



Kx GPRS M2M I-NET

User's Guide

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Revision History

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1. Product Overview

1.1 Introduction

KX GPRS M2M I-NET/Router, a **GPRS** 2G modem, is built in an Ethernet port and optional Bluetooth function. Not only could it be used to connect to Internet devices such as vending machines or our IP cameras to get on the Internet through the modem dialup but also a Bluetooth access point with an optional Bluetooth module. Up to 7 incoming Bluetooth connection from mobile phones and PC/NBs with Bluetooth PAN Profile will be supported.



1.2 Features

- Use 2G modem dialup as the WAN connection or RJ45 interface as the WAN/LAN connection.
- Multimode operation – GPRS/GSM.
- Quad-band GPRS/GSM 850/900/1800/1900 MHz.
- GPRS data up to 85.6 Kbps DL and 42.8 Kbps UL.
- Supports the remote reboot of the device through web-based user interface.
- Offer a slide switch to change the Router operation mode.
- Optional module for Bluetooth Access Point.
 - Bluetooth 2.0 EDR module on board
 - Bluetooth PAN Profile support
 - PAN daemon enabling
 - As a role of NAP (master)
 - Up to 7 incoming BT connection
 - All Bluetooth connection are bridging with RJ45 for outgoing TCP/IP network.

1.3 Package Contents

- ? 1 x 2G KX GPRS M2M I-NET Router
- ? 1 x RJ45 Ethernet Cable
- ? 1 x 2G Antenna
- ? 1 x Power Adapter
- ? External 2G Antenna with 3M Antenna Cable (Optional)
- ? 1x Bluetooth Dongle (Optional)

2. Physical Description

The following information contains the physical description of KX GPRS M2M I-NET/Router. This includes the functions and the locations of each connector and indicator. This information provides useful reference when installing the product. Please familiarize yourself with this device.

2.1 Panels

2.1.1 Front Panel

For more related description, please refer to the Section 2.2 and Section 2.2.1.



Fig. 1 Front View of KX GPRS M2M I-NET/Router

2.1.2 Rear Panel

For more detailed description, please refer to the Section 2.2 and Section 2.2.2.



Fig. 2 Rear View of KX GPRS M2M I-NET/Router

2.2 Illustration

No. in Figures	Name on KX GPRS M2M I-NET/Router	Description	Remark
1	Bluetooth Connector	To externally connect with the Bluetooth dongle	Refer to section 2.2.1 for the front panel information
2	LAN Port	To connect to the device and Ethernet port via RJ45 cable	Refer to section 2.2.1 for the front panel information
3	Reset Button	To reset the KX GPRS M2M I-NET/Router to its factory defaults	Refer to section 2.2.1 for the front panel information
4	Power Supply Connector	To connect with the KX GPRS M2M I-NET/Router and the power adapter	Refer to section 2.2.1 for the front panel information
5	LEDs	To display the status of KX GPRS M2M I-NET/Router	Refer to section 2.2.3 for the LED description on the front panel
6	2G ANT SMA Connector	To connect with the 2G antenna	Refer to section 2.2.2 for Real panel information
7	SIM Card Slot	To connect with the internal modem for the access of Internet	Refer to section 2.2.2 for Real panel information
8	Switch	To change the operation mode	Refer to section 2.2.2 for Real panel information

2.2.1 Front Panels Information

Bluetooth Connector

Support Bluetooth mode for wireless access. *(Optional)*

LAN Port

KX GPRS M2M I-NET/Router is designed for 10/100Mbps Ethernet networks. KX GPRS M2M I-NET/Router connects to the network via category 5 cable.

Reset Button

Support the hardware reset function. Press this button 1 second around will reboot the device, and press 5 seconds around will reset the device to factory defaults. For the software reset of the device, you may refer to Section 3.2.1.2 for “Reboot the Device” or Section 3.2.1.3 for “Restore All Settings to the Factory Defaults”.

Power Supply Connector

Plug the power adapter. The specifications of KX GPRS M2M I-NET/Router's power adapter are as follows:

- Input: 100 ~ 240V AC, 50/60Hz
- Output: 6V DC / 1A

LEDs

Include the LEDs of POWER, LAN 100/10, Bluetooth, 2G Dialup Status and Cellular Signal Strength.

2.2.2 Rear Panel Information

2G ANT SMA Connector

Support 2G mode for wireless access.

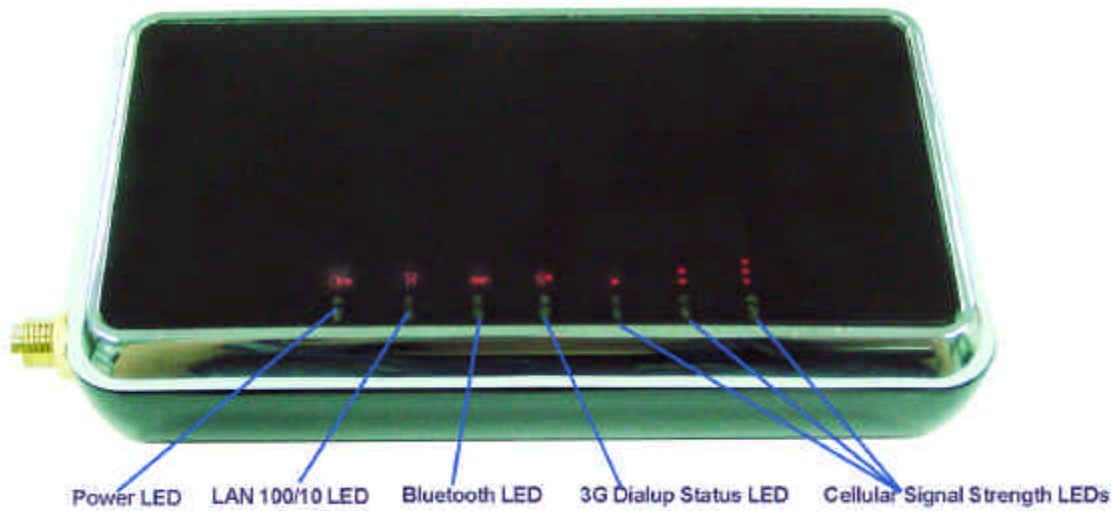
SIM Card Slot

Plug the SIM card chip.

Switch

- **GPRS Mode:** Switch the button into this operation mode, PC will get the virtual IP address assigned by KX GPRS M2M I-NET/Router.

2.2.3 LED Description on KX GPRS M2M I-NET/Router



LED	Color	Status
POWER LED (💡)	Red	Lit when 6V DC power is on and working.
LAN 100/10 LED (∞)	Red	Lit when connection with remote device is 100MHz. Off when connection with remote device is 10MHz.
Bluetooth LED (📶)	Red	Lit when device is detected. Off when no device is present.
2G Dialup Status LED (📶)	Red	Lit when dialup is connected. Off when dialup is disconnected.
6 Cellular Signal Strength LEDs		
Low (●)	Red	All 6 LEDs lit when the signal strength is good. (The LEDs lit would decrease progressively upon the signal strength)
Medium (●●)		
High (●●●)		

3. Web-Based Management

This chapter instructs you how to configure and manage your KX GPRS M2M I-NET/Router through the web user interface it supports. With this facility, you can easily access through the LAN port of the KX GPRS M2M I-NET/Router. Skip this chapter if you would like to use the “Dongle” mode connection.

After KX GPRS M2M I-NET/Router has been connected to your PC via RJ45 network cable, type <http://192.168.8.1> in IE browser, it will show the login screen and ask you to input the user name and password for authentication. The default user name and password are as follows:

Username: admin

Password: admin

When you successfully enter the setup page, you will see a simple user management window shown as the figure below. At the left section of the window, it is the whole list of main functions, including Basic Setting and Advanced, as well as other functions subordinating to them respectively.



3.1. Basic Setting

3.1.1 LAN Settings

These are the settings of the LAN (Local Area Network) interface for KX GPRS M2M I-NET/Router. The KX GPRS M2M I-NET/Router's local network (LAN) settings are configured based on the IP Address and Subnet Mask assigned in this section. The IP address is also used to access this web-based management interface. It is recommended that you use the default settings if you do not have an existing network.

Local IP Address: The IP address of your KX GPRS M2M I-NET/Router on the local area network. Your local area network settings are based on the address assigned here. For example, 192.168.0.1.

Subnet Mask: The subnet mask of your KX GPRS M2M I-NET/Router on the local area network.

DHCP Server: DHCP stands for Dynamic Host Configuration Protocol. The DHCP section is where you configure the built-in DHCP Server to assign IP addresses to the computers and other devices on your local area network (LAN).

Once your KX GPRS M2M I-NET/Router is properly configured and this option is enabled, the DHCP Server will manage the IP addresses and other network configuration information for computers and other devices connected to your Local Area Network. There is no need for you to do this yourself.

The computers (and other devices) connected to your LAN also need to have their TCP/IP configuration set to "DHCP" or "Obtain an IP address automatically". When you set **Enable DHCP Server**, the following options are displayed.

Starting IP Address and End IP Address: These two values (*from* and *to*) define a range of addresses that the DHCP Server uses when assigning addresses to computers and devices on your Local Area Network. Any addresses that are outside of this range are not managed by the DHCP Server; these could, therefore, be used for manually configured devices or devices that cannot use DHCP to obtain network address details automatically.

It is possible for a computer or device that is manually configured to have an address that does reside within this range. In this case the address should be reserved, so that the DHCP Server knows that this specific address can only be used by a specific computer or device.

Your KX GPRS M2M I-NET/Router, by default, has a static IP address of 192.168.8.1. This means that addresses 192.168.8.2 to 192.168.8.254 (from 2 to 254) can be made available for allocation by the DHCP Server.

Example,

Your KX GPRS M2M I-NET/Router uses 192.168.0.1 for the IP address. You've assigned a computer that you want to designate as a Web server with a static IP address of 192.168.0.3. You've assigned another computer that you want to designate as an FTP server with a static IP address of 192.168.0.4. Therefore the starting IP address for your DHCP IP address range needs to be 5 or greater.

Example,

Suppose you configure the DHCP Server to manage addresses From 100 To 199. This means that 3 to 99 and 200 to 254 are NOT managed by the DHCP Server. Computers or devices that use addresses from these ranges are to be manually configured. Suppose you have a web server computer that has a manually configured address of 192.168.0.100. Because this falls within the "managed range" be sure to create a reservation for this address and match it to the relevant computer.

Bluetooth Pin Code: Bluetooth password for authentication.

3.1.2 2G Setting

3.1.2.1 DIALUP WAN

The Dialup WAN (Wide Area Network) section is where you configure your dialup up connection type. You can disable the modem function.

Authentication: The mode for PPP authentication.

2G ISP Settings: Your 2G service provider will provide you with the values to fill in for the required fields of **PPP User Name**, **PPP Password**, and **Access Point Name (APN Gateway)**.

Dial String: The 2G dial command. Default is ATD*99#.

Extend AT Command: Enter any extra AT commands for the modem here. AT commands start with AT. New AT commands will be executed until the next 2G modem dialup begins.

Automatically LCP Check: The system will send an LCP echo-request frame to the peer every 3 seconds. Normally the ISP server at the remote site should respond to the echo-request by sending an echo-reply. This option can detect that the peer is no longer connected.

3.1.2.2 Ping WAN

Ping WAN function provides you with an option to check the WAN connection is valid or not, if not, KX GPRS M2M I-NET/Router will try to dial up again to reconnect to Internet.

The description of related parameters for the Ping WAN function is as follows:

Ping WAN Check: Enable or disable the function of Ping WAN Check.

Ping WAN IP Address: The IP address is used for the ping.

Ping Repetition Time (time between 2 Pings): The time interval of sending the Ping packet.

Max. Allowed Successive Lost Ping (1~255): The maximum times that the KX GPRS M2M I-NET/Router allows to receive no response from the successive Ping. KX GPRS M2M I-NET/Router will restart to dial up in order to do the WAN connection once it exceeds this limit.

3.1.3 DDNS (Dynamic DNS) Setting

The Dynamic DNS feature allows you to host a server (Web, FTP, Game Server, etc.) using a domain name that you have registered (www.dyndns.com or www.no-ip.com) with your dynamically assigned IP address. Most broadband Internet Service Providers assign dynamic (changing) IP addresses. When you use a Dynamic DNS service provider, your friends can enter your domain name to connect to your server, no matter what your IP address is.

3.1.3.1 Enable Dynamic DNS

Enable this option only if you have registered your own domain name with a dynamic DNS service provider. The following parameters are displayed when the option is enabled.

DDNS: Enable/Disable the DDNS function.

Server Select: Select a dynamic DNS service provider from the pull-down list.

DDNS Account: Enter the username or key provided by your service provider. If the Dynamic DNS provider supplies only a key, enter that key in all three fields.

DDNS Password: Enter the password or key provided by your service provider. If the Dynamic DNS provider supplies only a key, enter that key in all three fields.

Your DDNS Domain Name: Enter the hostname you have registered.

Note: After configuring KX GPRS M2M I-NET/Router for dynamic DNS, you can open a browser and navigate to the URL for your domain (for example <http://www.mydomain.info>) and KX GPRS M2M I-NET/Router will attempt to forward the request to port 80 on your LAN.

3.1.4 Virtual Server Setting

The Virtual Server function gives Internet users access to services on your LAN. This feature is useful for hosting online services such as FTP or HTTP servers. For each virtual server, you can define a port or a range of ports on your KX GPRS M2M I-NET/Router for the redirection to an internal LAN IP Address and LAN port. Up to 10 sets of virtual server can be supported by KX GPRS M2M I-NET/Router.

Example,

You are hosting a HTTP Server on a PC that has LAN IP Address of 192.168.8.50 and your ISP is blocking Port 80.

1. Select the proper name of the Virtual Server (for example: **HTTP Server**),
2. Enter the IP Address of the machine on your LAN (for example: **192.168.8.50**),
3. Enter the Port Range as [80~80],
5. Select the Protocol – TCP,
7. Click **Apply** to have the settings taken effect,
8. Repeat these steps for each Virtual Server Rule you wish to add.

With this virtual server entry, all Internet traffic on Port 80 will be redirected to your internal web server at IP Address 192.168.8.50.

3.1.4.1 Add New Virtual Server

You can add a new Virtual Server entry to the Virtual Servers List by filling in the parameters listed below.

Select: Entries in the list can be either active (enabled) or inactive (disabled). To activate, please assign a meaningful name to the virtual server by pulling down the "Select" list, for example, **FTP Server**. Several well-known types of virtual server are available in the "Select" list. Selecting one of these types of the virtual server, it will automatically fill some of the remaining parameters with standard values for that type of server. Or you may select **Manual Setting** if you would like to define some special port(s) for a virtual server.

Redirect IP Address: The IP address of the system on your internal network that will provide the virtual service, for example, **192.168.8.50**.

Port Range: The range of ports that will be used by the assigned IP address.

Protocol: Select the protocol used by the service.

Apply: Save the new virtual server entry you add. When finished updating the virtual server entries, you must still click the **Apply** button to make the changes effective and permanent.

Note: The TCP Port 80(HTTP Port) will cover the original web server of the router when the user selects HTTP type of virtual server.

3.2. Advanced Setup

3.2.1 Device Admin

This section allows you to do the firmware upgrade, reboot KX GPRS M2M I-NET/Router, and restore it to the factory default settings. Restoring the unit to the factory default settings will erase all settings, including any rules that you have created.

3.2.1.1 Firmware Upgrade

The firmware upgrade function can be used to update your KX GPRS M2M I-NET/Router to the latest firmware code to improve its functionality and performance.

To upgrade the firmware, click the **software update** hyperlink in the field of **Version** and follow these steps listed below:

1. Click the **Browse** button to locate the upgrade file (*.bin) on your computer.
2. Once you have found the file to be used, click the **Upload** button to start the firmware upgrade process. This can take a minute or more.
3. Wait for KX GPRS M2M I-NET/Router to reboot. This will take another minute or more.
4. Confirm the updated firmware revision shown on the Administration Settings page. Here are displayed the version numbers of the firmware currently installed in your KX GPRS M2M I-NET/Router and the most recent upgrade that is available.

Note: Before performing an upgrade, be sure to save the current configuration for KX GPRS M2M I-NET/Router.

Upload: Once you have a firmware update on your computer, use this option to browse for the file and then upload the information into the KX GPRS M2M I-NET/Router.

3.2.1.2 Reboot the Device

This function will have you restart KX GPRS M2M I-NET/Router when you select the **Yes** option in back of **Reset Device** and press **Apply** button. It is useful for restarting when you are not near the device.

3.2.1.3 Restore All Settings to the Factory Defaults

This function restores all configuration settings back to the settings that were in effect at the time KX GPRS M2M I-NET/Router was shipped from the factory. Just select the **Yes** option in back of **Factory Defaults** and press **Apply** button, any settings that have been saved or not been saved will be lost and return into the factory defaults.