Season Wireless
User Manual

English

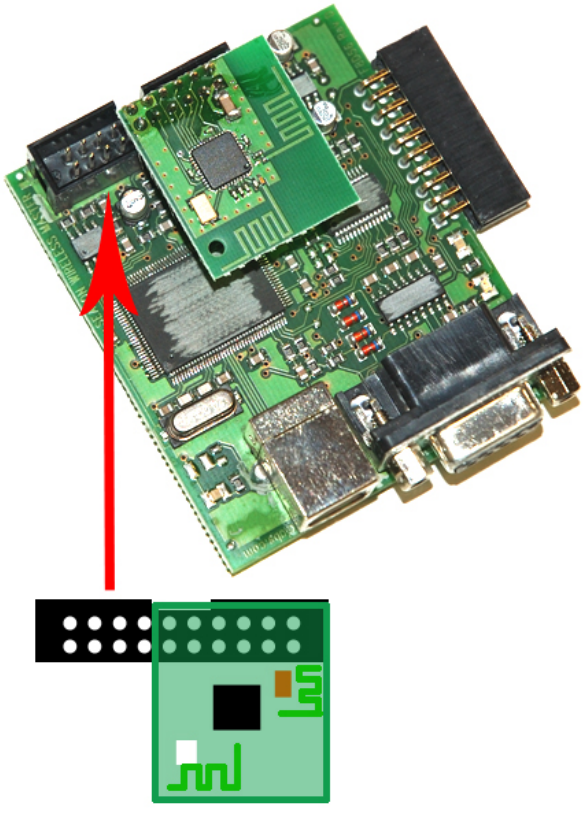
- April 2005 -

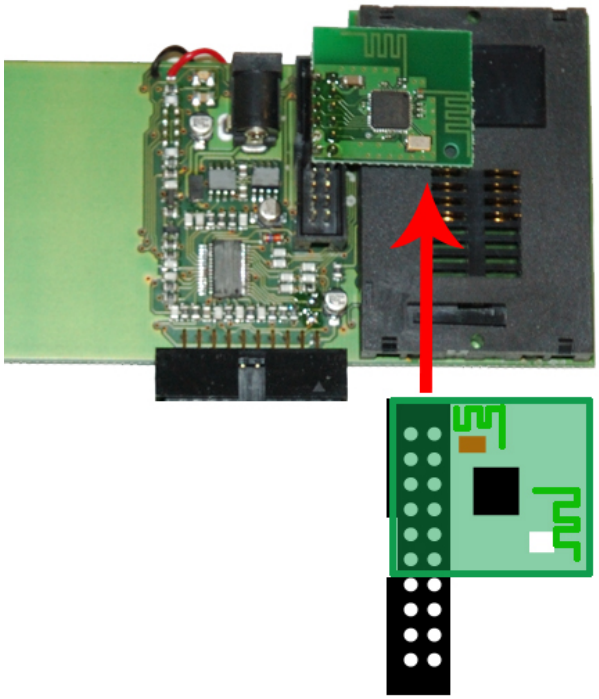
Premise

Season Wireless is a smartcard traffic analyzer and a useful support tool for developers of smartcard emulators. This device is the natural evolution of Season Logger 2, which can be connected to PCs by means of an RS-232 serial cable.
This new product is wireless and enables therefore the analysis/testing device to be installed in a different location as compared to the PC where the testing/emulation software runs, thus eliminating the need of connection cables.
The device consists of two distinct components: the Slave and Master. The Slave is the card that is inserted in the remote device and that physically replaces the smartcard, while the Master is the card connected to the PC through the USB port and the RS-232 connection, which acts as radio link between the PC and Slave. Both components have a removable wireless antenna with a frequency of 2.4 GHz.

Connections

The Slave needs to be connected to an external 9 V power supply. Therefore, the card has a standard power connector and a small connector for the connection of the 9 V battery. The Slave also has a connector for the insertion of the smartcard, which is used to log the traffic between the smartcard and the remote device.
The Master is powered by the USB port that connects it to the PC. This port is also used to transmit configuration commands, while the smartcard emulation data is transmitted through the RS-232 serial port. This ensures maximum compatibility with the software applications used with Season Logger 2.
The Slave and Master can be connected to one another through their 20-pin male-female connectors if it is necessary to upgrade the internal firmware.
Both units have a connector for the wireless antenna. It is important to make sure that the antennas are correctly positioned on each of these units and that their orientation complies with the instructions given on next 2 images.
Both units also have red and yellow LEDs that light when the units are being powered and when the firmware is upgraded. The Master also has an additional green LED that lights when data is being transmitted to/from the PC through the RS-232 serial port.





Software

Season Wireless is supplied with a software for PCs that can be used to setup and upgrade the Slave and Master. This software requires the use of Windows operating systems.

The device can operate correctly only if the Slave is powered at 9 V, the Master is connected to the PC through the USB and RS-232 serial ports, the updated drivers for the Master have been installed on the PC and if the software is running on the PC.

The two units are configured with the following default settings that can be changed through the software:

- Operating mode: Season (smartcard emulation) or Logger (traffic analysis)
- Wireless transmission channel (to allow the simultaneous use of several Slave/Master units)
- ATR to be sent to the remote device
- Settings for serial communications; baud rate and parity *before and after* the transmission of the ATR to the remote device.

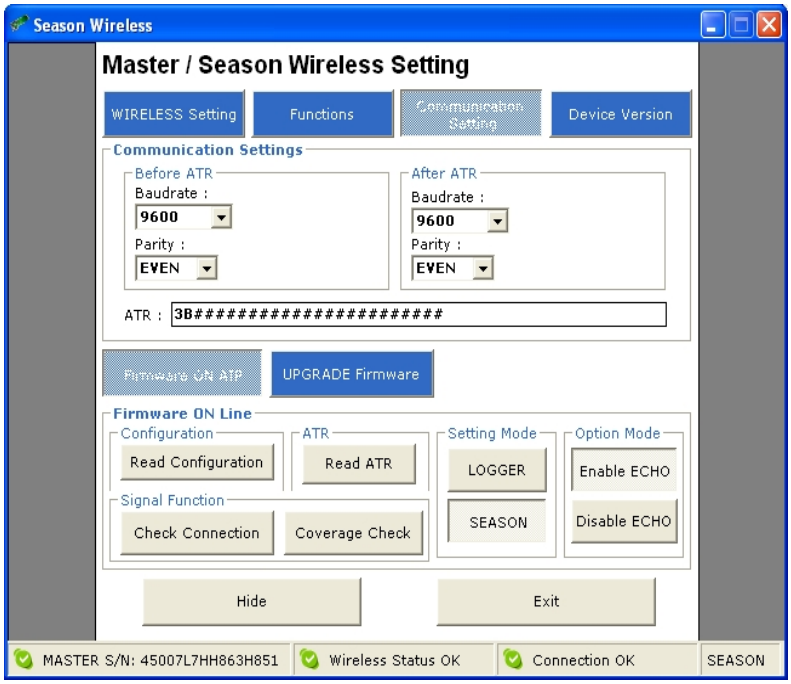
To change the initial settings of the device, press **Firmware on AIR** in the software panel.

Click **Read Configuration** to display the initial settings of the device. The settings are displayed only if both components are powered and if the two antennas are correctly inserted in their respective slots.
At this point, you can display the settings by clicking the following buttons:

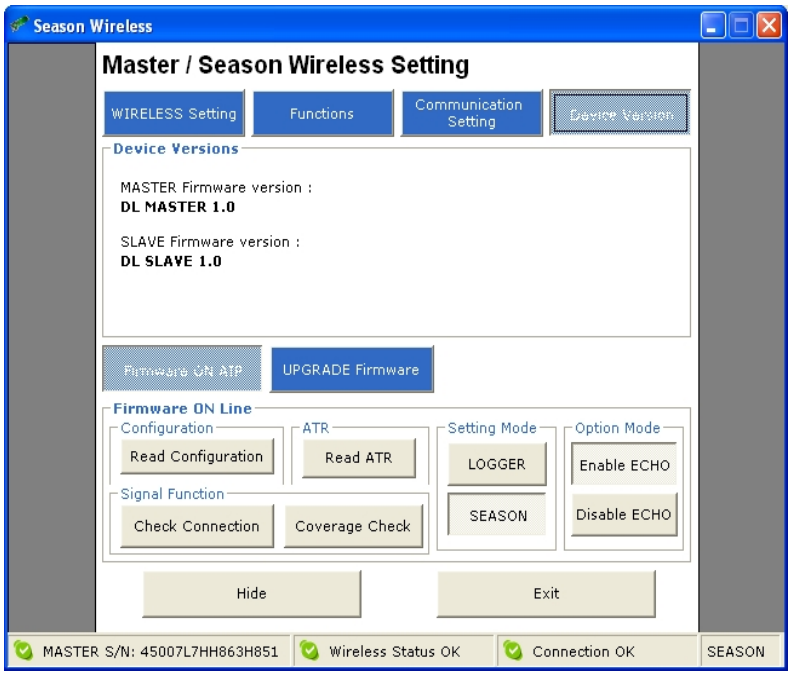
- **WIRELESS Setting**: to select the transmission channel

- **Functions**: to select the Season or Logger mode

- **Communication Setting**: to select the settings for serial and ATR communications sent to the remote device.



Click **Device Version** to display the firmware version of the Slave and Master.



Click **Read ATR** to quickly display only the ATR that has to be sent to the remote device.

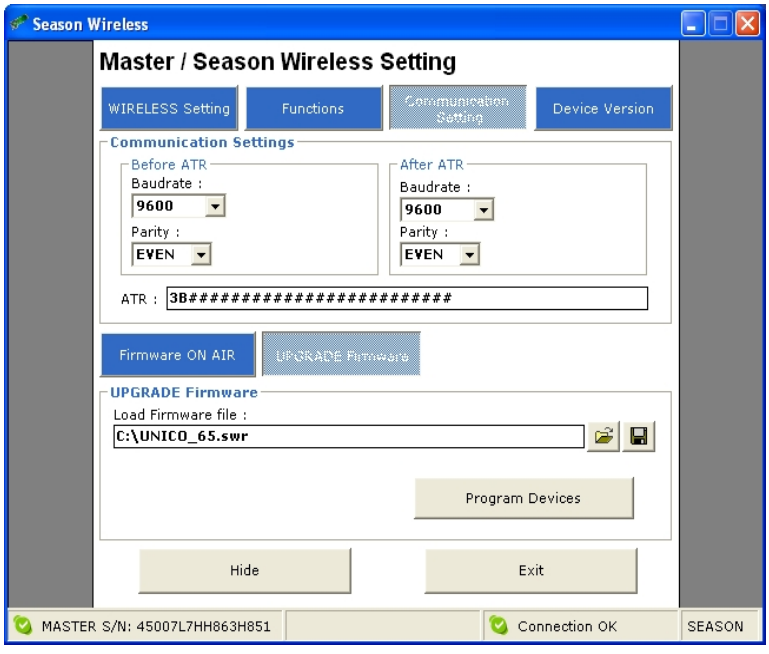
Click **Logger** or **Season** in the **Setting Mode** pane to temporarily select an operating mode. If you disconnect the Slave from the power supply, the default operating mode is resumed. Before selecting the desired mode, it is necessary to make sure that the Slave is powered and able to establish a radio link, as during the reading of the initial settings.
To be able to use the Logger mode, you need to insert a smartcard in the slot of the Slave. The Master is designed to receive the flow of data exchanged by the smartcard and reader, and captured by the Slave.

In the **Option Mode** pane you can decide whether to enable or disable the echo (**Enable ECHO** / **Disable ECHO**) of the bytes sent from the PC to the Master. By default, the echo is always enabled when you switch the Master on and it is not possible to save it as default configuration (unlike the settings described above).
The byte echo is important because it guarantees full compatibility with the software applications that are already used with Season Logger 2.

The **Signal Function** pane displays the options that you can use to check if the Slave and Master are communicating correctly.
You can click **Check Connection** at any time to verify if the Slave and Master are communicating correctly through the radio link. You can also click **Coverage Check** to start the loop testing cycle that enables you to check the

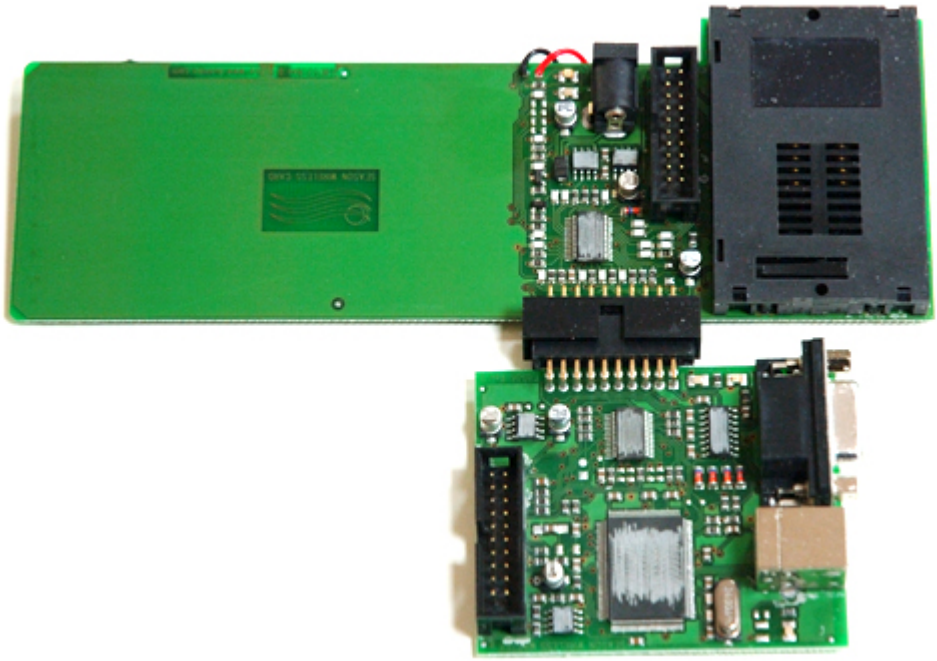
radio link between the two units and quickly verify the existence of a radio coverage if one of the components is moved. This function is very useful when the Slave and Master are located at a great distance or separated by obstacles that could affect the radio communications.

To change the initial settings of the device and/or update the internal firmware, press **UPGRADE Firmware** in the software pane.



Settings can be changed and firmware can be upgraded with one operation only. Therefore, to be able to carry out one of these two operations, it is sufficient to use a file with the last version of the firmware of Season Wireless, usually with an "**.SWR**" extension. To load the file, click the button that represents the open yellow folder.
After loading the file, you can view the initial settings of Season Wireless by

clicking **WIRELESS Setting**, **Functions** and **Communication Setting**. The settings can be read, edited and saved in the same file, so that they are available in future, by simply clicking the icon that represents a floppy disk. Click **Device Version** to display the firmware version (for the Slave and Master) contained in the loaded file.
To apply the changes and/or upgrade the device firmware using the parameters in the loaded file, disconnect the Slave from the power supply, disconnect the USB and RS-232 cables from the Master, remove the antennas from the two components, connect the Slave and Master to one another using the 20-pin connectors and reconnect the USB cable to the Master.



To start the upgrade, click **Program Devices**, then select **Proceed** in the confirmation dialog.

A progress bar displays while the upgrade process in progress

And the yellow LED flashes on both components (first on the Slave, then on the Master).

The lower section of the software pane displays two buttons, **Hide** and **Exit**, which can be used to hide the software dialog and close the application. To resume the display of the dialog, it is sufficient to click the icon on the bar next to Windows clock.

The software also displays a status bar that provides a summary of the status of the device, indicates whether the Master is connected to the PC, if the wireless communication between the Master and Slave was successful, if buffer overflow problems have occurred and the operating mode of the Slave (Season or Logger).

F.A.Q.

Q: Is Season Wireless compatible with all the software applications used with the traditional version of Season Logger 2?
A: It is compatible with the vast majority of software applications that are currently used with Season Logger 2.

Q: What can I do if the smartcard emulation software I am using is not compatible?
A: Send a notice to support@duolabs.com detailing the software used and the type of problem that has occurred. Our technicians will examine your problem and make the necessary changes.

Q: Do I need to upgrade the firmware of the device?
A: You may have to upgrade the firmware of the device if you wish to use it with a larger number of software applications. Upgrades can be done easily and quickly with a single operation by simply following the instructions provided in this manual or in subsequent technical notes.

Q: Can you use several Masters or Slaves?
A: You can only use one Slave for each Master. Alternatively, you can use several pairs of Masters and Salves (kit) along with different wireless channels.

Q: Do I have to use the battery of the Slave? How long does it last?
A: The additional power supply (battery or power supply) is required. The autonomy of the battery varies according to the initial charge of the battery. New 9V alkaline batteries can be approximately used for 10 hours.

Q: What type of power supply must I use if I don't have a 9V alkaline battery?
A: It is advisable to use a stabilized 9V power supply with the following polarity: central positive and external negative poles. You may also use a *non* stabilized power supply, provided that you do not exceed a maximum voltage of 9V.

Q: What range can Season Wireless cover?
A: It is very difficult to determine the maximum distance that can be covered, because this is influenced by the objects located between the Slave and Master, and by the presence of other equipment that generate radio waves at a frequency of 2.4 GHz.

Q: Does Season Wireless interfere with other wireless equipment?
A: Season Wireless has a low emission power, equal to 0 db. Therefore, it can be used without the authorization of regulatory bodies. However, it is not

possible to exclude possible interferences with other equipment that uses the same frequencies.

Technical specifications

- Range: up to 200 meters (this range cannot be guaranteed as it varies according to the location; see F.A.Q.)
- Wireless communication speed: 64 Kbit/sec.
- Reception/Transmission buffer: 50 byte
- Number of channels: 78
- Slave power supply: 9V with external power supply (central positive and external negative poles) or alkaline battery
- Master power supply: through USB port
- Energy consumption of Slave: ~ 70mAh
- Life of Slave batteries: ~ 10 hours
- Reset signal from smartcard reader easily identifiable by PC
- User-specified ATR
- User-specified serial settings (baud rate and parity)
- Automatic correction of wireless transmission errors
- Automatic buffer overflow notification
- Upgradable firmware
- Season / Logger modes selectable via radio
- Setting commands transmittable via software or RS-232 serial connection

General information

Duolabs Srl declines all responsibility for damages originating from the failure or the improper use of Season Wireless. Duolabs Srl shall accept returned products only if these have been used in compliance with the instructions provided in this manual or on Web site www.duolabs.com.
Products that fail to run with third party software applications or that cannot be used due to the lack of radio coverage shall not be refunded.

Software should be downloaded only from Web site www.duolabs.com that is the official Web site of the manufacturer.

The manufacturer does not supply .bin or equivalent files.

For more detailed information or upgrades, visit our Forum at www.duolabs.com. The manufacturer reminds all users that the use of unlicensed software infringes copyright laws.

Duolabs Srl thanks all people/companies who/that have supported the research and development of this product, and all the beta testers and forums that have contributed to the circulation of information on this product.

The product contains a unique serial code. Duolabs reserves the right to block the code without notice in the event of improper use of the device or in the event of introduction of new law requirements.

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