



Version 1.0  
March 2016

## ***Reference MANUAL***

### ***Tips for the USB port settings***

## PREFACE

Until recently, it has been necessary to change your PC data output to fit your transceiver's specifications when you operate RTTY. This is because the transceiver does not directly accept signals output from the PC's COM port. Therefore, you needed to use an interface unit between the transceiver and your PC. The interface unit adjusted the signals levels or signal format.

Now, certain Icom transceivers have built-in RTTY mode. You can simply operate the modes with only your Icom transceiver itself. However, some users operate those modes with their PC connected through a USB cable to synchronize with other software applications.

To connect between your Icom transceiver and PC through a USB cable, you do not need to think of signal level or signal format, and you do not need an interface unit to connect both units. Therefore, the connection becomes very simple.

The USB port is used not only for RTTY and logging software operation, but also to remotely control the transceiver from a PC using the CI-V commands, to enter content into memory and to make settings using optional Icom cloning software.

This document describes certain USB port settings.

The applicable transceivers described in this document are as follows. (As of March 2016)

- IC-7100
- IC-7300
- IC-7850/IC-7851 (Referred to as the IC-7851)
- IC-9100

Note that a USB driver installation is required to connect the above transceivers to your PC. The USB driver for Microsoft® Windows® PC can be downloaded from our website at:  
<http://www.icom.co.jp/world/support/download/firm/>

Refer to your transceiver's instruction manual for details on downloading the USB driver, and refer to the USB driver installation guide about installing the driver.

This document describes only the concept of PC or network settings. Refer to your PC or software manual, or contact to their respective support center about the PC, software, or network settings. Please note that Icom cannot provide support for your PC, software, network or their proper settings

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# SECTION 1 ABOUT “DTR” AND “RTS”

**Applicable products: IC-7300, IC-7851 (as of March 2016)**

When connecting the above Icom amateur base transceivers to a PC using a USB cable, and operating an RTTY or logging software application, set either the “DTR” or “RTS” items in the transceiver Set mode settings of “USB SEND,” “USB Keying (CW),” and “USB Keying (RTTY).”

This section describes how to set these items.

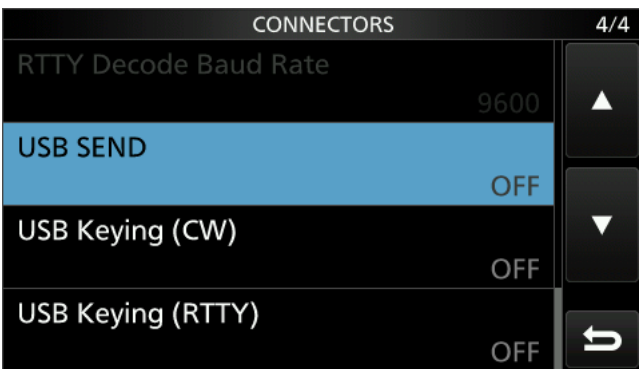


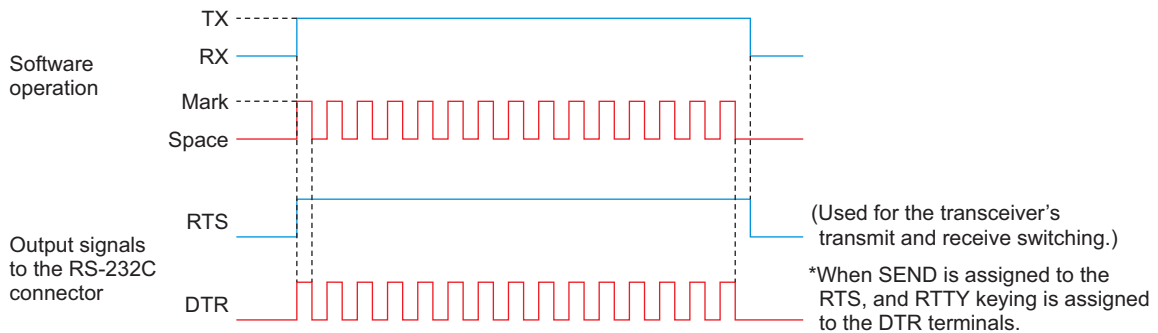
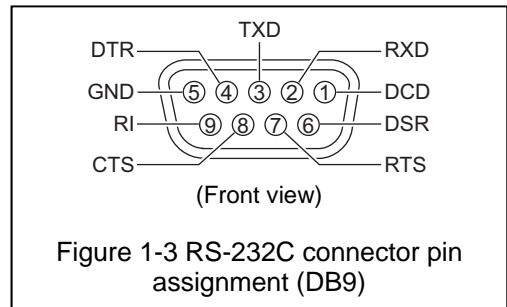
Figure 1-1 Set mode screen for IC-7300



Figure 1-2 Set mode screen for IC-7851

DTR stands for Data Terminal Ready, and RTS stands for Request To Send. They originated from the RS-232C standard, which is a unified standard for the control signal line.

The SEND and CW/RTTY keying signals from the PC through the DTR and RTS terminals of the RS-232C port or the sound card are applied to the ACC socket on the transceiver. On some transceivers with an RS-232C port, these signals are directly applied from the DTR and RTS terminals on the PC's RS-232C port through an RS-232C cable.



Recent PCs have a USB port instead of an RS-232C port. To allow an easier connection and mutual communication, a USB port is also built into the transceiver.

With using an RS-232C communication port, signal lines such as RTS and DTR are needed to exchange data between the PC and the transceiver. However, there are no DTR and RTS terminals on a USB port.

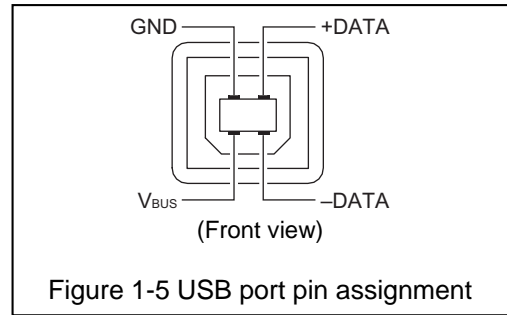


Figure 1-5 USB port pin assignment

RTS and DTR terminals of the RS-232C can be found in the Serial-USB converter as shown in Figure 1-6. The data from the [USB B] port is output to these terminals in this Serial-USB converter.

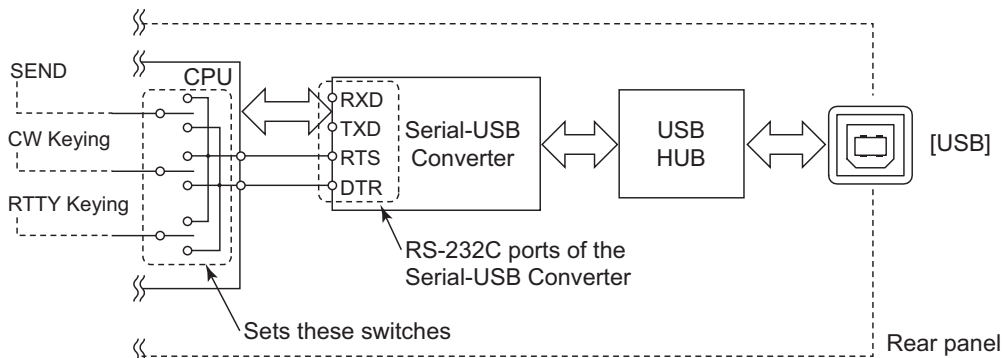


Figure 1-6 Data bus line between CPU and USB

The RTTY/logging software application sets the output terminal, either RTS or DTR, for each SEND and CW/RTTY keying signal. In other words, the software sets the SEND and CW/RTTY keying signal output terminal of the Serial-USB Converter inside the transceiver.

On the other hand, the transceiver's set mode items, "USB SEND," "USB keying (CW)," and "USB keying (RTTY)," selects either the RTS or DTR port of the Serial-USB Converter to capture SEND, CW/RTTY keying signal, respectively. (Except "OFF")

Therefore, the settings will succeed when the same terminal is set between the transceiver's "USB SEND," "USB keying (CW)," and "USB keying (RTTY)" and software's SEND, CW keying, and RTTY keying, respectively.

Note that the setting item name may differ, depending on the software being used.

For example, "PTT" or "Transmit" may be used instead of "SEND," "FSK" may be used instead of "RTTY." Therefore, properly set these items by also referring to the software manual or help files.

**For your information:**

The "USB SEND" item is a setting to switch the transceiver's transmit and receive. So, the terminal must be set to the same setting as that in the software. If a different terminal or OFF is set in the transceiver's set mode, the software cannot toggle between transmit and receive. Note that the transceiver will transmit when the USB SEND line inside the transceiver's CPU becomes High. (The transceiver transmits with the inverted logic from the SEND jack, or SEND line of [ACC].)

## SECTION 2 ABOUT LINK SETTING FOR BETWEEN USB PORT AND REMOTE JACK

Applicable products: IC-7300, IC-7851 (as of March 2016)

You can switch USB port and [REMOTE] link ON and OFF in the above Icom's amateur base transceivers. In case the transceivers that two COM ports are recognized, the link setting is available for only USB1.

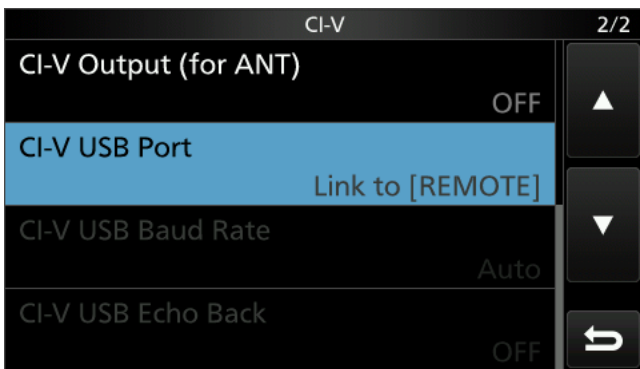


Figure 2-1 Set mode screen for IC-7300

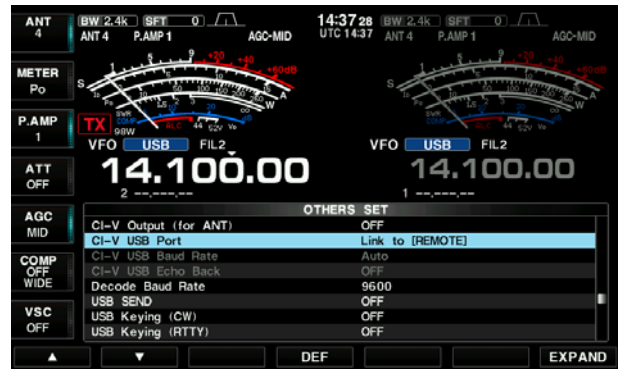


Figure 2-2 Set mode screen for IC-7851

The default setting of this item is "Link to [REMOTE]."

This setting is selected when using the Transceive function by outputting the control signal from [REMOTE] after converting the communicating data at the USB port to CI-V data, or when operating the existing remote control system with the optional CT-17. In this case, the USB port communication speed is limited to 19,200 bps because the [REMOTE] jack's maximum communication speed is 19,200 bps.

Thus, Icom strongly recommends the setting of "Unlink to [REMOTE]" in cases other than those above. By using "Unlink to [REMOTE]," you can operate the USB port with a speed of up to 115,200 bps.

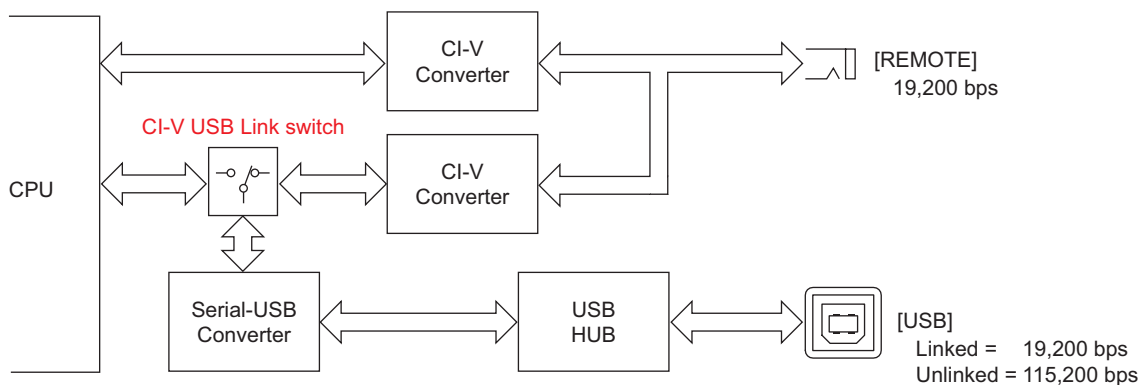


Figure 2-3 USB port and [REMOTE]

**IMPORTANT:** Set to "Unlink to [REMOTE]" when using the spectrum scope function of RS-BA1 with the IC-7300, or IC-7851 through a USB cable. Otherwise RS-BA1 spectrum scope will not function since the data transfer speed of the USB port is insufficient for the amount of data required by the spectrum scope.

## SECTION 3 WHY TWO VIRTUAL COM PORTS ARE RECOGNIZED ON ONE PHYSICAL USB PORT

Applicable products: IC-7100, IC-7851, IC-9100 (as of March 2016)

Two COM ports will be recognized when connecting the above transceivers to a PC that the specified USB driver has been installed on, because two internal circuits are connected through a built-in USB HUB. Therefore, these two internal circuits have been recognized as two ports on the PC.

For example, the optional RS-BA1 automatically selects USB1 and uses the circuit for remote control. If RTTY/logging software is assigned to the USB 2's COM port, both the RS-BA1 and RTTY/logging software can simultaneously be operated.

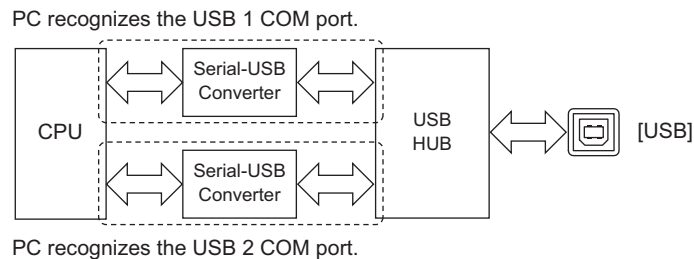


Figure 3-1 USB circuit block diagram

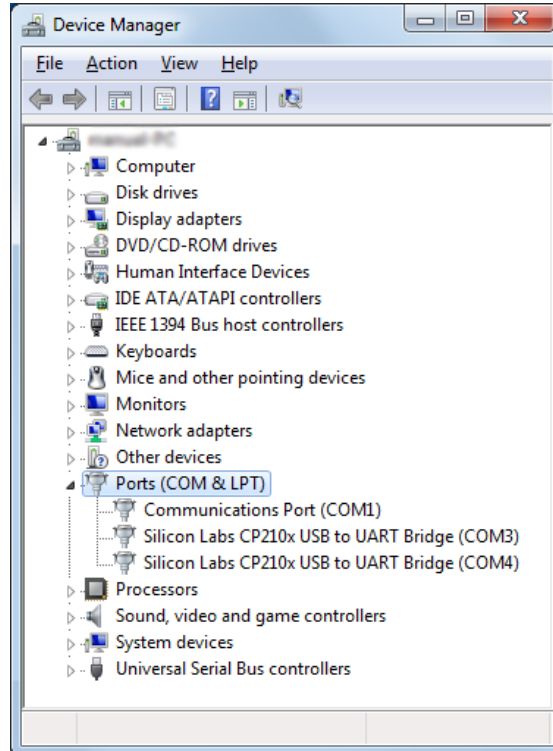
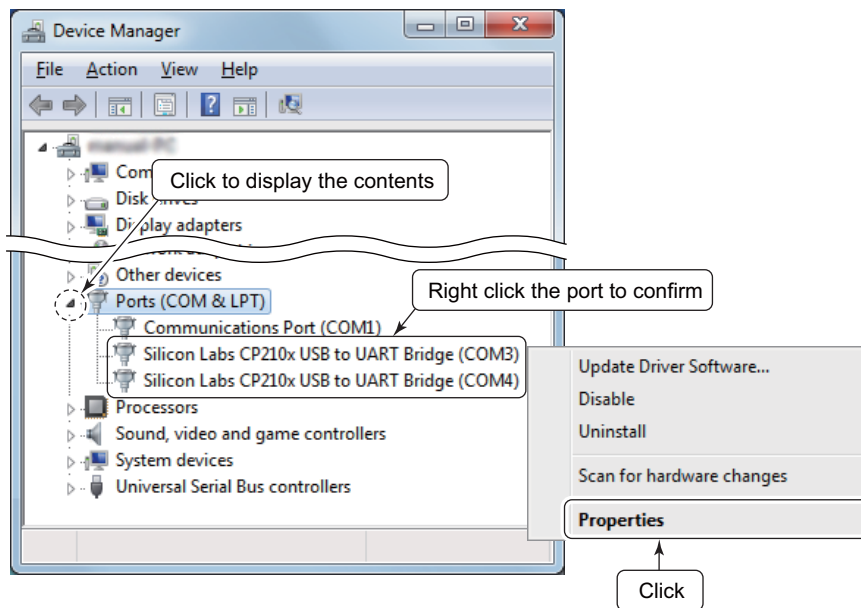


Figure 3-2 Device Manager screen

### 3-1 How to check the internal circuit for each COM port

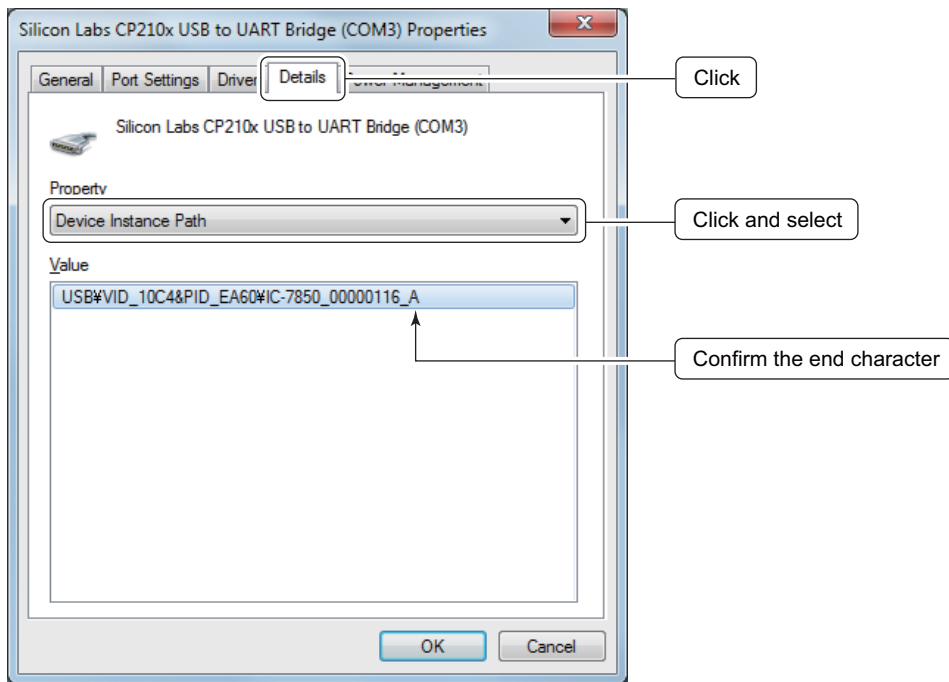
You can check the corresponding internal circuit, USB 1 or USB 2, for each COM port in the Device Manager.

- (1) Open the Device Manager screen.
  - To display the Device Manager screen with Microsoft® Windows® 7 do the steps below.
    - The description may differ according to your OS version or settings. Refer to your PC's instruction manual, or help file for details.
    - 1) Click "Start menu" and then "Control Panel."
    - 2) Click "Hardware and Sound."
    - 3) Click "Device Manager" in "Device and Printer" group.
  - Click the triangle mark for "Ports (COM & LPT)" to display the contents.
- (2) Right-click the COM port that you want to check the internal circuit, and select "Properties."
  - The "Silicon Labs CP210x USB to UART Bridge (COM\*) Properties" screen is displayed.
  - \* is the COM port number





- (3) Click the “Details” tab.
- (4) Click “Property” and select the “Device Instance Path” displayed in the drop-down list.
- (5) Check the contents displayed in “Value.”
  - If the end of the displayed contents is “A,” the COM port is for USB 1.
  - If the end of the displayed contents is “B,” the COM port is for USB 2.

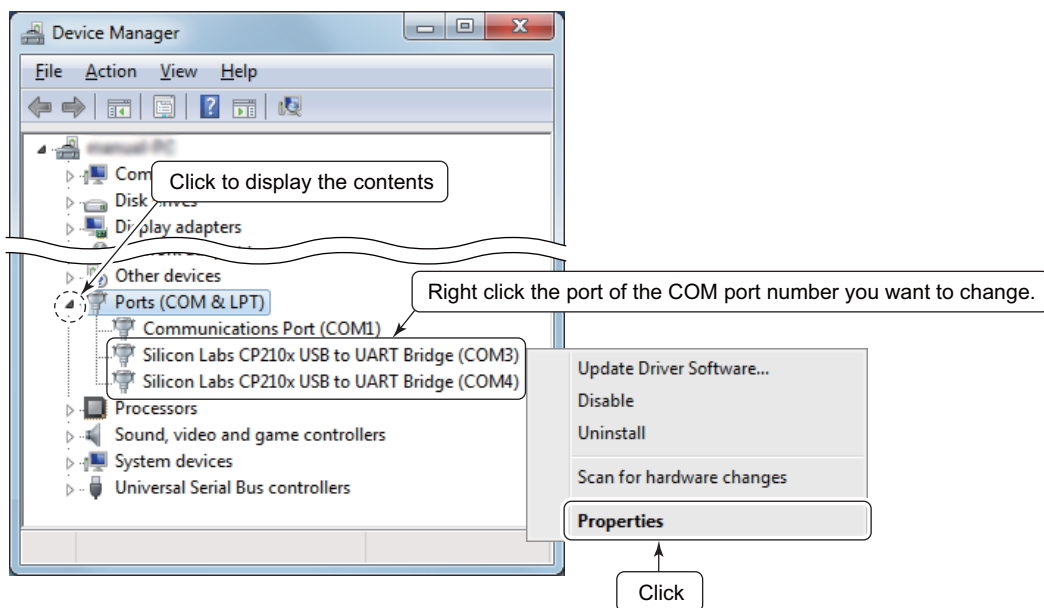


- (6) Click <Cancel> to close the “Silicon Labs CP210x USB to UART Bridge (COM\*) Properties” screen.
  - \* is the COM port number

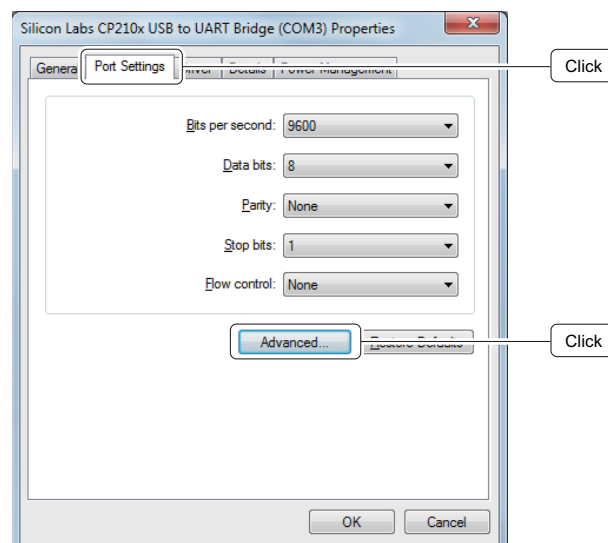
### 3-2 How to change the COM port number

You can manually change the COM port number with the following procedures, such as when the automatically assigned COM port number cannot be selected in your software.

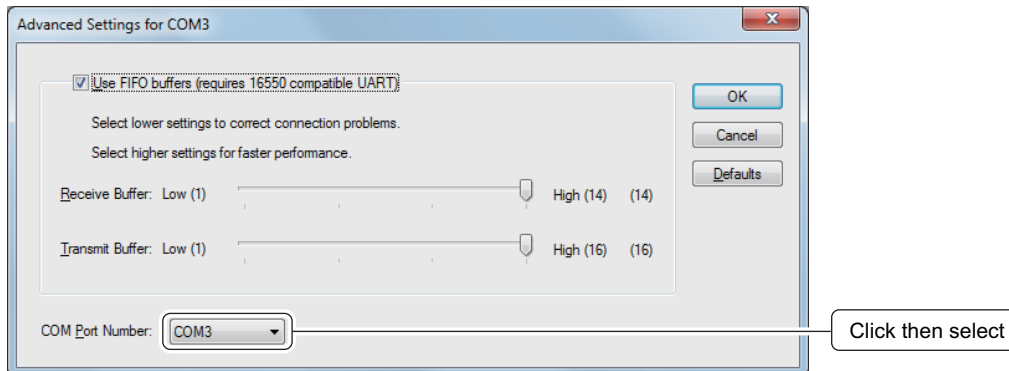
- (1) Open the Device Manager screen.
  - To display the Device Manager screen with Microsoft® Windows® 7 do the steps below.
    - The description may differ according to your OS version or settings. Refer to your PC's instruction manual, or help file for details.
    - 1) Click "Start menu" and then "Control Panel."
    - 2) Click "Hardware and Sound."
    - 3) Click "Device Manager" in "Device and Printer" group.
  - Click the triangle mark of "Ports (COM & LPT)" to display the contents.
- (2) Right-click the COM port that you want to change the COM port number, and select "Properties."
  - The "Silicon Labs CP210x USB to UART Bridge (COM\*) Properties" screen is displayed.
  - \* is the COM port number.



- (3) Click the "Port Settings" tab.
- (4) Click <Advanced...>.
  - The "Advanced Settings for COM\*" screen is displayed.
  - \* is the COM port number.



- (5) Click “COM Port Number” and select a desired number from the drop-down list.
- The COM port number that has already been assigned to another device on your PC, is marked “in use.”



- (6) Click <OK> to set.
- The “Advanced Settings for COM\*” screen closes at the same time.
  - \* is the COM port number.
  - After changing the COM port number, you may not be able to immediately use the selected COM port number.
- In this case, disconnect the USB cable once, and then reconnect the cable. By reconnecting, you'll be able to use the selected COM port.



**Icom America Inc.**

12421 Willows Road NE,  
Kirkland, WA 98034, U.S.A.  
Phone : +1 (425) 454-8155  
Fax : +1 (425) 454-1509  
E-mail : [sales@icomamerica.com](mailto:sales@icomamerica.com)  
URL : <http://www.icomamerica.com>

**Icom Canada**

Glenwood Centre #150-8165  
Highway 17A, Delta, B.C.,  
V4K 5B8, Canada  
Phone : +1 (604) 952-4266  
Fax : +1 (604) 952-0090  
E-mail : [info@icomcanada.com](mailto:info@icomcanada.com)  
URL : <http://www.icomcanada.com>

**Icom Brazil**

Rua Itororo, 444 Padre Eustáquio  
Belo Horizonte MG,  
CEP: 30720-450, Brazil  
Phone : +55 (31) 3582 8847  
Fax : +55 (31) 3582 8987  
E-mail : [sales@icombrazil.com](mailto:sales@icombrazil.com)

**Icom (Europe) GmbH**

Communication Equipment  
Auf der Krautweide 24  
65812 Bad Soden am Taunus, Germany  
Phone : +49 (6196) 76685-0  
Fax : +49 (6196) 76685-50  
E-mail : [info@icomeurope.com](mailto:info@icomeurope.com)  
URL : <http://www.icomeurope.com>

**Icom Spain S.L.**

Ctra. Rubí, No. 88 "Edificio Can Castanyer"  
Bajos A 08174, Sant Cugat del Valles,  
Barcelona, Spain  
Phone : +34 (93) 590 26 70  
Fax : +34 (93) 589 04 46  
E-mail : [icom@icomspain.com](mailto:icom@icomspain.com)  
URL : <http://www.icomspain.com>

**Icom (UK) Ltd.**

Blacksale House, Allira Park,  
Herne Bay, Kent, CT6 6GZ, U.K.  
Phone : +44 (0) 1227 741741  
Fax : +44 (0) 1227 741742  
E-mail : [info@icomuk.co.uk](mailto:info@icomuk.co.uk)  
URL : <http://www.icomuk.co.uk>

**Icom France s.a.s.**

Zac de la Plaine,  
1 Rue Brindejenc des Moulinais, BP 45804,  
31505 Toulouse Cedex 5, France  
Phone : +33 (5) 61 36 03 03  
Fax : +33 (5) 61 36 03 00  
E-mail : [icom@icom-france.com](mailto:icom@icom-france.com)  
URL : <http://www.icom-france.com>

**Icom (Australia) Pty. Ltd.**

Unit 1 / 103 Garden Road,  
Clayton, VIC 3168 Australia  
Phone : +61 (03) 9549 7500  
Fax : +61 (03) 9549 7505  
E-mail : [sales@icom.net.au](mailto:sales@icom.net.au)  
URL : <http://www.icom.net.au>

**Icom New Zealand**

39C Rennie Drive, Airport Oaks,  
Auckland, New Zealand  
Phone : +64 (09) 274 4062  
Fax : +64 (09) 274 4708  
E-mail : [inquiries@icom.co.nz](mailto:inquiries@icom.co.nz)  
URL : <http://www.icom.co.nz>

**Asia Icom Inc.**

6F No.68, Sec. 1 Cheng-Teh Road,  
Taipei, Taiwan, R.O.C.  
Phone : +886 (02) 2559 1899  
Fax : +886 (02) 2559 1874  
E-mail : [sales@asia-icom.com](mailto:sales@asia-icom.com)  
URL : <http://www.asia-icom.com>

**Shanghai Icom Ltd.**

No.101, Building 9, Caifuxingyuan Park,  
No.188 Maoping Road, Cheshun Town,  
Songjiang District, Shanghai, 201611, China  
Phone : +86 (021) 6153 2768  
Fax : +86 (021) 5765 9987  
E-mail : [bjicom@bjicom.com](mailto:bjicom@bjicom.com)  
URL : <http://www.bjicom.com>

Your local distributor/dealer: