

# 产品承认书

## SPECIFICATION FOR APPROVAL

客户 Customer: \_\_\_\_\_

产品名称 Model Name: RT8153 1000M USB3.0 Ethernet Card

产品编号 Model number: TXA042

日期 Date: \_\_\_\_\_

### SIGNATURE:

业务 SALES	工程 ENG	制造 MFG	品质 QUALITY
APPROVED BY	CHECKED BY	CHECKED BY	TESTED BY

### CUSTOMER APPROVAL:

CUSTOMER APPROVAL BY	
DATE	

## 1、Product Photo



## 2、 Product specification

Model number	TXA042
Chipset	Realtek RTL8153
Port number	1* RJ45
Standard	IEEE 802.3x,IEEE 802.3,IEEE 802.3u,IEEE 802.1P, IEEE 802.1Q VLAN tagging IEEE 802.3az-2010 (EEE)
Network media	10Base-T,cat3 or above UTP,10Base-Tx,cat5 UTP
Data rate	10/100M/1000Mbps
Interface	USB3.0
Color	Black, white
LED Indicator	Link/ACT
Dimension	70*32.5*17mm,USB cable:150mm
Support OS	Windows 10 8.1 8 32-bit 64-bit Plug in Play Native Driver No installation Needed Windows 7 Vista XP Compatible
Environment	Operating Temperature: 0 °C-55 °C
	Relative Humidity: 10%-90%(non-condensing)
	Storage Temperature: -0°C-80°C
	Relative Humidity: 5%-90%(non-condensing)
Other features	plug and play Wake-On-LAN Flow control Auto-Negotiation with Next Page capability Selective suspend Remote wake-up ECMA Half Duplex and Full Duplex Mode

### 3、 Chipset Description :

The Realtek RTL8153-CG 10/100/1000M Ethernet controller combines an IEEE 802.3u compliant Media Access Controller (MAC), USB 3.0 bus controller, and embedded memory. With state-of-the-art DSP technology and mixed-mode signal technology, 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 embedded One-Time-Programmable (OTP) memory that can replace the external EEPROM (93C46/93C56/93C66/TWSI).

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.

Advanced Configuration Power management Interface (ACPI)—power management for modern operating systems that are capable of Operating System-directed Power Management (OSPM)—is supported to achieve the most efficient power management possible. 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 Microsoft Wake Packet Detection (WPD) to provide Wake-Up Frame information to the OS, e.g., PatternID, OriginalPacketSize, SavedPacketSize, SavedPacketOffset, etc. WPD helps prevent unwanted/unauthorized wake-up of a sleeping computer.

The RTL8153 supports ‘RealWoW!’ technology to enable remote wake-up of a sleeping PC through the Internet. This feature allows PCs to reduce power consumption by remaining in low power sleeping state until needed.

*Note: The ‘RealWoW!’ service requires registration on first time use.*

The RTL8153 supports Protocol offload. It offloads some of the most common protocols to NIC hardware in order to prevent spurious wake-up and further reduce power consumption. The RTL8153 can offload ARP (IPv4) and NS (IPv6) protocols while in the D3 power saving state.

The RTL8153 supports the ECMA (European Computer Manufacturers Association) proxy for sleeping hosts standard. The standard specifies maintenance of network connectivity and presence via proxies in order to extend the sleep duration of higher-powered hosts. It handles some network tasks on behalf of the host, allowing the host to remain in sleep mode for longer periods. Required and optional behavior of an operating proxy includes generating reply packets, ignoring packets, and waking the host.

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). The above features contribute to lowering CPU utilization, especially benefiting performance when in operation on a network server.

The RTL8153 is suitable for multiple market segments and emerging applications, such as desktop, mobile, workstation, server, communications platforms, docking station, and embedded applications.

## Feature:

### Hardware

- Integrated 10/100/1000M transceiver
- Auto-Negotiation with Next Page capability
- 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!' (Wake-On-WAN) Technology (see note 1)
- Supports ECMA-393 ECMA ProxZzzy Standard for sleeping hosts (see note 1)
- XTAL-Less Wake-On-LAN
- Supports power down/link down power saving
- Transmit/Receive on-chip buffer support
- EEPROM Interface
- Embedded OTP memory can replace external EEPROM
- Built-in switching regulator and LDO regulator
- Supports Customizable LEDs
- Supports hardware CRC (Cyclic Redundancy Check) function
- LAN disable with GPIO pin
- Supports 25MHz or 48MHz external clock (from oscillator or system clock source)
- SPI Flash Interface
- 48-pin QFN 'Green' package

*Note 1. Select between RealWoW! or ECMA, only one feature can be active at a time.*

### Software Offload

- Microsoft NDIS5, NDIS6 Checksum Offload (IPv4, IPv6, TCP, UDP) and Segmentation Task-offload (Large send v1 and Large send v2) support
- Supports jumbo frame to 9K bytes

### 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

## 4、RD test result

### 4.1 Compatibility test->PASS

NO.	Each Link(100MCAT5)	Internet Link	data packet (100MCAT5)
WindowsXP 32bit	PASS	PASS	PASS
Windows7 32bit	PASS	PASS	PASS
Windows7 64bit	PASS	PASS	PASS
Windows8 64bit	PASS	PASS	PASS
Windows10 64bit	PASS	PASS	PASS
Linux	PASS	PASS	PASS

### 4.2 Data traffic test-PASS

```

GA TCP流量1-test
[176] 79.0-80.0 sec  111 MBytes  933 Mbits/sec
[ ID] Interval      Transfer  Bandwidth
[176] 80.0-81.0 sec  111 MBytes  927 Mbits/sec
[176] 81.0-82.0 sec  111 MBytes  927 Mbits/sec
[176] 82.0-83.0 sec  107 MBytes  898 Mbits/sec
[176] 83.0-84.0 sec  110 MBytes  924 Mbits/sec
[176] 84.0-85.0 sec  112 MBytes  941 Mbits/sec
[176] 85.0-86.0 sec  109 MBytes  914 Mbits/sec
[176] 86.0-87.0 sec  109 MBytes  918 Mbits/sec
[176] 87.0-88.0 sec  115 MBytes  961 Mbits/sec
[176] 88.0-89.0 sec  113 MBytes  945 Mbits/sec
[176] 89.0-90.0 sec  111 MBytes  934 Mbits/sec
[176] 90.0-91.0 sec  111 MBytes  932 Mbits/sec
[176] 91.0-92.0 sec  111 MBytes  930 Mbits/sec
[176] 92.0-93.0 sec  111 MBytes  934 Mbits/sec
[176] 93.0-94.0 sec  111 MBytes  934 Mbits/sec
[176] 94.0-95.0 sec  112 MBytes  937 Mbits/sec
[176] 95.0-96.0 sec  112 MBytes  936 Mbits/sec
[176] 96.0-97.0 sec  111 MBytes  933 Mbits/sec
[176] 97.0-98.0 sec  113 MBytes  949 Mbits/sec
[176] 98.0-99.0 sec  111 MBytes  930 Mbits/sec
[176] 99.0-100.0 sec 111 MBytes  930 Mbits/sec
[ ID] Interval      Transfer  Bandwidth
[176] 100.0-101.0 sec 111 MBytes  933 Mbits/sec
[176] 101.0-102.0 sec 111 MBytes  930 Mbits/sec
[176] 102.0-103.0 sec 111 MBytes  933 Mbits/sec
[176] 103.0-104.0 sec 111 MBytes  935 Mbits/sec
[176] 104.0-105.0 sec 112 MBytes  937 Mbits/sec
[176] 105.0-106.0 sec 112 MBytes  937 Mbits/sec
[176] 106.0-107.0 sec 113 MBytes  952 Mbits/sec
[176] 107.0-108.0 sec 111 MBytes  932 Mbits/sec
    
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