

ZTE AD226

WiMAX EVDO USB Modem

User Manual

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Chapter 1

General

Welcome to ZTE AD226 WiMAX EVDO USB Modem

Thank you for choosing ZTE AD226 WiMAX EVDO USB Modem (hereinafter referred to as **Modem**).

AD226 is a high-speed, broadband wireless dual-mode USB modem with two work modes of WiMAX and EVDO to enable users enjoy internet anywhere and anytime.

AD226 can support smart switch between WiMAX and EVDO. It can offer the maximum download speed of 3.1Mbps and upload 1.8Mbps based on EVDO Rev.A, and even makes the data download speeds up to 30 Mbps and upload 6 Mbps when user access to the next generation WiMAX service. AD226 also supports GPS for location-based services right on your laptop.

Getting started with ZTE AD226 WiMAX EVDO USB Modem is simple: no wires means no service calls. Just connect your ZTE AD226 WiMAX EVDO USB Modem to your computer, install **Join Air**, and activate your account, and you have broadband on the go.

To guarantee your modem always in its best condition, please read this manual carefully and keep it for future use.

The pictures, symbols and contents in this manual are just for your reference. They might not be completely identical with your modem. Please subject to the real object. ZTE operates a policy of continuous development and reserves the right to update and modify the technical specifications in this document at any time without prior notice.

Safety Warning and Notice

To the owner

- Some electronic devices are susceptible to electromagnetic interference sent by modem if inadequately shielded, such as electronic system of vehicles. Please consult the manufacturer of the device before using the modem if necessary.
- Operating notebook computer and Modem may interfere with medical devices like hearing aids and pacemakers. Please always keep the modem more than 20 centimeters away from such medical devices when they are in use. Take off modem if it is necessary. Consult a physician or the manufacturer of the medical device before using the Modem.
- Be aware of the usage limitation when using a Modem at places such as oil warehouses or chemical factories, where there are explosive gases or explosive products being processed. Do not use Modem if necessary.
- Don't touch the antenna area unnecessarily while connected. This can affect your Modem's performance and reduce the signal quality.
- Do not use Modem at gas station.
- The Modem contains sensitive electronic circuitry. Do not expose the Modem to any liquids, high temperatures or shock.
- Store the Modem out of the reach of small children. The Modem may cause injury if used as a toy.
- Only use original accessories or accessories that are authorized by the manufacturer. Using unauthorized accessories may affect your Modem's performance, damage your Modem and violate related national

regulations.

- Always handle the Modem with care. Be careful not to drop or bend the Modem.
- There are no user serviceable parts inside the Modem. Unauthorized dismantling or repair of the modem will void the warranty.
- This Modem generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
- There is no guarantee that interference will not occur in a particular installation. If this modem does cause harmful interference to radio or television reception, which can be determined by turning the modem off and on.
- This Modem must be installed and operated in accordance with provided instructions and must be used to provide a separation distance of at least 5 mm from all persons and must not be co-located or operating in conjunction with any other transmitter.

Modem

- Please use original accessories or accessories that are authorized by the manufacturer. Using any unauthorized accessories may affect your Modem's performance, and violate related national regulations about telecom terminals.
- Avoid using the Modem near metallic structure device or establishment that can emit electromagnetic wave. Otherwise it may influence receiving of signals.
- The Modem is non-waterproof, please keep it dry and store in shady and cool place.
- Don't use the Modem immediately after a sudden temperature change e.g. from an air conditioned environment to high temperature and humidity outside. In such cases there could be condensing moisture inside the Modem which can cause internal damage. Unplug the Modem and leave it for 30 minutes before use.
- Take the Modem carefully. Don't drop, bend, knock or harshly treat it to avoid destructive damage.
- Do not attempt to disassemble the Modem by yourself. Changes and modifications made to the Modem without the approval of manufacturer could void your authority to operate this Modem.

In Aircraft

- Please power off the modem before the airplane takes off. In order to protect airplane's communication system from interference, it is never allowed to use the modem when it is in flight. Using it before the airplane taking off should get aircrew's permission according to safety regulations.

Cleaning and Maintenance

- ZTE AD226 WiMAX USB Modem is non-waterproof, please keep it dry and store in shady and cool place.
- Do not use or store the device in dusty or dirty areas, since its moving parts and electronic components can be damaged in such environment.
- If you want to clean your modem, please use clean fabric that is a bit wet or anti-static. Do not use harsh chemical cleaning solvents or strong detergents to clean your modem, such as alcohol, dilution agent and benzene. Power-off your modem before you clean it.
- Use modem within a temperature range of -10°C~55°C and a humidity range of 5%~95%.

Limit Warranty

The warranty does not apply to defects or errors in the product caused by:

1. Reasonable abrasion.

2. Misuse including mishandling, physical damage, improper installation, unauthorized disassembly of the product.
3. Water or any other liquid damage.
4. Any unauthorized repair or modification.
5. Power surges, lightning damage, fire, flood or other events outside ZTE's reasonable control.
6. Use of the product with any unauthorized third party products such as generic chargers.
7. Any other cause beyond the range of normal usage for products.

End User shall have no right to reject, return, or receive a refund for any product from ZTE under the above-mentioned situations.

This warranty is end user's sole remedy and ZTE's sole liability for defective or nonconforming items, and is in lieu of all other warranties, expressed, implied or statutory, including but not limited to the implied warranties of merchantability and fitness for a particular purpose, unless otherwise required under the mandatory provisions of the law.

Declaration

We, ZTE Corporation, declared that:

The user is cautioned that changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

RF Exposure Information (SAR)

This device meets the government's requirements for exposure to radio waves.

This USB Dongle is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.

The exposure standard for wireless device employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6W/kg. *Tests for SAR are conducted using standard operating positions accepted by the FCC with the device transmitting at its highest certified power level in all tested frequency bands. Although the SAR is determined at the highest certified power level, the actual SAR level of the USB Dongle while operating can be well below the maximum value. This is because the device is designed to operate at multiple power levels so as to use only the power required to reach the network. In general, the closer you are to a wireless base station antenna, the lower the power output.

The highest SAR value for the device as reported to the FCC when tested for body, as described in this user guide, is 1.45 W/kg for CDMA band, 0.604 W/kg for WIMAX band.

While there may be differences between the SAR levels of various USB Dongles and at various positions, they all meet the government requirement.

The FCC has granted an Equipment Authorization for this device with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this device is on file with the FCC and can be found under the Display Grant section of <http://www.fcc.gov/oet/fccid> after searching on FCC ID: Q78-ZTEAD226.

For body operation, this device has been tested and meets the FCC RF exposure guidelines for use the positions the device a minimum of 0.5 cm from the body. Use of other enhancements may not ensure compliance with FCC RF exposure guidelines.

This USB dongle transmitter is approved for use in typical laptop computers. To comply with FCC RF exposure requirements, this USB dongle should not be used in other devices or certain laptop and tablet computer configurations where the USB connectors on the host computer are unable to provide or ensure the necessary operating configurations intended for the device and its users or bystanders to satisfy RF exposure compliance requirements. This transmitter must not be collocated or operating in conjunction with any other antenna or transmitter.

Limitation of Liability

ZTE shall not be liable for any loss of profits or indirect, special, incidental or consequential damages resulting from or arising out of or in connection with using this product, whether or not ZTE had been advised, knew or should have known the possibility of such damages.

Chapter 2

Getting Started

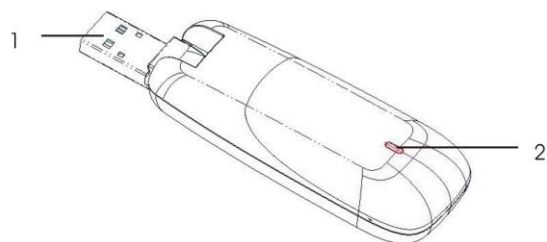
Functions

Functions: Data service, Connection management, etc.

Specification

Port		USB2.0	
Mode of Access		WiMAX (Worldwide Interoperability for Microwave Access) CDMA 2000 1X/EVDO Release 0/EVDO Release A	
Protocol	WiMAX	802.16e (IEEE 802.16-2005)	
	CDMA	CDMA 2000 1x / EVDO Release 0 / EVDO Release A	
Frequency Allocation	WiMAX	2496MHz~2690MHz	
	CDMA	CDMA Cellular (UL 824MHz~849MHz,DL 869MHz~894MHz) CDMA PCS (UL 1850MHz~1910MHz,DL 1930MHz~1990MHz)	
Data Rate		WiMAX High Speed Data	Peak downlink data rate of 30Mbps
			Peak uplink data rate of 6Mbps
			Average downlink data rate of 18Mbps
			Average uplink rate of 4Mbps
		CDMA 1X Packet Data (Release 0) *Peak data rate is as remark	Reverse Link 153kbps
			Forward Link 153kbps
		CDMA 1X-EVDO Packet Data (Rev. 0) *Peak data rate is as remark	Reverse Link 153kbps
			Forward Link 2.4Mbps
		CDMA 1X-EVDO Packet Data (Rev. A) *Peak data rate is as remark	Reverse Link 1.8Mbps
			Forward Link 3.1Mbps
OS Compatibility		Win XP, Win Vista, Win 7, Mac OS,	
Dimension		82mm*32.6mm*17.8mm	
Weight		TBD	

Modem View



1. USB connector
2. LED indicator

LED Indications

Your Modem gives you at-a-glance status information via its LED indicator bar. Here's a list of indicators and meanings:

Item	Description
Device Initiating	LED Solid Amber
Firmware Downloading	LED Solid Amber
Firmware Download finished	LED Solid Amber
No Network/searching for Network	LED Solid Red
Network Entry	LED Solid Green/4G; Solid Blue/3G
Network Disconnected	LED Solid Red
Connected & No Data transfer	LED Solid Green/4G; Solid Blue/3G
Transferring Data	LED Solid Green/4G; Solid Blue/3G
Idle Entry	LED Solid Green/4G; Solid Blue/3G
Idle Exit	LED Solid Green/4G; Solid Blue/3G

Working Condition

Working temperature: -10°C ~ +60°C

Working humidity: 5% ~ 95%

Storage temperature: -40°C ~ +70°C

Storage humidity: 5% ~ 90%

Chapter 3

Installing Modem

Installing Join Air and connecting your modem requires just a few simple steps: prepare your computer, install Join Air, insert your modem, and activate your account.

System Requirements

The system requirements provided here reflect only the standards required to install and run Join Air. Please see your modem support documentation for additional specifications.

- Operating System: Windows XP (service pack 2 or service pack 3)
- Ports: One available USB port.
- System Configuration:
 - Processor: 466 MHz or higher (1 GHz or higher recommended)
 - RAM: 512 MB or higher recommended
 - Storage: 500 MB available disk drive space (100 MB or more recommended)

Inserting Modem

1. Rotate the USB connector of the Modem.
2. Plug the USB connector of the Modem into your computer's USB port. Make sure it is tightly inserted.

When you insert the modem into computer for the first time, your system will automatically detect the new hardware and install the driver.

Install Join Air

About Join Air

Join Air manages the modem connections and it does not manage connections for any other wireless connection cards including those designed to operate on the major cellular networks. To connect using another type of connection card, exit Join Air from the system tray and then launch that card's connection manager program. To return to WiMAX or EVDO service of modem, turn off the other connection manager program and then launch Join Air.

Installing Join Air

Insert the Installation CD into your computer's CD drive. The installation screen (see below) should appear automatically. If your computer does not display the installation screen, you need to check the configuration of your computer and make sure that the CD Self-start function is turned on. Or you can click **Start > My Computer** and double-click on the **CD Drive**. From the CD drive file list, click **install.exe** to display the installation screen.

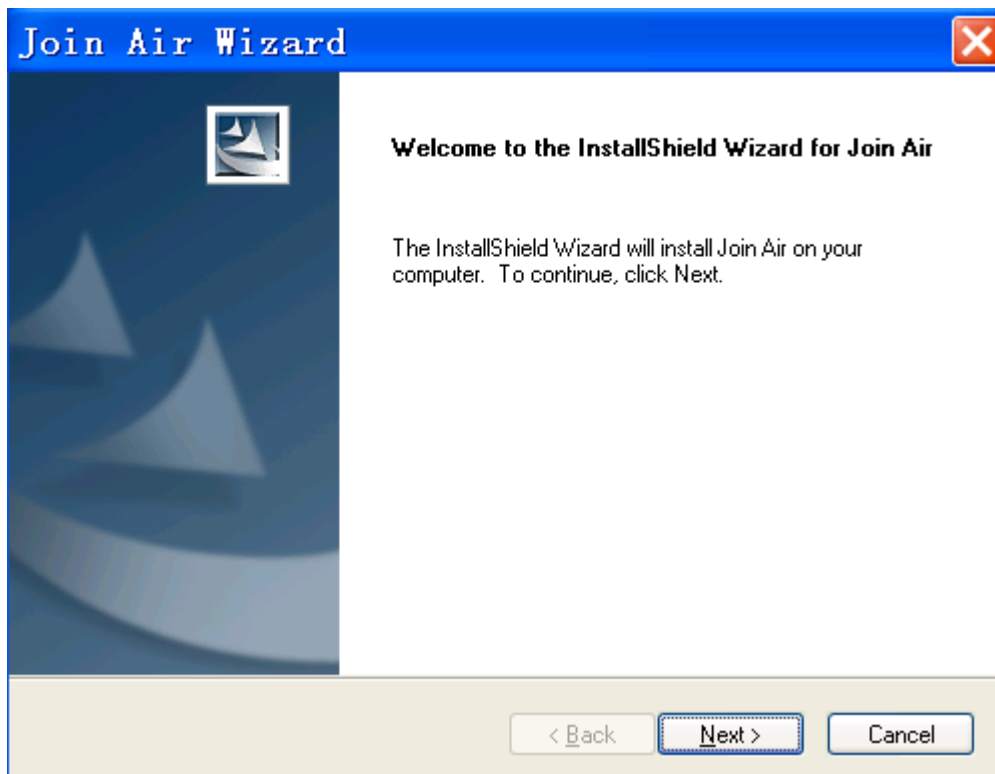
The following snapshots show customers how to install driver and Join Air for the modem on Windows XP OS.



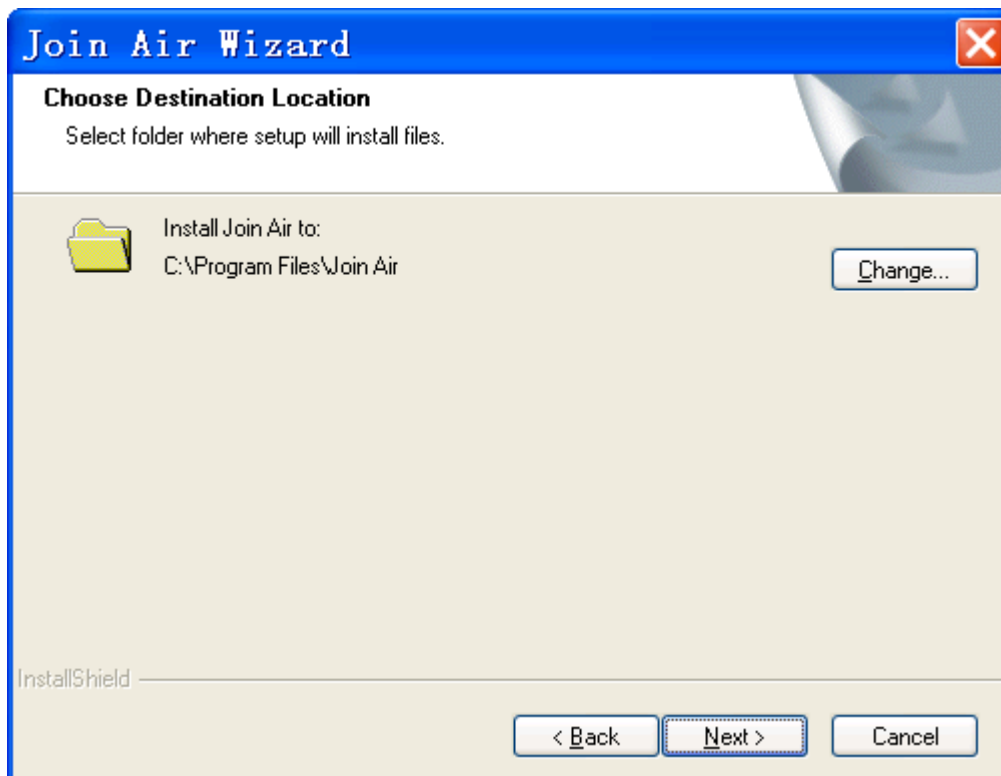
Notes:

Please make sure that you have uninstalled the previous versions.

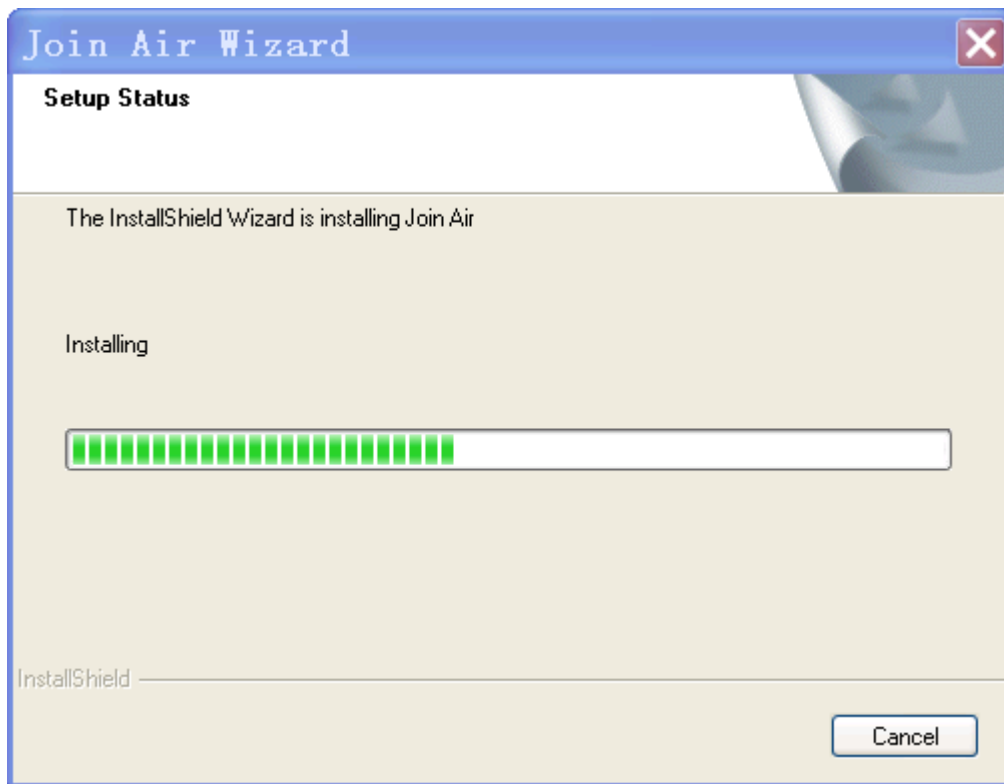
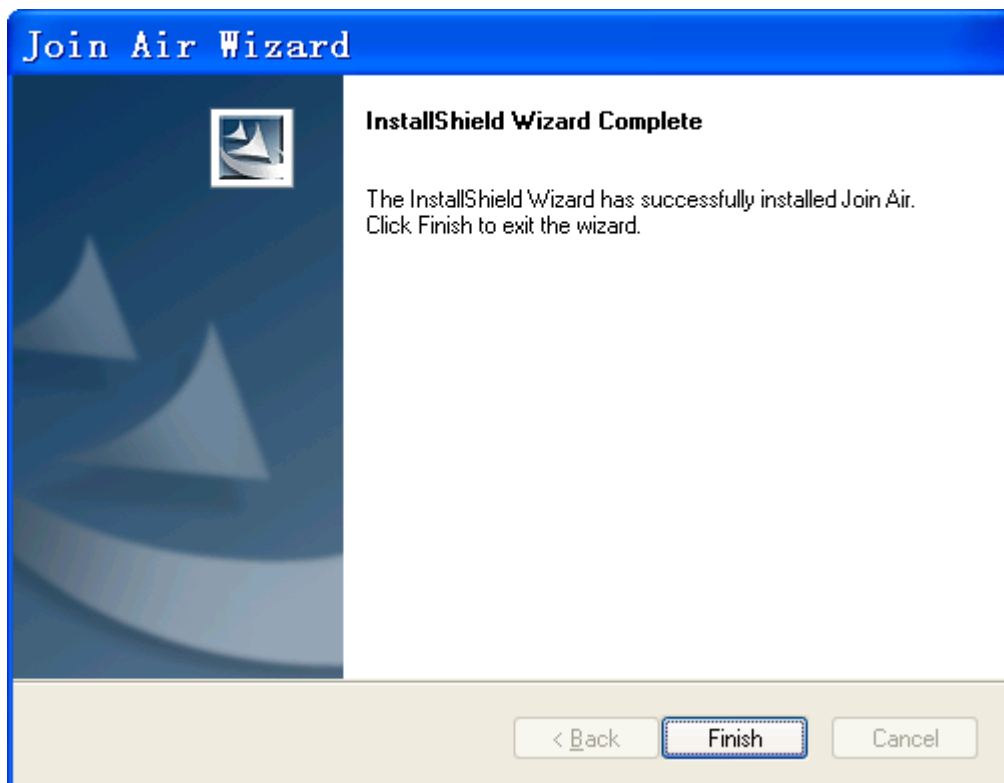
1. Run **install.exe** and click **Next** button.



2. Click on **Next** in the **Destination Location** box to accept the default destination installation folder, or click on **Change** to browse to a different installation folder, then click on **Next**.




3. Installing in progress.

4. Click **Finish** button to finish installation.

After the installation, the installation software will create a shortcut icon on the desktop, and **Join Air** and **Uninstall** program group in the computer **Start > (All) Programs > Join Air** menu.

Remove the modem safely

If you need to remove your modem from the computer, please always use the Safe Removal of Hardware procedure. Removing the modem when it is active may cause the software drivers to lock up or become corrupted

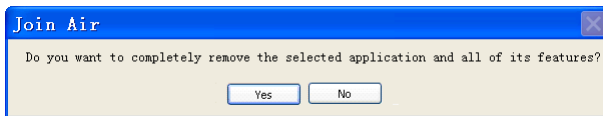
1. First close the software application.
2. Safely remove the modem.
 1. E.g. in Windows XP, left click the icon on the windows taskbar.
 2. Click on Safely Remove Hardware  to shut down the drivers safely.
 3. Remove the modem.

Uninstalling Join Air

1. First make sure that the Join Air is closed.

You can right click on the Join Air icon in the system tray and click *Exit*. Then click **OK** to exit Join Air.

2. Click **Start > (All) Programs > Join Air > Uninstall**.
Or Click **Start > Control Panel > Add or Remove Programs > Join Air > Remove**.

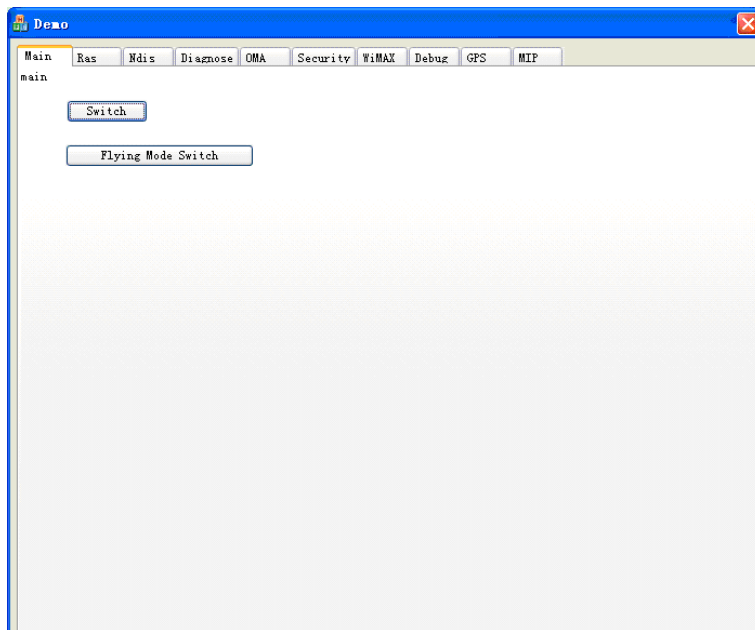


3. Click "Yes" to confirm that you want to uninstall Join Air.

Chapter 4

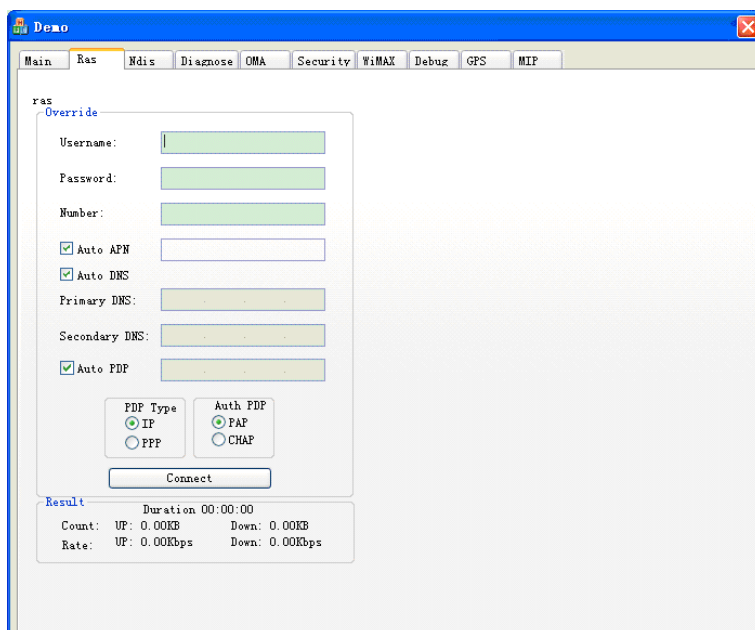
Basic Operation

Main Panel



- **Switch:** Switch between EVDO and WiMAX mode.
- **Flying Mode Switch:** Enter or exit Flying Mode.

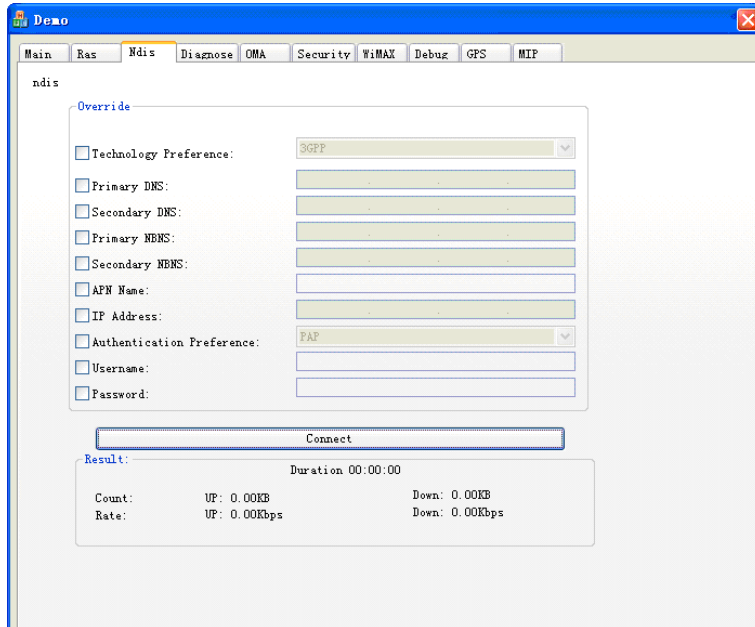
Ras Panel



- **Override:** Configure Ras connection parameters, such as Username, Password, Number, APN, DNS, and PDP

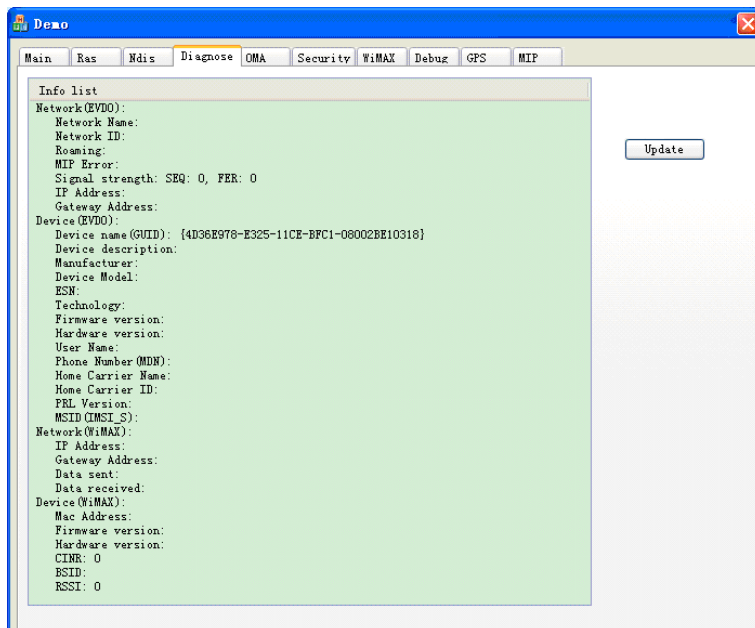
- **Connect:** Connect/Disconnect from the Internet.
- **Result:** Display connection status, such as duration, count, and rate.

Ndis Panel



- **Override:** Configure connection parameters, as Technology Preference, Primary DNS, Secondary DNS, Primary NBNS, Secondary NBNS, APN Name, IP Address, Authentication Preference, Username, and Password.
- **Connect:** Connect/Disconnect from the Internet.
- **Result:** Display connecting data: duration, count, and rate.

Diagnose Panel



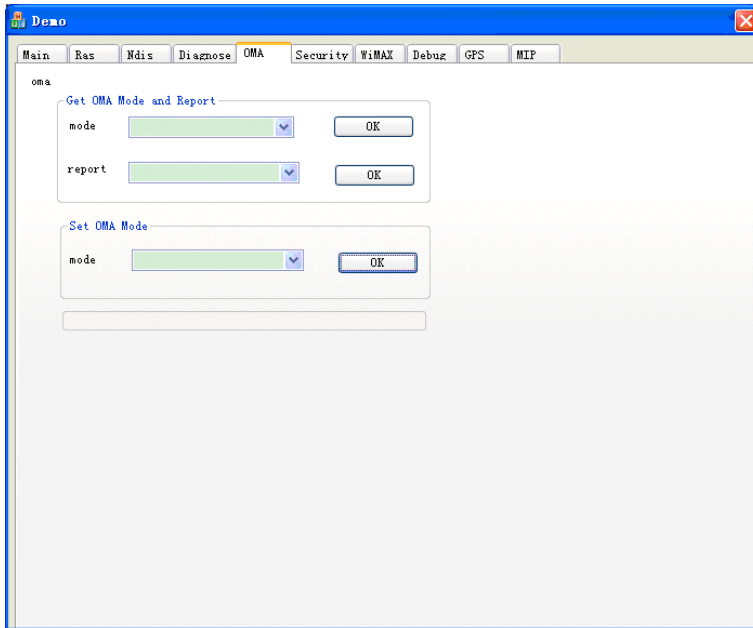
Display Network and Device information for both EVDO and WiMAX.

- Network information for EVDO: Network Name, Network ID, Roaming, MIP Error, Signal strength, IP

Address, Gateway Address.

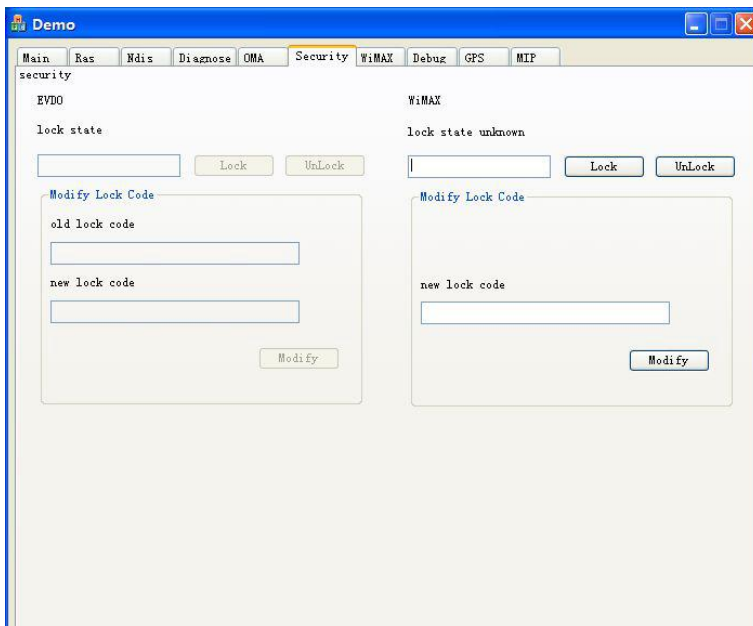
- Device information for EVDO: Device name(GUID), Device description, Manufacturer, Device Model, ESN, Technology, Firmware version, Hardware version, User Name, Phone Number(MDN), Home Carrier Name, Home Carrier ID, PRL Version, MSID(IMSI_S).
- Network information for WiMAX: IP Address, Gateway Address, Data sent, Data received.
- Device information for WiMAX: Mac Address, Firmware version, Hardware version, CINR, BSID, RSSI.

OMA Panel



- **Get OMA Mode and Report:** Get OMA and Report state.
- **Set OMA Mode:** Set mode for OMA.

Security Panel



- **lock state:** set display Lock, Unlock.
- **Modify Lock Code:** Modify the lock code.

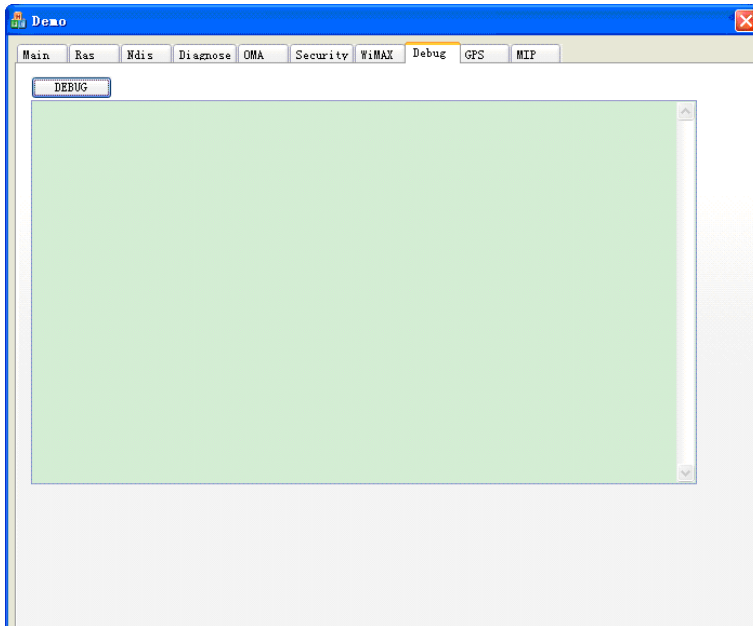
WiMAX Panel

The screenshot shows the WiMAX Panel interface with the following fields and sections:

- Authentication Settings:** User Name (sa016), Password (****), EAP Type (EAP-TTLS/MSCHAPv2), CA Certificate (E:\projects\work\AD1001052042\A), Anonymous Identity (0019C6BC0D38@freshtel.com.us), Device Certificate, Device Private Key, Device Private Key Password.
- Signal Strength:** CINR: Value, RSSI: Value, RX Rate: Value, TX Rate: Value, TXPWR: Value, NAPIID: Value, NSPID: Value.
- Base Station and Device Info:** BS ID, Center Frequency, Firmware Version, MAC Address, Device Temperature, MRU, Device State.
- Network Info:** IP, DNS, Gateway, Connect Status.
- Version Info:** Software, Hardware, Driver, Library.

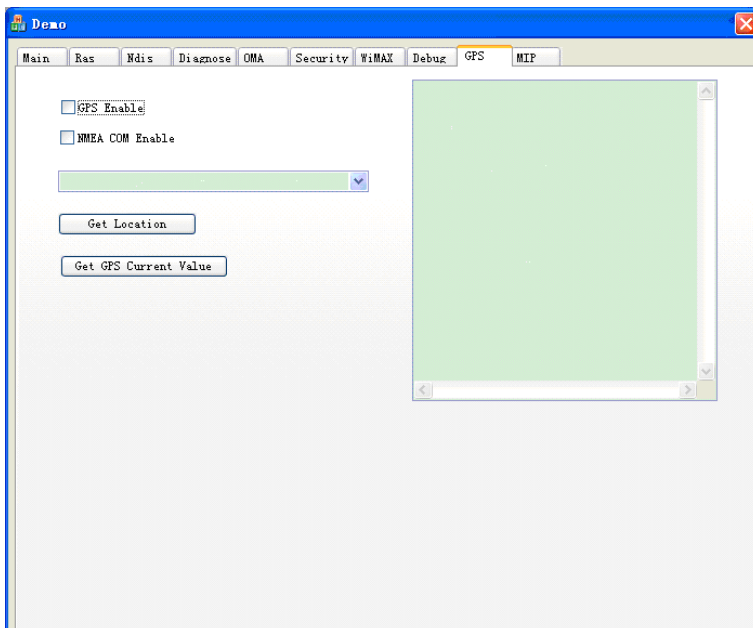
- **Authentication Settings:** Set or display authentication parameters, as User Name, Password, EAP Type, CA Certificate, Anonymous Identity, Device Certificate, Device Private Key, and Device Private Key Password.
- **Signal Strength:** Display signal and connect info, as CINR, RSSI, RX Rate, TX Rate, TXPWR, NAPIID, and NSPID.
- **Base Station and Device Info:** Display base station and device Info, as BS ID, Center Frequency, Firmware Version, MAC Address, Device Temperature, MRU, and Device State.
- **Network Info:** Display network info, as IP, DNS, Gateway, and Connect Status.
- **Version Info:** Display version info, as Software, Hardware, Driver, and Library.
- **Save:** Save authentication parameters.
- **Connect:** Connect/Disconnect from the Internet.

Debug panel



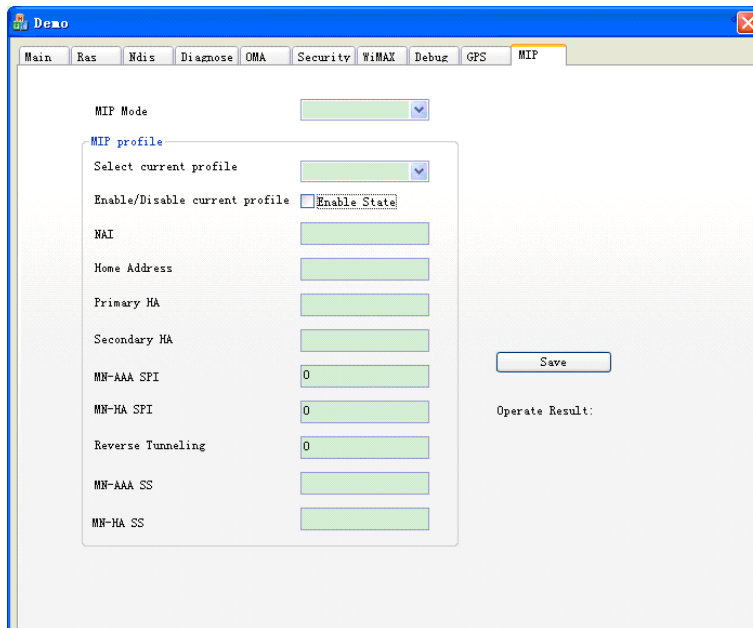
Shows displays debug information.

GPS Panel



- **GPS Enable:** Enable or disable GPS.
- **NMEA COM Enable:** Enable or disable NMEA COM.
- **Get Location:** Get Current location.
- **Get GPS Current Value:** Get state for GPS and NMEA COM.
- **Combo box:** Select a GPS mode.
- **List box:** Display the result.

MIP Panel



- **MIP Mode:** Specify the behavior of the mobile with respect to MIP.
- **Select current profile:** Select one of the MIP user profiles to be the current active profile.
- **Enable/Disable current profile:** Enable or disable the currently active profile.
- **Save:** To set the parameters, such as NAI, Home Address, Primary HA, Secondary HA, MN-AAA SPI, MN-HA SPI, Reverse Tunneling, MN-AAA SS, MN-HA SS for the currently active profile.
- **Operate Result:** Displays operate result, as MIP Mode, Select current profile, Enable/Disable current profile or set parameters.

Chapter 5

FAQs and Troubleshooting

When you meet the following problems in service, please refer to the following answers to solve it. If the problems still exist, please contact with your suppliers.

Problem Description	Possible Causes	Problem Solving
The system can not run the installation program automatically	The system configuration is not suitable for the auto-run.	Open the disc of the modem program and start the install.exe. If you have installed the other version of installation program please uninstall it firstly.
After restarted the computer, there is no signal all the time.	1.You are in the place where no WiMAX or EVDO network covered, such as underground parking lot, tunnel etc.	Move to the place that has good signal.
	2.The modem isn't connected well.	Pull out and insert the modem safely again.
When the modem is being inserted, the notebook computer cannot find it.	1.The installation programs of the modem haven't been installed properly.	Run the installation program first, then connect the modem. If you use the Win XP operating system, install the drivers according to the Windows indication information to operate.
	2. The modem isn't connected well.	Restart the computer, or connect the modem again.
Data connection failed.	1. You are in the place where no WiMAX or EVDO network covered, such as underground parking lot, tunnel etc.	Move to the place that has good signal.
	2. The network at this time in this place is busy now.	Try later.
	3. The modem data is error.	It is perhaps of the WiMAX or EVDO network problem and contact with the local supplier timely.