ICPDAS ZigBee Converter Application Note

Warranty

All products manufactured by ICP DAS are warranted against defective materials for a period of one year from the date of delivery to the original purchaser.

Warning

ICP DAS assumes no liability for damages consequent to the use of this product. ICP DAS reserves the right to change this manual at any time without notice. The information furnished by ICP DAS is believed to be accurate and reliable. However, no responsibility is assumed by ICP DAS for its use, or for any infringements of patents or other rights of third parties resulting from its use.

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Trademark

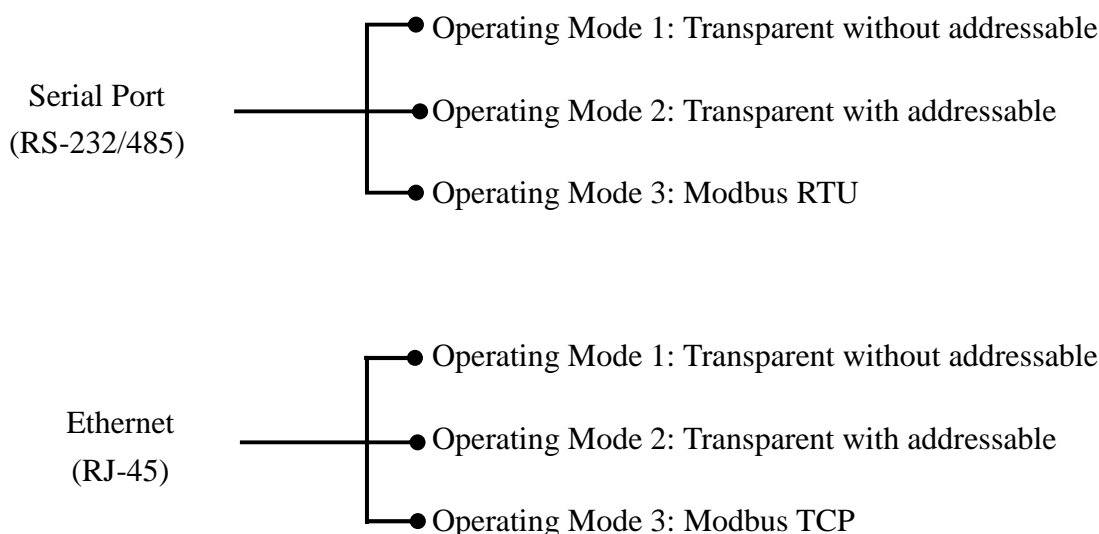The names used for identification only may be registered trademarks of their respective companies.

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Introduction

This document introduces the applications of the ICPDAS ZigBee converters ZB-2570 (host) and ZB-2571 (slave). The ZigBee (IEEE 802.15.4), a new wireless technology, supports more flexible and powerful functions such as mesh, repeater, automatic network organized and data encryptions etc. ICPDAS provides a new wireless converter ZB-2570 and ZG-2571 that is based on ZigBee technology. . The following figure shows the converter's classification of the operating modes by different interfaces:

Serial Port
(RS-232/485)

- Operating Mode 1: Transparent without addressable
- Operating Mode 2: Transparent with addressable
- Operating Mode 3: Modbus RTU

Ethernet
(RJ-45)

- Operating Mode 1: Transparent without addressable
- Operating Mode 2: Transparent with addressable
- Operating Mode 3: Modbus TCP

● You can refer to the following web site for more information about ZigBee:
  http://www.icpdas.com/products/GSM_GPRS/zigbee/zigbee_introductions.htm
● You can refer to the following web site for more information about ZigBee converters:
  http://www.icpdas.com/products/GSM_GPRS/zigbee/zb-2570.htm
  http://www.icpdas.com/products/GSM_GPRS/zigbee/zb-2571.htm
● You can refer to the following web site for more information about ZigBee repeater:
  http://www.icpdas.com/products/GSM_GPRS/zigbee/zb-2510.htm
● You can refer to the following web site for more information about ZigBee Utility software and how to configure the ZigBee converter:
  http://ftp.icpdas.com/pub/cd/usbcd/napdos/wireless/zigbee/zb-257x/ducoment/
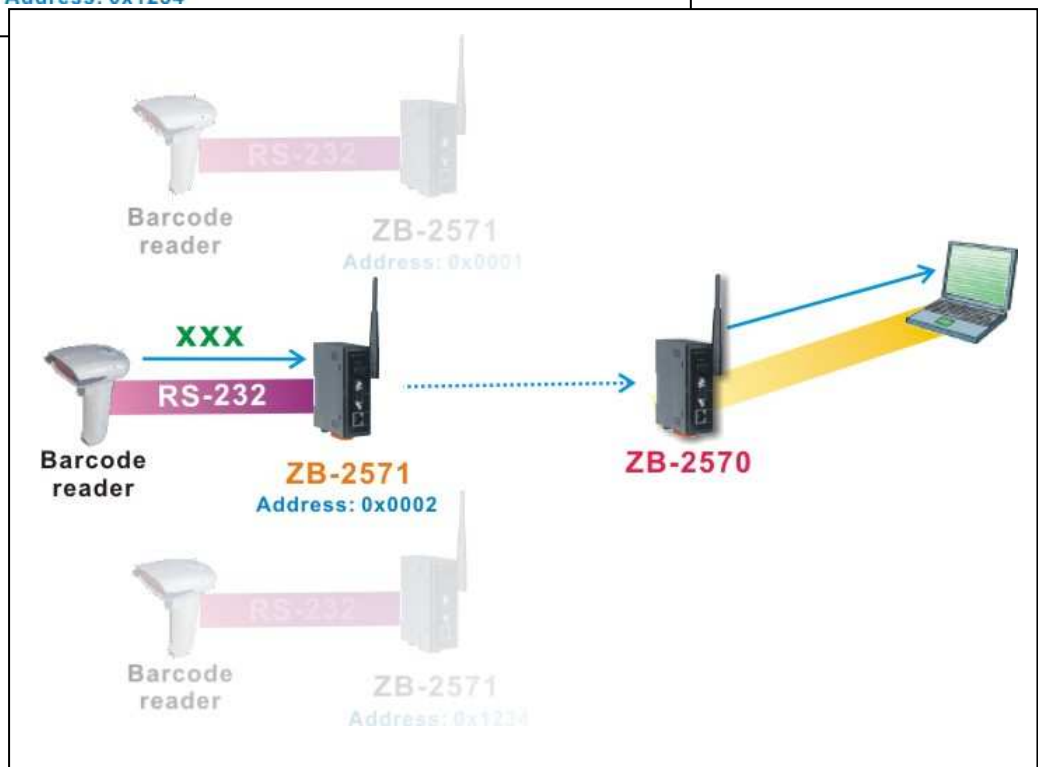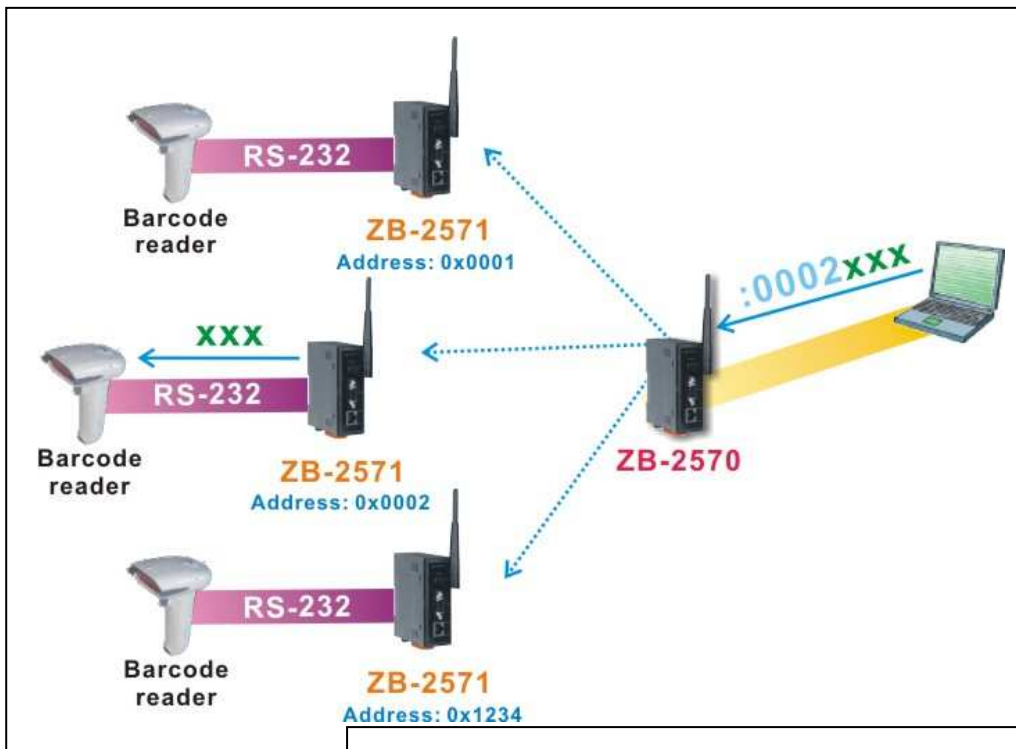
Serial Port Operating Mode 1:

When you want to converter the RS-232/RS-485 interface into to ZigBee and the device is addressable such as ICPDAS I-7000/M-7000/I-87k remote I/O modules, you can use our ZB-2571 (slave) to connect to these I/O modules and use the ZB-2570 (host) to connect to your controller or PC.
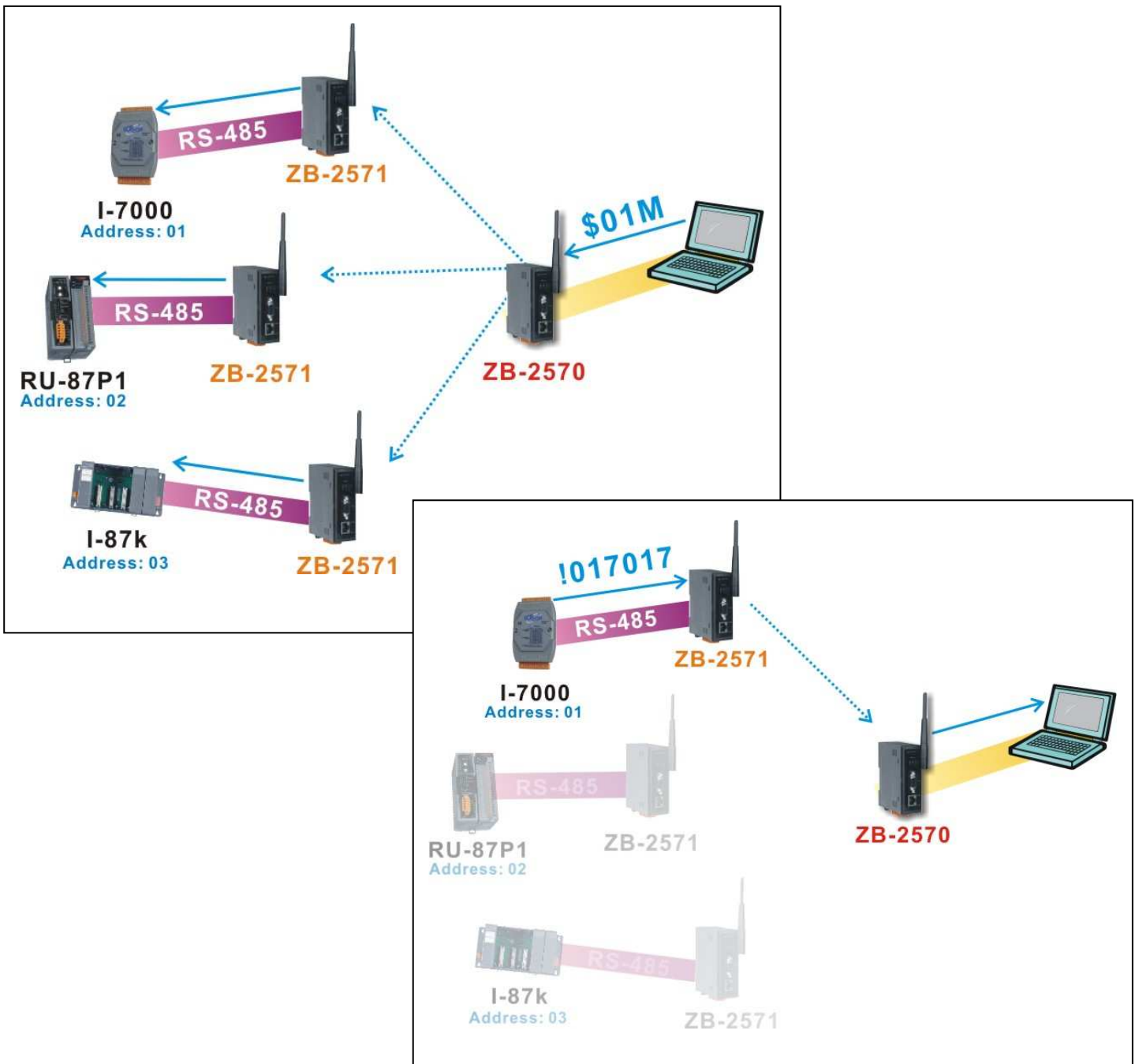
In some applications that the host controller needs to broadcast the data to all RS-232/RS-485 devices and these devices receive data only (no response), you can also use this mode.
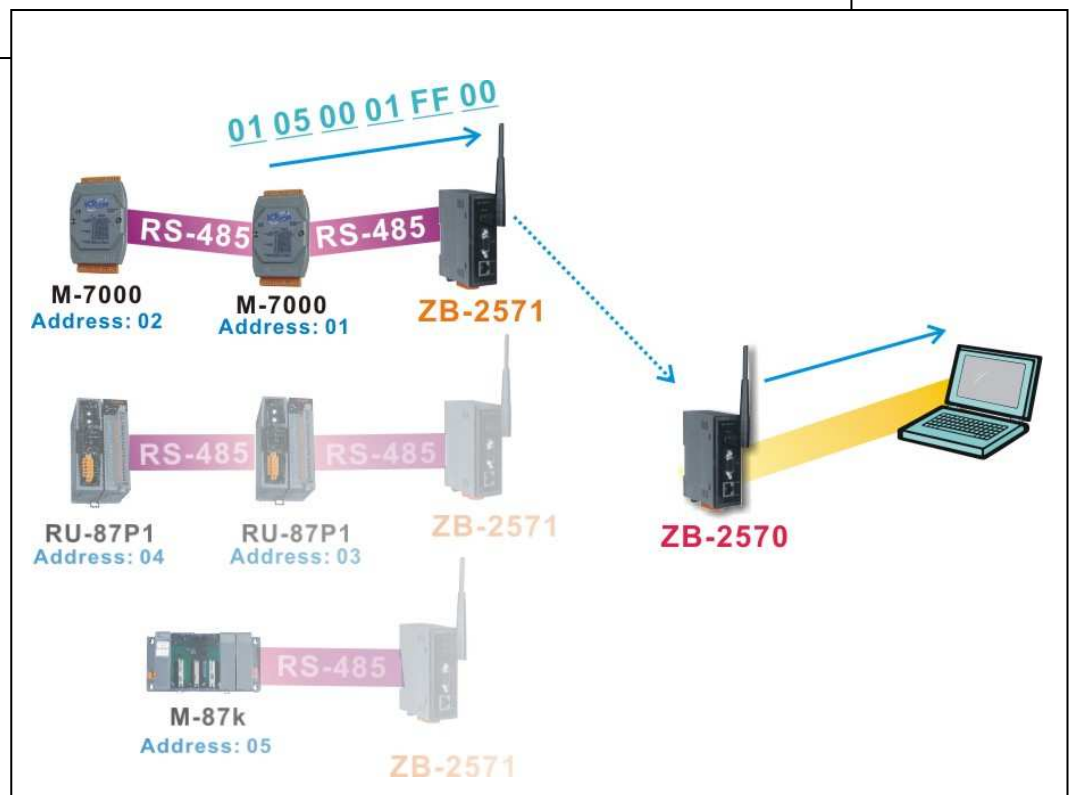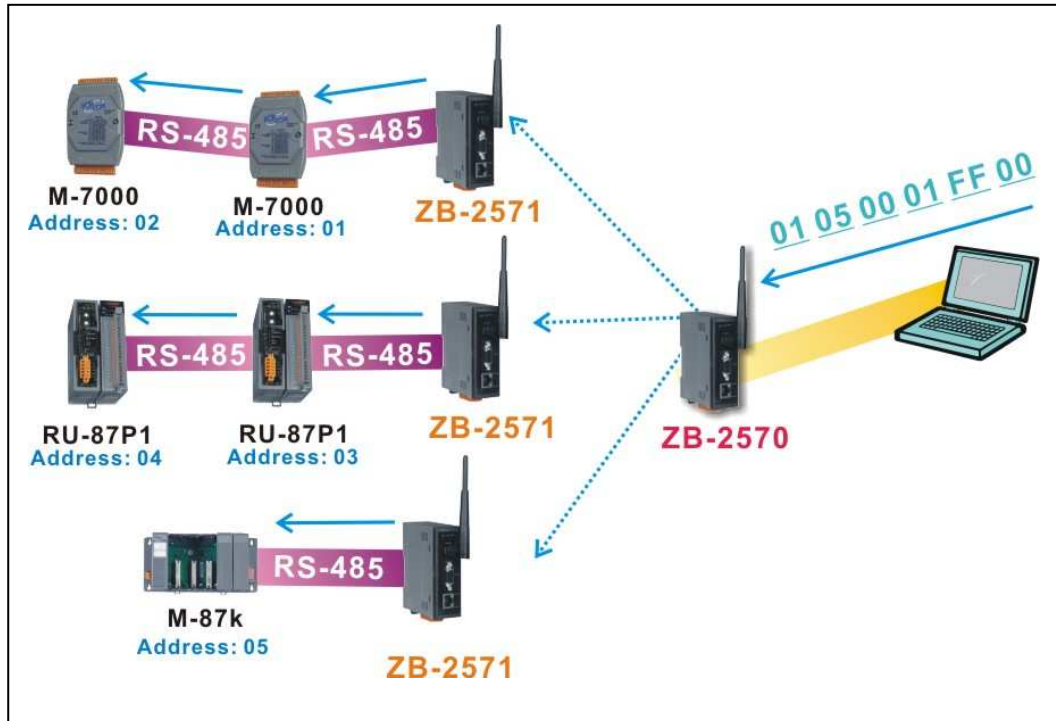
Serial Port Operating Mode 2:

If the RS-232/RS-485 interface modules aren't addressable, you can use mode 2 to set an address to the ZB-2571 from 1~0xFFFF (ZB-2570 is always set as 0). Add 5 ASCII characters to the header of your controller's original request data, then the remote device that is the correct address will responses it. This mode is similar as ICPDAS I-752N products.
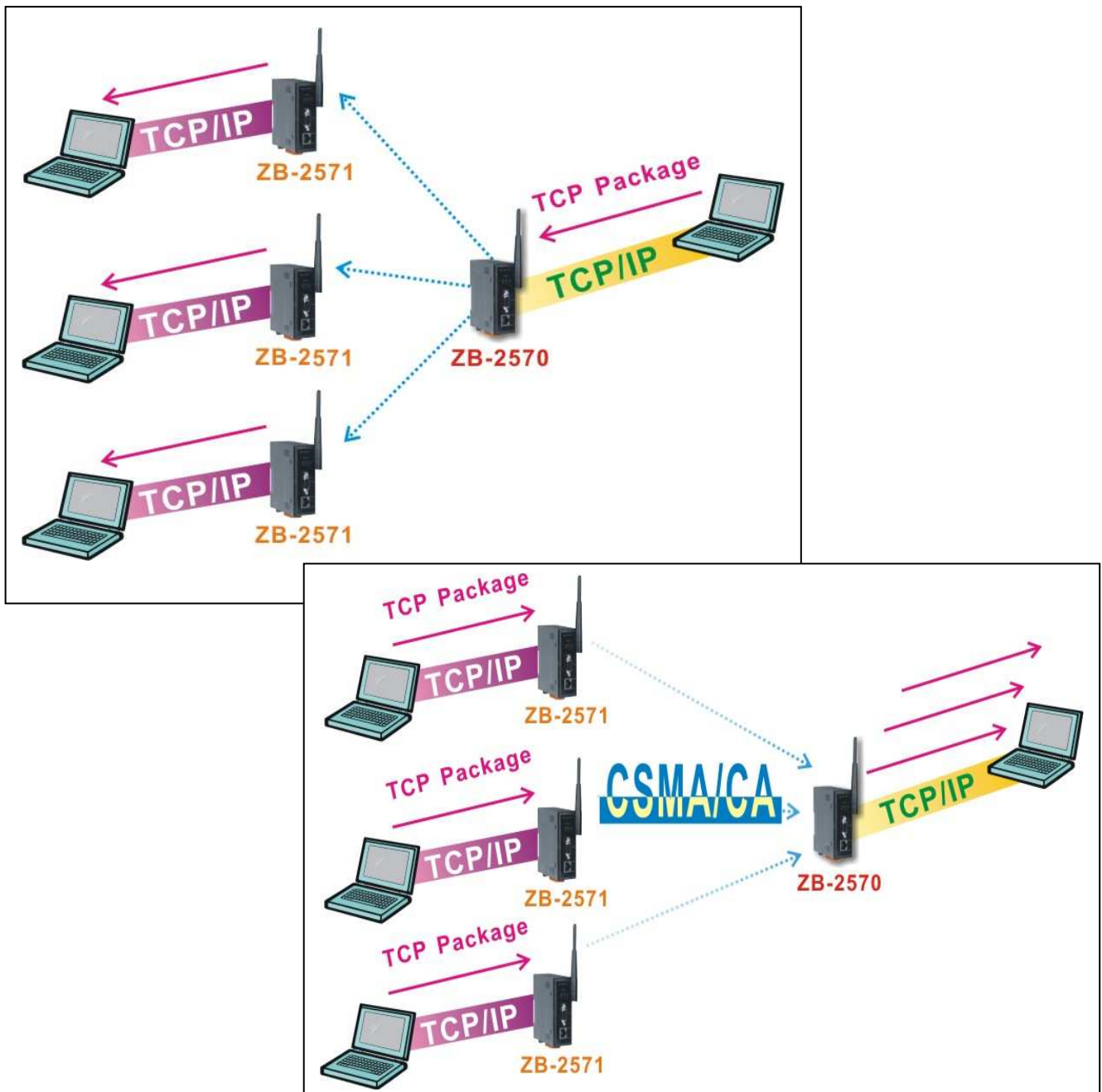

Serial Port Operating Mode 3:

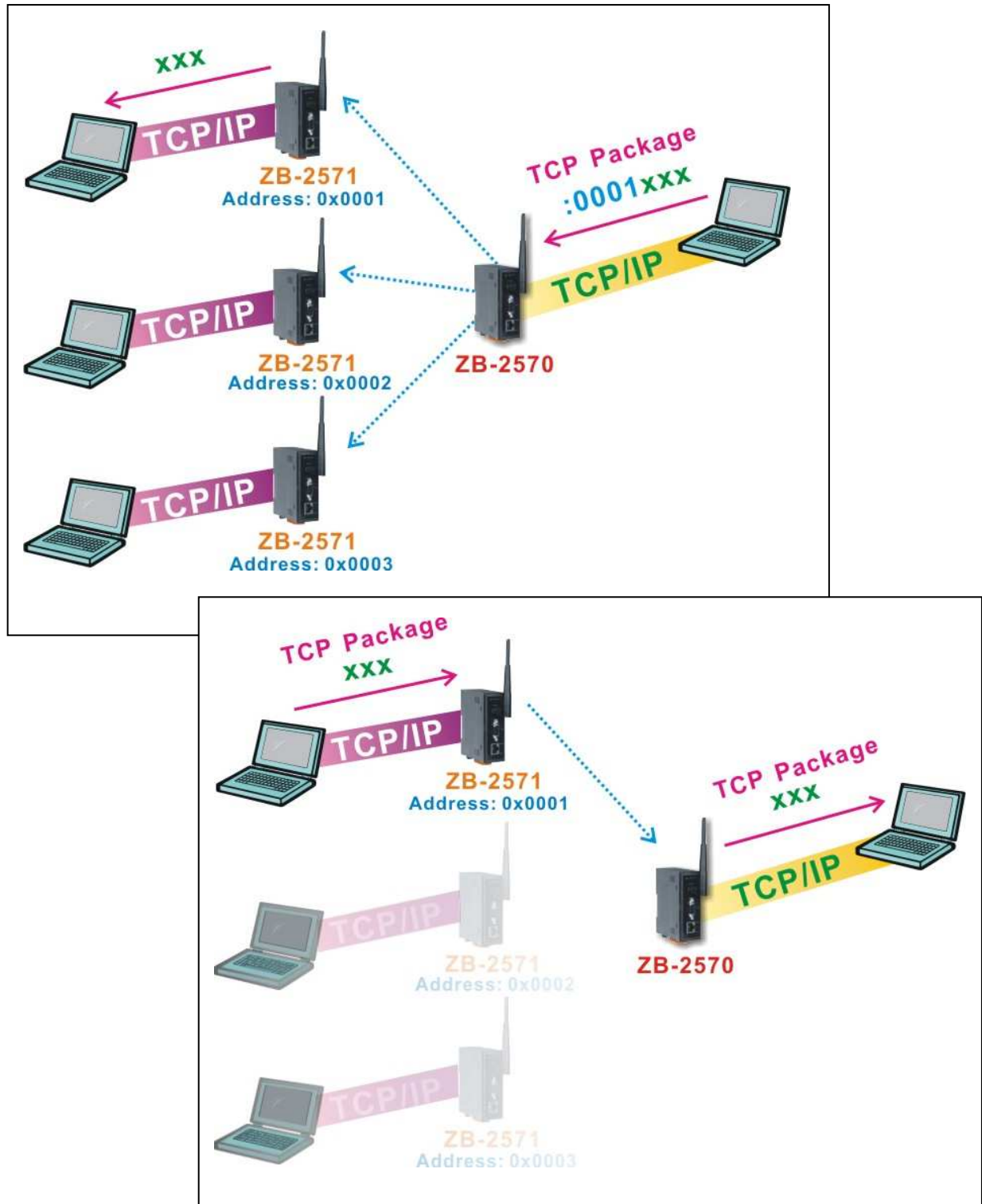This is specific mode for Modbus RTU devices.

Ethernet Operating Mode 1:

      This mode is similar as serial port operating mode 1 but connect to the Ethernet devices. You should create a socket with ZB-2570 instead of remote device at controller side. The ZB-2071 will create a socket connection to the rear device (you should set the connection IP and port number via our utility software before you use it.). When the controller sends a TCP package to ZB-2570, the ZB-2570 will broadcast it. When the ZB-2571 receives the data from ZB-2570, it will forward it the rear device. If the device responses data, the ZB-2571 will only send the TCP package to the ZB-2570. Then your controller will receive the data that is forwarded from ZB-2570.

Ethernet Operating Mode 2:

This mode is similar as serial port operating mode 2 but connect to the Ethernet devices.

Ethernet Operating Mode 3:

This is specific mode for Modbus TCP devices. You should set a mapping address to the Modbus TCP device in the ZB-2571 via our utility software. Then you can send an Modbus TCP request command from your SCADA software or your own software via our ZB-2570, then the device that is correct address will response it.

For example, if your Modbus TCP device's default address is 1 and you set the mapping address of the ZB-2571 to address 2, then at your software you should send a Modbus TCP request command with the address filed is 02 to request the data.