

PC-HELPER

No-Isolated RS-232C Micro Converter
for USB2.0

COM-1(USB)H

Isolated RS-232C Micro Converter
for USB2.0

COM-1P(USB)H

User's Guide

CONTEC CO.,LTD.

Check Your Package

Thank you for purchasing the CONTEC product.

The product consists of the items listed below.

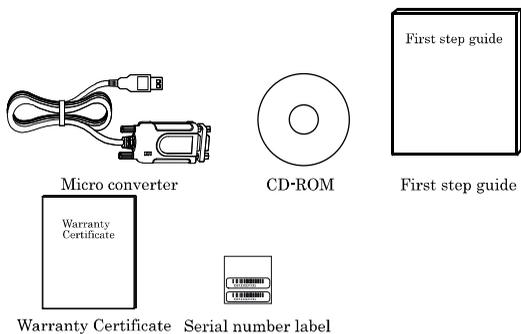
Check, with the following list, that your package is complete. If you discover damaged or missing items, contact your retailer.

Product Configuration List

- Micro converter (One of the following)
[COM-1(USB)H + gender changer ...1] *1
[COM-1P(USB)H + gender changer ...1] *1
- First step guide ...1
- COM Setup Disk(CD-ROM *2) ...1
- Warranty Certificate ...1
- Serial number label ...1

*1: The converter is packed with the gender changer attached.

*2: The CD-ROM contains the driver software and User's Guide (this guide).



Copyright

Copyright 2013 CONTEC CO., LTD. ALL RIGHTS RESERVED

No part of this document may be copied or reproduced in any form by any means without prior written consent of CONTEC CO., LTD.

CONTEC CO., LTD. makes no commitment to update or keep current the information contained in this document. The information in this document is subject to change without notice.

All relevant issues have been considered in the preparation of this document. Should you notice an omission or any questionable item in this document, please feel free to notify CONTEC CO., LTD.

Regardless of the foregoing statement, CONTEC assumes no responsibility for any errors that may appear in this document or for results obtained by the user as a result of using this product.

Trademarks

MS, Microsoft, Windows and Windows NT are trademarks of Microsoft Corporation. Other brand and product names are trademarks of their respective holder.

Table of Contents

Check Your Package	i
Copyright	ii
Trademarks	ii
Table of Contents	iii

1. BEFORE USING THE PRODUCT	1
------------------------------------	----------

About the Product	1
Features	1
Support Software.....	3
Cable & Connector (Option).....	3
Customer Support.....	4
Web Site	4
Limited One-Year Warranty	4
How to Obtain Service	4
Liability	4
Safety Precautions	5
Safety Information	5
Handling Precautions.....	5
Environment	7
Inspection	7
Storage.....	7
Disposal	7

2. SETUP	9
-----------------	----------

What is Setup?.....	9
Installing the driver.....	9
Step 1 Setting the Hardware	10
Name of each parts.....	10
Step 2 Installing the Software.....	11
Step 3 Installing the Hardware	12
Connecting the converter	12
Setting with the Found New Hardware Wizard.....	13
Windows Vista.....	13
Windows XP	15
Step 4 Initializing the Software	17
Step 5 Checking Operations with the Diagnosis Program	18
What is the Diagnosis Program?	18
Check Method	18
Using the Diagnosis Program	19

Step 6 Uninstalling the Driver Libraries.....	21
If your problem cannot be resolved	21

3. EXTERNAL CONNECTION	23
-------------------------------	-----------

Interface connectors.....	23
Directly Connecting the Product.....	23
Connecting the Product with a Cable	24
Gender changer.....	24

4. FUNCTION	25
--------------------	-----------

Communication Function	25
Serial Data Transmission	25
RS-232C Control Lines	25
Setting the Baud Rate.....	25
Bus isolation [COM-1P(USB)H]	25
Surge protection [COM-1P(USB)H]	25

5. ABOUT HARDWARE	27
--------------------------	-----------

LED display	27
Hardware specification.....	28
Physical dimension.....	29

1. Before Using the Product

This chapter provides information you should know before using the product.

About the Product

COM-1(USB)H is a micro converter for converting the USB port of PC into RS-232C serial communications.

COM-1P(USB)H is an isolated micro converter for converting the USB port of PC into RS-232C serial communications. COM-1P(USB)H is higher noise-resistant models with isolation between a PC and bus line as well as a surge protection circuit for communication ports.

This product has one channel RS-232C communication port.

These products support a baud rate of up to 921,600bps and has separate 128-byte / 384-byte buffer memory for transmit and receive. It also comes with a Windows driver, which allows boards to be used as OS-standard COM ports.

This product supports CONTEC-defined driver library "API-PAC(W32)" that provide local routines.

Features

- Max. 921,600bps RS-232C Serial Communication

This product has one channel RS-232C-standard serial ports. Baud rates from 300 to 921,600 bps can be set by software. When data is transferred at the high speed, it may not be transferred normally, depending on the use environment such as the external device and cable length used.

- Compatible to USB1.1/USB2.0 and not necessary to power this product externally as the bus power is used.

Compatible to USB1.1/USB2.0 and capable to achieve high speed transfer at Full Speed (12Mbps).

Not necessary to power this product externally as the bus power of USB is used.

- Possibly used as Windows-standard COM ports, using the bundled driver library

Comes with a driver software that allows the products to be used under Windows in the same way as COM ports on the PC. Under Windows, the product supports the OS-standard Win32 API communication function as well as Visual Basic MSComm. In addition, supplies a diagnostic program to confirm hardware operation and to perform a communication test with equipment.

- Isolation between channels and between PCs, surge protection for all signal lines
(For COM-1P(USB)H only)

Electric isolation is provided between channels and between PCs. This prevents electric noise between PCs and external circuits. As surge protection is provided on all signal lines, you can safely use the products in environments where you are concerned about surges causing incorrect operation or damage to the PC.

- Max. 127 converters can be installed as configured in the range COM1 - COM256.

Using a USB hub allows you to install up to 127 converters to a single PC.

COM1 - COM256 can be set using the device manager.

- Each channel is equipped with separate 128-byte / 384-byte FIFO buffers for transmit and receive.

These are FIFO format, useful for high speed communications and to reduce the load to the CPU when transmitting/receiving.

As the device manager can be used to enable/disable the use of FIFO and set the FIFO trigger size, you can build an optimum system according to your use.

- 9-pin D-SUB connector (female type) can be connected directly to a device such as a modem.

Use of a 9-pin D-SUB connector (female type) allows you to connect it to a device such as a modem directly. It can also be connected to the cable of another 9-pin D-SUB connector (female type), if the gender changer is connected. (*Installed before shipment)

- To suit your application, cables and connectors are available as optional

Straight cables (1.8m), cross cables (1.8m) and 9-pin D-SUB connectors (male or female type) for your own cables are available as optional.

- The control line for RS-232C can be controlled and monitored by software.

The control lines for RTS, CTS, DTR and DSR can be controlled and monitored using software.

Support Software

Standard COM Driver Software **COM Setup Disk** (Bundled)

Under Windows, this software allows you to use the serial ports on the converter as if they were standard COM ports on the PC. You can add additional micro converters up to a maximum of 127 COM ports.

Under Windows, the serial ports can be accessed using the standard Win32 API communication routines (CreateFile(), WriteFile(), ReadFile(), and SetCommState(), etc.) The serial ports are also compatible with the Visual Basic communication control (MSComm). * API-SIO(98/PC) is not used.

< Operating environment >

OS Windows 8, 7, Vista, XP, Server 2003, 2000 etc..

Cable & Connector (Option)

RS-232C Straight Cable with D-SUB 9 pin (1.8m)	:	RSS-9M/F
RS-232C Cross Cable with D-SUB 9 pin (1.8m)	:	RSC-9F
RS-232C Connection Conversion Straight Cable (25M→9F, 1.8m)	:	RSS-25M/9F
RS-232C Connection Conversion Straight Cable (25F→9M, 1.8m)	:	RSS-25F/9M
RS-232C Connection Conversion Cross Cable (25F→9F, 1.8m)	:	RSC-25F/9F
D-SUB 9 pin Male Connector Set (5 Pieces)	:	CN5-D9M
D-SUB 9 pin Female Connector Set (5 Pieces)	:	CN5-D9F

Customer Support

CONTEC provides the following support services for you to use CONTEC products more efficiently and comfortably.

Web Site

Japanese <http://www.contec.co.jp/>
English <http://www.contec.com/>
Chinese <http://www.contec.com.cn/>

Latest product information

CONTEC provides up-to-date information on products.

CONTEC also provides product manuals and various technical documents in the PDF.

Free download

You can download updated driver software and differential files as well as sample programs available in several languages.

Note! For product information

Contact your retailer if you have any technical question about a CONTEC product or need its price, delivery time, or estimate information.

Limited One-Year Warranty

CONTEC Interface products are warranted by CONTEC CO., LTD. to be free from defects in material and workmanship for up to one year from the date of purchase by the original purchaser.

Repair will be free of charge only when this device is returned freight prepaid with a copy of the original invoice and a Return Merchandise Authorization to the distributor or the CONTEC group office, from which it was purchased.

This warranty is not applicable for scratches or normal wear, but only for the electronic circuitry and original products. The warranty is not applicable if the device has been tampered with or damaged through abuse, mistreatment, neglect, or unreasonable use, or if the original invoice is not included, in which case repairs will be considered beyond the warranty policy.

How to Obtain Service

For replacement or repair, return the device freight prepaid, with a copy of the original invoice. Please obtain a Return Merchandise Authorization number (RMA) from the CONTEC group office where you purchased before returning any product.

* No product will be accepted by CONTEC group without the RMA number.

Liability

The obligation of the warrantor is solely to repair or replace the product. In no event will the warrantor be liable for any incidental or consequential damages due to such defect or consequences that arise from inexperienced usage, misuse, or malfunction of this device.

Safety Precautions

Understand the following definitions and precautions to use the product safely.

Safety Information

This document provides safety information using the following symbols to prevent accidents resulting in injury or death and the destruction of equipment and resources. Understand the meanings of these labels to operate the equipment safely.

 DANGER	DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
 WARNING	WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
 CAUTION	CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.

Handling Precautions

DANGER

Do not use the product where it is exposed to flammable or corrosive gas. Doing so may result in an explosion, fire, electric shock, or failure.

CAUTION

- Do not strike or bend these products.
Otherwise, these products may malfunction, overheat, cause a failure or breakage.
- Do not touch these product's metal plated terminals (USB connector, D-SUB connector) with your hands.
Otherwise, these products may malfunction, overheat, or cause a failure.
If these products are touched by someone's hands, clean these products with industrial alcohol.
- Make sure that your PC can supply ample power to all these products installed.
Insufficiently energized products could malfunction, overheat, or cause a failure.
- The specifications of these products are subject to change without notice for enhancement and quality improvement.
Even when using these products continuously, be sure to read the manual and understand the contents.
- Do not modify these products. CONTEC will bear no responsibility for any problems, etc., resulting from modifying these products.
- Regardless of the foregoing statements, CONTEC is not liable for any damages whatsoever (including damages for loss of business profits) arising out of the use or inability to use these CONTEC products or the information contained herein.
- It may cause a trouble in recognizing and operating the device according to the kind of USB hub.
If you use the USB hub, we encourage you to take advantage of the CONTEC's product loan service to confirm operation before purchasing.

- COM-1(USB)H, COM-1P(USB)H Regarding “EMC Instruction Class A Notice”

These products have acquired the above-mentioned standard.

However, a sufficient margin may not be secured for the standard. In this case, use a ferrite core (SEIWA E04SR301334 or a compatible product) for the COM cable (this product’s side) or use a ferrite core (SEIWA E04SR170730A or a compatible product) for the USB cable (PC side).

When attaching a ferrite core to the USB cable, just put the cable inside the case; when attaching a ferrite core to the COM cable, coil it around once near the connector while leaving it open, and then close it.

- COM-1P(USB)H Regarding “FCC PART 15 Class A Notice”

These products have acquired the above-mentioned standard.

However, a sufficient margin may not be secured for the standard. In this case, use a ferrite core (SEIWA E04SR301334 or a compatible product) for the COM cable (this product’s side).

When attaching the ferrite core, coil it around once near the connector while leaving it open, and then close it.

FCC PART 15 Class A Notice

NOTE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference at his own expense.

WARNING TO USER

Change or modifications not expressly approved the manufacturer can void the user's authority to operate this equipment.

Environment

Use this product in the following environment. If used in an unauthorized environment, the board may overheat, malfunction, or cause a failure.

Operating temperature

0 - 50°C

Operating humidity

10 - 90%RH (No condensation)

Corrosive gases

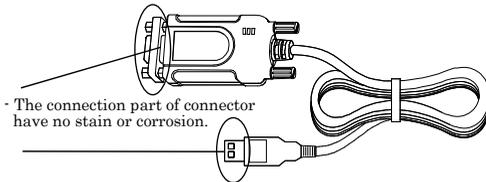
None

Floating dust particles

Not to be excessive

Inspection

Inspect the product periodically as follows to use it safely.



Storage

When storing this product, keep it in its original packing form.

- (1) Put the product in the storage bag.
- (2) Wrap it in the packing material, then put it in the box.
- (3) Store the package at room temperature at a place free from direct sunlight, moisture, shock, vibration, magnetism, and static electricity.

Disposal

When disposing of the product, follow the disposal procedures stipulated under the relevant laws and municipal ordinances.

2. Setup

This chapter explains how to set up the converter.

What is Setup?

Setup means a series of steps to take before the product can be used.

Different steps are required for software and hardware.

Installing the driver

This section enables you to prepare the software and hardware by operating in accordance with each step in this chapter using the bundled CD-ROM. Taking the following steps sets up the software and hardware. You can use the diagnosis program later to check whether the software and hardware function normally.

Step 1 Setting the Hardware

Step 2 Installing the Hardware

Step 3 Initializing the Software

Step 4 Checking Operations with the Diagnosis Program

If Setup fails to be performed normally, see the “Setup Troubleshooting” section at the end of this chapter.

Step 1 Setting the Hardware

This section describes how to setup the converter and connect it to your PC.

Name of each parts

COM-1(USB)H, COM-1P(USB)H

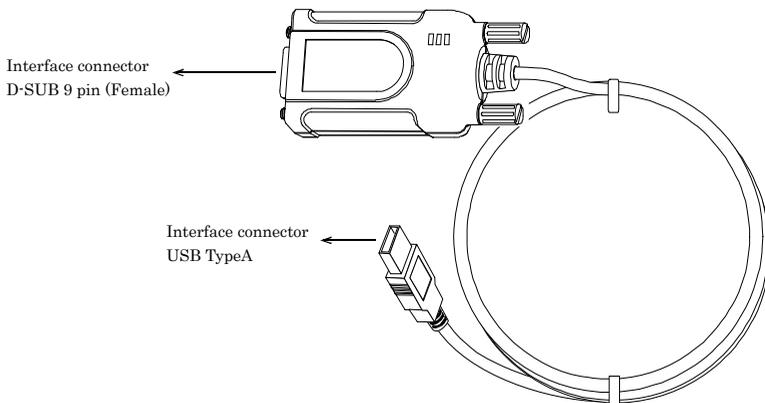


Figure 2.1. Name of each parts

Step 2 Installing the Software

Install software.

Run [\\USB\\Com1Usb\\Setup.exe] from the supplied CD-ROM.

- (1) The screens below show the installation. Click [next].



- (2) Accept the license agreement, then click [Next>].



- (3) The setup is completed



Step 3 Installing the Hardware

Under Windows, information about the converter needs to be detected by the OS. This is called hardware installation.

When using multiple converters, install one at a time and complete setup for the previous converter before starting to install the next converter.

Connecting the converter

- (1) Turn on the power to the PC before connecting the product.
- (2) When the PC has been up and running, plug the USB interface connector to a USB port in the PC.

The converter can also be connected to the PC via a USB hub.

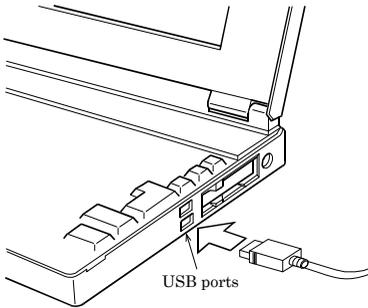


Figure 2.2. Connecting the converter

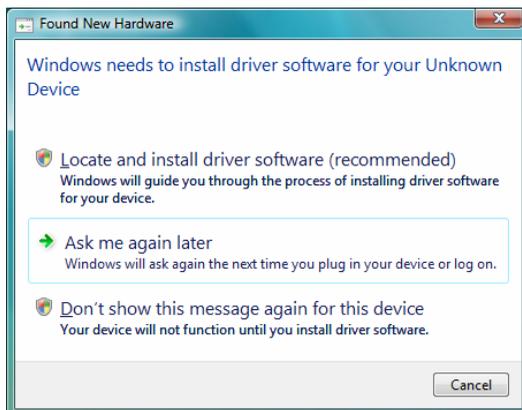
CAUTION

It may cause a trouble in recognizing and operating the device according to the kind of USB hub. If you use the USB hub, we encourage you to take advantage of the CONTEC's product loan service to confirm operation before purchasing.

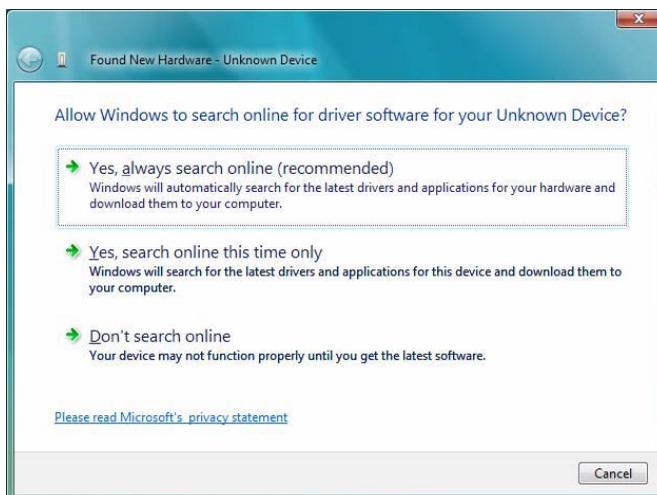
Setting with the Found New Hardware Wizard

Windows Vista

- (1) “Found New Hardware” Wizard is open. Click “Locate and install driver software”.



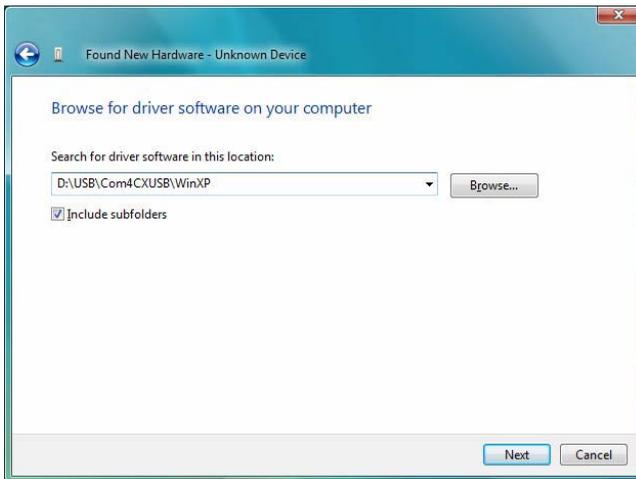
- (2) When the “Found New Hardware” windows is displayed, insert the accompanying CD-ROM“COM Setup Disk” into the CD-ROM drive. After a while, the device installation process begins.



(3) Click “Browse my computer for driver software (advanced)”.



(4) Click “Next”



You have now finished installing the hardware.

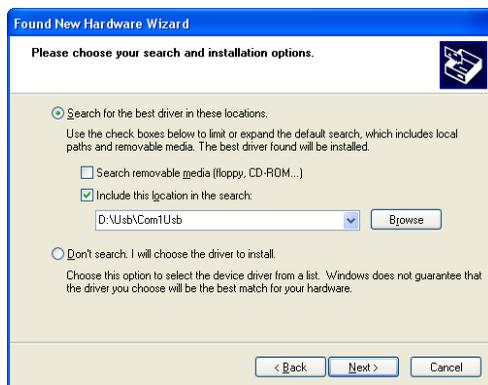
Windows XP

- (1) The “Found New Hardware Wizard” will be started.
- (2) Select “Install from a list or specific location[Advanced]”, then click on the [Next] button.



- (3) Specify that folder on the CD-ROM which contains the setup information (INF) file to register the converter.

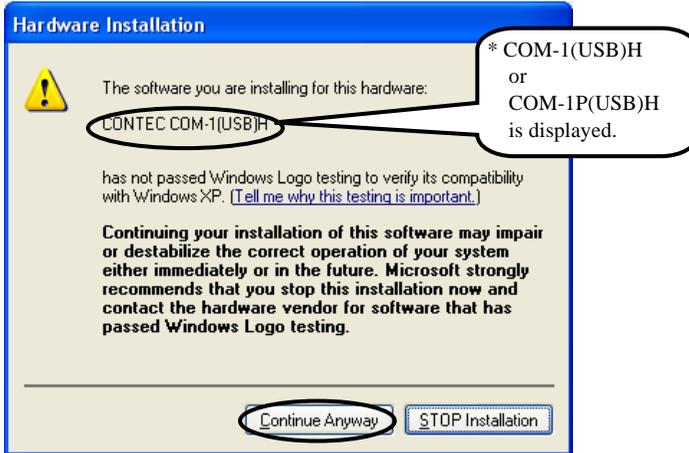
Source folder is “(CD-ROM drive letter)\USB\COM1USB”.



- * Be sure to uncheck [Search removable media (floppy, CD-ROM)].

- (4) In Windows XP, the Hardware Wizard displays the following alert dialog box when you have located the INF file. This dialog box appears, only indicating that the relevant driver has not passed Windows Logo testing, and it can be ignored without developing any problem with the operation of the terminal.

In this case, click on the [Continue Anyway] button.



When completing the installation, push the completion button and close the wizard.

- (5) After that, do the same operation so that you can confirm the COM port.

You have now finished installing the hardware.

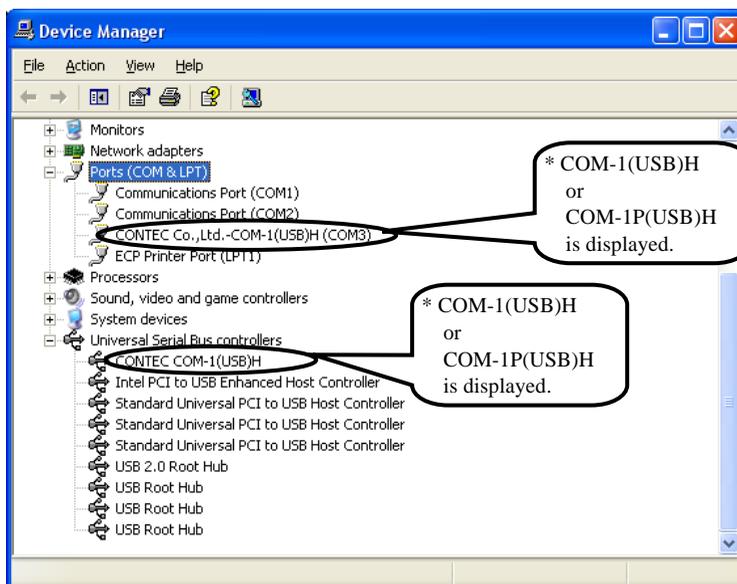
Step 4 Initializing the Software

The COM ports are already assigned by the hardware installation step.

Run Device Manager as described below if you wish to view or modify the COM port settings.

Start Device Manager

- (1) Select "System" from "Control Panel" and start [Device Manager].



- (2) Make sure that the detected USB device is listed in the "Universal Serial Bus controllers" folder.
- (3) Check that the new COM ports are displayed in the [Ports] folder.

Updating the Settings

- (1) If you wish to change a port number, open the properties page for the port and click the [Advanced...] button under [Port Settings].
- (2) Use the [COM Port Number] combo box to modify the COM port number.

You have now finished installing the initial setting of Software.

Step 5 Checking Operations with the Diagnosis Program

Use the diagnosis program to check that the terminal and driver software work normally, thereby you can confirm that they have been set up correctly.

What is the Diagnosis Program?

These programs perform some simple checks on the terminal operation. Two programs are provided.

Terminal program (CTstCom.exe)

Data entered from the keyboard is sent directly from the port. The function of the program is equivalent to the Hyper Terminal program provided with Windows.

Serial Communications Diagnostic Program (CommChk.exe)

Performs actual communications and indicates whether the results are correct or not (error).

The following describes the procedure for testing using the serial communications diagnostic program (CommChk.exe).

Check Method

Obtain an RS-232C crossed cable or a loopback connector. If using a loopback connector, you can perform the check using a single COM port. The figure below shows the wiring connections for a loopback connector.

Using the Diagnosis Program

Starting the Diagnosis Program

Run [\\Utility\\CommChk\\CommChk.exe] from the supplied CD-ROM.

Communication Settings

COM Setup: Specify the number of the COM port you wish to test.

If connecting two COM ports via a cross cable, specify the respective COM ports in [Device1] and [Device2].

When performing loopback communications on a single COM port, set the same port number in both [Device 1] and [Device 2].

Communication Settings: Specify the [Bits / Second], [Data bits] and other settings you wish to use.

Diagnostic Program for Serial Communications Port

COM Setup

Device1: COM1

Device2: COM3

Communication Settings

Bits / Second: 9600

Data bits: 8

Stop Bits: 1

Parity: None

Duplex: Full

Type of data

Binary Codes (01h to FFh)

Ascii String

Definition String: SendCommand

Iterations

Once

Limited Num. of Iterations: 10

Infinity

Test Item

Open/Close the port every time.

Port Open: Device1: Device2:

From Device1 to Device2:

From Device2 to Device1:

Port Close: Device1: Device2:

Iterations number:

Message:

Start Help End

Start test

Click the [Start] button to start the test using the specified conditions.

View test result

The test result is displayed in the [Message] window.

A successful completion message appears if the test completed OK.

Diagnostic Program for Serial Communications Port

COM Setup

Device1: COM1

Device2: COM3

Communication Settings

Bits / Second: 9600

Data bits: 8

Stop Bits: 1

Parity: None

Duplex: Full

Type of data

Binary Codes (01h to FFh)

Ascii String

Definition String: SendCommand

Iterations

Once

Limited Num. of Iterations: 10

Infinity

Test Item

Open/Close the port every time.

Port Open:

Device1: OK

Device2: OK

From Device1 to Device2: OK

From Device2 to Device1: OK

Port Close:

Device1: OK

Device2: OK

Iterations number: 1

Message:

Normal Termination.

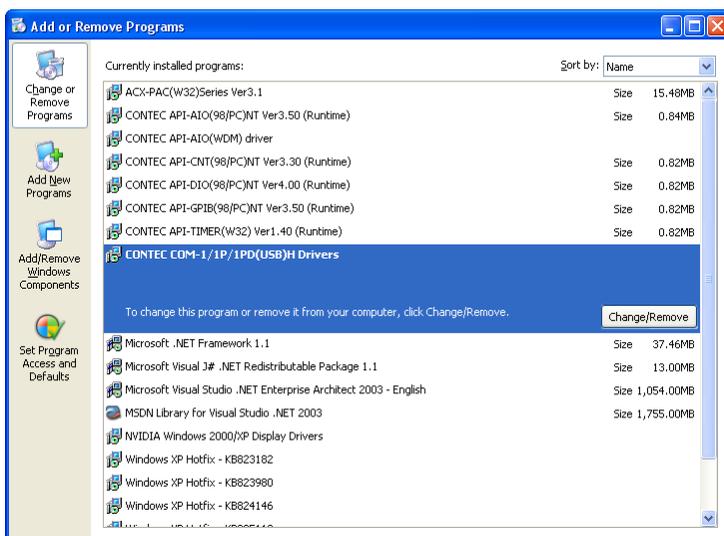
Start **Help** **End**

Step 6 Uninstalling the Driver Libraries

To uninstall COM-1/1P/1PD(USB)H Drivers, follow the procedure below.

- (1) Click on the [Start] button on the Windows taskbar. From the Start Menu, select “Settings” – “Control Panel”.
- (2) Double-click on “Add and Remove Programs” in the Control Panel.
- (3) Select “CONTEC COM-1/1P/1PD(USB)H Drivers VerX.XX” from the displayed application and then click on the [Change/Remove] button. Follow the on-screen instructions to uninstall the function libraries.

* X.XX shows the version of driver.



If your problem cannot be resolved

Contact your retailer.

3. External Connection

This chapter describes the interface connectors on the converter.

Check the information available here when connecting an external device.

Interface connectors

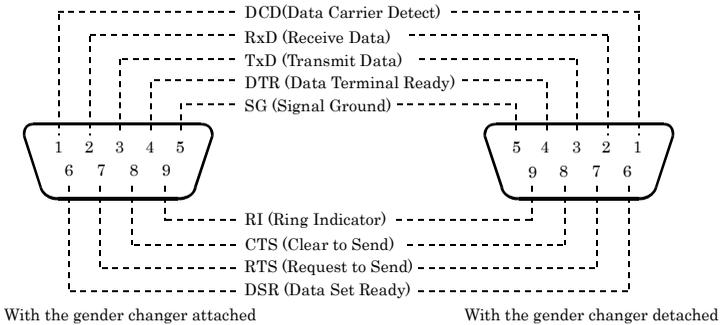


Figure 3.1. Pin assignment of interface connectors

Directly Connecting the Product

The RS-232C interface of this product uses a 9 pin D-SUB (female) connector.

You can connect the product directly to a device such as a modem if it has a D-SUB 9 pin (male) connector. For connection to such a device, detach the gender changer.

Note, however, that the product cannot cross-connect directly such as COM port on a PC to a device even though the device has a 9 pin D-SUB (male) connector.

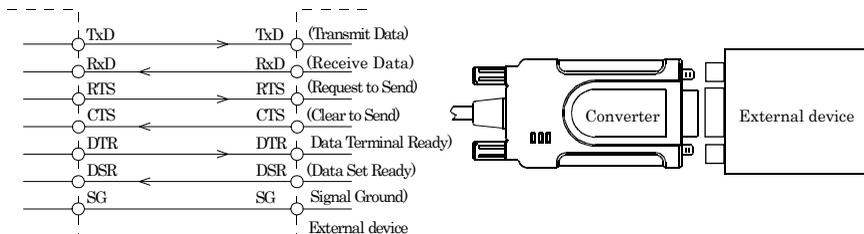


Figure 3.2. Example Connection to a Modem (Cableless)

Connecting the Product with a Cable

Use a cable when you use the gender changer to connect the product to the 9 pin D-SUB (female) RS-232C interface of the external device or when a straight connection cannot be made.

The cable to be used may be different depending on the device to connect the product to. Check the specifications of the external device, then prepare the straight type or cross (reverse) type of cable depending on the cable type (specifications). If signal conductors in the connectors require treatment, treat them according to the specifications.

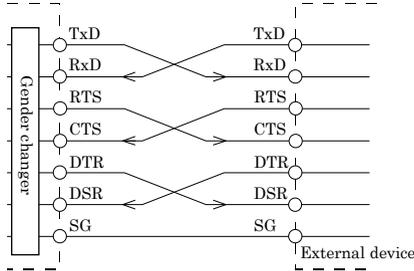


Figure 3.3. Example Connection to a PC (gender changer + cross cable)

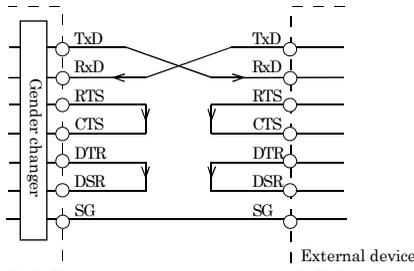


Figure 3.4. Example Connection to a device

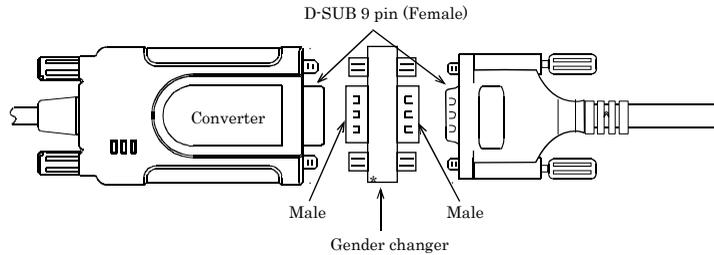


Figure 3.5. Example use of gender changer

CAUTION

Connection with conductors wired incorrectly can result in failures in the product and external device.

Gender changer

The interface connector of this product is a 9 pin D-SUB (female) connector.

The product is shipped with the gender changer attached to the interface connector. When connecting the product with a screw-locked (female) cable, leave the gender changer attached to the connector.

When connecting the product to a device having a 9 pin D-SUB (male) connector using a straight cable, remove the gender changer and connect the product directly to the device.

4. Function

This section describes the functions of the converter.

Communication Function

Serial Data Transmission

Sends and receives data in accordance with the RS-232C standard.

RS-232C Control Lines

All ports include the RTS, CTS, DTR and DSR control lines.

The lines can be controlled or monitored by software from the application.

Setting the Baud Rate

This converter can set the following baud rate using the software.

Baud Rate: 300, 600, 1200, 2400, 4800, 9600, 14400, 19200, 28800, 38400,
57600, 115200, 230400, 460800, 921600bps

Bus isolation [COM-1P(USB)H]

It is electrically isolated between the PC to be installed and the remote device.

Isolation between buses, prevents electrical disturbance between the PC and an external circuit and inter-channel interference as well.

The converter can therefore be used comfortably even when line noise can be easily generated to seemingly cause the PC to malfunction or break.

Surge protection [COM-1P(USB)H]

As the RS-232C control lines are all surge-protected, you can use the product without anxiety about surges which can cause the PC to malfunction or be damaged.

5. About Hardware

LED display

Table 5.1. Function list

LED name	LED display content
POWER (green)	ON ... Power ON
	OFF ... Power OFF
RxD (yellow)	Blinking ... Receiving data *
	OFF ... Not receiving data or not connected
TxD (yellow)	Blinking ... Transmitting data *
	OFF ... Not transmitting data or not connected

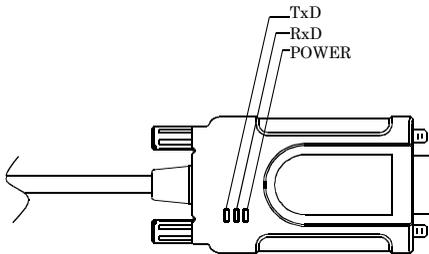


Figure 5.1. LED display

- * If you forget the COM port number of this product, perform communication via specific COM ports and check the LEDs on the product to identify its COM port number.

Hardware specification

Table 5.2. Specification

Item	COM-1(USB)H	COM-1P(USB)H
Number of channels	1 channel	
I/O specification	RS-232C	
Isolated specification	-	Bus isolation
Dielectric strength	-	300VDC
Transfer method	Asynchronous serial transfer	
Baud rate	300 · 921,600bps *1*2	
Data length	7, 8 bit / 1, 2 stop bit	
Parity check	Even, Odd, Non-parity	
Loading LSI	FT232BL Mounting the FIFO memory as the common buffer of RS-422A/RS-485 communication and USB. Sending: 128byte / receiving: 384byte (by the view of PC)	
Connecting distance	Within 15m	
Connector specification	USB side : USB A connector RS-232C side : 9 pin D-SUB connector (female)	
Operation guaranteed voltage	5V±5% *3	
Power consumption	5VDC 50mA(Max.) *3	5VDC 280mA(Max.)
Operating condition	0 - 50°C, 10 - 90%RH(No condensation)	
USB bus specification	USB Specification 1.1/2.0 standard	
Power supply	Only bus power	
USB transmission speed	12Mbps (full speed mode)	
Cable length	1.8m	
Physical dimension (mm)	78.3(W) x 20.5(D) x 36.5(H) 91.0(W) x 20.5(D) x 36.5(H) (When connecting gender changer)	
Weight	130g 140g (When connecting gender changer)	

*1 Data transmission at high speed may not be performed normally depending on the environment including the type of status of connected material of cable and environment.

*2 These items can be set by software.

*3 It doesn't correspond to Low-power Bus-powered Function (4.4V operation).

Table 5.3. Gender changer specification

Engagement	9 pin D-SUB male, thumb screw : UNC#4-40 (inch screw threads) x 2
Wiring	Straight over entire length
Physical dimension (mm)	18.0(W) x 12.5(D) x 31.0(H)
Weight	10g

Physical dimension

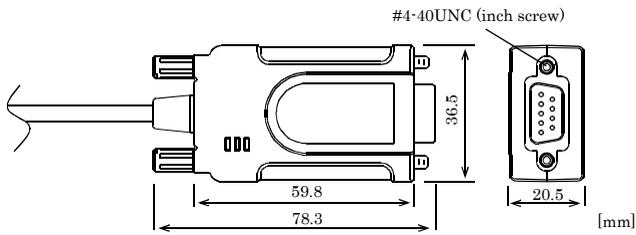


Figure 5.2. Physical dimension

COM-1(USB)H COM-1P(USB)H User's Guide

CONTEC CO.,LTD.

June 2013 Edition

3-9-31, Himesato, Nishiyodogawa-ku, Osaka 555-0025, Japan

Japanese <http://www.contec.co.jp/>

English <http://www.contec.com/>

Chinese <http://www.contec.com.cn/>

No part of this document may be copied or reproduced in any form by any means without prior written consent of CONTEC CO., LTD. [06272013]

[11162004]

Management No. A-46-832

[06272013_rev8]

Parts No. LYDG456