DIALAB

Strip Reader 40 (Urine)
Data Transfer
Package Insert

REF G11201	English

For data transfer to Personal Computer (PC) or Laboratory Information System (LIS).
For professional in vitro diagnostic use only.

INTENDED USE

This communication protocol defines the format and timing for data transmission from the Strip Reader 40. Data available from the analyzer includes specimen ID, date, time, and urine analysis results. This insert provides information required to develop a suitable computer interface to transfer analyzer data to an external computer with suitable PC software or a laboratory LIS system.

SUMMARY

Data is sent to the analyzer communication ports only when data is being printed to either the internal or external printer. If the analyzer has a USB port, the USB port may be used for data download also, using software which is compatible with this port.

If a report is printed manually, the test data for that report is sent to the available communication ports at the time of printing. Communication software residing on the LIS or local connected Personal Computer must look for and recognize data present at the communications port and capture it at the time of transmission.

MATERIALS

Materials Provided

- RS232-C Cable (Null) or USB Cable
- Package insert

Materials Required But Not Provided

- Applicable PC or LIS software

RS232 CABLE

A null modem cable is required for connection to a personal computer. The pin configuration for the cable is as follows:

RS232 Cable Pin Assignment	
Analyzer	Computer
2	3
3	2
5	5

USB Driver Installation

A software driver is required for connection to a personal computer.

1. Visit http://www.silabs.com/products/mcu/pages/usbtouartbridgevcpdrivers.aspx and download and run the corresponding program according to the operation system that your computer is running. For example, if your computer is running on Windows 2000, you can download and run the driver program from "Download for Windows 2K (v6.1)-> VCP Driver Kit".

2. Follow the prompts to download and run the driver by accepting the terms of agreement and using the default installation settings. A virtual COM port is built, normally distributed as COM3.

3. Follow the Directions for Use below for downloading data to a PC or LIS.

DIRECTIONS FOR USE

Download to PC

1. Connect the RS232C port on the analyzer to the COM port of the computer or connect the USB port on the analyzer to the USB port of the computer.
   Note: If you are using the RS232C serial splitter cable, ensure the end of the cable that says PC/LIS is connected to the COM port of the computer.

2. Turn on the analyzer.

3. **For use with the RS232C port**: Open the communication software in the PC, such as the Hyperterminal.

   For use with the USB port: Enter Control Panel, then System, Hardware, and Device Manager on the computer to access Ports (COM & LPT). Connect the USB port on the analyzer to the USB port of the computer, Find the COM port assigned to the driver. Use this COM port for communication software. For example, if the screen shows "Silicon labs CP210x USB to UART Bridge (COM3)" in Ports (COM & LPT), you can choose COM3 as the Hyperterminal.

4. Enter the following PC data interface:

#	COMx * Port Settings
1	9600 baud
2	8 data bits
3	No parity
4	1 Stop Bit
5	Flow Control Hand-shake Off

   Note: If using the RS232C port, select COM1. If using the USB port, select COM3, COM4, etc. depending on the assigned COM port number in the Device Manager.

5. Begin Urine Strip testing according to the **DIALAB** Strip Reader 40 User Manual.

Download to LIS

Connect the RS232C port on the analyzer to the COM port of the computer or connect the USB port on the analyzer to the USB port of the computer.

Note: If you are using the RS232C serial splitter cable, ensure the end of the cable that says PC/LIS is connected to the COM port of the computer.

DATA AND FORMAT

The following data and formats are used for printing and transmission to the communication interface.

ID：0058164578	
DATE: 2008-01-22 08:40	
Operator: 01	
No. 002000	
*LEU	1+	70 Leu/uL
*NIT	+	pos
URO	-	3.5 umol/L
PRO	-	neg
pH	6.0	
BLO	-	neg
SG	1.030	
KET	-	neg
BIL	-	neg
GLU	-	neg
*ASC	2+	1.14 mmol/L

All data transmitted are ASCII characters, codes below are hexadecimal.

Each record begins with	02 (Start of text)
Each line of data ends with	0D (Carriage return)
	0A (Line feed)
Each record ends with	03 (End of text)

If there is no strip on the holder, no data is sent to the computer.

Header Data Structure

The following data structures indicate the testing information provided after data transfer.

1. Header Data Structure with Barcode Reader:
   First line: ID
   Second line: Date & Time
   Third line: Operator ID
   Fourth line: No.

2. Header Data Structure without Barcode Reader:
   First line: Date & Time
   Second line: Operator
   Third line: No.

Results Data Structure

The following data structures indicate the testing results depending on the number of parameters tested. Result lines are buffered with spaces to 29 characters total.

1. ASC/GLU/KET/BIL/PRO/BLO/URO/NIT/LEU Data Structure:
   Character 1: Abnormal flag "*" (Blank means Normal)
   Characters 2 to 4: Test parameter
   Characters 5 to10: Blank (space)
   Characters 11 to 12: Arbitrary Results
   Characters 13 to 19: Blank (space)
   Characters 20 to 23: Concentration (Blank means No data)
   Characters 24 to 29: Units (neg means Negative, pos means Positive)

2. pH/SG Data Structure:
   Character 1: Blank (space)
   Characters 2 to 4: Test parameter
   Characters 5 to11: Blank (space)
   Characters 12 to16: Concentration
   Characters17 to 29: Blank (space)

3. Invalid Test Strip Data Structure:
   Characters 1-29 are blank (space)

Index of Symbols

	Attention, see instructions for	LOT	Lot Number	REF	Catalog #
IVD	For in vitro diagnostic use		Manufacturer		

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