3.4 Data Flow Control

Data flow is controlled by the RTS/CTS lines. With RTS/CTS data flow control, the status of the corresponding control line allows the terminal device to signal that additional data can be accepted.

If data flow control is local, the local ISDN adapter is in charge of buffering the data. If the local buffer is full (for example because the payload data are transmitted only

Author: cl	Date of Saving: 28.03.07	Ref: TA+USBA_TechnicalOverview_V1.01_en.doc	Revision: 1.01	Page 6 of 7
------------	--------------------------	---	----------------	-------------

Stollmann E + V GmbH	TA+USBA Technical Overview
-------------------------	-------------------------------



slowly because of many packet retransmissions over the ISDN interface) the adapter will activate data flow control, thus preventing the local buffer from overflowing and ensuring the integrity and completeness of the payload data transmitted.

For additional information on data flow control, please contact Stollmann.

4 History

Version	Release Date	By	Change description
1.0	19.02.07	cl	First version
1.01	23.02.07	bs	modified