HN-DR4PN2U

User Manual

Contents

1 Safety Precautions

Follow the instructions below to prevent damage to the device and the risk of fire or electric shock:

- Use the power adapter supplied with the unit and plug it into a suitably rated power outlet.
- Leave sufficient space around the Power adapter and Modem to allow the free flow of air for heat dissipation. Do not cover the device ventilation slots as this will result in the device overheating.
- Do not install this device close to a heat source or in an area of high temperature. Avoid exposure to direct sunlight.
- Do not install in a damp environment or allow fluid to spill on the Modem or Power Supply.
- Only connect this device as specified in the Manual or installation Wizard. Failure to observe these instructions can lead to the risk of fire or damage to the equipment concerned.
- Install in a well-ventilated dry environment on a stable surface.

2 Introduction

The Router supports ADSL2+ link with downstream up to 24 Mbps and upstream up to 1 Mbps. It provides a simple and cost-effective ADSL Internet connection for a private Ethernet. The Router combines high-speed ADSL Internet connection, 3G WAN service, IP routing for the LAN, and wireless connectivity in one package. The wireless network supports 802.11g/802.11b/802.11n. It can provide high access performance application for the individual users, SOHOs, and small enterprises.

2.1 LED Status Description
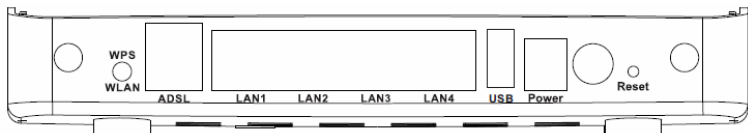
2.1.1 Front Panel
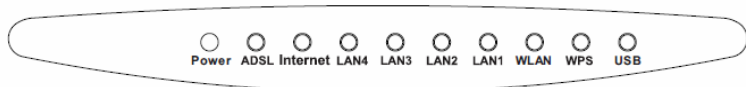
The following table describes the LEDs of the device:

LEDs	Color	Status	Description
Power	Green	On	The device is powered on and the device operates normally.
	Red	On	The device and is initiating.
		Blink	The software is upgrading.
	Off		The device is powered off.
ADSL	Green	On	The DSL line connection is established.
		Blink slowly	The DSL line is off.
		Blink quickly	The DSL line is initiating.
Internet	Green	On	The Internet connection is established. And the users can access the Internet.
		Blink	Internet data is being transmitted.
	Red	On	Authentication fails.
	Off		The device is not connected to the Internet.
LAN4-1	Green	On	The Ethernet interface is connected.
		Blink	Data is being transmitted through the Ethernet interface.
		Off	The Ethernet interface is disconnected.
WLAN	Green	On	WLAN is enabled.
		Blink	Data is being transmitted through the Wireless interface.
		Off	WLAN is disabled.
WPS	Green	On	Connection succeeds under Wi-Fi Protected Setup.
		Blink	Negotiation is in progress under Wi-Fi

LEDs	Color	Status	Description
			Protected Setup.
		Off	Wi-Fi Protected Setup is disabled.
USB	Green	On	The connection of 3G or USB flash disk has established.
		Blink	Data is being transmitted.
		Off	The connection of 3G or USB flash disk is disabled.

2.1.2 Rear Panel

The following table describes the interfaces of the device:

Interface	Description
WLAN/WPS	● If you press the button between 1s and 5s to enable WLAN function. ● Press the button for more than 5s to enable WPS function.
ADSL	RJ-11 interface, for connecting to the ADSL interface or a splitter through a telephone cable.
LAN1-4	RJ-45 interface, for connecting to the Ethernet interface of a PC or the Ethernet devices through an Ethernet cable.
USB	USB port, for connecting the 3G network card or other USB storage devices.
Power	Power interface, for connecting to the power adapter. The output of power adapter is 12 V DC, 1A.
◯	Power switch.
Reset	To restore the factory default, keep the device powered on, push a needle into the hole for about 1 second, and then release.

3 Hardware Installation

3.1 Choosing the Best Location for Wireless Operation

● Keep the numbers of walls and ceilings to the minimum.

● Consider the direct line between access points and workstations.

● Building materials make difference.

● Position the antenna for best reception.

● Keep your product away (at least 1~2 meters) from electrical devices.

● Keep wireless devices away from electrical devices that generate RF noise such as microwave ovens, monitors, and electric motors.

3.2 Connecting the ADSL Router

Step 1 Connect the **ADSL** interface of the router to the **MODEM** interface of the splitter through a telephone cable. Connect the phone to the **PHONE** interface of the splitter through a cable. Connect the incoming line to the **LINE** interface of the splitter.

The splitter has three interfaces:

● **LINE**: Connect to a wall phone jack (RJ-11 jack).

● **MODEM**: Connect to the ADSL jack of the device.

● **PHONE**: Connect to a telephone set.

Step 2 Connect the **LAN** interface of the router to the network interface card (NIC) of the PC through an Ethernet cable (MDI/MDIX).

Note:

Use the twisted-pair cables to connect with the hub or switch.

Step 3 Plug one end of the power adapter to the wall outlet and connect the other end to the **Power** interface of the router.

The following figure shows the connection of the Router, PC, and telephones.
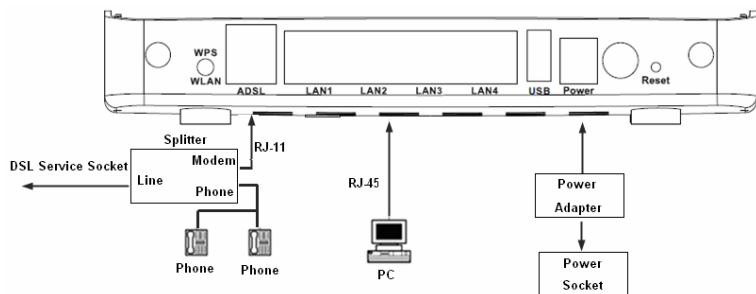
4   Introduction to Web Configuration

4.1   Preparation before Login
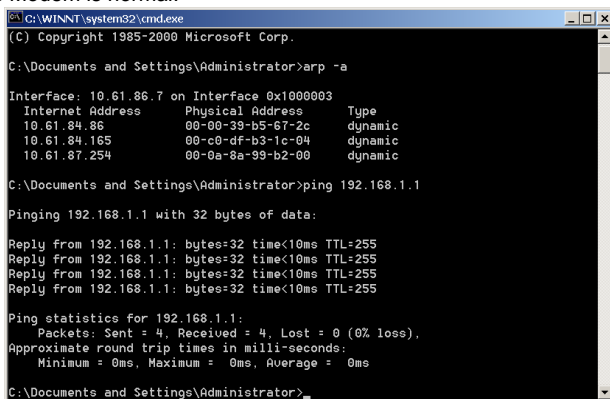
Before accessing the Modem, ensure the communication between PC and Modem is normal. Check the communication as follows.

- Configure the IP address of the PC as 192.168.1.X (2~254), net mask as 255. 255.255.0, gateway address as 192. 168.1.1 (For customized version, configure them according to the actual version).
- Enter **arp -a** in the DOS window to check whether the PC can read the MAC address of the Modem.
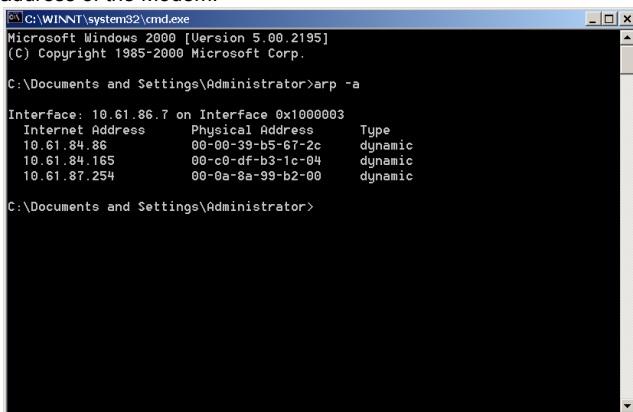
- Ping the management IP address (192.168.1.1 by default) of the Modem.

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If the PC can read the MAC address of the Modem and can ping through the management IP address of the Modem, that means the communication of the PC and the Modem is normal.

Note:

When you manage the router through Web, do not cut off the power supply of the router. Otherwise, the router may be damaged.

4.2 Logging In to the Router

To log in to the DSL Router, do as follows:

Step1 Open a Web browser on your computer.

Step2 Enter **http://192.168.1.1** (default IP address of DSL router) in the address bar. The login page appears.

Step3 Enter a user name and the password. The default username and password of the super user are **admin** and **password**. The username and password of the common user are **user** and **user**. You need not enter the username and password again if you select the option **Remember my password**. It is recommended to change these default values after logging in to the DSL router for the first time.

Step4 Click **OK** to log in to the Web page. Otherwise, please click **Cancel** to exit.

After logging in to the DSL router as a super user, you can view, configure, and modify all the settings, and diagnose the system.

4.3 WAN Configuration

4.3.1 Layer2 Interface

ATM Interface

Choose **Advanced Setup** > **Layer2 Interface > ATM Interface** , and the following page appears.

DSL ATM Interface Configuration

Choose Add, or Remove to configure DSL ATM interfaces.

Interface	Vpi	Vci	DSL Latency	Category	Link Type	Connection Mode	IP QoS	Scheduler Alg	Queue Weight	Group Precedence	Remove
atm0	0	35	Path0	UBR	EoA	DefaultMode	Enabled	SP	1	8	☐
atm1	7	70	Path0	UBR	PPPoA	DefaultMode	Enabled	SP	1	8	☐
atm2	8	35	Path0	UBR	EoA	DefaultMode	Enabled	SP	1	8	☐
atm3	0	32	Path0	UBR	EoA	DefaultMode	Enabled	SP	1	8	☐
atm4	8	81	Path0	UBR	EoA	DefaultMode	Enabled	SP	1	8	☐
atm5	0	33	Path0	UBR	EoA	DefaultMode	Enabled	SP	1	8	☐

Add   Remove

Figure 1 DSL ATM interface configuration

In this page, you can add or remove the DSL ATM Interfaces.

Click the **Add** button to display the following page.

ATM PVC Configuration
This screen allows you to configure an ATM PVC identifier (VPI and VCI), select DSL latency, select a service category. Otherwise choose an existing interface by selecting the checkbox to enable it.

VPI: [0-255] 0

VCI: [32-65535] 40

Select DSL Latency
☑ Path0
☐ Path1

Select DSL Link Type (EoA is for PPPoE, IPoE, and Bridge.)
◉ EoA
○ PPPoA
○ IPoA

Select Connection Mode
◉ Default Mode - Single service over one connection
○ VLAN MUX Mode - Multiple Vlan service over one connection

Encapsulation Mode: LLC/SNAP-BRIDGING ▼

Service Category: UBR Without PCR ▼

Select IP QoS Scheduler Algorithm
◉ Strict Priority
Precedence of the default queue: 8 (lowest)
○ Weighted Fair Queuing
Weight Value of the default queue: [1-63]   1
MPAAL Group Precedence: 8 ▼

[Back] [Apply/Save]

Figure 2 ATM PVC configuration

In this page, you can set the VPI and VCI values, and select the DSL latency, link type (EoA is for PPPoE, IPoE, and Bridge.), connection mode, encapsulation mode, service category, and IP QoS scheduler algorithm.

● **VPI (Virtual Path Identifier)**: The virtual path between two points in an ATM network, and its valid value is from 0 to 255.

● **VCI (Virtual Channel Identifier)**: The virtual channel between two points in an ATM network, ranging from 32 to 65535 (1 to 31 are reserved for known protocols).

● **Select DSL Latency**: You may select **Path0** and **Path1**.

● **Select DSL Link Type**: You may select **EoA** (it is for PPPoE, IPoE, and Bridge), **PPPoA**, or **IPoA**.

● **Select Connection Mode:** You may select the **Default Mode** or the **VLAN MUX Mode**.

- **Encapsulation Mode**: You may select **LLC/SNAP-BRIDGING** or **VC/MUX** in the drop-down list.
- **Service Category:** you may select **UBR Without PCR**, **UBR With PCR**, **CBR**, **Non Realtime VBR** or **Realtime VBR** in the drop-down lsit.
- **Select IP QoS Scheduler Algorithm:** You may select **Strict Priority** and **Weighted Fair Queuing**.

Note:

QoS cannot be set for CBR and Realtime VBR.

After finishing setting, click the **Apply/Save** button to make the settings take effect. See the following figure:

If you want to remove this Interface, please select the **Remove** check box that is corresponding to the selected interface and then click the **Remove** button.

ETH Interface

Choose **Advanced Setup** > **Layer2 Interface > ETH Interface** , and the following page appears.

ETH WAN Interface Configuration

Choose Add, or Remove to configure ETH WAN interfaces.
Allow one ETH as layer 2 wan interface.

Interface/(Name)	Connection Mode	Remove

Add Remove

Figure 3 ETH WAN Interface Configuration

In this page, you can add or remove the ETH WAN Interfaces.

Click the **Add** button to display the following page.

ETH WAN Configuration

This screen allows you to configure an ETH port .

Select an ETH port:

LAN4

Select Connection Mode

⊙ Default Mode - Single service over one connection
○ VLAN MUX Mode - Multiple Vlan service over one connection

Back   Apply/Save

Figure 4 ETH WAN Configuration

In this page, you can select an ETH port from the drop-down list and select **Default Mode** or **VLAN MUX Mode** as the connection mode.

4.3.2 WAN Service

Choose **Advance Setup > WAN Service,** and the following page appears.

Wide Area Network (WAN) Service Setup

Choose Add, Remove or Edit to configure a WAN service over a selected interface.

Interface	Description	Type	Vlan8021p	VlanMuxId	Igmp	NAT	Firewall	IPv6	Mld	Remove	Edit
ppp0	pppoe_0_0_35	PPPoE	N/A	N/A	Disabled	Enabled	Enabled	Disabled	Disabled	☐	edit
pppoa1	pppoa_0_7_70	PPPoA	N/A	N/A	Disabled	Enabled	Enabled	Disabled	Disabled	☐	edit
ppp2	pppoe_0_8_35	PPPoE	N/A	N/A	Disabled	Enabled	Enabled	Disabled	Disabled	☐	edit
ppp3	pppoe_0_0_32	PPPoE	N/A	N/A	Disabled	Enabled	Enabled	Disabled	Disabled	☐	edit
ppp4	pppoe_0_8_81	PPPoE	N/A	N/A	Disabled	Enabled	Enabled	Disabled	Disabled	☐	edit
ppp5	pppoe_0_0_33	PPPoE	N/A	N/A	Disabled	Enabled	Enabled	Disabled	Disabled	☐	edit

Add   Remove

Figure 5 WAN service configuration

In this page, you are allowed to add, remove, or edit a WAN service.

Adding a PPPoE WAN Service

This section describes the steps for adding the pppoe_0_0_40 (PPPoE mode) service.

Step1   In the **Wide Area Network (WAN) Service Setup** page, click the **Add** button to display the following page. (At first, you must add a proper ATM or ETH configuration for this WAN service.)

WAN Service Interface Configuration

Select a layer 2 interface for this service

Note: For ATM interface, the descriptor string is (portId_vpi_vci)
For PTM interface, the descriptor string is (portId_high_low)
Where portId=0 --> DSL Latency PATH0
portId=1 --> DSL Latency PATH1
portId=4 --> DSL Latency PATH0&1
low =0 --> Low PTM Priority not set
low =1 --> Low PTM Priority set
high =0 --> High PTM Priority not set
high =1 --> High PTM Priority set

atm6/(0_0_40)

Back   Next

Figure 6 WAN service interface configuration (PPPoE)

Step2   In this page, you can select a ATM or ETH Interface for the WAN service. After selecting the interface, click **Next** to display the following page.

WAN Service Configuration

Select WAN service type:
- ⦿ PPP over Ethernet (PPPoE)
- ○ IP over Ethernet
- ○ Bridging

Enter Service Description: pppoe_0_0_40

☐ Enable IPv6 for this service

[Back] [Next]

Figure 7 WAN service configuration (PPPoE)

Step3   In this page, select the WAN service type to be **PPP over Ethernet (PPPoE)**. Click **Next** to display the following page.

PPP Username and Password

PPP usually requires that you have a user name and password to establish your connection. In the boxes below, enter the user name and password that your ISP has provided to you.

PPP Username:
PPP Password:
PPPoE Service Name:
Authentication Method: AUTO

☐ Enable Fullcone NAT

☐ Dial on demand (with idle timeout timer)

☐ PPP IP extension

☐ Use Static IPv4 Address

☐ Enable PPP Debug Mode

☐ Bridge PPPoE Frames Between WAN and Local Ports

Multicast Proxy

☐ Enable IGMP Multicast Proxy

[Back] [Next]

Figure 8 PPP username and password (PPPoE)

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Step4   In this page, you can modify the PPP username, PPP password, PPPoE service name and authentication method.

- **PPP Username:** The correct user name provided by your ISP.
- **PPP Password:** The correct password provided by your ISP.
- **PPPoE Service Name:** If your ISP provides it to you, please enter it. If not, do not enter any information.
- **Authentication Method:** The value can be AUTO, PAP, CHAP, or MSCHAP. Usually, you can select AUTO.
- **Dial on demand (with idle timeout timer):** If this function is enabled, you need to enter the idle timeout time. Within the preset minutes, if the modem does not detect the flow of the user continuously, the modem automatically stops the PPPOE connection. Once it detects the flow (like access to a webpage), the modem restarts the PPPoE dialup. If this function is disabled, the modem performs PPPoE dial-up all the time. The PPPoE connnection does not stop, unless the modem is powered off and DSLAM or uplink equipment is abnormal.
- **PPP IP extension:** If you want to configure DMZ Host, you should enable it first.
- **Use Static IPv4 Address:** If this function is disabled, the modem obtains an IP address assigned by an uplink equipment such as BAS, through PPPoE dial-up. If this function is enabled, the modem uses this IP address as the WAN IP address.
- **Enable PPP Debug Mode:**Enable or disable this function.
- **Bridge PPPoE Frames Between WAN and Local Ports:**Enable or disable this function.
- **Enable IGMP Multicast Proxy:**if you want PPPoE mode to support IPTV, enable it.

Step5   After setting the parameters, click **Next** to display the following page.

Routing -- Default Gateway

Default gateway interface list can have multiple WAN interfaces served as system default gateways but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.

**Selected Default
Gateway Interfaces**

**Available Routed WAN
Interfaces**

```
ppp0
```

->
<-

```
ppp6
pppoa1
ppp2
ppp3
ppp4
ppp5
```

Back Next

Figure 9 Routing-default gateway (PPPoE)

Step6 In this page, select a preferred WAN interface as the system default gateway and then click **Next** to display the following page.

DNS Server Configuration

Select DNS Server Interface from available WAN interfaces OR enter static DNS server IP addresses for the system. In ATM mode, if only a single PVC with IPoA or static IPoE protocol is configured, Static DNS server IP addresses must be entered.
DNS Server Interfaces can have multiple WAN interfaces served as system dns servers but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.

Select DNS Server Interface from available WAN interfaces:

Selected DNS Server
Interfaces

Available WAN Interfaces

```
ppp0
```

->
<-

```
ppp6
pppoa1
ppp2
ppp3
ppp4
ppp5
```

Back Next

Figure 10 DNS server configuration(PPPoE)

Step7 In this page, you may obtain the DNS server addresses from the selected WAN interface or manually enter the static DNS server addresses. If only a PVC with IPoA or static MER protocol is configured, you must manually

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enter the static DNS server addresses. Click **Next**, and the following page appears.

WAN Setup - Summary

Make sure that the settings below match the settings provided by your ISP.

Connection Type:	PPPoE
NAT:	Enabled
Full Cone NAT:	Disabled
Firewall:	Enabled
IGMP Multicast:	Disabled
Quality Of Service:	Enabled

Click "Apply/Save" to have this interface to be effective. Click "Back" to make any modifications.

Back   Apply/Save

Figure 11 PPPoE summary

Step8   In this page, it displays the information about the PPPoE settngs. Click **Apply/Save** to save and apply the settings, and then the following page appears. You can modify the settings by clicking the **Back** button if necessary.

Wide Area Network (WAN) Service Setup

Choose Add, Remove or Edit to configure a WAN service over a selected interface.

Interface	Description	Type	Vlan8021p	VlanMuxId	Igmp	NAT	Firewall	IPv6	Mld	Remove	Edit
ppp0	pppoe_0_0_35	PPPoE	N/A	N/A	Disabled	Enabled	Enabled	Disabled	Disabled	☐	edit
pppoa1	pppoa_0_7_70	PPPoA	N/A	N/A	Disabled	Enabled	Enabled	Disabled	Disabled	☐	edit
ppp2	pppoe_0_8_35	PPPoE	N/A	N/A	Disabled	Enabled	Enabled	Disabled	Disabled	☐	edit
ppp3	pppoe_0_0_32	PPPoE	N/A	N/A	Disabled	Enabled	Enabled	Disabled	Disabled	☐	edit
ppp4	pppoe_0_8_81	PPPoE	N/A	N/A	Disabled	Enabled	Enabled	Disabled	Disabled	☐	edit
ppp5	pppoe_0_0_33	PPPoE	N/A	N/A	Disabled	Enabled	Enabled	Disabled	Disabled	☐	edit
ppp6	pppoe_0_0_40	PPPoE	N/A	N/A	Disabled	Enabled	Enabled	Disabled	Disabled	☐	edit

Add   Remove

Figure 12 Completing the settings of PPPoE WAN service

4.3.3 3G WAN Service

Choose **Advanced Setup > 3G WAN Service** , and the following page appears.

modem status NO USB CARD

<div style="text-align:center">

Wide Area Network (WAN) Service For 3G Moblie Setup
Choose Add, Remove or Edit to configure a WAN service For 3G Moblie interface.

</div>

Interface	Description	Type	Vlan8021p	VlanMuxId	Igmp	NAT	Firewall	IPv6	Mld	Remove	Edit	Action

[Add] [Remove] [Information] [Pin Manage] [Upload Driver]

This page is used to configure 3G connection. If you want to access the Internet through 3G connection, a 3G network card is required. Connect the 3G network card to the USB interface of the Router.

● **Information**: Click it to display the information of the 3G network card.
● **Upload Driver**: For a un-support USB dongle, click it to upload the new driver for supporting the USB. The driver is a text file.

Click **Add** in the **WAN Service For 3G Moblie Setup** to display the following page.

3G USB mobile modem setup

'Initialization Delay' and 'Mode Switch Delay' are used to setting the delay time before initializing a 3G dongle, if the value of them is small, the initializing will be fast, but will result in some 3G dongle being not recognized.

☐ Enable USB Modem

User Name:	any
Password:	•••
Authentication Method:	AUTO
APN:	
Dial Number:	
Idle time(in sec.):	360
Net Select:	AUTO
☐	Dial on demand
Initialization Delay(in sec.):	20
Mode Switch Delay(in sec.):	20
Dial Delay(in sec.):	10
Default WAN Connection Select:	DSL OR ETHERNET

WAN backup mechanism: ⦿ DSL ◯ IP connectivity

[Apply/Save]   [Auto Setting]

In this page, you are allowed to configure the settings of the 3G USB modem.

- **Enable USB Modem:** If you want to access the Internet through the 3G network card, you must enable the USB modem.
- **User Name:** Username provided by your 3G ISP.
- **Password:** Password provided by your 3G ISP.
- **Authentication Method:** Select a proper authentication method in the drop-down list. You can select Auto, PAP, CHAP, or MSCHAP.
- **APN:** APN (Access Point Name) is used to identify the service type. Enter the APN provided by your 3G ISP.
- **Dial Number:** Enter the dial number provided by your 3G ISP.
- **Idle time (in sec.):** If no traffic for the preset time, the 3G will disconnect automatically.

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- **Default WAN Connection Select**: You can select DSL or ETHERNET or 3G from the drop-down list.
- **WAN back mechanism**: The 3G connection is backup for the DSL connection.
    - **DSL**: If the DSL is disconnected, the 3G starts to dial.
    - **IP connectivity**: If the system fails to ping the specified IP address, the 3G starts to dial.

After finishing setting, click the **Apply/Save** button to save the settings.

You may also click the **auto setting** button to automatically configure the 3G connection.

Click Apply/Save to apply the settings.