USB3.0 TO 10/100/1000M

Ethernet Controller

User Manual
Ver. 1.00

General Description

The Realtek RTL8153 10/100/1000M Ethernet controller combines an IEEE 802.3u compliant Media Access Controller (MAC), the RTL8153 offers high-speed transmission over CAT 5 UTP cable or CAT 3 UTP (10Mbps only) cable. Functions such as Crossover Detection and Auto-Correction, polarity correction, adaptive equalization, cross-talk cancellation, echo cancellation, timing recovery, and error correction are implemented to provide robust transmission and reception capabilities.

The RTL8153 features USB 3.0 to provide higher bandwidth and improved protocols for data exchange between the host and the device. USB 3.0 also offers more advanced power management features for energy saving. In addition to the ACPI feature, remote wake-up (including AMD Magic Packet and Microsoft Wake-Up Frame) is supported in both ACPI and APM (Advanced Power Management) environments.

The RTL8153 supports IEEE 802.3az-2010, also known as Energy Efficient Ethernet (EEE). IEEE 802.3az-2010 operates with the IEEE 802.3 Media Access Control (MAC) Sublayer to support operation in Low Power Idle mode. When the Ethernet network is in low link utilization, EEE allows systems on both sides of the link to save power.

The RTL8153 is fully compliant with Microsoft NDIS5, NDIS6 (IPv4, IPv6, TCP, UDP) Checksum features, and supports IEEE 802 IP Layer 2 priority encoding and IEEE 802.1Q Virtual bridged Local Area Network (VLAN).

Features

- Integrated 10/100/1000M transceiver
- Supports USB 3.0, 2.0, and 1.1
- Supports CDC-ECM
- Supports LPM (Link Power Management)
- Supports pair swap/polarity/skew correction
- Crossover Detection & Auto-Correction
- Supports Wake-On-LAN and 'RealWoW!'
- Supports power down/link down power saving
- Supports hardware CRC (Cyclic Redundancy Check) function

IEEE

- Supports Full Duplex flow control (IEEE 802.3x)
- Fully compliant with IEEE 802.3 and IEEE 802.3u
- Supports IEEE 802.1P Layer 2 Priority Encoding
- Supports IEEE 802.1Q VLAN tagging
- Supports IEEE 802.3az-2010 (EEE)

Microsoft AOAC (Always On Always Connected)

- Supports 16-set 128-byte Wake-Up Frame pattern exact matching
- Supports link change wake up
- Supports Microsoft WPD (Wake Packet Detection)
- Supports Protocol Offload (ARP & NS)

Intel CPPM (Converged Platform Power Management)

- Supports L1 with 3ms BESL (USB 2.0)
- Dynamic LTM messaging (USB 3.0)
- Supports U1/U2 (USB 3.0)
- Supports selective suspend

Package Contents

- 1x USB 3.0 Ethernet Adapter
- 1x Quick Installation Guide

System Requirements

Operating Systems :

Windows Server 2003, 2012, XP, Vista, 7, 8 32 and 64 bit
Windows Server 2008 32_bit
Linux and Mac
One available USB port
Applications
USB 10/100/1000M Ethernet on Motherboard, Dongle, Notebook, Docking station, or Embedded system
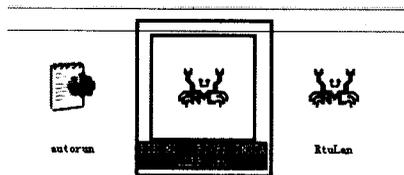
Installation

Hardware Connection

General instructions for installing the USB 3.0 Ethernet Adapter are provided below. Since the design of system may vary, refer to your system's reference manual for further information, if needed

1. Connect the Ethernet adapter to a free USB port.
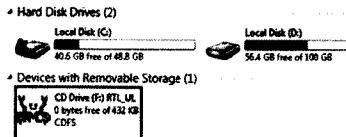
2. Double click the "RTK_NIC_DRIVER_INSTALLER.SFX", driven automatic installation is complete

Now the installation is complete. You can connect the adapter to a network device by an Ethernet cable:

1. Connect an Ethernet cable to the Ethernet port on the adapter.
2. Connect the other end of the Ethernet cable to your network hub, switch or router.
The Link LED should light up Red (or Green) to indicate a proper physical connection between the adapter and the network. If the Link LED doesn't light up, please verify the cable connections between all the network devices.
**Actual strings depend on your operation system. These screen shots are from Windows 7 and might vary slightly for each operation system.

Verifying the Driver Installation

Once you finish the installation, you can open Windows **Device Manager** to verify if your Ethernet adapter is properly installed.

To access the Device Manager:

On Windows Vista/7: Right-click **Computer** on the desktop and click Properties > Device Manager.

On Windows 2000/2003/XP: Right-click **My Computer** on the desktop and click **Properties > (Hardware) > Device Manager**.

In the **Network adapters** group, an item named **Realtek USB GBE Family Controller** should be displayed.

If there is a question or exclamation mark next to that item, then the driver is not properly installed. Please delete the item, select the Delete the driver software for this device option (if provided), unplug the adapter from your computer and then repeat the installation steps.