ELAD FDM-S1

USER MANUAL

Ver. 1.01
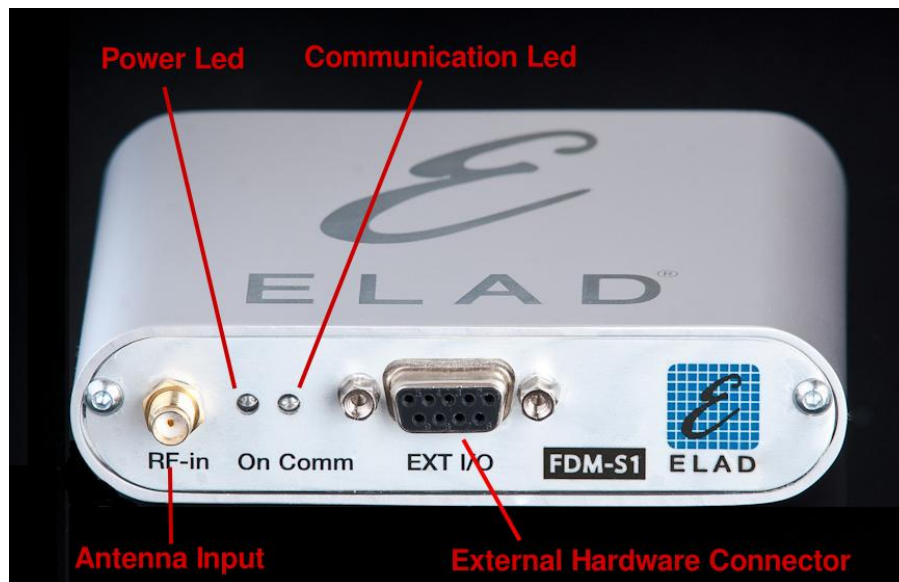
Index

1   FDM-S1 Overview

1.1   Description of the ELAD FDM-S1 receiver

The radio-receiver ELAD FDM-S1 is conceived as a SDR (Software Defined Radio). This approach means that the receiver is composed of an Hardware RF front-end and a PC with an ELAD software (ELAD FDM-SW1).

1.2   Front Panel Description

Power Led
Turns on when the receiver is connected to a USB port of the PC

Communication Led
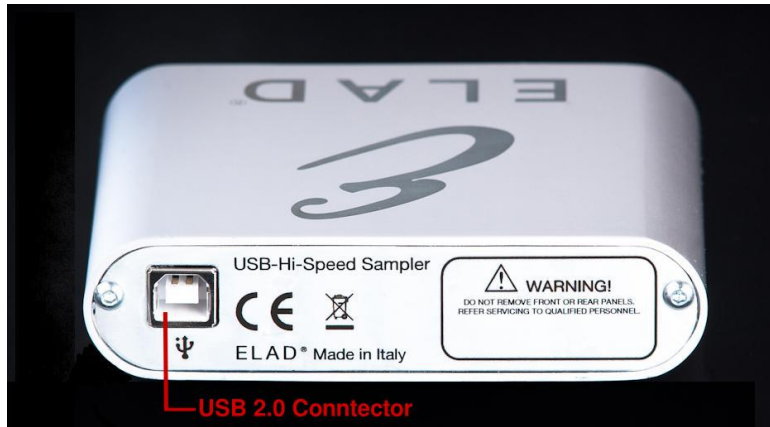Shows the communication between the receiver and the PC

Antenna Input
SMA 50Ω input connector.

External Hardware Connector
DB9 connector for external hardware (eg pre-selector filters board)

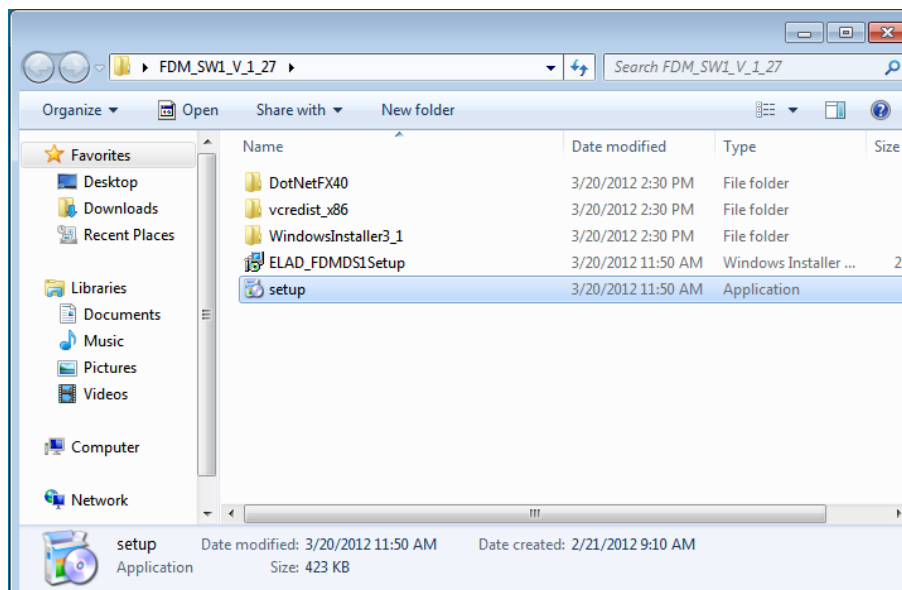## 1.3   Rear Panel Description

USB 2.0 Connector
Connection with the PC. Please use the supplied cable.

2   Software & Driver Installation

2.1   Software installation in Windows 7 and Windows XP
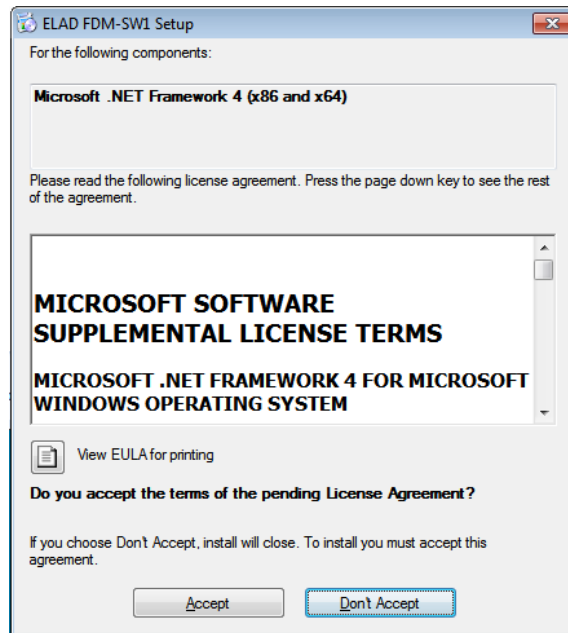
2.1.1   First-time install in Windows 7
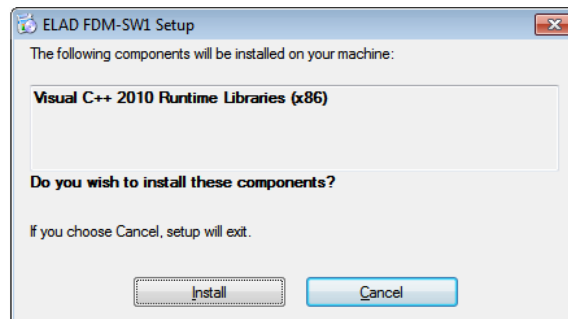
Double-click the file "setup.exe" in the CD .

 The windows installer first installs the prerequisites:
- Microsoft VC++ 2010 Runtime libraries
- Microsoft .NET Framework 4.0

and then the FDM-SW1 software.
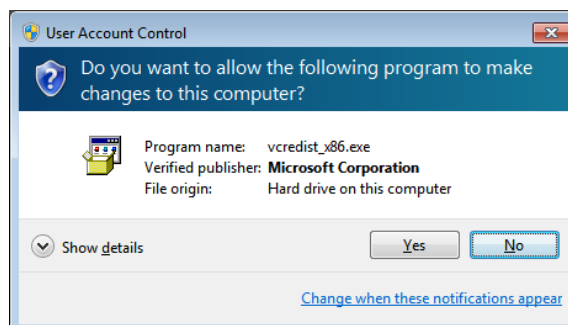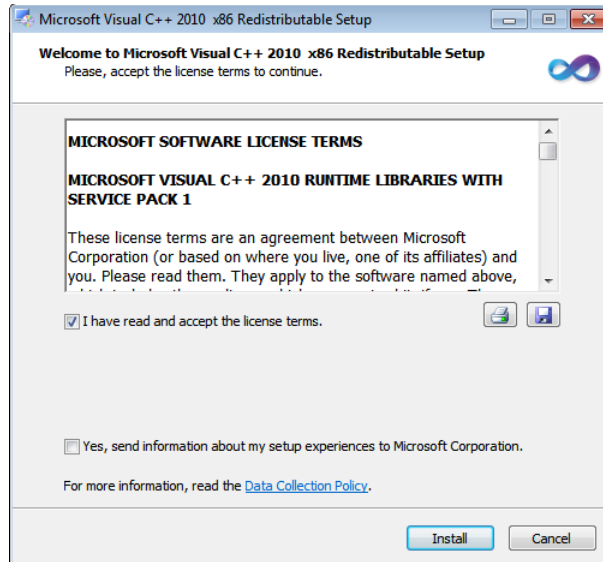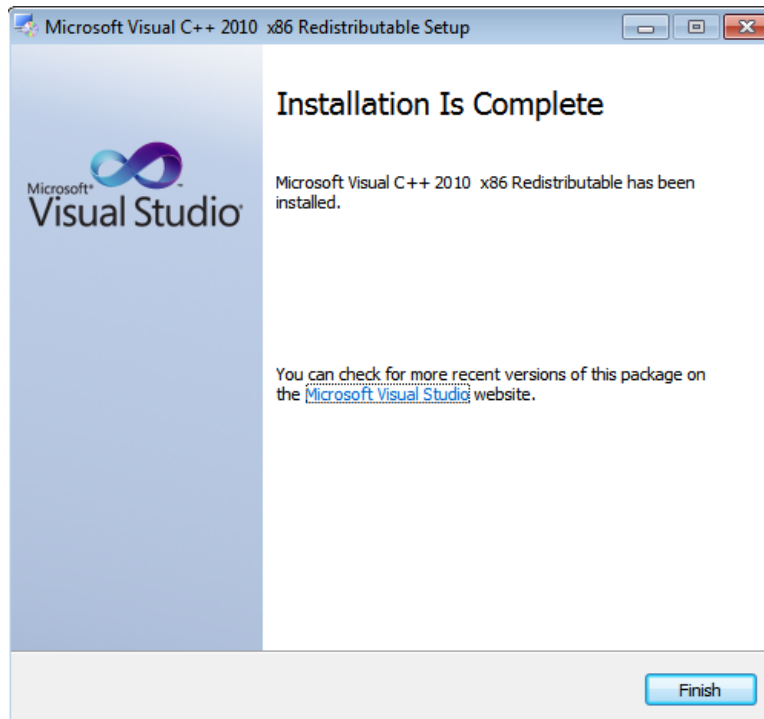
Click on "Accept"

Click on "Install"

Click on "Yes"
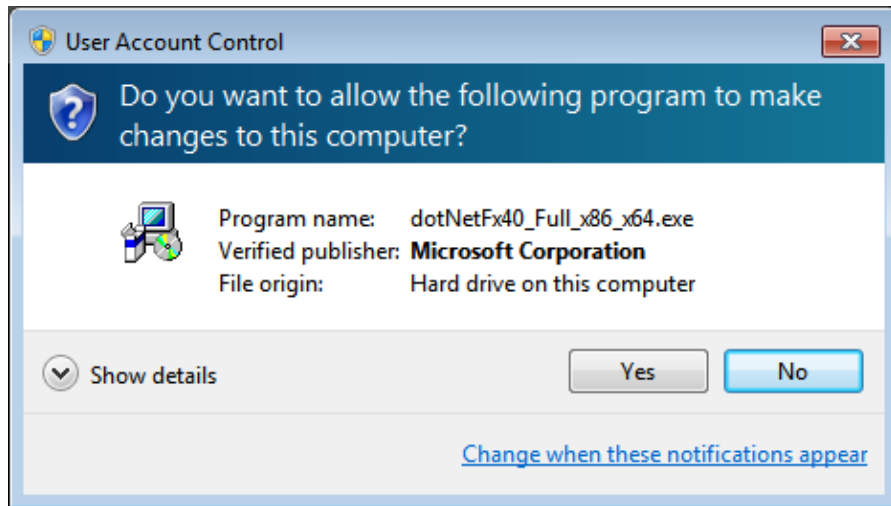
Click on Install

Microsoft Visual C++ 2010 x86 Redistributable installation is complete, click on "Finish"

Click on "Yes" to start the installation of the .Net Framework 4.0

Click to "Next" to start the FDM-SW1 software installation
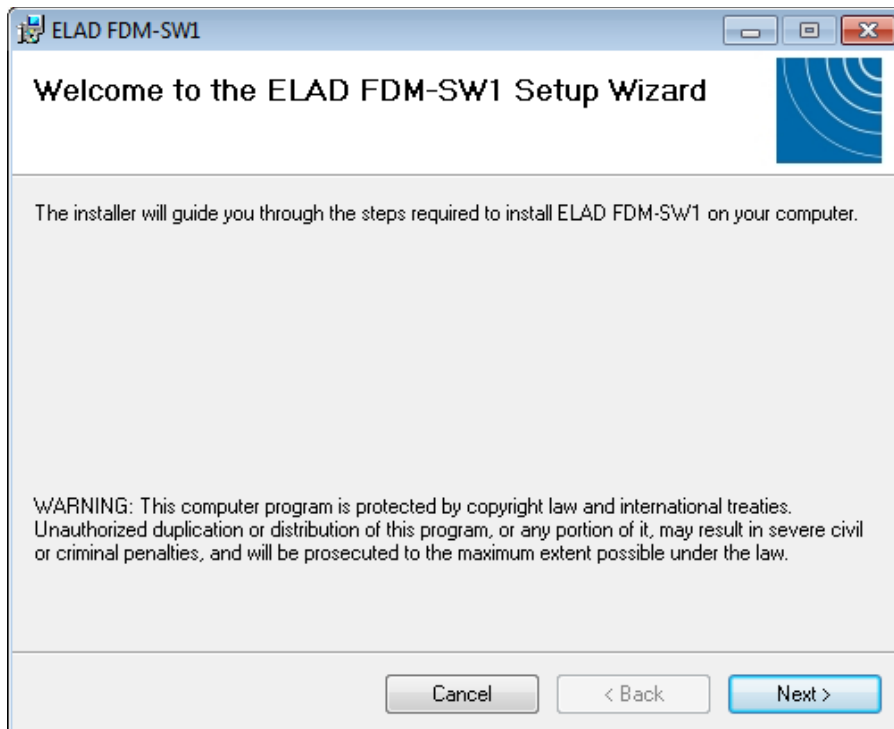
Chose the installation folder, then click on "Next"
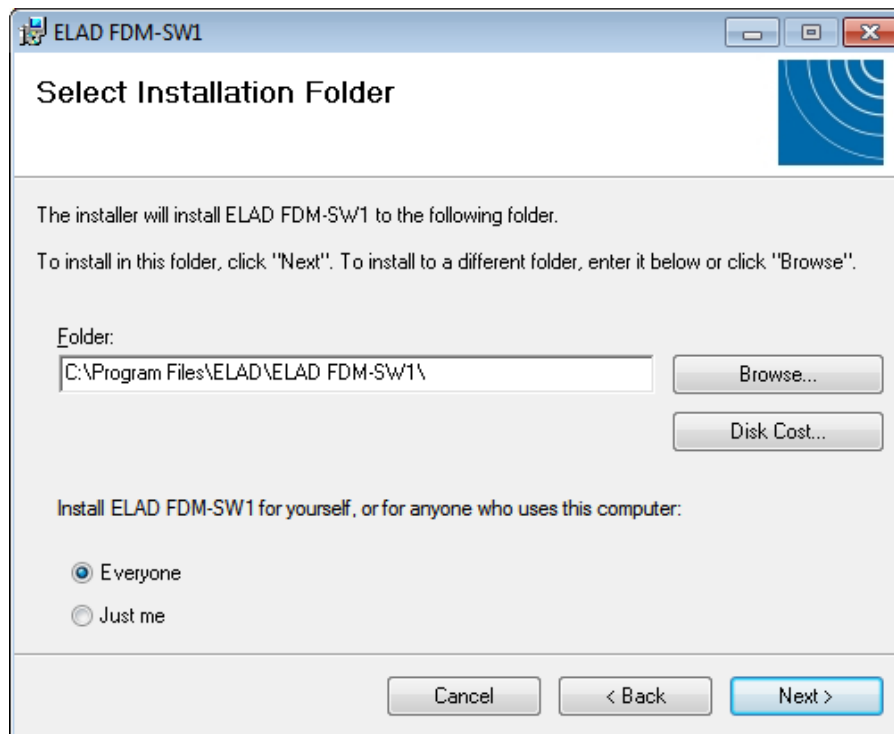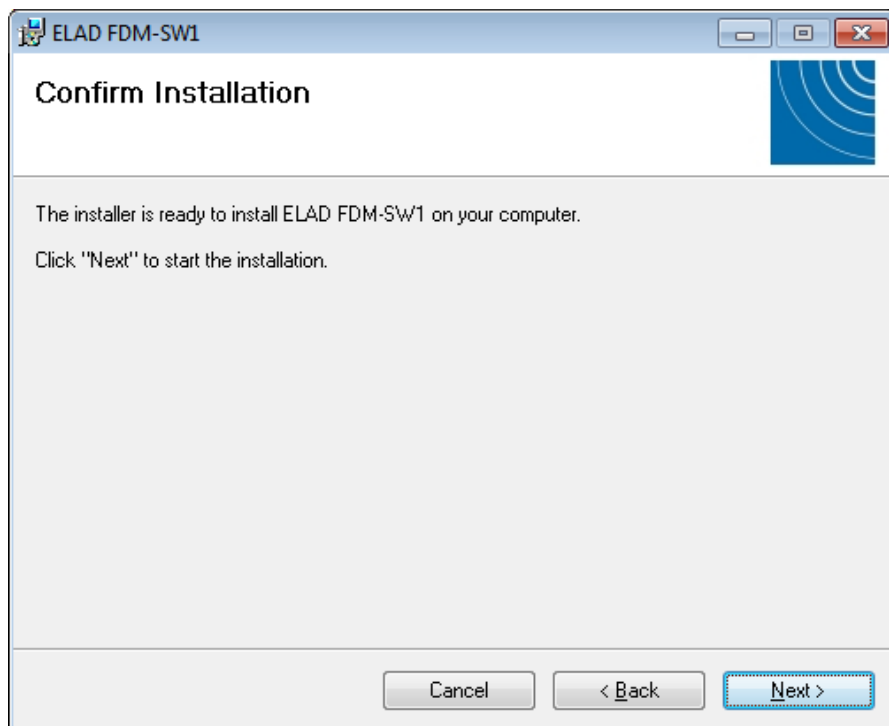
Click on "Next"

Click on "Yes"

The FDM-SW1 software installation is completed, click on "Close"
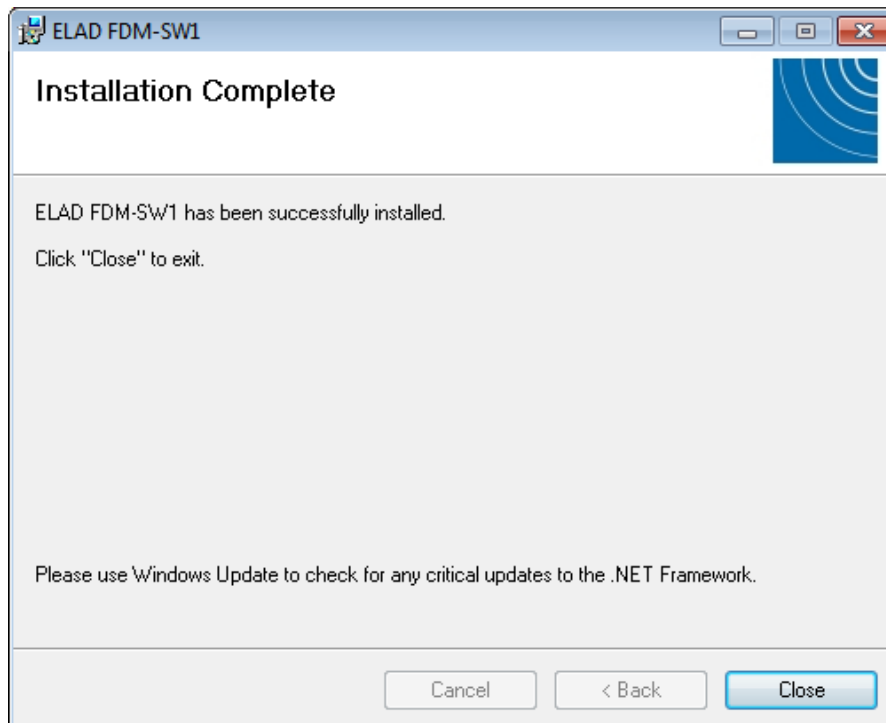
2.1.2   First-time install in Windows XP

Double-click the file "setup.exe" in the installation folder.

Click on "Accept"
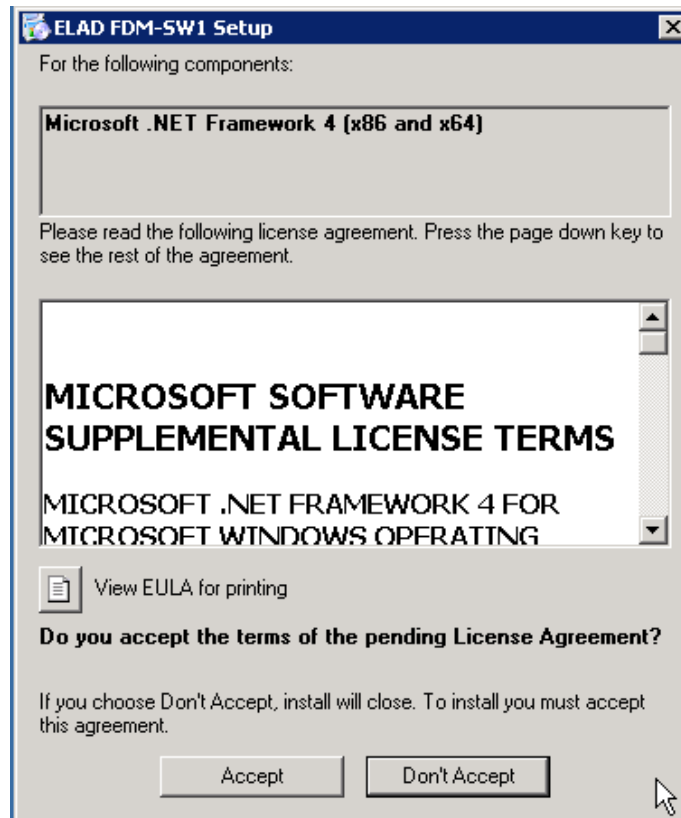
Click on "Install"
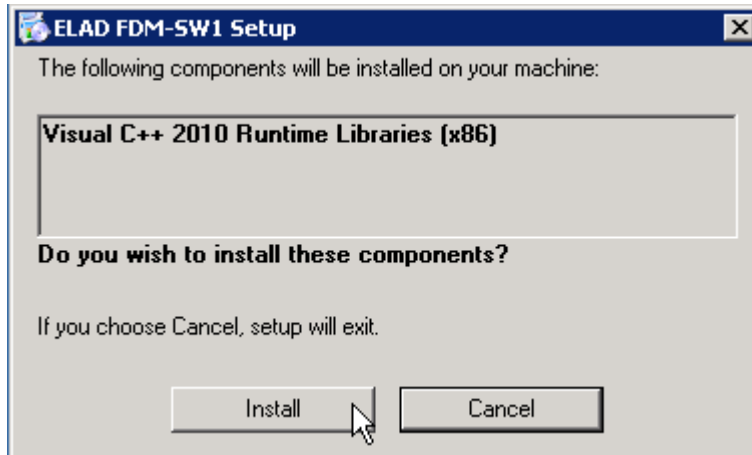
Click on "Install"
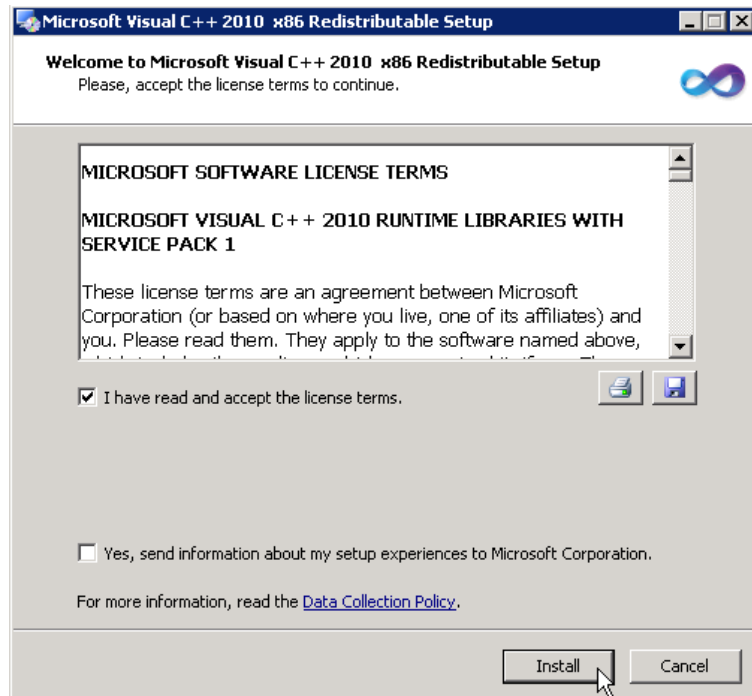
Click on Next to install the FDM-SW1 software
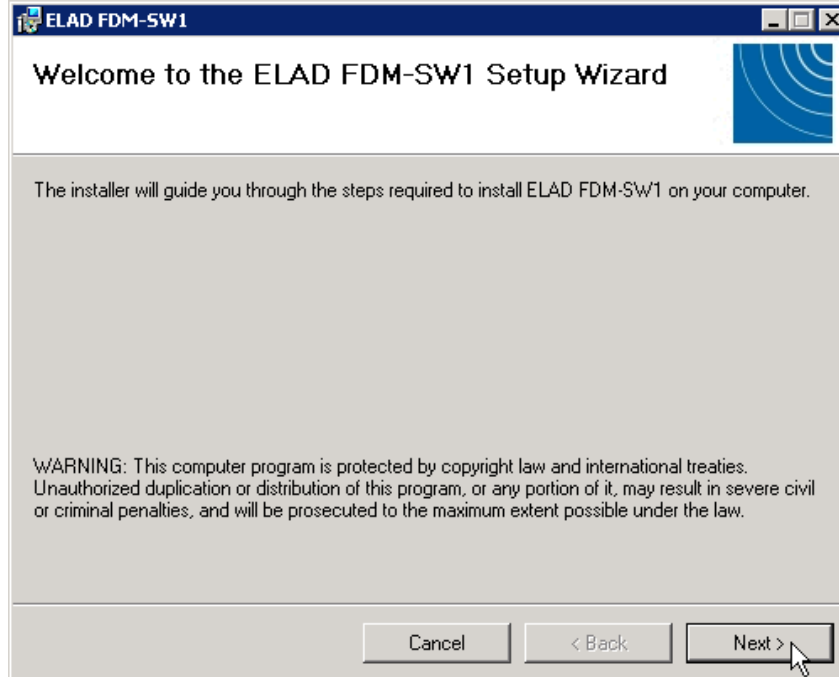
Select the installation folder, then click on "Next"
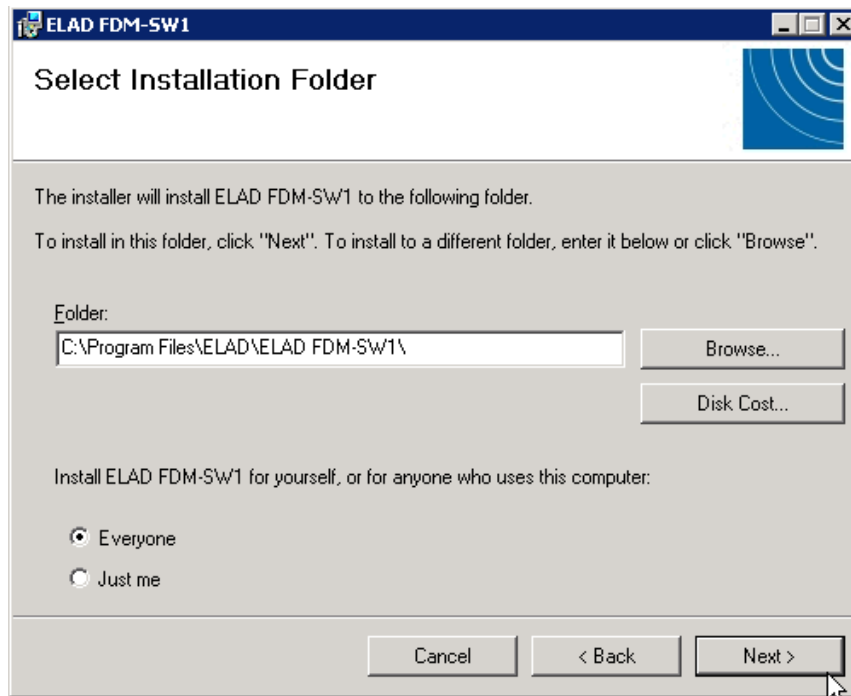
Click on "Next"
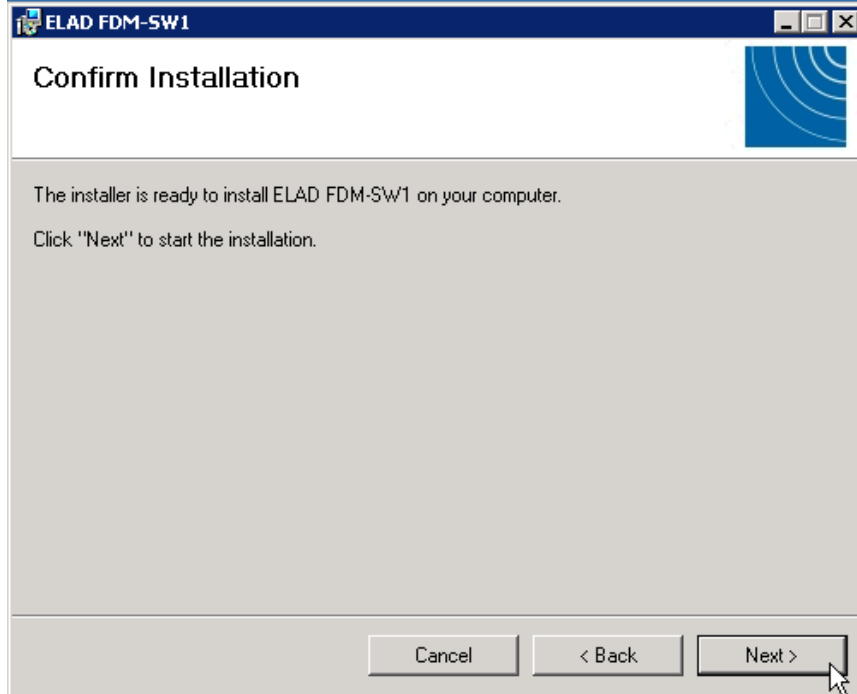
The FDM-SW1 Software installation is completed
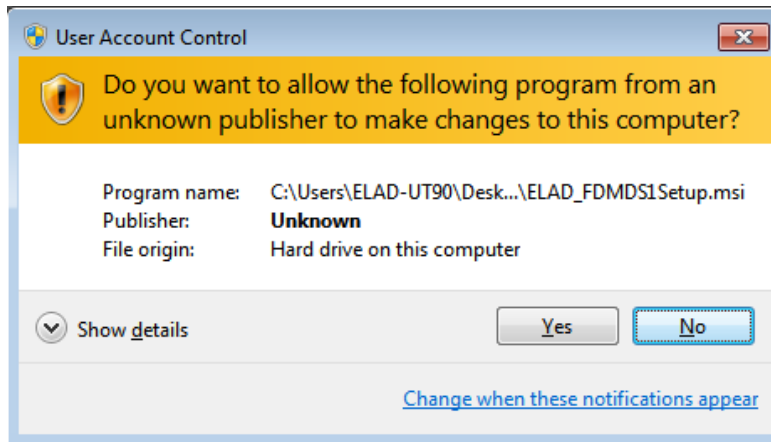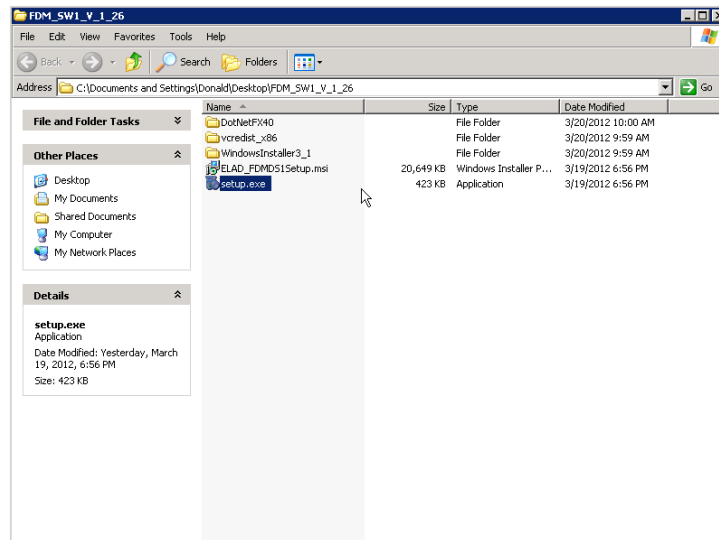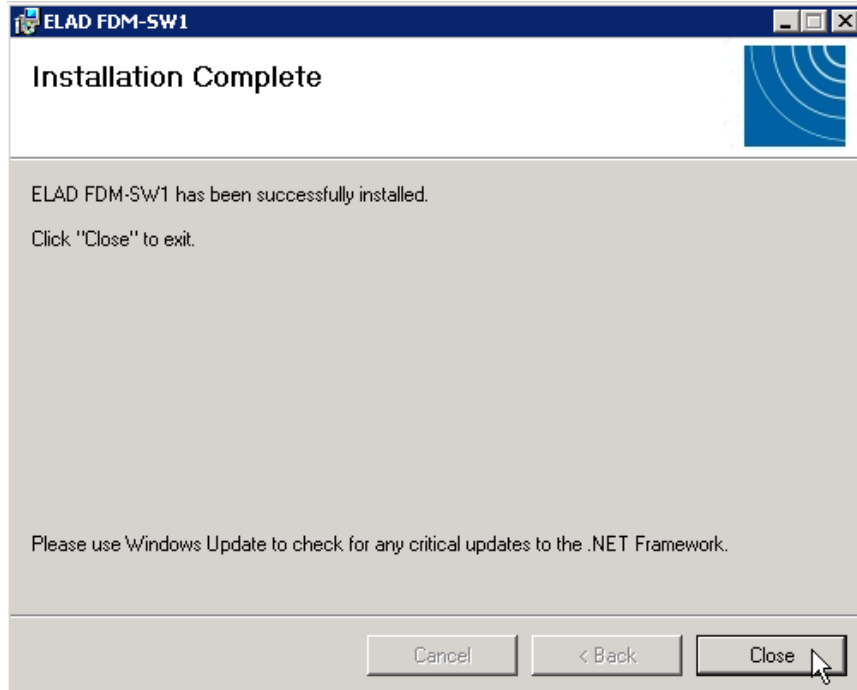
2.1.3   Update an existing software version

If you need to update an existing software version, first uninstall the version already installed, then install the update.

Windows 7

- Go to: Control Panel->Programs->Programs and Features. Select the ELAD FDM-SW1 and click on "Uninstall".
- Double click on file ELAD_FDM_SW1_V_x.xx.msi in the CD.

Windows XP

- Go to: Control Panel->Add or Remove Programs. Select the ELAD FDM-SW1 and click on "Remove".
- Double click on file ELAD_FDM_SW1_V_x.xx.msi in the CD.

2.2 FDM-S1 USB driver

2.2.1 FDM-S1 USB driver installation in Windows 7

Connect the FDM-S1 to a free USB 2.0 port of the pc.
Open the Control panel then, click on "Device Manger".
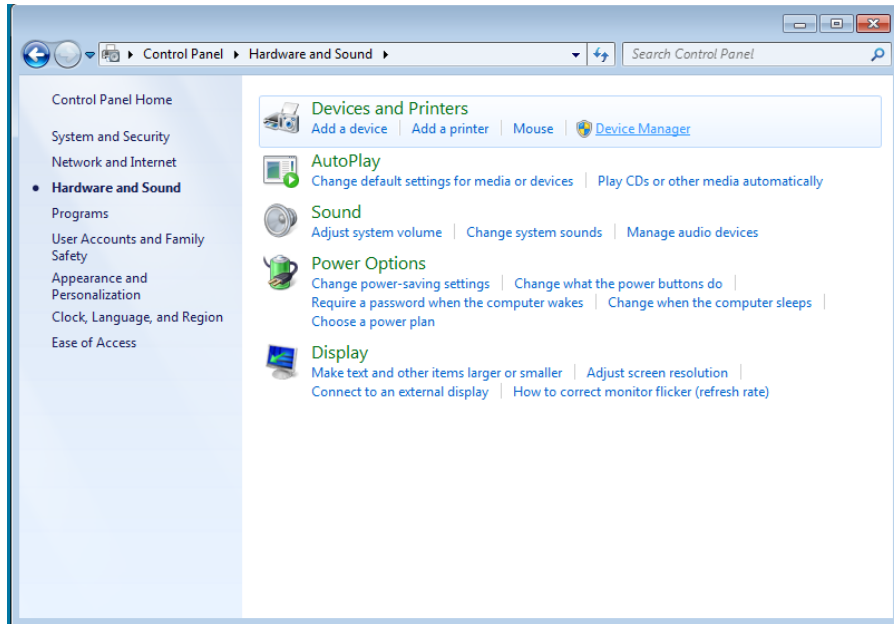
Expand the "Other devices" node and select "ELAD FDM S1" device, right click and select "Update Driver Software…"
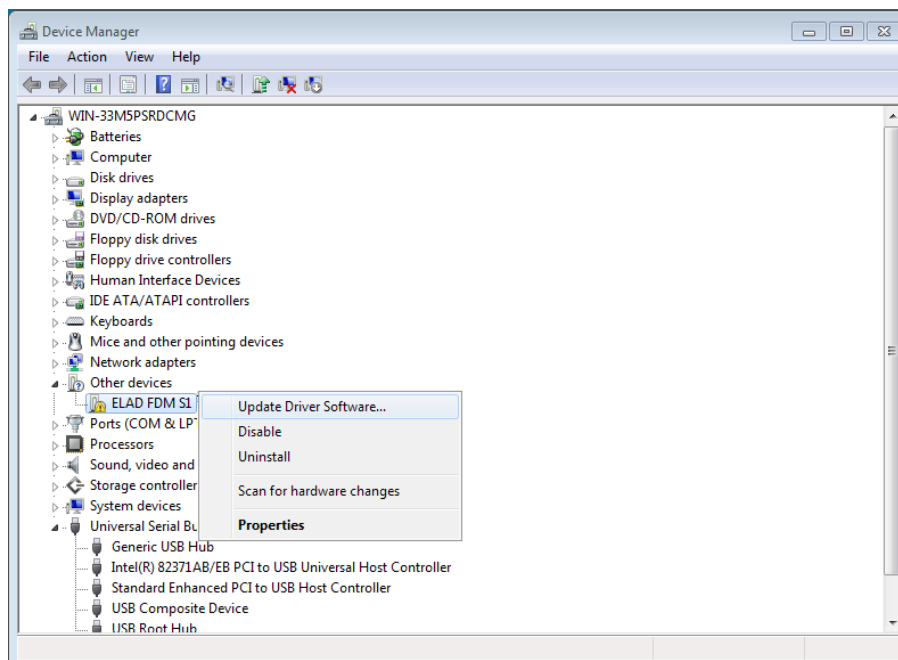
Select the second option
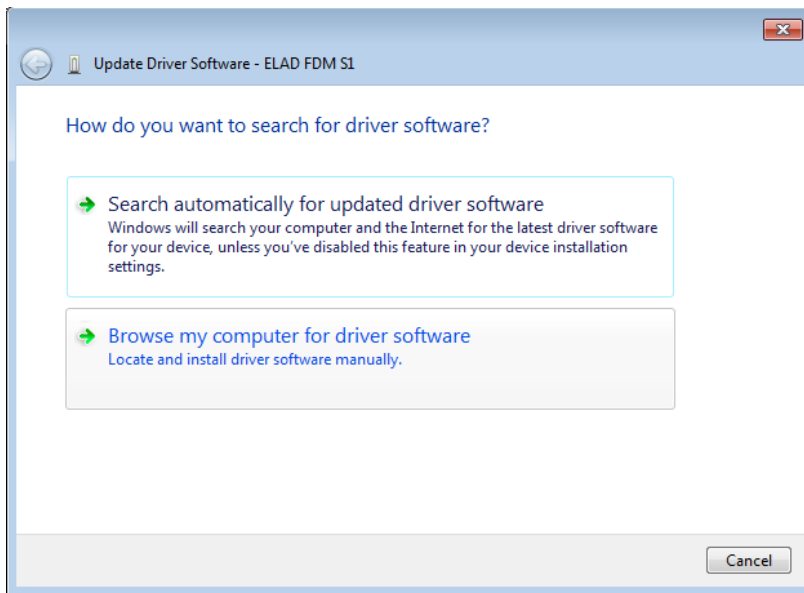
For 32 bit system select the folder:
C:\Program Files\ELAD\ELAD FDM-SW1\ELAD_FDM-S1_Driver
For 64 bit system select the folder:
C:\Program Files (x86)\ELAD\ELAD FDM-SW1\ELAD_FDM-S1_Driver
Click on "Next"

Ignore the warning and select the second option to install the driver.
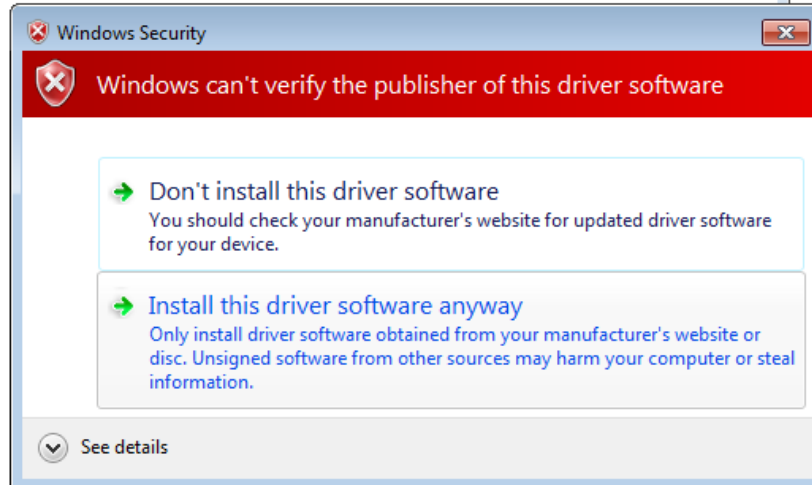
The USB Driver installation is completed, click on "Close"
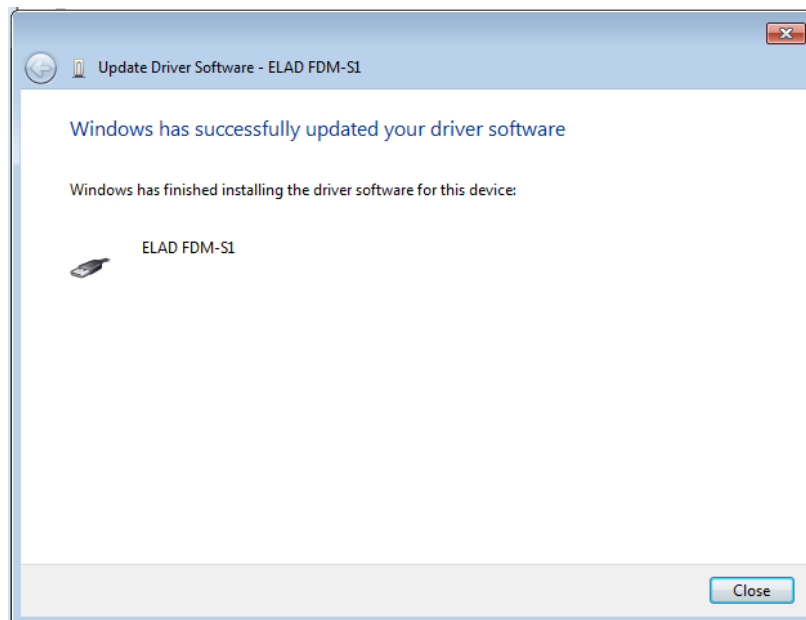
2.2.2   FDM-S1 USB driver installation in Windows XP

Connect the FDM-S1 to a free USB 2.0 port of the pc , the Hardware Update wizard starts automatically

Select the third option "No, no this time", the click on "Next"

Select the option "Install from a list or specific location (Advanced)" and click on "Next"

Select "Search for the best driver in these location" and "Include this location in the search", click on "Browse" and select the folder:
Local Drive (C:) \Programs\ELAD\ELAD FDM-SW1\ELAD_FDM-S1_Driver
Then click on "Next".
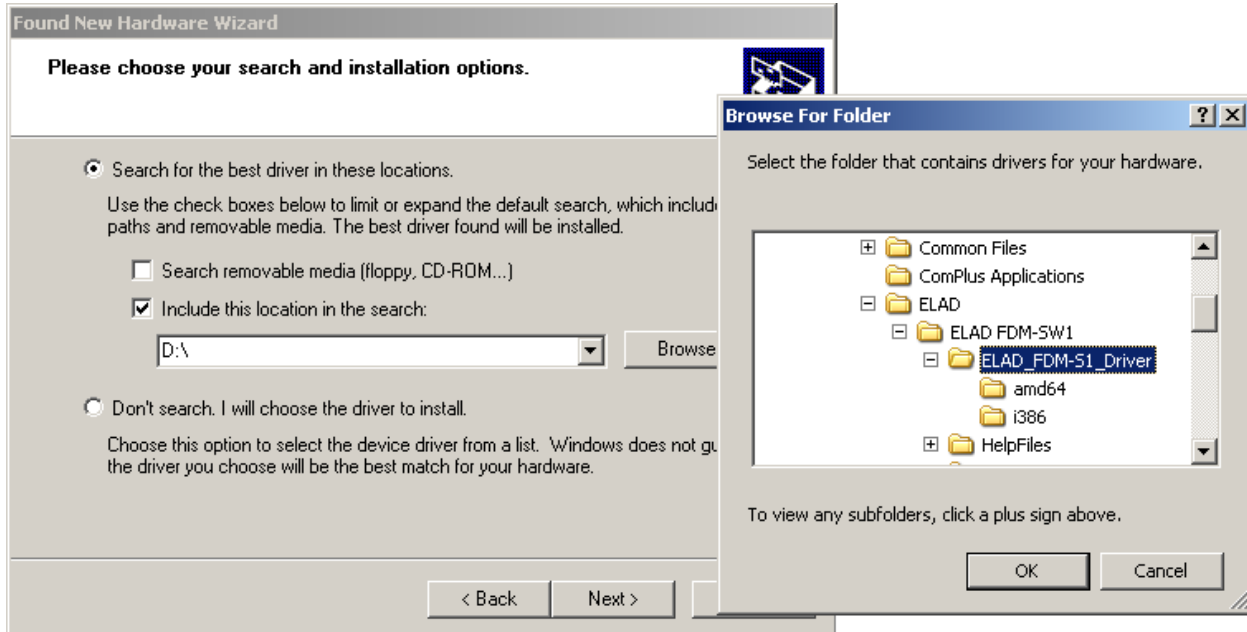
Ignore the warning and click on "Continue Anyway"
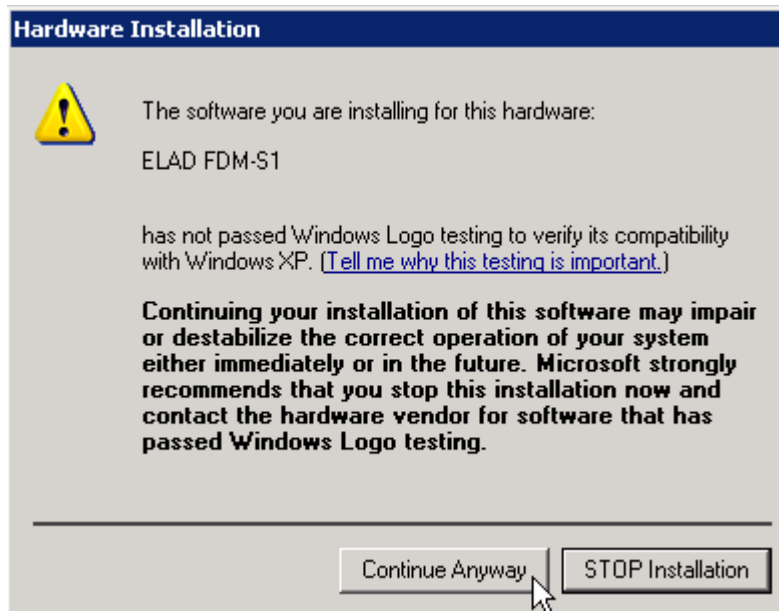
TheFDM-S1 USB driver is completed, click on "Finish"

2.3   WoodBoxRadio Tmate USB driver installation

2.3.1   WoodBoxRadio Tmate USB driver installation in Windows 7

Connect the WoodboxRadio Tmate to a free USB 2.0 port of the pc.
Open the Control panel then, click on "Device Manger"
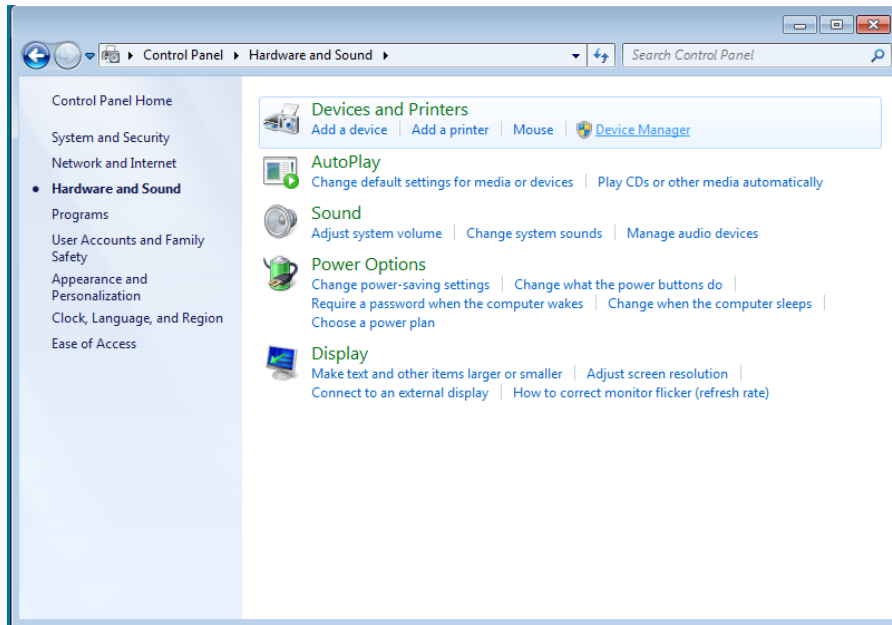
Expand the "Other devices" node and select "DSW:100XX USB" device, right click and select "Update Driver Software…"
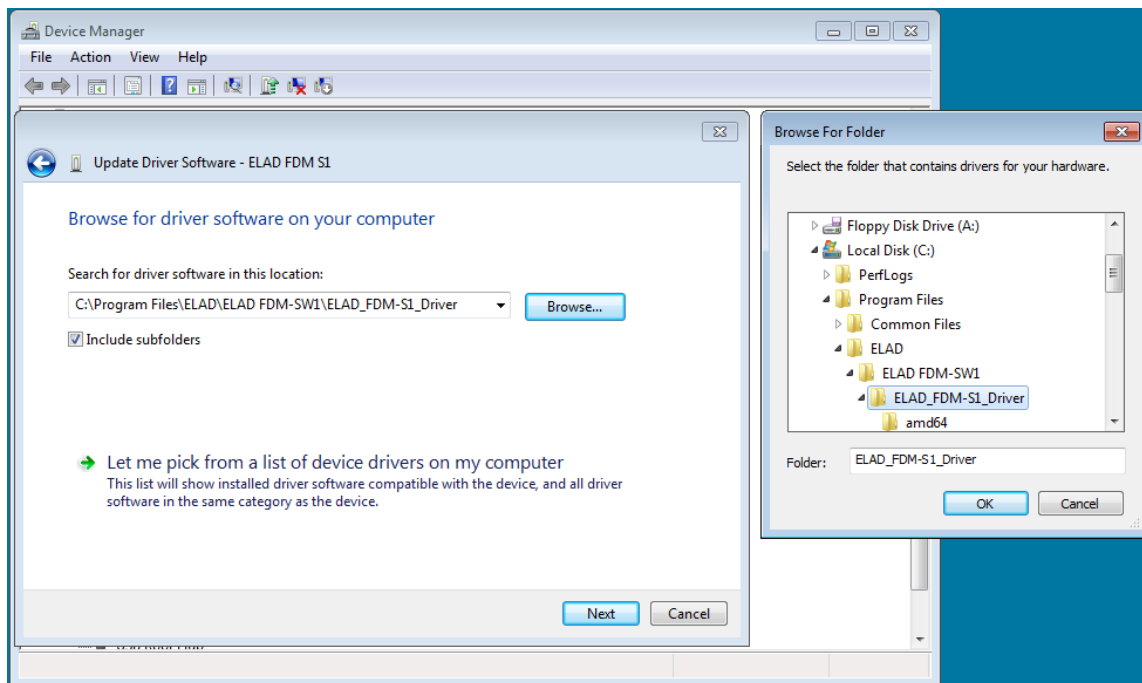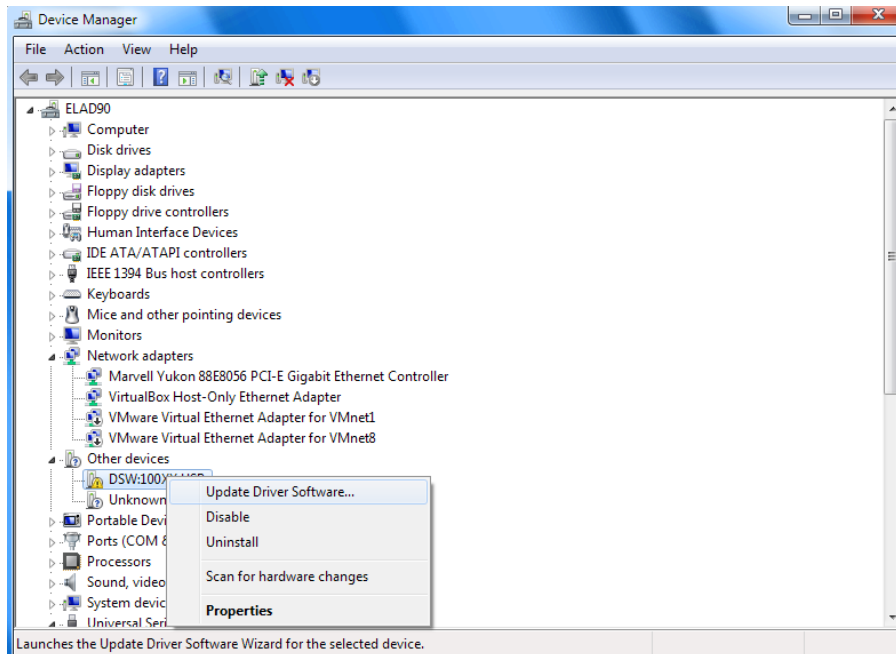
Select the second option
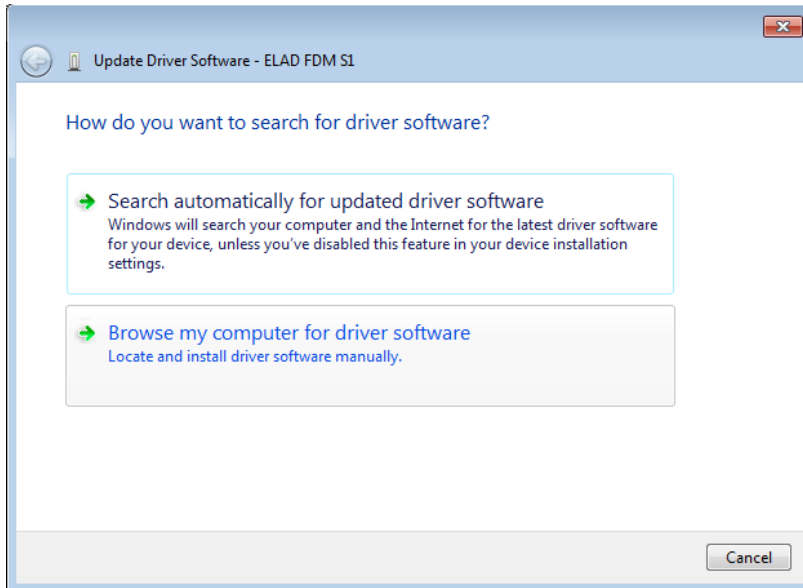
For 32 bit system select the folder:
**C:\Program Files\ELAD\ELAD FDM-SW1\TMateDriver**
For 64 bit system select the folder:
**C:\Program Files (x86)\ELAD\ELAD FDM-SW1\ TMateDriver**
Click on "Next"
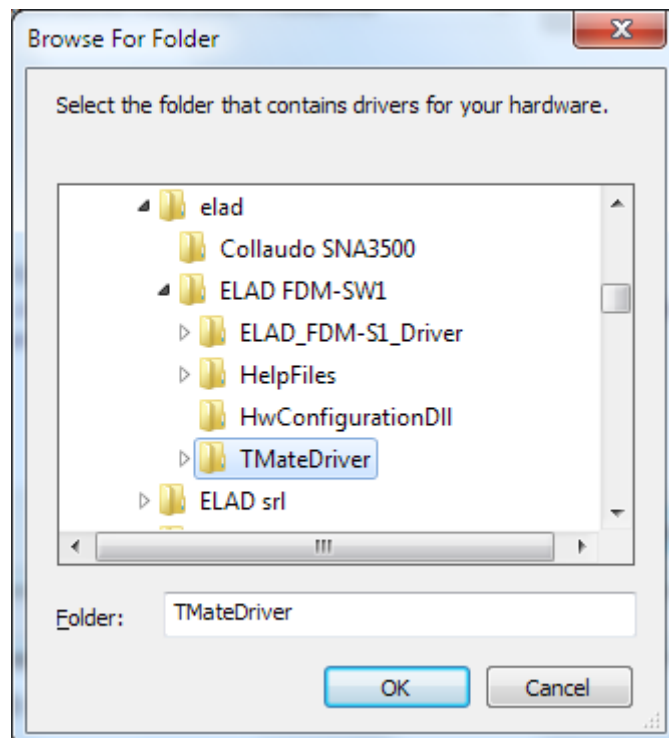
Ignore the warning and select the second option to install the driver.
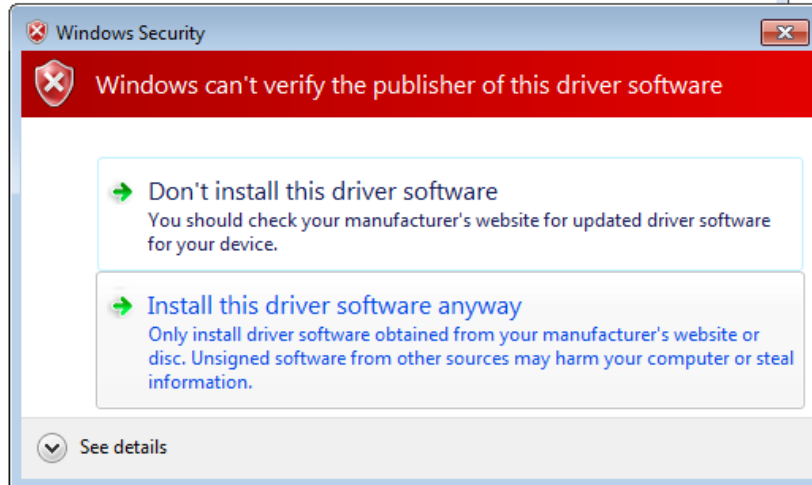
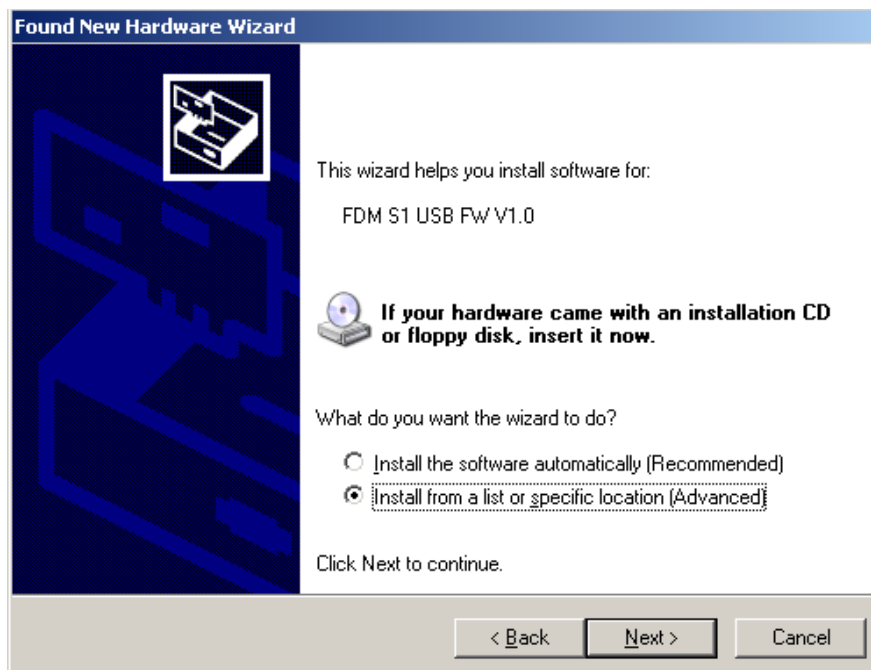The USB Driver installation is completed, click on "Close"
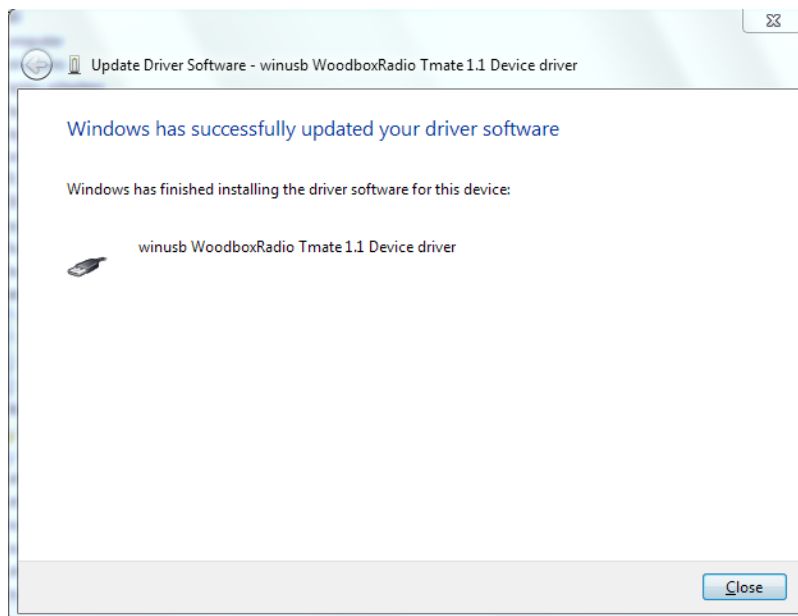
2.3.2   WoodBoxRadio Tmate USB driver installation in Windows XP

Connect the WoodBoxRadio Tmate to a free USB 2.0 port of the pc , the Hardware Update wizard starts automatically.

Select the third option "No, no this time", the click on "Next"

Select the option "Install from a list or specific location (Advanced)" and click on "Next"
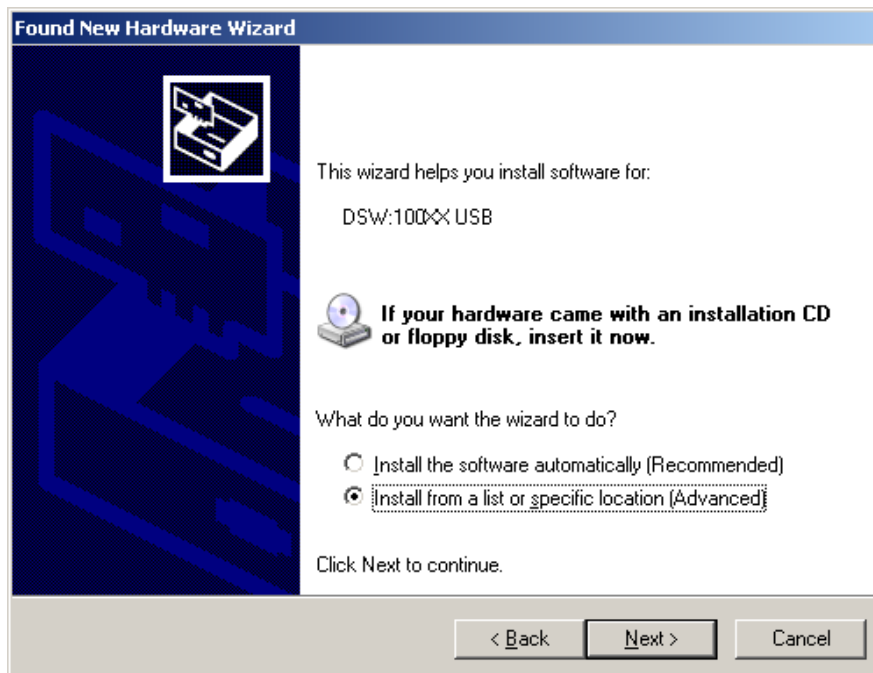
Select "Search for the best driver in these location" and "Include this location in the search", click on "Browse" and select the folder:
Local Drive (C:) \Programs\ELAD\ELAD FDM-SW1\TMateDriver
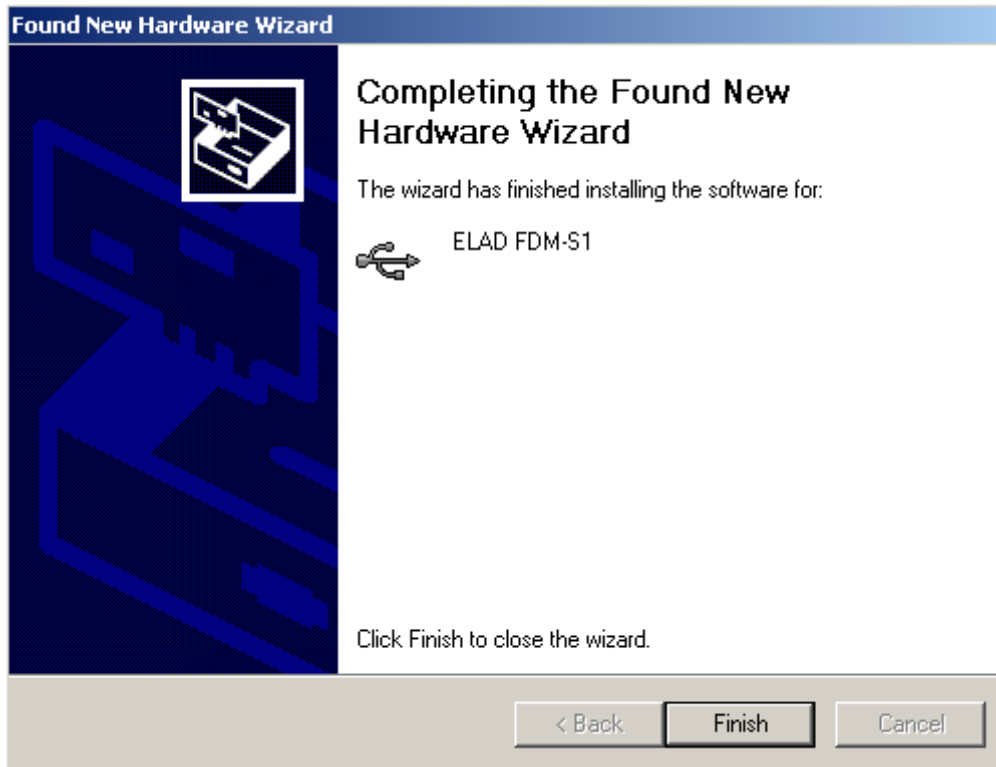Then click on "Next".
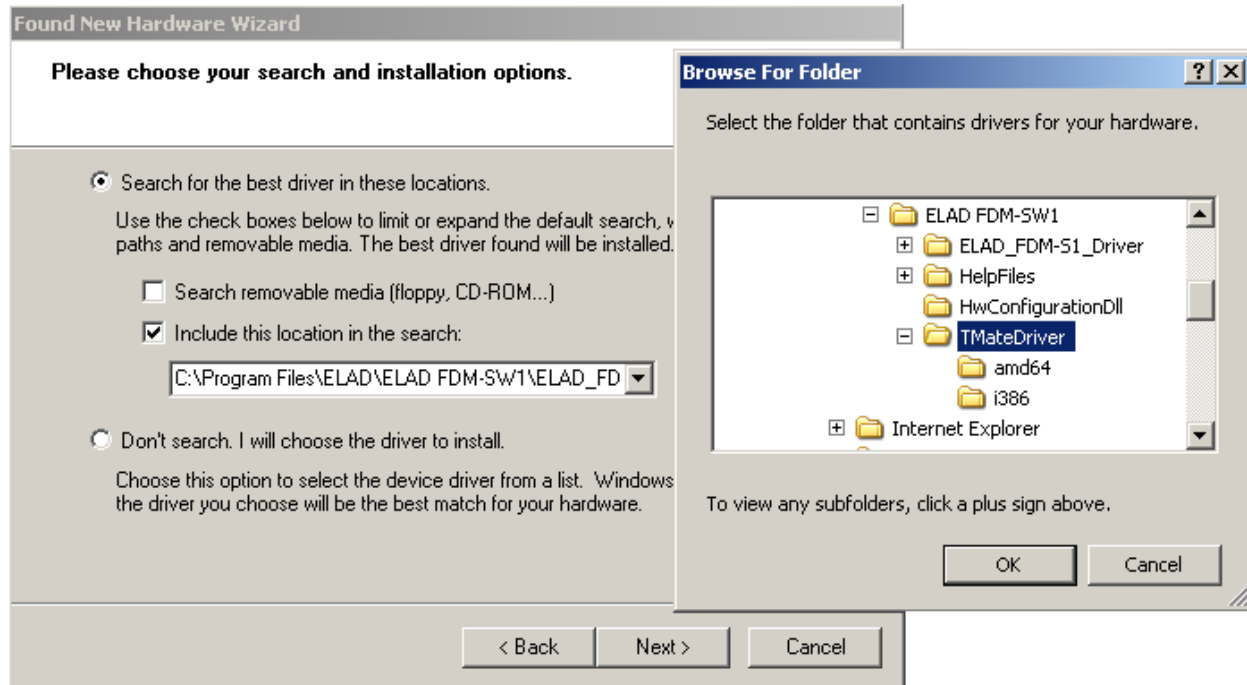

Ignore the warning and click on "Continue Anyway"

The Tmate driver installation is completed, click on "Finish"

ELAD FDM-S1
TECNICAL SPECIFICATIONS

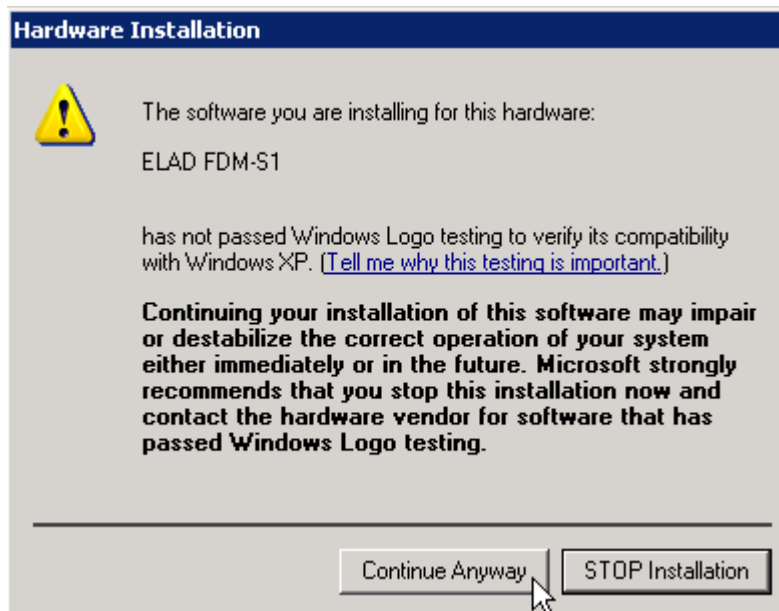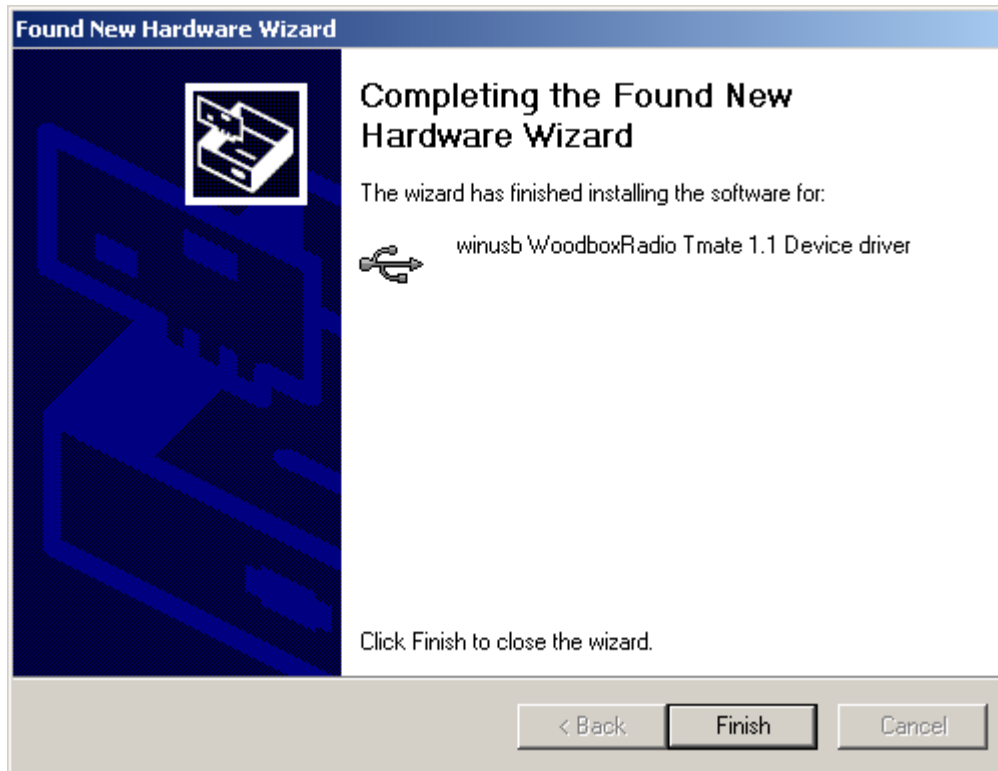|		
GENERAL	**Frequency coverage:**	20 kHz ÷ 30 MHz (up to 170 MHz in down-sampling)
	Mode:	CW, CW SH+, CW SH-, USB, LSB, DSB, AM, SYNC AM, FM, WB FM, DRM (Software Defined)
	Memory:	XML Files (Software Defined)
	Antenna connectors:	SMA (50 Ω)
	Temperature range:	0 ÷ 40 °C
	Frequency stability:	TBD
	Frequency resolution:	1 Hz
	PC Interface	High-Speed USB 2.0 (480 Mbit/s)
	Power supply:	USB powered
	Power consumption:	Less than 2.2 W
	External I/O connector:	Female DB9
	Dimensions:	108 (W) x 27 (H) x 88 (D) mm
	Weight:	180 g
RECEIVER	**Configuration:**	Direct sampling
	Digital USB Streaming Sampling Rate:	192 kHz, I/Q channels, 32 bit/sample (Software Defined)
	Digital USB Streaming Bandwidth:	150 kHz (Software Defined)
	Sensitivity:	Typical 0.39 µV (CW, Bandwidth 500 Hz, 10 dB (S+N)/N)
	Selectivity:	> 100 dB (Software Defined)
	3rd Oder Intercept Point:	> +25 dBm @ 14 MHz, Spacing 2 kHz, Input level -97 dBm
	IMD Dynamic Range:	> 105 dB @ 14 MHz, Spacing 2 kHz, Input level -97 dBm
	Blocking gain compression:	> 100 dB @ 14 MHz, Spacing 2 kHz, CW, Bandwidth 500 Hz
	Noise floor (MDS):	< -121 dBm @ 14 MHz, CW, Bandwidth 500 Hz
	Attenuator:	0, 20 dB
	RF Preselection filter:	OFF (wide band), low pass (0 ÷ 30 MHz)

All stated specifications are derived using ELAD FDM-SW1 software (version 1.10) running on 2.2 GHz Intel Core i7 PC with Windows 7 operating system.

All stated specifications and other product information provided in this document are subject to change without notice or obligation.

Declaration of Conformity

The product marked as

FDM-S1

manufactured by

           Manufacturer: ELAD S.r.l.

           Address: Via Col De Rust, 11 - Sarone
                                       33070 CANEVA (PN)

is produced in conformity to the requirements contained in the following EC directives:

- ➢ R&TTE Directive 1999/5/CE
- ➢ EMC Directive 2004/108/CE
- ➢ Low Voltage Directive 2006/95/CE

The product conforms to the following Product Specifications:

Emissions & Immunity:
  ETSI EN 300 330-1
  ETSI EN 301 489-1
  ETSI EN 301 498-15
  ETSI EN 301 783-2
  EN 55022: 2006 + A1: 2007
  EN 55024: 1998 + A1: 2001 + A2: 2003

Safety:
  EN 60950-1: 2006 + A11: 2009

And further amendments.

This declaration is under responsibility of the manufacturer:

ELAD S.r.l.
Via Col De Rust, 11 - Sarone
33070 CANEVA (PN)

Issued by:

Name: Franco Milan
Function: President of ELAD

          Caneva   March, 20th 2012
          Place   Date   Signature