



## **Installation Manual**

Document version: 1.03 Rev 3.  
March 2010

### **Dension Wi-Drive**

Version: WID11GEN  
(Firmware 1.03)

**The installation procedure of Wi-Drive is a relatively simple process, however the end result is strongly depends on the details.**

**So please read carefully and follow the instructions of this document.**

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## 1 Introduction

### 1.1 *About Dension Wi-Drive*

#### **A secure mobile HotSpot**

By plugging in a 3G USB dongle, or via your Bluetooth 3G Phone, your car can become a secure Access Point, giving Internet access to any Wi-Fi device (iPod, iPhone, laptop, etc.) in the vehicle. Passengers can check their email, kids can surf the net; you can make Skype calls, the world is literally at your fingertips.

#### **Wireless content synchronisation**

Dension Wi-Drive allows a vehicle to become part of your home or office wireless network. When the vehicle is parked within your WLAN's coverage area, Wi-Drive can be set to regularly connect with your home computer, and automatically and wirelessly synchronize your car's device (USB disk, Pendrive, iPod<sup>1</sup>) with the multimedia content on your home PC.

#### **Internet Radio**

By using the 3G connection, Wi-Drive can make your original car stereo to play Internet radio stations.

#### **Open Platform**

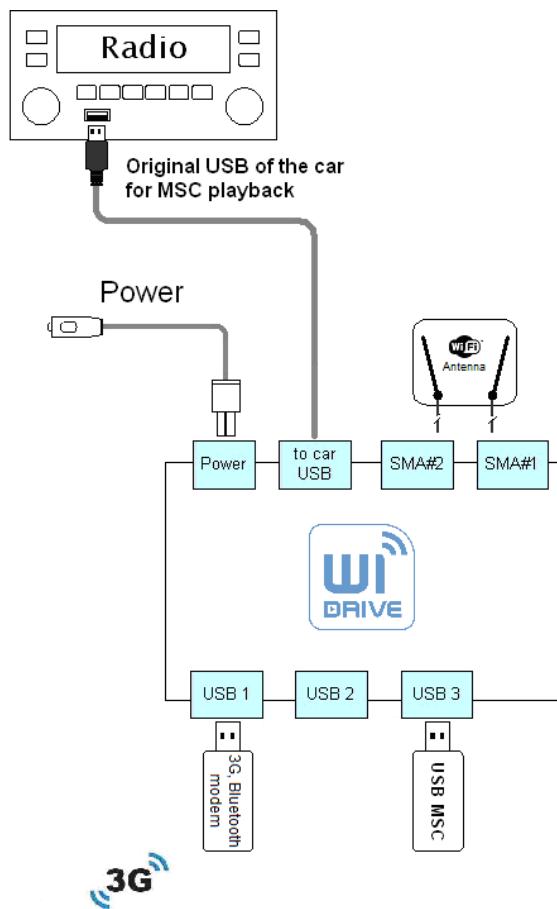
Based on the Dension Wi-Drive platform new software applications can offer more and more interesting applications, such as Internet radio, e-mail access, and many more.

Visit [www.dension.com/widrive](http://www.dension.com/widrive) in order to get the latest news and feature improvements on Dension Wi-Drive.

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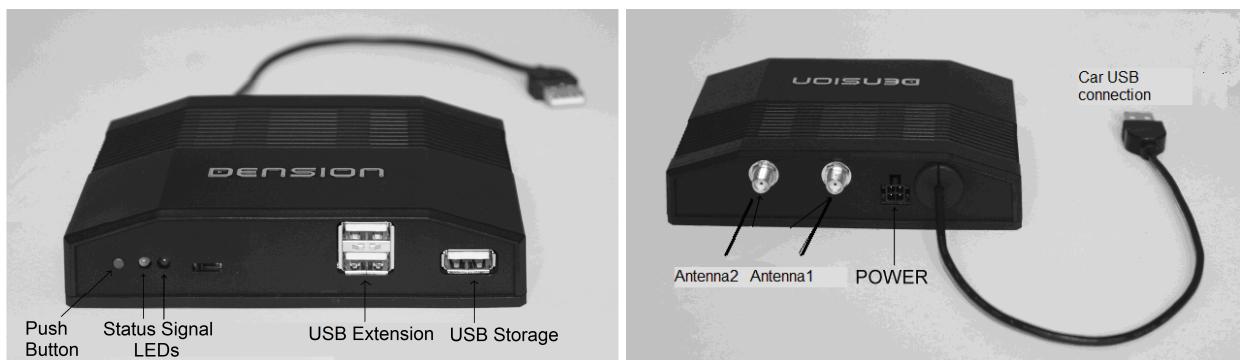
<sup>1</sup> Requires separate software.

## 1.2 Block diagram



1. Figure: Block diagram

## 1.3 Device connections and indicators



2. Figure: Device connections and indicators

### Front

Push button: Change operating mode, reboot the device (see chapter 6.)  
 Status LED: indicate status of the device (see chapter 6.)  
 Signal LED: indicate signal level in Station mode (see chapter 6.)  
 USB Extension: USB ports for 3G and Bluetooth modems, Internet radio configuration pendrive  
 USB Storage: USB port for hard disk, pendrive  
 Note, the slide switch is not used

**Rear**

Antenna 1,2: Wi-Fi antenna connections  
Power: 12 Volts power connection  
Car USB: USB connection to the car

#### 1.4 Wi-Drive Utility Software

Wi-Drive Utility (WDU) is a software tool which runs on your home or office computer to set Wi-Drive connection parameters and manage downloads.

Normally WDU runs in the background, and it automatically detects, when Wi-Drive is connecting. WDU informs you with a popup message, and it performs automatic synchronization with specified folders, or you can perform manual downloads to Wi-Drive as a Network Attached Storage or via FTP.

Of course your computer must be able to establish Wi-Fi connection with Wi-Drive. Your options are:

- Use a Wi-Fi router - Wi-Drive should be set as a **Station** (like a notebook)
- Directly with your Wi-Fi laptop/PC - Wi-Drive should be set as an **Access Point** (AP, like a Wi-Fi Router).

## 2 Physical Installation of the device into the car

Wi-Drive is usually installed in the glove box or in the armrest compartment. Use the provided fastening tapes to fix your device. Make sure that you have sufficient space on the front and on the back for the USB devices (Flash drive, 3G modem, etc.) and for the Wi-Fi antenna.

With professional installation you can hide away the device and its cables behind the dashboard, and use an USB extension cable for the USB storage.

The device physical installation typically takes 30-60 minutes.



**BEFORE STARTING THE PHYSICAL INSTALLATION PLEASE TURN OFF YOUR IGNITION AND TURN OFF YOUR CAR RADIO. PLEASE DO NOT CONNECT THE CAR USB CONNECTOR TO THE CAR YET!**

#### 2.1 POWER CONNECTION FOR TEMPORARY INSTALLATION

If you don't want to install the Wi-Drive permanently in your car, you can use the cigarette lighter connector to power it.



**PLEASE DO NOT CONNECT THE POWER CONNECTOR TO WI-DRIVE YET!**

**PLEASE DO NOT CONNECT THE CAR USB CONNECTOR TO THE CAR YET!**

**CONNECT** the cigarette lighter connector to your car's 12V plug.

You can also use this option to quickly test your setup before fixing it into the car. Depending on the vehicle, there are several options:

- A. If the cigarette lighter gives **continuous 12V**, just use the cable included in the package. However please note, that in this case the Wi-Drive can not "sense" the ignition key, and will not start operation on that. Instead you need to start the engine, and the elevated voltage level will start and stop Wi-Drive operation. Of course the regular wake-up and Wi-Fi connection and download functionality is not effected by this.
- B. If the cigarette lighter gives **switched 12V**, than there is no power in the cigarette lighter when the car is parked, therefore Wi-Drive cannot wake up for regular Wi-Fi connections. In this case you have the following options:
  - Install Wi-Drive permanently (the best option anyway!)

- Use Wi-Drive only as a secure Access Point and Netradio, when the car is on.

**Notes:**

Some new cars feature a 5V level cigarette lighter connection. This is not enough for Wi-Drive. In this case the only choice is the permanent installation.

## 2.2 POWER CONNECTION FOR PERMANENT INSTALLATION



**PLEASE DO NOT CONNECT THE POWER CONNECTOR TO WI-DRIVE YET!**

**PLEASE DO NOT CONNECT THE CAR USB CONNECTOR TO THE CAR YET!**

**CONNECT** the 3 power leads by use the included power harness:

Red: +12V Battery (continuous 12 Volts).

Purple: +12V Switch ON signal (ACC, Ignition on, Radio on). This connection is optional. If connected, this +12V will switch on Wi-Drive. Not all cars have 12V Ignition, if not connected Wi-Drive will perform automatic switch on by the elevated voltage level when the engine is running.

Black: GND (ground).

To connect the power leads to the right points of the vehicle you need certain expertise and tools. If you are not familiar with these, **please contact a professional installation shop.**

## 2.3 WI-FI ANTENNA CONNECTION AND PLACEMENT

The Wi-Drive package includes two Wi-Fi antennas; the device is capable of dual antenna operation.

**CONNECT** one of the supplied antennas to Antenna1, and the other to Antenna2 and screw them on.

The Wi-Fi range and performance depends on many things, both at the vehicle side, and the Wi-Fi installation at your home/office/garage.

For the synchronisation you need a good Wi-Fi coverage to outside of the car, for the 3G Access Point you need good coverage inside the cabin.

The general practices for home Wi-Fi installations are valid here as well. You can reach the best performance if the car antenna can "see" the home antenna. To achieve this, you might consider modifying your home installation as well.

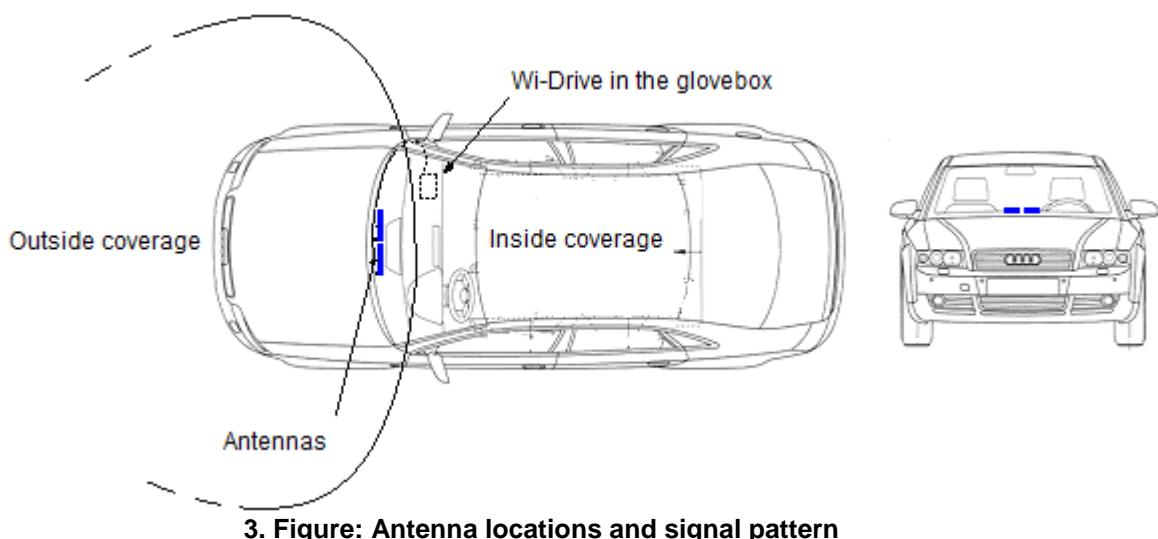
You may put the Wi-Fi router near to the window, or use an additional Wi-Fi repeater. If you park in a garage, you might install a dedicated router there too.

For longer distances you can use special orientated antennas on the home side.

For more hints please visit [www.dension.com/widrive](http://www.dension.com/widrive), or consult an expert.

### Antenna locations

To select the best antenna locations in the vehicle you have to consider also the usual parking conditions.



It is always best, if you can park the car facing toward your home Wi-Fi antenna. In this case the best location for the car's Wi-Fi antennas is the lower center part of the **front windscreens** (see 3. Figure). Place the antennas about 4 - 5 cm (1.5 - 2 inches) above the dash surface and leave 1 - 2 cm between them.

To fix the antenna, please remove the cover tape, and press the adhesive surface of the antenna to a clean glass surface. Adjust the antenna cable to the fittings of the dashboard. Please avoid bending the cable too sharply; this might destroy Wi-Fi performance.

Alternatively you may use the inside surface of the front or the back plastic **bumpers**, or the housing of the **side mirrors**. These locations normally provide better directional signal strength, and allow "invisible" installation, but require antenna extension cables, and some installation expertise. Furthermore, the external antenna location will result somewhat lower signal strength inside the cabin, when you use Wi-Drive as an in-vehicle Internet Access Point. In most cases the signal strength will be enough due to the short distance; however it is worth testing before finalizing the installation.

If your car has metallic content in the windscreens, than the inside antenna installation will not work for external connectivity; you have to use the plastic bumpers or the side mirrors as installation locations. In this case the externally placed antennas may not cover the cabin for in-vehicle Internet Access Point application. For this situation install the two antennas: one inside, the other outside. The inside antenna location is now not as critical, and may not be attached to the windscreens, rather in the glove box.

#### Tips:

Try out the Wi-Fi performance before fixing the antennas and the cables. Use some temporary adhesive tape to fix the antennas to the selected positions, and test the signal strength by connecting to the home computer.

If the signal is still low, you can try to relocate your WLAN router. Put it to the window temporarily, and adjust its antenna direction parallel to the car antenna.

You may also install an external antenna on your home router.

In order to help the installation, Wi-Drive features an approximate signal strength indication in Station mode (Signal LED). For details, see chapter 6.

**FCC RF EXPOSURE STATEMENT**

To satisfy RF exposure requirements, this device and its antenna must operate with a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

**INFORMATION FOR CANADIAN USERS (IC NOTICE)**

This device has been designed to operate with an antenna having a maximum gain of 5 dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than the required for successful communication.

**2.4 Test your physical Installation - Part1: Wi-Fi connection**

**PLEASE DO NOT CONNECT THE CAR USB CONNECTOR TO THE CAR YET!**

**CONNECT** the power connector to Wi-Drive now!

In order to test the successful device installation, check the followings:

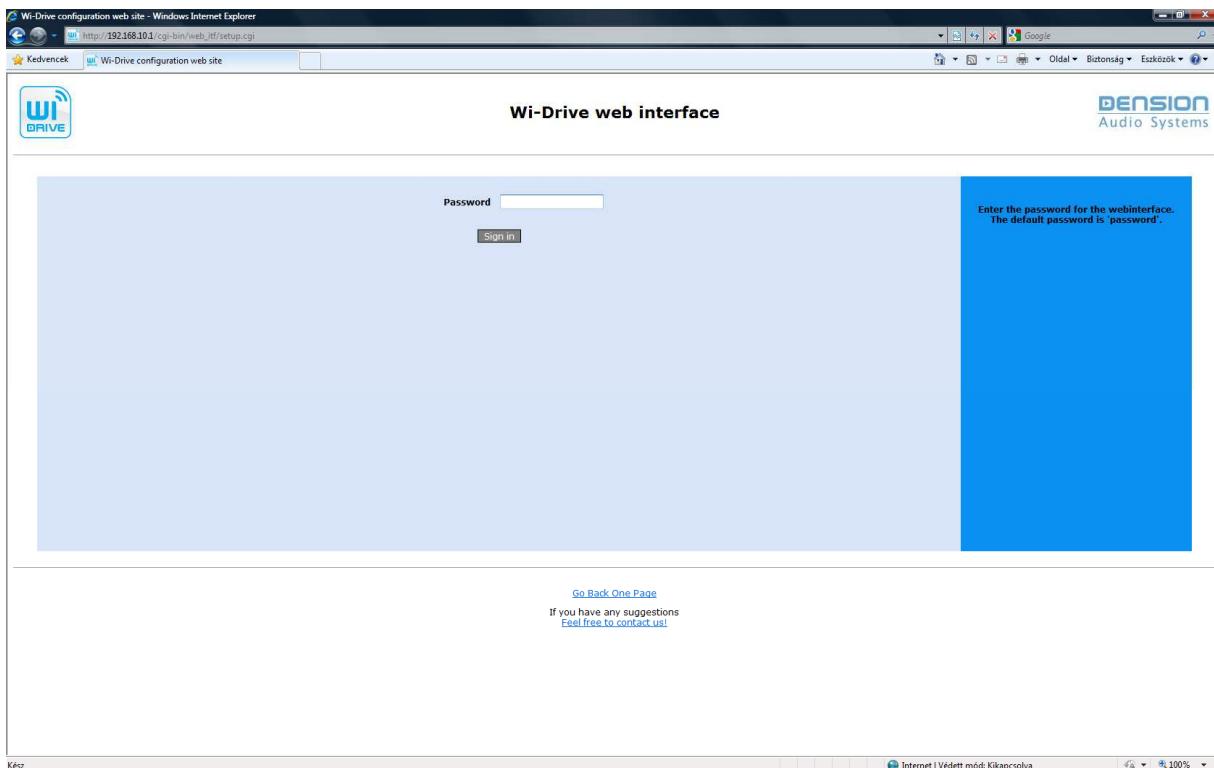
1. Power on Wi-Drive by starting the engine. The Wi-Drive “Status LED” should turn on Orange for a few seconds (boot up), than blink green slowly – to indicate Access Point (AP) mode.
2. Connect your computer to the secure Wi-Drive Access Point and connect to it.

With a notebook you should now be able to see the factory default Wi-Drive Access Point and be able to connect to it. This way you also can check the signal strength on your PC.

Switch on Wi-Fi on your computer, list the available wireless networks and look for “dension-widrive” network. Click to connect to this network and use the default passkey of “12345678”. When your PC is successfully connected you can visit the web interface of Wi-Drive to test the connection by visiting 192.168.10.1 from your browser (see 4. Figure).

**SSID: dension-widrive**

**Passkey: 12345678**



4. Figure: WiDrive web interface.

## 2.5 USB CONNECTION (MP3 playback)



**PLEASE DO NOT CONNECT YOUR 3G MODEM DEVICE YET!** (The 3G modem is not yet configured, connection trials with the wrong PIN may lock your modem.)

**CONNECT** the pigtail car USB plug to the USB port of the car's audio system now!

If the cable length is not enough, use a standard USB male-female extension cable (included). Please note that maximum length of the USB extension is 2 meters.

Prepare a USB Flash drive for the installation by formatting it to FAT32 and copy a couple of MP3 files (maximum 2 or three) to it.

## 2.6 Test your physical Installation – Part2: MP3 playback

In order to test the successful device installation, check the following:

1. Power on Wi-Drive by starting the engine. The Wi-Drive "Status LED" should turn on Orange for a few seconds (boot up), than blink green slowly – to indicate Access Point (AP) mode.
2. Insert the USB Flash drive (containing some music files) into the "USB Storage" port, and select the USB playback on the radio, the music playback should function as normally (the radio will run indexing of the music files that can take a minute or longer depending on the radio).

## 3 In-vehicle Internet Access Point Application, 3G configuration

If you want to use Wi-Drive as an in-vehicle Internet Access Point, you need an Internet access device. You have several options to provide that:

Option 1. **3G USB Modem (dongle)** with a dedicated SIM-card, and subscription.

Option 2. Your **mobile phone**, with it's built in (3G) Internet access and subscription.

To connect your Phone with Wi-Drive you have several options depending on your Phone's type.

- A. Connect your phone with a simple **USB cable** to one of the "USB Extension" ports - if your phone has a USB connector. Note, the USB cable will also charge your phone, while connected. Your phone must support USB RNDIS function to do this.
- B. Connect your Phone via **Bluetooth (PAN profile)** to Wi-Drive. A USB Bluetooth dongle must be connected to one of the "USB Extension" ports, and paired with your Phone. Your Phone must support Blueooth PAN (Personal Area Network) profile, and provide Internet tethering (sharing) function.
- C. Connect your Phone via **Bluetooth (DUN profile)** to Wi-Drive. A USB Bluetooth dongle must be connected to one of the "USB Extension" ports, and paired with your Phone. Your Phone must support Blueooth DUN (Dial Up Networking) profile, and provide Internet tethering (sharing) function.

In any option you select, the Internet accessing device (modem or phone) should be placed to a location, where it can have good radio signal reception. This is practically the same position recommended for the Wi-Fi antenna: the front middle center of the dashboard. Use standard USB extension cable if necessary.

In case of **metallic windscreens** you face the same problem, as you want to make phone calls from the cabin. The options you have:

- o Use the factory installed phone kit (if you have) to access the Internet, and share the connection with Wi-Drive via Bluetooth.
- o Install a 3G modem externally, i.e. in the housing of the side mirror.

### 3.1 **OPTION1: 3G USB dongle setup**

For configuring the 3G USB modem (dongle) please follow the steps! Please check your modem's compatibility on [www.dension.com/widrive](http://www.dension.com/widrive).



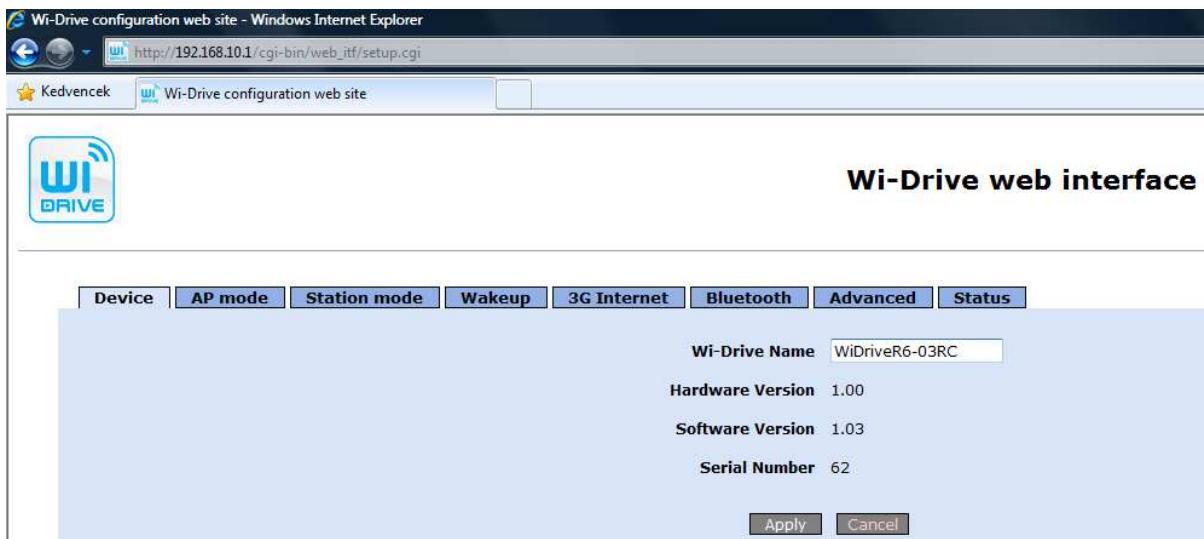
**PLEASE MAKE SURE YOUR 3G MODEM IS NOT CONNECTED YET TO WI-DRIVE!**

1. **Power on** Wi-Drive by starting the engine. The Wi-Drive "Status LED" should turn on Orange for a few seconds (boot up), than blink green slowly – to indicate Access Point (AP) mode.
2. With a notebook you should be able to see the factory default Wi-Drive Access Point, **connect to this network** with the default passkey.

**SSID: dension-widrive**

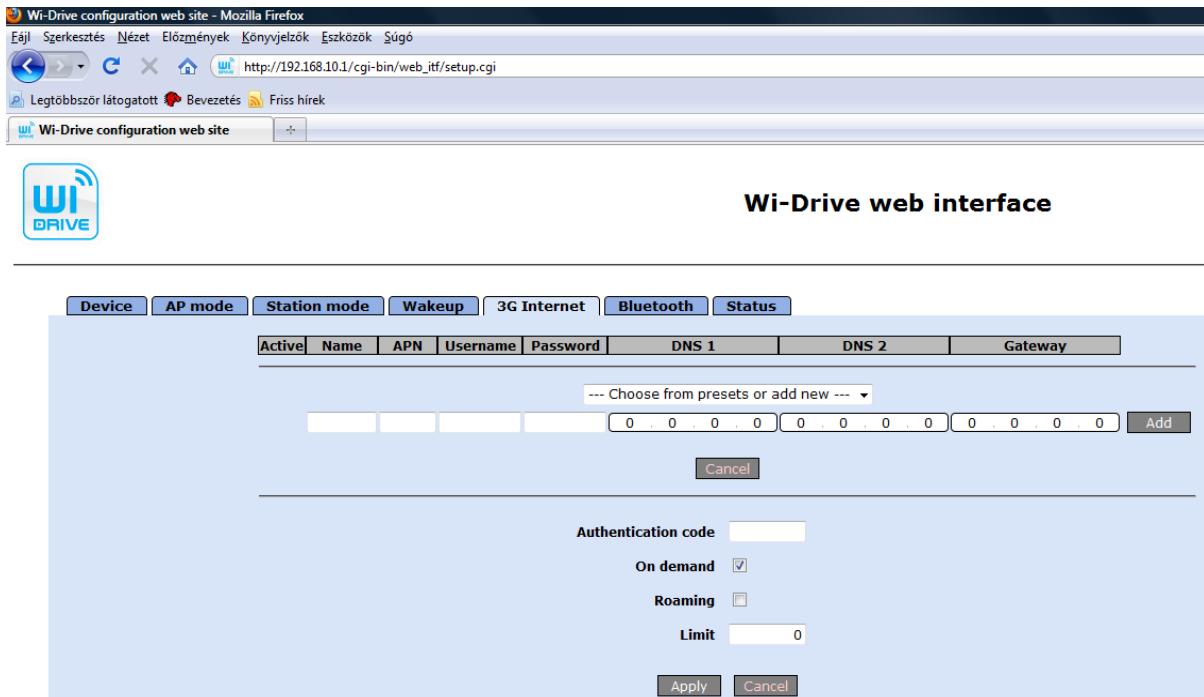
**Passkey: 12345678**

3. **Start your Internet browser** (Internet Explorer, Firefox, etc.) and go to this address:  
<http://192.168.10.1>  
You have to be connected to Wi-Drive web interface (see 4. Figure).
4. **Sign in** with the default password: "**password**". You can change this password later on the web interface (password tab).



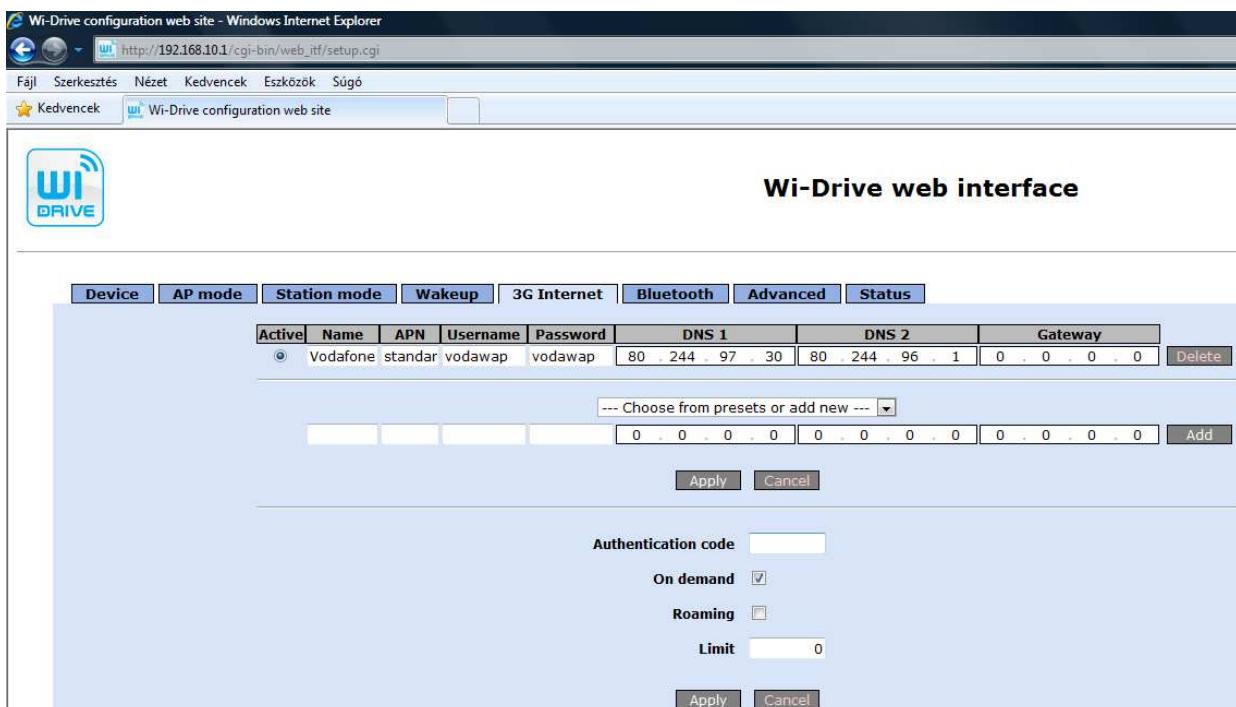
5. Figure: Wi-Drive web interface upon successful login

- Once successfully signed in, you will see several tabs with the configuration details. **Click on “3G Internet” tab.**



6. Figure: Wi-Drive web interface 3G Internet tab

- If you have a factory defined entry please delete it first by clicking the “Delete” button.
- Click on “Choose from presets or add new”** drop down list and select your 3G operator listed by countries. After selecting your operator, the parameter fields will be filled (*Name, APN, Username, Password, DNS1, DNS2, Gateway*). If the pre-defined list does not contain your operator, type in the parameters manually. Consult your telecom operator for these settings.
- Click on “Add”** next to the list. Now you will have a line with the settings under the parameters and **Click on “Active”** button at the beginning of the entry.



7. Figure: Wi-Drive web interface, 3G operator settings

9. **Type in** your modem's (SIM) PIN number to the “**Authentication code**” entry or leave it blank if your modem does not use one.
10. **Set “On demand”**: check this on if you want Wi-Drive to connect when a connected Wi-Fi device needs Internet connection and disconnect upon network inactivity.  
By leaving on-demand field off, 3G internet will be established as soon as possible regardless of current internet demand. Since Wi-Drive keeps running as long as 3G connection is up, this can lead to battery exhaust - of course within the limits of internal battery protection scheme. There are chances that your 3G modem automatically drops the 3G connection even if it's not in on-demand mode after several minutes of inactivity. Setting “On-demand” on is recommended.
11. **Set “Roaming”**: check this on if you allow Internet access when roaming. Check your subscription plan's International data roaming charges before use.
12. **Set Limit**: type in traffic limit in MBytes. When limit is reached the connection will be disconnected. You can see and reset the counter on the “Status” tab.
13. **Click on “Apply”** under Limit.
14. **Connect** your 3G modem to one of the USB Extension ports.
15. **Reboot** your Wi-Drive. (Via the web interface or by pressing the Push button twice in one second.)
16. Your modem's lights (if any) will indicate connection status (consult your modem's documentation).
17. **Connect** a Wi-Fi device (laptop, iPod, iPhone, etc.) to the Wi-Drive Access Point (default SSID: dension-widrive, Passkey: 12345678), make sure that this device has no other ways of connecting to the Internet.
18. **Initiate Internet traffic** from this laptop by visiting a web page, or downloading e-mails, etc. You should have Internet connection and your modem's lights (if any) will show connected status.

### 3.2 **OPTION2 A: 3G Phone connected with USB cable setup**

For configuring the 3G phone access via USB cable (RNDIS) please follow these steps! Please check your Phones compatibility on [www.dension.com/widrive](http://www.dension.com/widrive).

Usually phones with Windows Mobile support this operating mode. On Windows Mobile 6 follow these steps. Your phone has to be configured according to your 3G operator settings.

1. **Power on** Wi-Drive by starting the engine. The Wi-Drive “Status LED” should turn on Orange for a few seconds (boot up), than blink green slowly – to indicate Access Point (AP) mode.
2. **Connect** the phone to one of the USB Extension ports on Wi-Drive, by using the USB cable provided with the phone.
3. On your Phone set the followings:
  - i. **Set (checkbox)** “Enable advanced network functionality” under Start / Settings / Connections / USB to PC.
  - ii. **Click on** “Internet sharing” application under “Start”.
  - iii. **Select USB** for “PC Connection”, and **select your configured 3G connection** for “Network Connection”.
  - iv. **Click Connect.**

Your Internet connection will be active and available for the Wi-Fi devices connected through Wi-Drive’s secure Access Point. If you disconnect the Phone, Internet connection will not be available to the connected devices. Next time you connect the Phone, just click on Start/Internet sharing and Connect to re-establish the Internet connection.

### 3.3 **OPTION2 B: 3G Phone connected via Bluetooth PAN setup**

For configuring the 3G phone access via Bluetooth Personal Area Networking (PAN) please follow these steps. Please check your Phones compatibility on [www.dension.com/widrive](http://www.dension.com/widrive).

Prerequisites are a Bluetooth USB Adapter (dongle) and a Bluetooth enabled 3G Phone implementing the Bluetooth PAN profile.

Apple **iPhone** example is shown here, consult your Phone’s manual to perform these steps, and also check [www.dension.com/widrive](http://www.dension.com/widrive) for other Phone configuration examples.

1. **Connect** a Bluetooth USB modem (dongle) to one of the USB Extension ports on Wi-Drive.
2. **Configure and connect your Phone.**
  - i. **Enable 3G** Network connection on your Phone.  
Go to Settings/General/Enable 3G and turn it ON.



## ii. Enable Internet tethering on your Phone.

Go to Settings/General/Network/Internet Tethering and turn it ON. If Bluetooth is currently turned OFF, turn Bluetooth ON.



## iii. Go to Settings/General/Bluetooth "dension-widrive" Bluetooth device will appear in the Devices list.



iv. Tap on this device and enter PIN (0000) code to pair it with your Phone.



v. Tap Connect. Status will change to Connected, and Internet tethering will be active.



Internet connection will be active and available for the Wi-Fi devices connected through Wi-Drive's secure Access Point until your Phone is connected.

On Wi-Drive's web interface you can manage the established connections.

### 3.4 **OPTION2 C: 3G Phone connected via Bluetooth DUN setup**

For configuring the 3G phone access via Bluetooth Dial Up Networking (DUN) please follow these steps. Please check your Phones compatibility on [www.dension.com/widrive](http://www.dension.com/widrive).

Prerequisites are a Bluetooth USB Adapter (dongle) and a Bluetooth enabled 3G Phone implementing the Bluetooth DUN profile.

**Nokia E51** example is shown here, consult your Phone's manual to perform these steps, and also check [www.dension.com/widrive](http://www.dension.com/widrive) for other Phone configuration examples.

1. **Configure your 3G operator settings** on Wi-Drive's web interface, follow the steps 1-13 under 3.1.
2. **Connect a Bluetooth USB modem (dongle)** to one of the USB Extension ports on Wi-Drive.
3. **Configure and connect your Phone.**

**i. Turn Bluetooth ON.**

Go to Menu/Connectivity/Bluetooth and turn Bluetooth ON. Set Phone's visibility to "Shown to all".

**ii. Pair your Phone with Wi-Drive.**

Go to Menu/Connectivity/Bluetooth/Paired devices (right click from the main Bluetooth menu) click Options/New paired devices and select More devices. On your list dension-widrive will appear, click to connect it. Enter the pairing code (default 0000), and allow connections.

Internet connection will be active and available for the Wi-Fi devices connected through Wi-Drive's secure Access Point until your Phone is connected.

On Wi-Drive's web interface you can manage the established connections.

## 4 Wireless Content Synchronisation Setup and Configuration

After a successful physical installation of Wi-Drive to the car you can set up the system for automatic wireless content synchronisation. Your Wi-Drive must have proper connections to power, to the car's USB port, to the Wi-Fi antennas and the USB storage device (hard disk or pendrive) must be connected to the USB Storage port.

### 4.1 **USB Mass Storage Synchronisation with Wi-Drive Utility**

**Setup steps:**

1. Make sure that Wi-Drive is in sleep mode (see Push button operation in chapter 6) and the car radio is switched-off.
2. Insert a USB pen drive to the "USB Storage" slot (single) of Wi-Drive.

Turn on Wi-Drive by switching on the ignition (or by starting the engine), or just simply pressing the Push button on Wi-Drive. Wi-Drive will write a configuration file to the pendrive (named wid-config.update). It is **important**, that your head unit is switched off.

You will see a short blinking of the LED on the pen-drive (if it has), while Wi-Drive is writing. This takes a few seconds only (wait 30 seconds), than remove the pen-drive and take it to you computer.

3. Install and start Wi-Drive Utility (WDU) software on your PC. Microsoft Windows XP or Vista OS and 6 MB free disk space is required. (We recommend Windows XP if you have the choice).

You can download the latest version WDU install package from: [www.dension.com/widrive](http://www.dension.com/widrive)

Run the downloaded install package and follow the Setup Wizard instructions, answer Yes where needed, and enable network access for WDU, if you have a firewall.

For automatic synchronization the install package also includes the Rsync utility for Windows, please allow its installation also!

Launch Wi-Drive Utility. At first time running and if no devices are configured the Installation Wizard will start.



**8. Figure: WDU Install Wizard**

If one (or more) previous devices are configured WDU will start in tray mode, look for the Wi-Drive logo , and double-click to open it.

4. Insert the pen-drive to your PC containing Wi-Drive configuration file (from Step 2), and select the drive when the Install Wizard asks for it.



**9. Figure: Select the USB pendrive with the configuration file in WDU Install Wizard**

5. Click Next and follow all installation pages, and change settings, as necessary.
6. At the last page when clicking Finish the Install Wizard will write a new configuration file to the pen-drive.  
Disconnect safely the pen-drive from the PC, and insert it again to Wi-Drive's "USB Storage" port and turn-on Wi-Drive.  
Wi-Drive learns the new configuration data, reboot itself, and will work accordingly.  
Now your Wi-Drive system is set up and ready to work. You can re-configure your Wi-Drive anytime with this method.

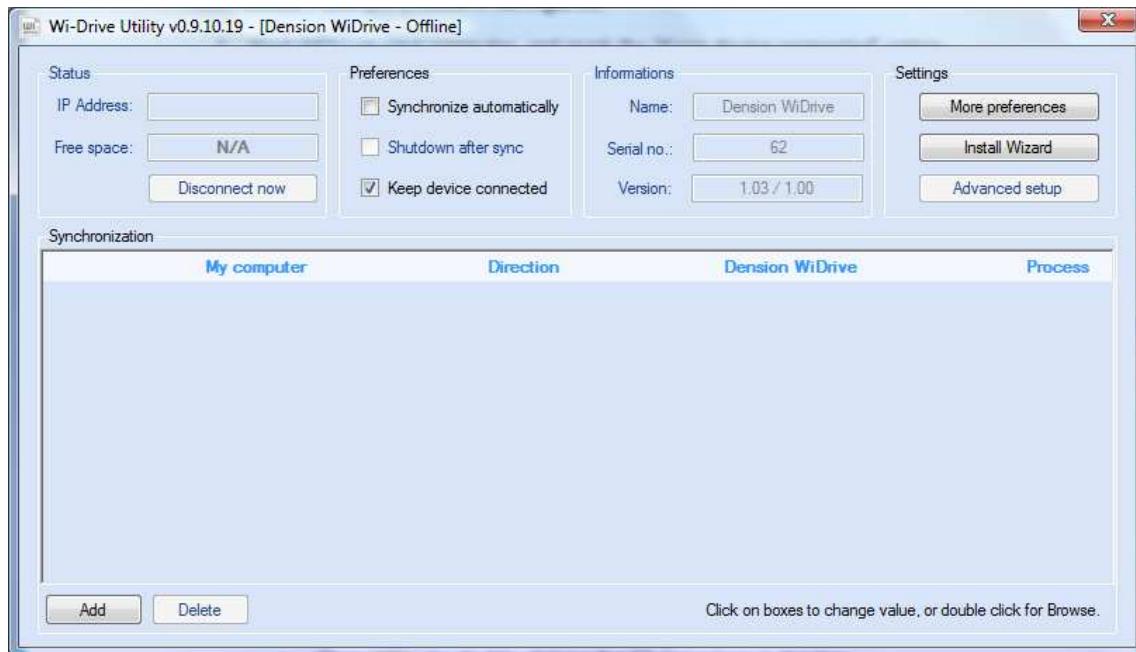
**Notes:**

Each time Wi-Drive wakes up, it writes its configuration out to the USB storage found.

#### 4.1.1 Test your system setup

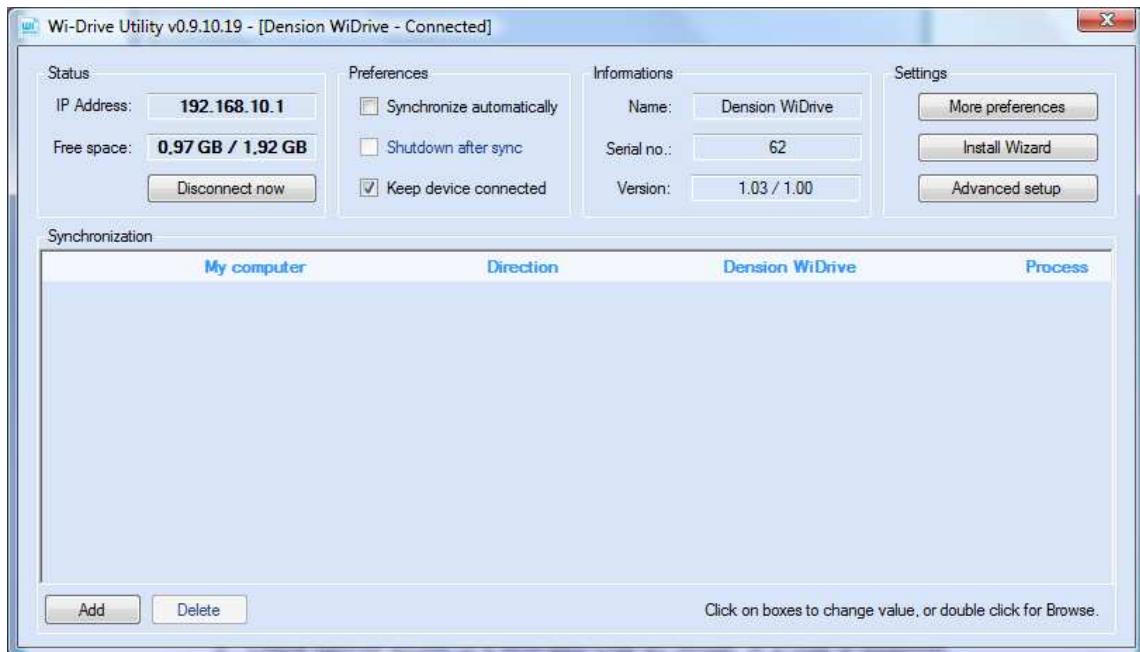
##### **Test Access Point (AP) mode if configured:**

1. Start WDU on your computer, and mark the "Keep device connected" option.



**10. Figure: Launch WDU and mark Keep device connected**

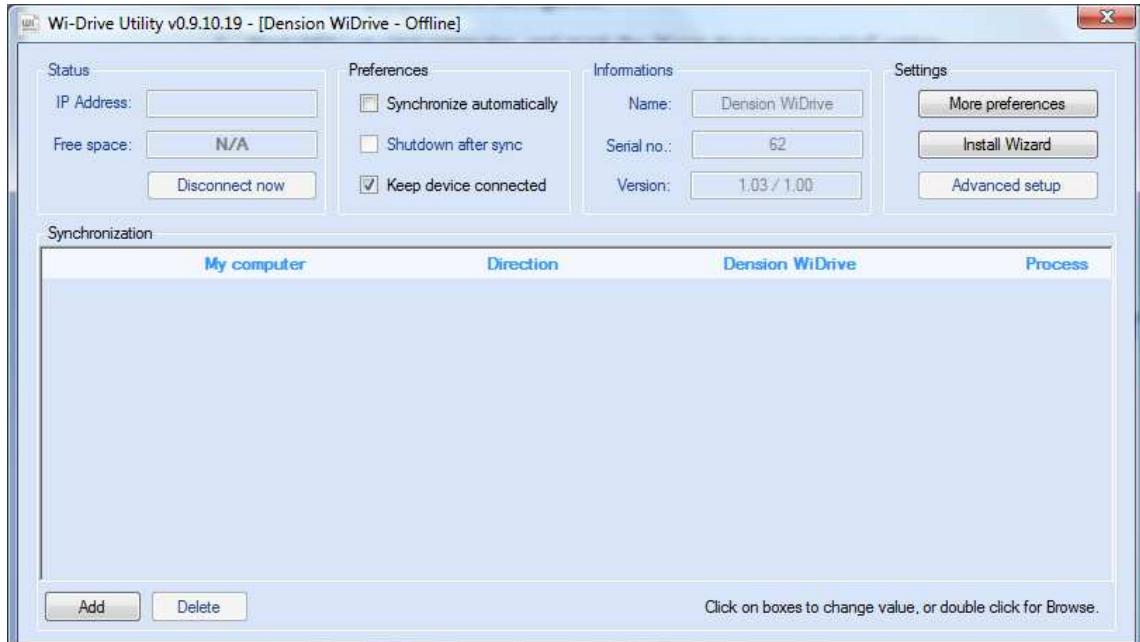
2. Switch-on Wi-Drive, make sure that Radio is OFF, and USB storage device is connected.
3. Look for the preset AP name on your notebook and make connection.
  - Perform the network search manually, automated Windows recognition can be extremely slow!
  - Connect manually to the Wi-Drive AP.
4. Check connectivity with Wi-Drive Utility.
  - Open WDU by double clicking the Wi-Drive logo in the tray.
  - Check if connection status is indicated (Status: IP Address provided).
  - The “Status LED” on Wi-Drive should light on Green continuously.
  - Finally disconnect Wi-Drive by unchecking “Keep device connected”



**11. Figure: WDU is connected with Wi-Drive.**

**Test Station mode if configured:**

1. Start WDU on your computer, and mark the “Keep device connected” option. Your computer must be connected to the home WLAN network. Wi-Drive must be configured to connect to this home WLAN network.



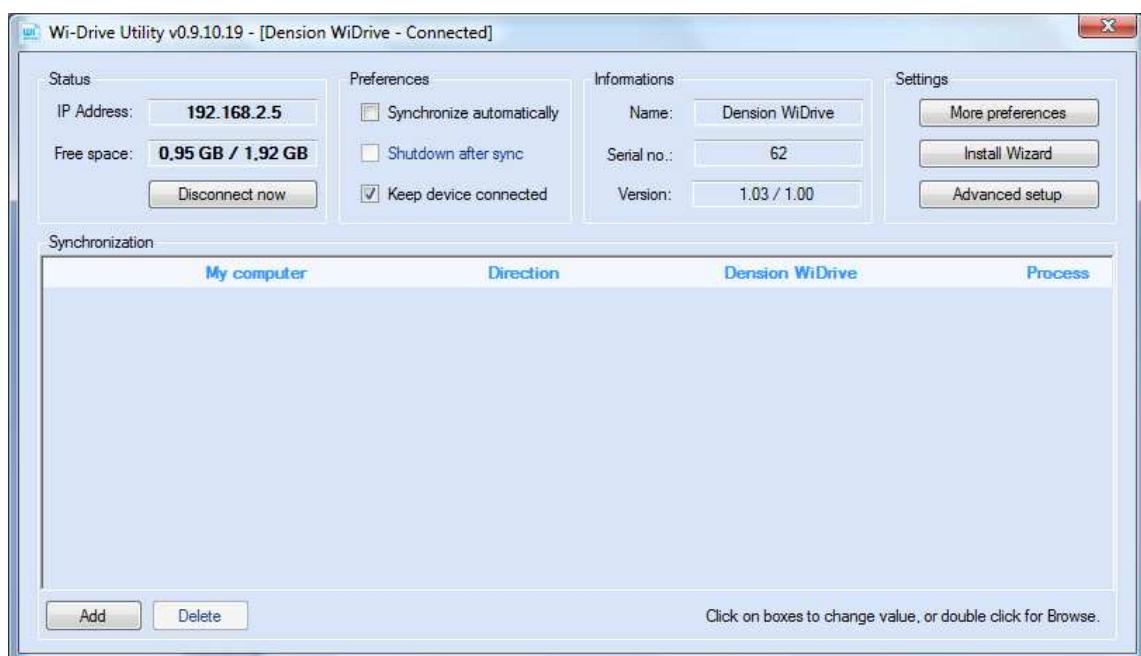
**12. Figure: Launch WDU and mark Keep device connected**

2. Make sure that Radio is OFF and USB storage device is connected. Switch-on Wi-Drive, wait for the blinking Green Status LED (AP mode) and force Station mode by

pressing the Wi-Drive Push button for 2-3 seconds. Status LED on Wi-Drive should blink Red slowly.

### 3. Check connectivity with Wi-Drive Utility.

- Open WDU by double clicking the Wi-Drive logo in the tray.
- Check if connection status is indicated (Status: IP Address provided).
- The “Status LED” on Wi-Drive should light on Red continuously.
- The “Signal LED” on Wi-Drive is blinking (three levels exist, number of blinks in two seconds indicate level)



13. Figure: WDU is connected with Wi-Drive.

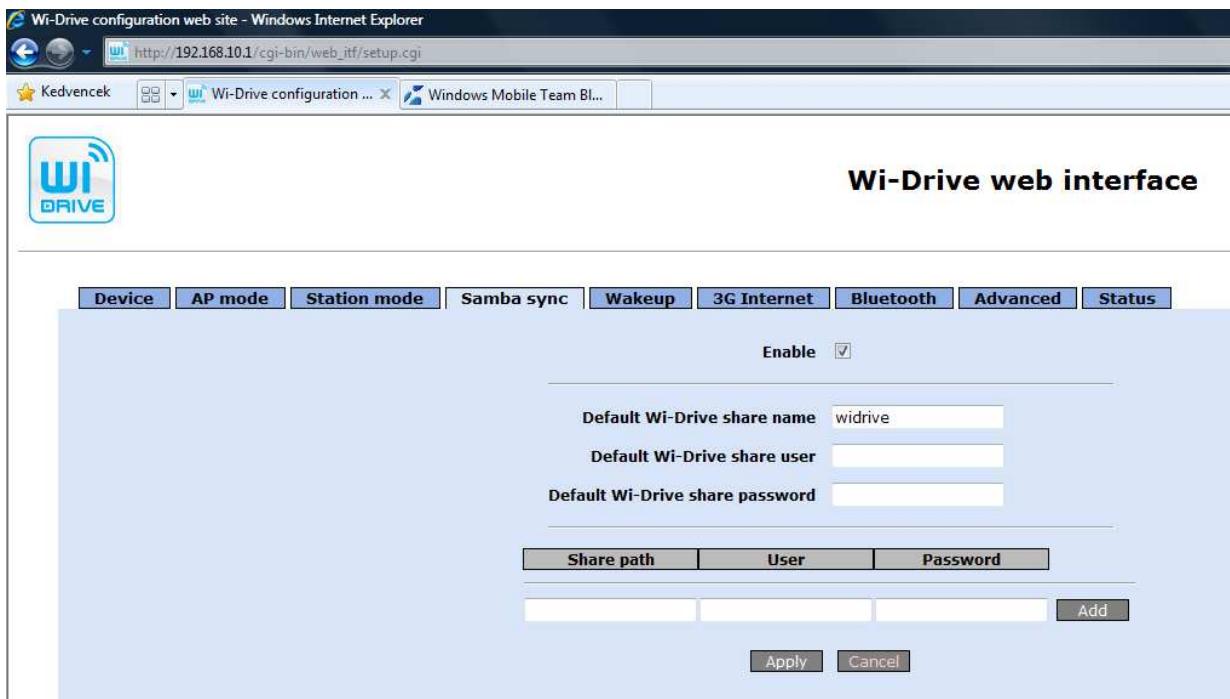
#### Notes:

If Wi-Drive cannot connect because of weak signal, try to relocate the router, install external antenna (or repeater) on your router, or add a second antenna to Wi-Drive.

## 4.2 USB Mass Storage Synchronisation from shared folders (Samba)

To perform a content synchronisation from a shared folder you do not need the Wi-Drive Utility. The shared storage folder and Wi-Drive have to be connected to the same network, ie. your home WLAN.

By default Wi-Drive will look for a shared folder called “widrive”, if the network contains such a share, Wi-Drive will synchronise its content to the car. You can also setup your own shared folder settings on Wi-Drive’s web interface.



14. Figure: Wi-Drive web interface for setting Samba sync

The synchronisation is performed in the following way:

1. Your computer is connected to the home WLAN, have a shared folder named "widrive", and Wi-Drive is configured to access this WLAN as a Station.
2. When Wi-Drive wake-up and connected to the home WLAN in Station mode, it checks the defined shared folders. If they are available on the network, Wi-Drive synchronise the content to the car. After Samba sync finished, Wi-Drive will try to connect WDU if available, otherwise goes to standby mode.

## 5 Internet Radio Application and Configuration

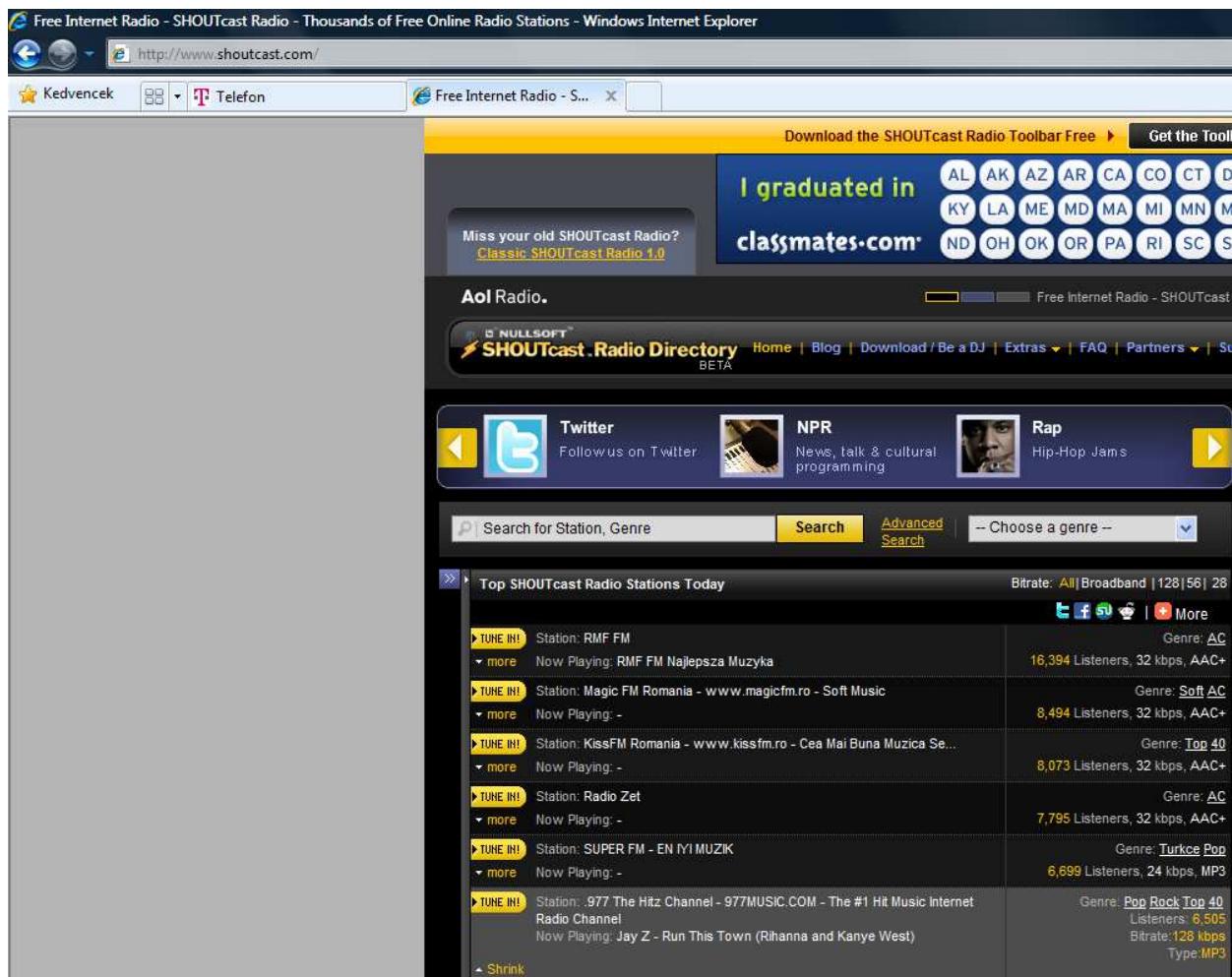
With Wi-Drive you can play your Internet radio stations. For Internet radio you need a configured and working 3G Internet connection. To switch to Internet radio mode do the following:

3. Download the Wi-Drive Internet Radio configuration files to an empty pendrive (from [www.dension.com/widrive](http://www.dension.com/widrive)).
4. Switch on Wi-Drive and start playing music from the USB Storage memory.
5. Make sure that your 3G Internet connection is up and working.
6. Plug in the Wi-Drive Internet Radio configuration pendrive to one of the USB Extension ports.
7. After a few seconds Wi-Drive will switch to Internet radio mode, you will hear a pre-set sound for about 30 seconds, then Wi-Drive will play the first Internet radio station (playlist file).
8. On the radio you can use browse, play, play next to switch between stations (depending on your type of radio)
9. To turn off Internet radio please remove the Internet radio configuration pendrive.

You can copy your favorite Internet radio list to the Internet radio configuration pendrive. Wi-Drive supports .pls and .m3u type playlists. Please copy these files to the /netradio directory on the configuration pendrive. We suggest using maximum of 5 stations (playlists) on a single pendrive.

To copy a radio station to the pendrive do the following:

1. Plug in the Internet radio configuration pendrive to your computer.
2. Go to the radio station web-site or a page with links to the stations.



15. Figure: [www.shoutcast.com](http://www.shoutcast.com)

3. Select the station you want to copy and click on “Tune in”. When File download comes up, select Save, change the default file name to the name you want to see, and save the file (playlist file) to the Internet radio configuration pendrive’s netradio directory. Make sure that you do not change the file extension, it must remain .pls or .m3u. The radio station has to be MP3 format.

## 6 Quick reference guide

### Push Button functions:

Wi-Drive's Push button has useful functionality during installation.

Press	Duration	Function
Short	1..2 sec	Equals to a Car on / Car off cycle. Start 5 minutes AP mode (if enabled), than 2 minutes Station mode (if enabled)
Long	2..6 sec	Forced switch from AP to Station mode. When pressed in Station mode Wi-Drive goes to sleep mode.
Very long	8..16 sec	Restore all factory default settings
Double Short	2 press in 1 second	Manual reboot from AP and Station modes.

### Status LED indications:

The different operation modes of Wi-Drive are indicated by the Status LED.

Color	Blinking	Status
Orange	Fast	Wi-Drive operating system is booting up
Orange	Steady	System firmware update is in progress. <b>Do not disconnect Wi-drive's power line!!!</b>
Red	Short pulse	Wi-Drive is in Standby (sleeping) mode.
Red	Slow	Station mode, connection trial is in progress.
Red	Fast	Station mode, connected to an Access Point.
Red	Steady	Station mode, connection established with WDU.
Green	Slow	AP mode is provided, but no clients connected.
Green	Fast	AP mode is provided, and at least one client is connected.
Green	Continuous	AP mode is provided, connection established with WDU.
Green-Orange	Fast	AP mode is provided, and 3G Internet access is active. During WDU connection, the Internet status is not indicated.
Green-Orange	Slow	AP mode is provided, and 3G Internet access is active.

### Signal LED indications:

The number of blinks in two seconds of the Signal LED indicates the signal strength of the actual Wi-Fi connection in Station mode. Three blinks indicates the strongest, one blink is the weakest signal reception. This functionality is active only when Wi-Drive is connected.

**Technical specifications**

Parameter	Range	Comment
Operating Voltage	10V - 16V	
Active Current	Max 400 mA	Without external peripherals, @1 Mbps data transfer
Standby Current	Max 100 uA	
Operating temperature	-20 C - +65 C	
Battery protection level	11.7 V	
USB device supply current	Min 1.5A	Sum of all the 3 USB ports
USB Storage compatibility		Most of the Kingston, Transcend, SanDisk memories are compatible. Some "noname" pen-drives may not work. Long USB extension cable may cause problems.
3G USB modem and 3G Phone compatibility		Check it on <a href="http://www.dension.com/widrive">www.dension.com/widrive</a>
Car USB compatibility		Check it on <a href="http://www.dension.com/widrive">www.dension.com/widrive</a>
Internet radio compatibility		Check it on <a href="http://www.dension.com/widrive">www.dension.com/widrive</a>

For updated compatibility list please check [www.dension.com/widrive](http://www.dension.com/widrive).

**FCC COMPLIANCE STATEMENT**

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.

In order to maintain compliance with the FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception.

The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

**INDUSTRY CANADA COMPLIANCE STATEMENT**

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.