afimilk®

AfiAct II

Installation Manual

AfiAct II™ Installation

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Federal Communications Commission, USA

Conformité Européenne (European Conformity)

Standards Institute of Israel

Preface Material

About this Manual

This manual describes the installation of AfiAct II, either as a standalone system or as part of the larger afimilk system.

Intended Users

This manual is intended for afimilk authorized technicians, experienced in installing electrical systems in non-protected environments, for dealers-technicians and farm technicians.

Document Scope

This manual describes the installation process of AfiAct II system. For a description of the features and usage of the AfiAct II system, refer to AfiAct II UM.

Contacting Technical Support HelpDesk

afimilk technical support contact information:

email: support@afimilk.co.il

Tel: +972-4-675-4824.

Notes

This device complies with FCC Rules Part 15 and with Industry Canada license-exempt RSS standard(s). Operation is subject to two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference that may be received or that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

NOTE: The digital circuit of this device 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 to this equipment not expressly approved by the party responsible for compliance (Afimilk Ltd.) could void the user's authority to operate the equipment.

WARNING

To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide 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.

Legal Notice

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The license to use the software is granted to the user only for the specific system it is installed on by afimilk Ltd., or its authorized distributors and representatives.

The purchaser shall not modify the software in any way.

It is strictly forbidden to use this product for any purpose other than originally designated for or stipulated by afimilk Ltd.

Conventions

Important information is highlighted in a frame, as explained below:

WARNING

Actions requiring special attention to avoid serious bodily injury. For example, working with high voltage components.

CAUTION

Actions requiring special attention, to avoid possible damage to equipment or livestock.

NOTE

Hints and recommendations for working efficiently.

Safety Instructions and Notice

WARNING

Do not dispose of WEEE as unsorted municipal waste!

- Read this manual carefully. Proper handling of the equipment is the basis for correct functioning.
- Only technicians who are skilled and authorized by afimilk, dealer technicians together with the farm staff may carry out installation of the equipment.
- The customer is fully responsible for any changes made, either in the system configuration or in the software application data, by the customer or by the customer's agent.
- Afimilk will not be held responsible directly or indirectly for any damage caused to the customer and/or to a third party and/or to the animals, by an action and/or change and/or omission performed in the AfiAct II™ system, either by the customer or by the customer's agent, directly and/or indirectly.

- Afimilk recommends that the customer call for a full system inspection by a qualified technician authorized by afimilk every six months.
- It is the responsibility of the operator to install, operate, and maintain the system in accordance with all applicable laws, codes and regulations.
- The equipment must be used only for the described purpose.
- This system has been checked for viruses prior to supply. If in the course of a service call, a virus is detected, removal of the virus, and any software or hardware repairs resulting from it, will be charged to the purchaser.
- The system and its components are powered by electricity from a main power supply. To avoid personal injury, danger of fire, and possible damage to equipment and materials, all work on electrical and electronic circuits should be done following these basic safety procedures:
- Remove power from the circuit or equipment prior to working on it. Never assume the circuit is off; check it with a multimeter.
- In case of electrical fire, switch off the circuit and report it immediately to appropriate authority.
- Stay away from live circuits. Do not work on or make adjustments when the power switch is on.
- Never switch on equipment in the presence of water leakage.
- Work in clean, dry areas. Avoid working in damp or wet locations because this increases the chance of electrical shock.
- Wear only nonconductive shoes to lessen the possibility of electrical shock.
- Remove all rings, wristwatches, bracelets, and similar metal items. Avoid working in clothing that contains exposed metal zippers, buttons, or other types of metal fasteners. The metal can act as a conductor, heat up, and cause a bad burn.
- High voltage surges and other power irregularities can cause extensive damage to a system. It is the responsibility of the operator to provide a power protection system.

List of Terms and Abbreviations

Term/Abbreviation	Description
RPU	Tag Reading/Programming Unit
AfiAct II	AfiFarm module for generating cow database and providing general fertility reports.
DIM	Days in Milk
ID	Identification
PC	Personal Computer
PD	Pregnancy Diagnosis
RF	Radio Frequency
LR	Long Range radio i.e. 916/868 MHz, communication between Reader and tags
SR	Short Range radio i.e. 200/80 KHz
RT	Real Time system
RTMS	Real Time Setup module
RTG	Real Time GUI module
RTC	Real Time Station Controller module
RPM	Revolutions per Minute
Opcode	Operation Code
AP	WiFi Access Point (antenna)
WLAN	Wireless Local Area Network - links two or more devices using wireless distribution, providing a connection through an access point to the Internet.
Tx	Transmit

Referred Documents

PN	Document Name
9140233	Tag Reader & Tag RPU user guide
	SR Opcodes (for RPU programming)
4096016	AfiFarm4 installation manual
	AfiFarm user manual
9440312	AfiAct II user manual

Revision History

Version	Date	Description
01	Aug 2013	Revision one.

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1 Introduction

AfiAct II is a **fertility monitoring** system that may be utilized for heifers and/or for milking cows, to provide complete fertility coverage of the dairy farm. It may be implemented either as a **standalone system** or as part of a comprehensive **afimilk system**.

AfiAct II is an automated estrus detection system based on AfiTag II sensors, designed to help the dairy farmer determine the optimal times for breeding cows. This is done by collecting cows' physical activity data and aggregating them with events information to generate heat lists, fertility reports and fertility disorder alerts (anestrous & abortion).

1.1 Principle of Operation

The following diagram shows the data flow in the AfiAct II system.

Figure 1: AfiAct II system data flow

AfiAct II uses Long Range (LR) communication to collect data from cow tags (AfiTag II sensors) and transfers the information via a standard network (IP based Wi-Fi or wired communication) to a PC based analysis.

Tags are placed on the cows' legs. The AfiTag II holds the unique ID of each cow, and records its number of steps, standing time, rest time and bout. The tags use LR (Long Range) RF (Radio Frequency) communication to send this data periodically (every pre-defined time-interval, default is 15 minutes) to an antenna located in the lower part of the AfiAct II reader device (two antennas that provide optimal coverage).

AfiAct II Reader collects data from the cows' tags which are within its receiving range. The Reader uses either wired or Wi-Fi communication to send the data to the PC for analysis (2 upper antennas are for Wi-Fi, when used).

The AfiAct II software, located on the PC, uses the collected activity data of each cow to calculate when the cow is in estrus and find the best time for breeding. The application generates reports and alerts the farmer.

The communication used by the entire system complies with local regulations and safety tests, corresponding with the 'home appliance' category.

1.2 AfiAct II Components

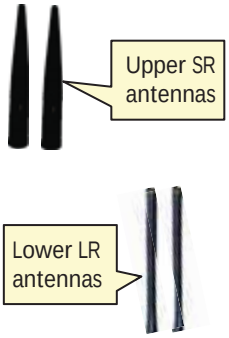
The following table provides a list of the basic AfiAct II system elements. For specific part numbers, refer to the detailed tables of each element.

Table 1-1. System Components

Picture	Name	Description	PNs – see:
	AfiAct II Reader (including antennas and brackets) 4256000 4256001	The Reader is the interface between the tags and the AfiAct II Software. Lower antennas are for the Reader-tag communication, Upper antennas are for the Reader-PC Wi-Fi communication.	1.2.1
	Electrical connection box (4085851)	Electrical cable connection box	1.2.2
	AfiTag II (4009600 4009610 4009620 4009630)	afimilk's cow-tag, including the attachment strap. A tag should be attached to every cow participating in the AfiAct II group.	1.2.3
	AfiAct II software program (AfiFarm5 + RT studio module)	CD with PC software to control the system: **AfiFarm5** for user interface; **RT System** module for data collection from the Reader.	4196000A2

1.2.1 Reader Box Components

Table 1-2. Reader Box Components

Picture	Name	Description	PN
	AfiAct II Reader	AfiAct II Reader: • 916MHz final assy • 868MHz final assy • Display Printed Circuit Board • Tested PCB Assembly	4256000 4256001
	Antennas	2 upper Wi-Fi Short Range (SR) (pink) antennas 2.4GHz 2 lower Long Range (LR) ROD antennas 915MHz: • Yellow stripe for 916 MHz (e.g. USA, Israel) • Gray stripe for 868 MHz (e.g. Europe) • China (TBD)	4025916 4025915
	Bracket plate connected to Reader	<u>Bracket plate</u> (for Reader-to-bracket plate connection): <u>4 Allen screws</u> <u>8 nuts</u>	5002009 9020383 *4 9020212 *8
	Bracket arm	<u>Bracket</u> to connect Reader to bracket: <u>1 screw</u> M8 <u>1 Nylock nut</u> <u>1 washer</u> M8 *(screws for wall connection – not supplied)*	5231558 9020822 9020033 9020807
	3m network cable	Not provided! To be brought with technician kit	9030498

1.2.2 Electricity Box Components

Table 1-3. Electricity Box Components

Picture	Name	Description	PN
	Screws and nuts	*Not provided!* *To be brought with technician kit.*	
	Short (2.4m) extension power cable	*Not provided!* *Technician to check and bring required cable length.*	4093506
	Electrical connection box for AfiAct II Reader	*Not provided!* *To be brought with technician kit.*	4085851
	Electrical terminal block	*Not provided!* *To be brought with technician kit.*	9020201
	Cable ties	*Not provided!* *To be brought with technician kit.*	

1.2.3 Tag Types

Table 1-4. Tag Types

Picture	Description	PN
	AfiTag II, Type A, 200 KHz SR, 916 MHz LR	4009600
	AfiTag II, Type A, 200 KHz SR, 916 MHz LR, Israel	4009600i
	AfiTag II, Type B, 80 KHz SR, 868 MHz LR	4009610
	AfiTag II, Type E, 200 KHz SR, Japan MHz LR	4009650
	AfiTag II, Type F, 80 KHz SR, 868 MHz LR, Lemmer	4009660

1.3 AfiAct II Reader – Indicators and I/Os

The following sections describe the Reader's indication LEDs, input and outputs.

1.3.1 Front Panel - LED Indications

The following image shows the Reader's fault and indication LEDs.

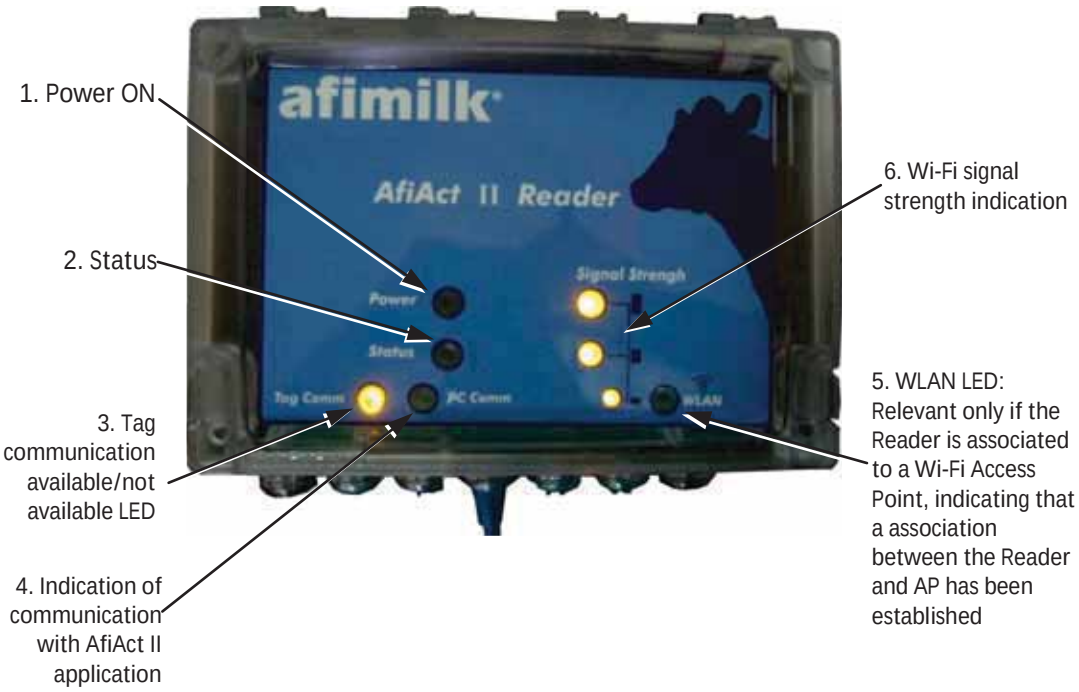
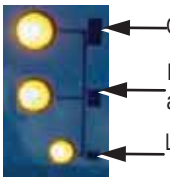


Table 1-5. External LED Indications

Item	LED Label	Description
1	Power	– ON
2	Status	- LED is steady ON – Indicates that the reader is in internal communication fault mode. LED is blinking RED – Indicates that there was no tag message for twice the Transmit (Tx) interval, i.e.: if the time is (default) 15 minutes, the LED will blink if there was no tag message for 30 minutes.
3	Tag Comm	Communication with tags: Blinking Yellow – good communication Off – No communication *Note: This LED blinks for a short period every time a tag message is received in the Reader.*
4	PC comm	Communication with the PC AfiAct II application Yellow – The Reader is communicating with the AfiAct II Off – Reader could not connect with AfiAct II

Item	LED Label	Description
5	WLAN	This LED is relevant if the Reader is associated with a Wi-Fi Access Point, and indicates if an association between the Reader and AP has been established. If it is ON, check the connection quality via the **Signal Strength** LEDs
6	Signal strength	Indicates Wi-Fi communication strength, after the WLAN LED shows successful association between the Reader and the AP.  Good signal strength (> -60 dbm) Medium signal strength (between -60 and -80 dbm) Low signal strength (between -80 and -90 dbm) *Note: When no strength LEDs are on and the WLAN LED is on, the signal strength is below -90*

1.3.2 Lower Panel – Inputs and Outputs

The following image shows the Reader's **lower panel** inputs and outputs.

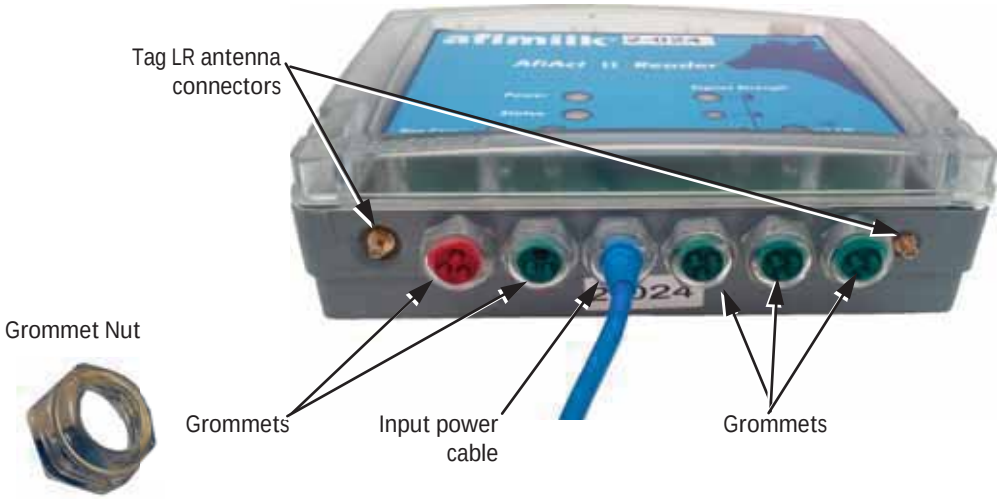


Table 5-6. Grommets

Cable Type	Grommet Color	Diameter	PN
Antenna	 green	6.5 mm (¼")	5001764
Communication	 red	5.0 mm (3/16")	5001762
Power	 blue	7.0 mm (¼")	5001763

1.3.3 Upper Panel – Inputs and Outputs

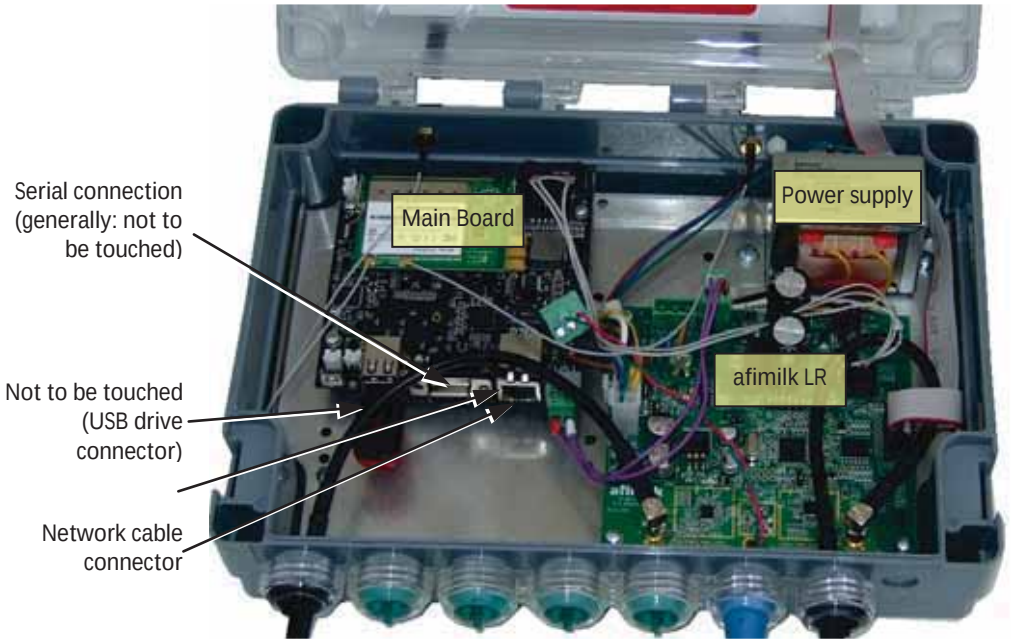
The following image shows the Reader's **upper panel** inputs and outputs.

1.3.4 Side Panel with Attributes Label

On one of the Reader's side panels you will find the following label, indicating the Reader's attributes

1.3.5 Reader Box – Inputs and Outputs

The following image shows the Reader's **inner** inputs and outputs.



1.3.6 Reader Box – Internal LEDs

The following image shows the Reader's **inner** inputs and outputs.

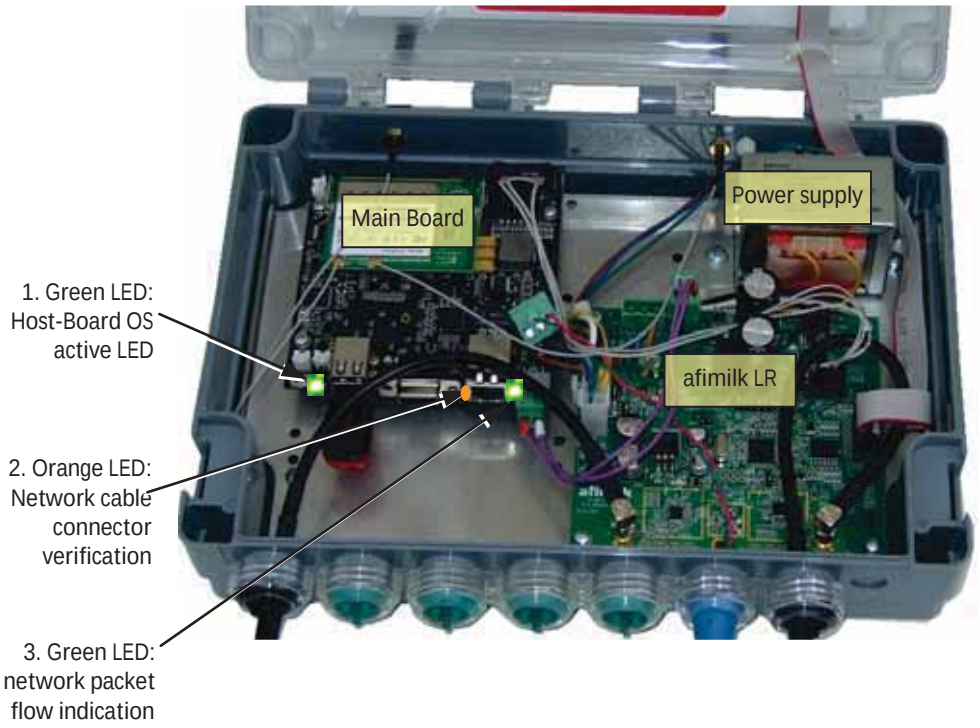


Table 1-7. Internal LED Indications

Item	LED Label	Description
1	Host Board operating system indication	– Host-Board Operating System completed loading and is active (blinks: two short and stop). ■■ — ■■ —
2	Physical network cable connection	- Orange LED that indicates physical link.
3	Network cable connection with data flow	- Green LED which blinks when data flowing over the Ethernet line.

1.4 AfiAct II Reader Power Specifications

The AfiAct II Reader power connection must comply with the following specifications:

Table 1-8. Power Specifications

Item	LED Label
Voltage	Nominal voltage of 24Vac (minimum 21.6Vac to maximum 27.5Vac)
Current	0.6Aac
Power per unit	16.5 Watts (i.e. a VA rating of at least 20 VA for the transformer)
Number of Readers powered by a single transformer	The standard afimilk 24Vac, 75VA rated transformer can power up to 3 Reader units, considering the cable length and diameter, see following note.

NOTE

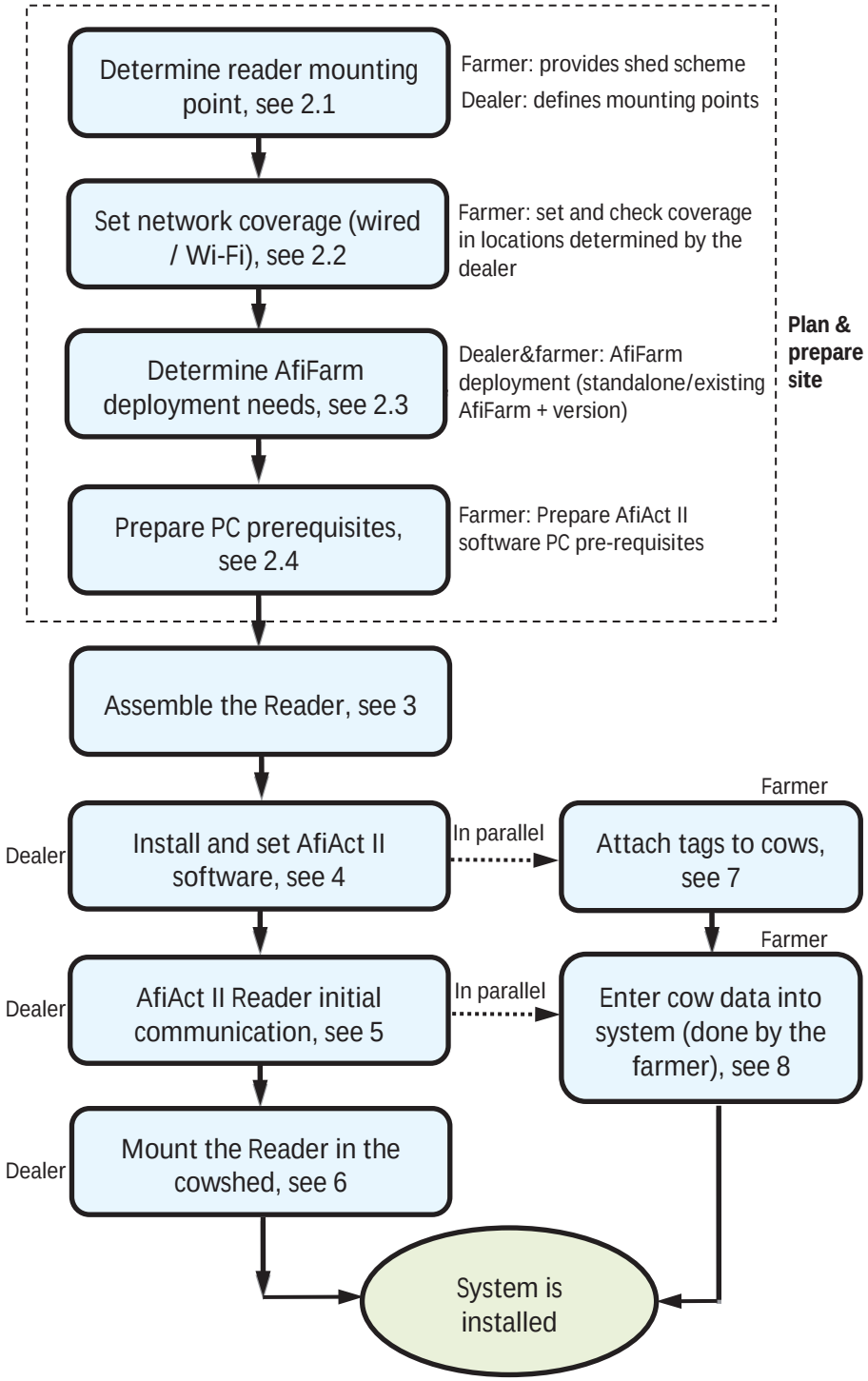
To avoid unacceptable electrical power reduction, the cable length and diameter must be validated, too ensure the cable is not too long per its diameter.

NOTE

A corresponding transformer box may be ordered separately from afimilk; PN 4096130 (not for USA).

1.5 System Installation Overview

To fully install AfiAct II system, pre-installation preparation is needed; some preparations are done by Dealers' technicians, and others are the farmer's responsibility. The following flowchart presents the preparation and installation phases and the responsible party per phase.



2 Prerequisites and Site Planning

Before starting AfiAct II installation, verify that all pre-requisites are fulfilled:

1. *Reader mounting point*: Identify a proper location for AfiAct II Reader, see 2.1
2. *Verify network coverage* in the required area, see 2.2

   Note: It is highly recommended that the network technician be present during the Reader installation.
3. *Verify existing AfiFarm version and system deployment* (this is relevant for farms using both systems), see 2.3
4. *Validate AfiAct II PC* corresponds with the requirements, see 2.4

NOTE

To determine the system sampling sessions during the installation, investigate the specific site needs. This can be performed during the preparations phase, or during the installation, see 4.3.2.

2.1 Determine Reader Mounting Location

Determining optional Reader mounting points is done by the Dealer technicians. To do this, either get a scheme of the shed dimensions from the farmer (including poles, electricity outlets, distance from the office, etc.), OR visit the farm before the installation to perform a site survey.

The farmer receives from the dealer a list/scheme showing the optional mounting points, and the required coverage radius. It is the farmer's responsibility to provide coverage in these points.

The Reader mounting location is based on the cowshed size and location, and should comply with the following conditions:

- *Height*: The Reader is mounted on a pole about 3.5 meters high from the ground.
- *Coverage (tags and Wi-Fi/wire)*: (fine-tuning will be performed while mounting)
  - The mounting pole location must allow tag-coverage range for the whole defined area. This is determined according to the shed scheme, and will probably be around the center of the required 80 meters coverage radius, also covering the feeding and water trough areas.

NOTE

The final coverage and corresponding location determination must be done during a site survey and could vary according to specific farm environment.

  - The Reader should have a line of sight towards cow tags, with minimal interference from other sheds/poles/buildings, etc.
  - The Reader should have WiFi / Wired connectivity to the Access Point / office.
- *Power access*: The pole has near access to a power outlet (to be provided by the farmer).
- *Accessibility*: The Reader and power box can be easily viewed and accessed for maintenance (if possible – accessible from the passage).
- *Weather protection*: The Reader and power box must be located under a roof with minimal exposure to weather conditions, according to the following specifications:
  - The structure may be made of metal or wood.
  - The roof should be at least 4 meters high and may be made of a plastic material (but not aluminum or sheet metal).
  - The roof must be large enough to prevent any direct sun or rain exposure to the device.
  - If the sides are closed, this siding material should not be metal either.
  - If metal fencing is used to keep animals out, it should be a large opening Australian-type fencing material (at least 30 cm) (otherwise the communication signals may be reduced).

2.2 Setting up Network and Power Coverage

The customer may determine the type of network communication used between the PC and the Reader; either wired or Wi-Fi can be used. However, it is the customer's responsibility to ensure power point and network coverage in the office and in the Reader-determined mounting point (in the cowshed – according to the Dealer's technicians). In either case, the office and Reader network coverage setup must be completed and tested before starting the Reader installation (e.g. via a laptop computer, smartphone, or in future releases, via tag-indicator).

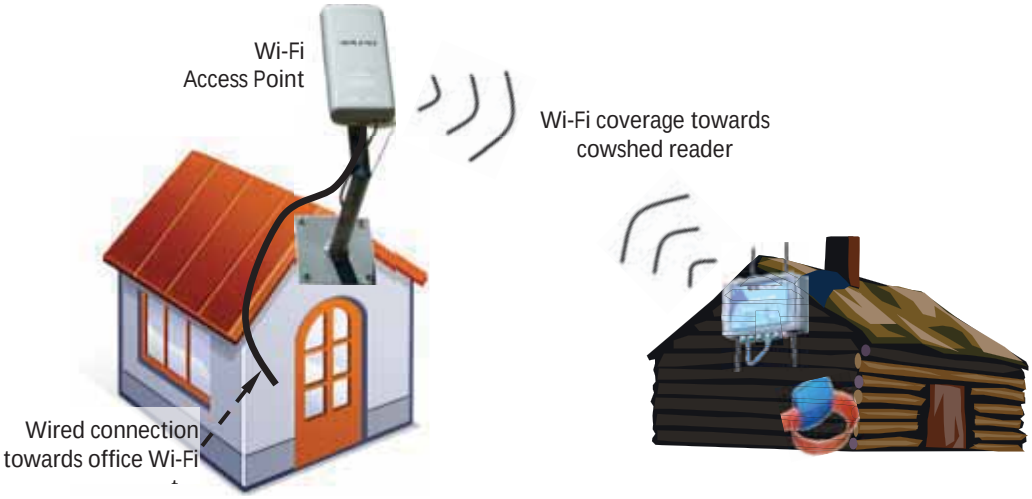
Note: The Wi-Fi network must in turn provide an IP to the Reader's MAC address.

Office Wi-Fi Coverage

The office Wi-Fi coverage is a recommendation, and it is required when configuring the Reader to work with the AfiAct II software.

PC to Reader Wi-Fi coverage

The Reader's network coverage is set after determining the Reader installation point in the cowshed. The following figure shows an example of network coverage in the office and cowshed.



Wi-Fi Specifications

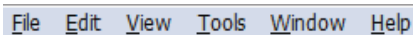
Item	Value
Network	Any commercial access point Carrier grade (99.999% service).
WiFi certification supports	802.11g or 802.11n
Encryption method default	WPA-PSK/WPA2-PSK The following methods are also supported: WEP, WPA/WPA2, WPA-PSK/WPA2-PSK and IEEE 802.1X standard
Preferable SSID	afiact2
Preferable password	afimilk123
Signal and Noise	• The SNR at Reader mounting point must be greater than 15 dB. • RSSI must be higher than -80dBm. *Note: Preferred RSSI is -65 dBm to -55 dBm in the designated Reader mounting point*

2.3 Determining the Deployment Type

The deployment may be either as a standalone system or as an integrated-mode-with-AfiFarm system, where AfiAct II is automatically synchronized with the existing AfiFarm system.

For integrated mode with AfiFarm systems, verify that the AfiFarm version is 4.0.1 or higher.

To check your AfiFarm version number

1. Open your AfiFarm application: double-click on the AfiFarm icon  . The AfiFarm window opens.
2. Click **Help** in the upper tool bar 

and select **About AfiFarm** from the roll-down menu. The installed version number will be displayed.

If your AfiFarm version is lower than 4.0.1 – upgrade your AfiFarm version. Refer to AfiFarm4 Installation manual, see referred documents on page vii.

2.4 Prepare the PC Environment

Before starting to install AfiAct II software, verify that your PC corresponds to the following set of requirements:

- The computer uses a **supported operating system,** see 2.4.1
- **Memory & processor** requirements, see 2.4.2
- **Network connections** comply with the requirements, see 2.4.3
- **Additional Windows 7 preparations**, see 2.4.4
- **Verify the PC is prepared**, see 2.4.5

These requirements are detailed in the following sections.

NOTE

Verifying that you are using correct computer settings is essential for performing the installation correctly, allowing correct operation of AfiFarm5. In systems where there is a network administrator, he or she must be present during the installation.

NOTE

It is highly recommended to have an internet connection, to allow efficient support when needed.

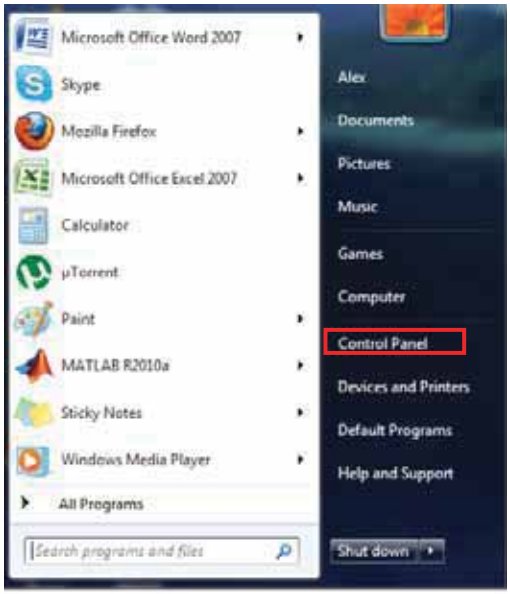
2.4.1 Verify Operating System Compatibility

AfiFarm5 supports the following operating systems**:**

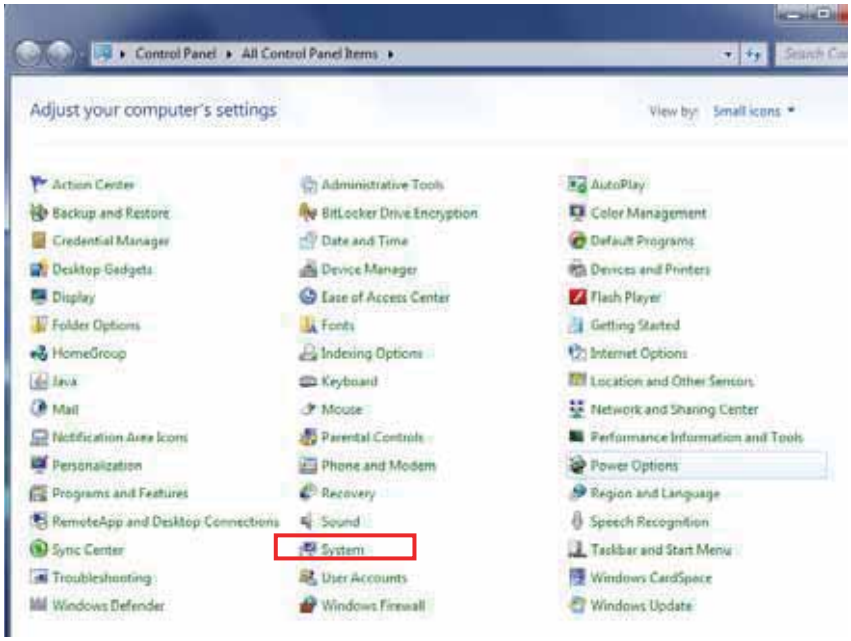
MS Windows7 - Professional/Enterprise/Ultimate 64 bit.

To verify your PC's operating system compatibility:

1. In your system tray, click the **Start** icon  , and select **Control Panel**

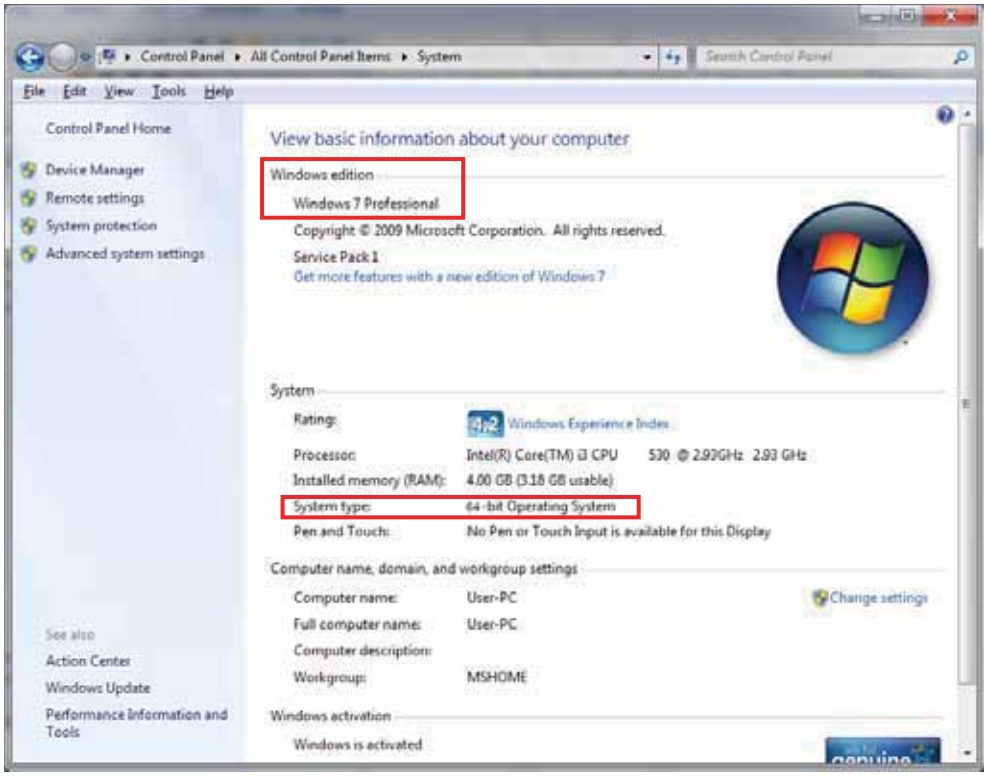


2. Click **System.**



3. Verify the following attributes:

- **Windows edition**: Windows 7 Professional/Enterprise/Ultimate
- **System type**: 64 bit.



2.4.2 Memory & Processor Requirements

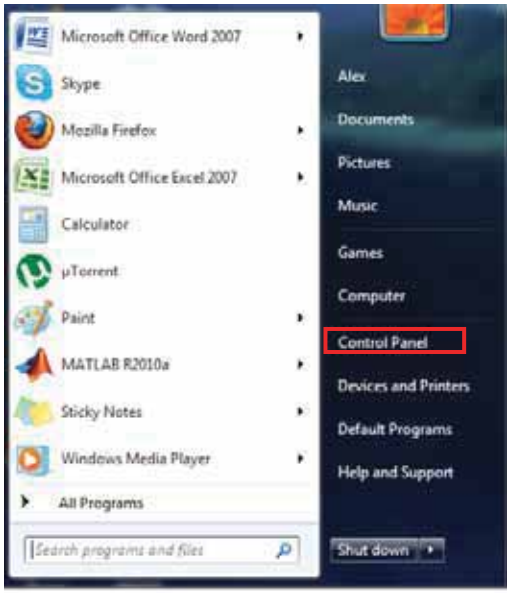
The PC minimum requirements are as follows:

- Operating system: Windows7 PRO 64-bit
- RAM: 4GB and above
- Processor: Core 2 Dual
- HD free space: 100 GB
- UPS unit – type is to be discussed with the PC supplier
- USB Flash drive of 8 GB or other backup device

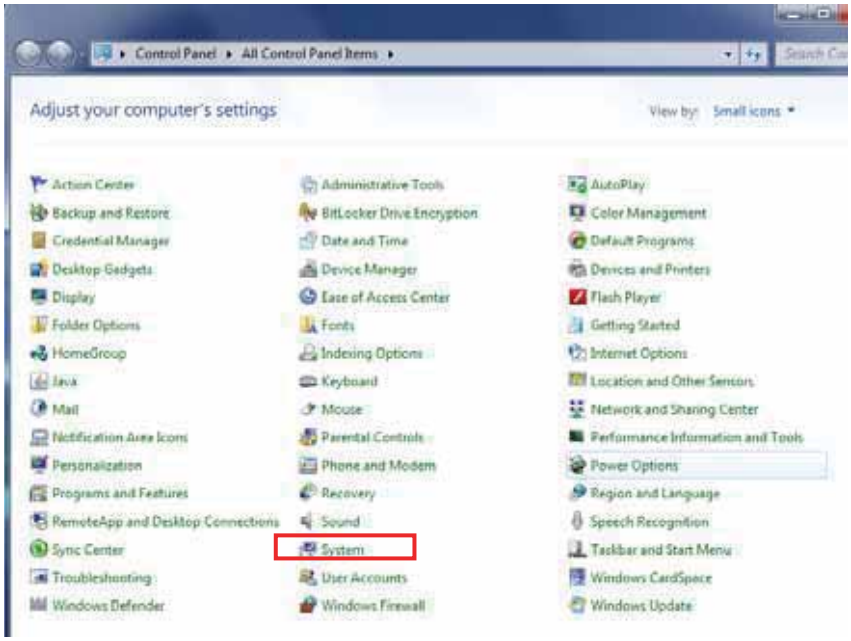
2.4.2.1 Verify RAM and Processor

To verify required RAM and Processor:

1. In your system tray, click the **Start** icon  , and select **Control Panel**

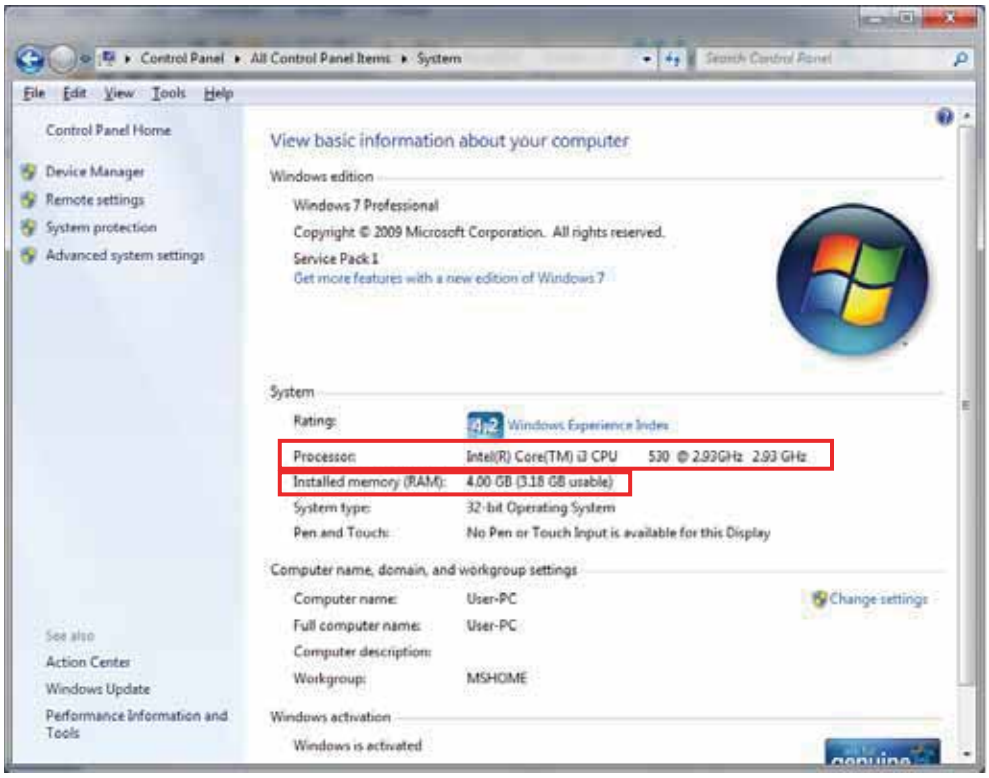


2. Click **System.**



3. Verify the following attributes:

- **Processor**: Windows 7 PRO/Enterprise/Ultimate
- **System Type**: 64 bit
- **RAM**: 4GB and above.



2.4.2.2 Verify HD Free Space and Type

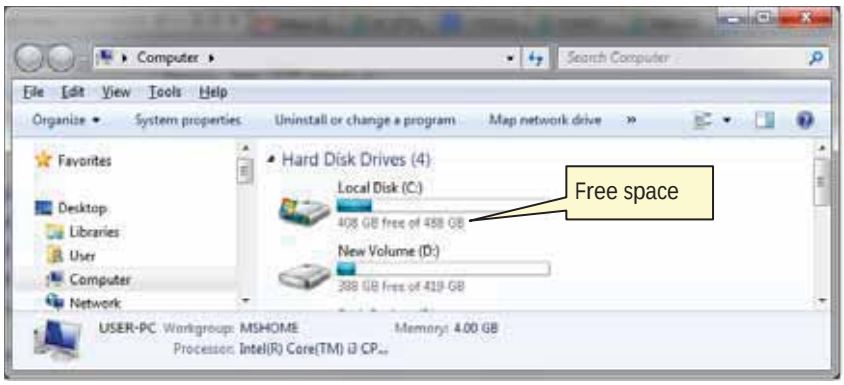
NOTE

If the installation is done in a folder that is not the installation folder – verify that there is enough disk space in BOTH disks.

To check your HD free space

1. In your system tray, click the **Start** icon  , and Double-click on **computer**

2. Check free space on your hard drive.



2.4.3 Network Connections

AfiFarm5 Network connections must comply with the following conditions:

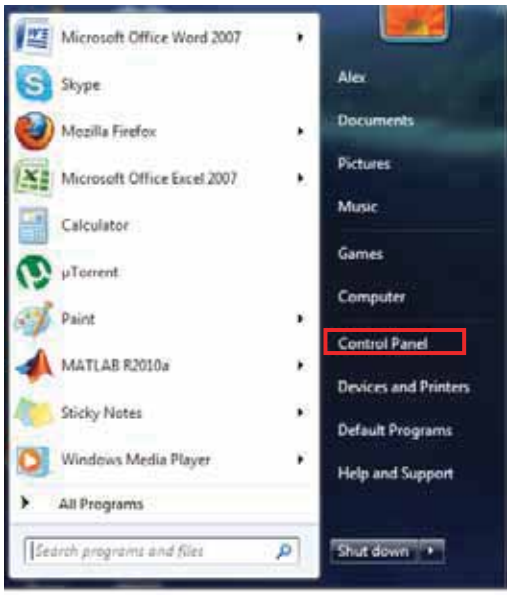
- The network is supported by Windows.
- The network supports TCP/IP.
- The network must be transparent for a UDP broadcast.
- The LAN must have a minimum speed of 100 MBps.

NOTE

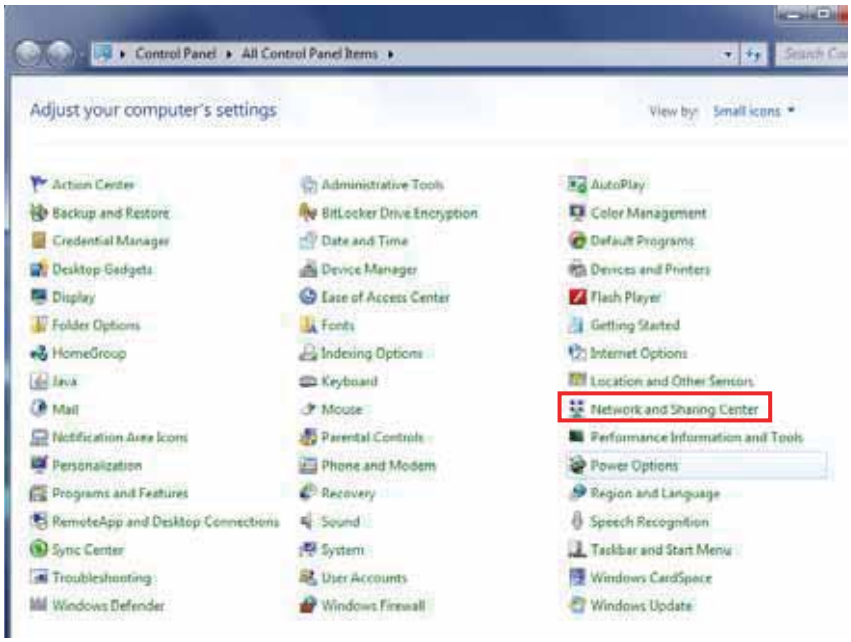
In order to print reports, the system must have a printer, connected either directly to the PC or via the network.

To verify your system has correct network connections

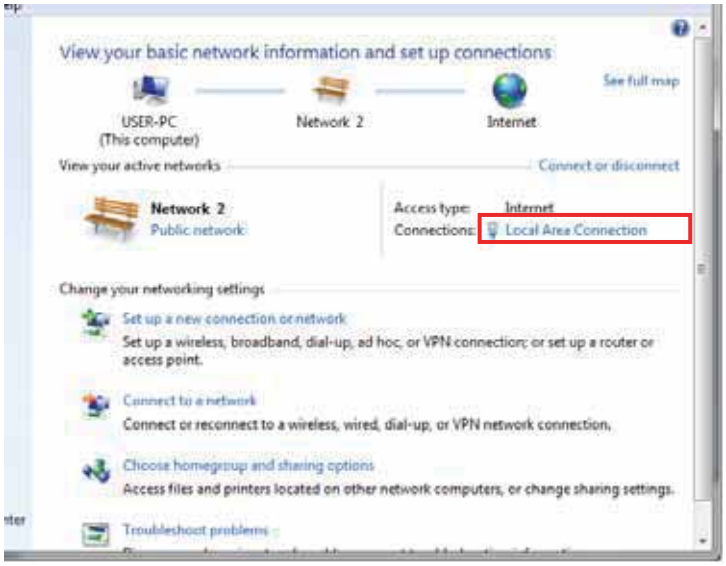
1. In your system tray, click the **Start** icon  , and select **Control Panel**



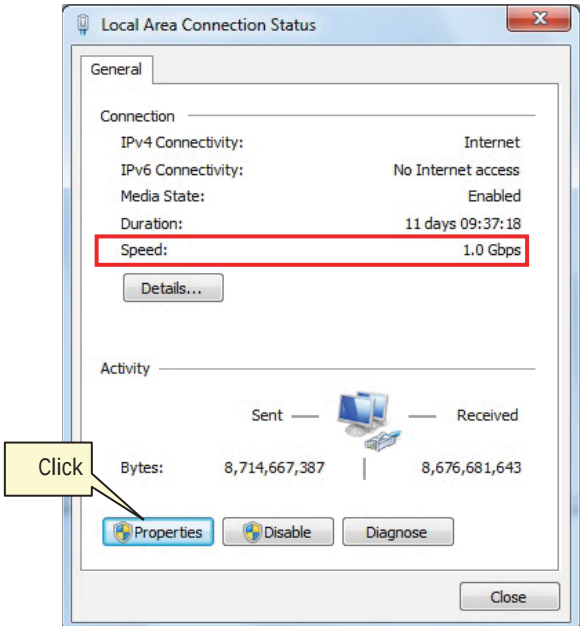
2. Click Network and Sharing Center.



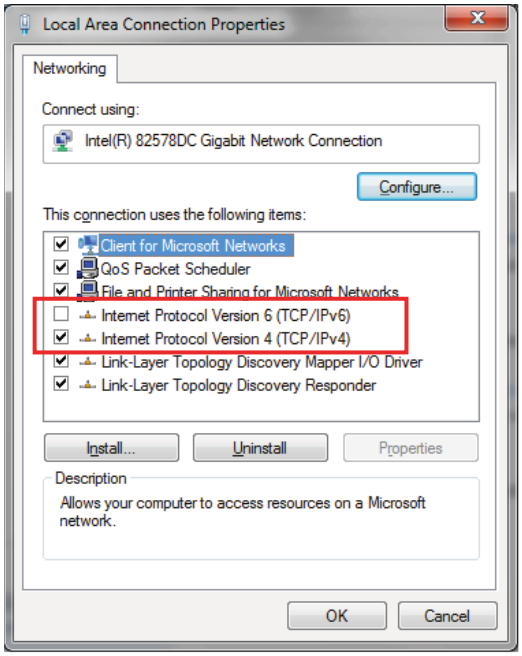
3. Click **Local Area Connection**



4. Verify that the **Speed** is 100Mbps or higher.



5. Click **Properties**.



6. Click the **Networking** tab and check the following attribute is checked:

   - Internet Protocol version 4 (TCP/IPv4)

   Ensure the following attribute is unchecked:

   - Internet Protocol version 6 (TCP/IPv6)

7. Click the **OK**, and then click **Close.**

8. In the Network and Sharing Center dialog, verify that the Network is set to **Home**

9. If the Network is not set to **Home**, click on the network value. The Set Network Location dialog appears.

10. Choose **Home Network** and close the dialog.

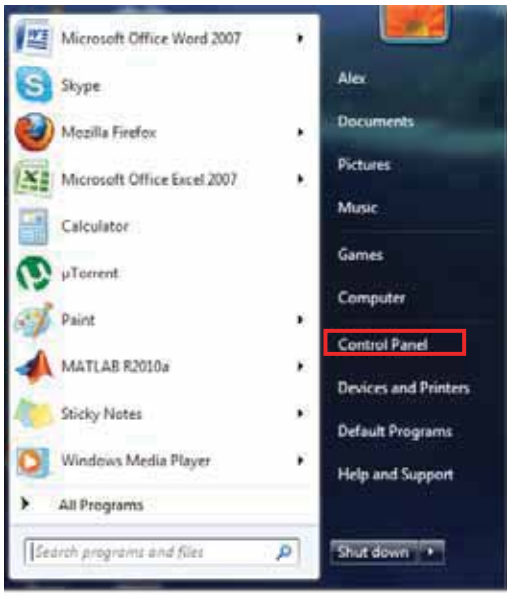
2.4.4 Additional Windows7 Preparations

2.4.4.1 Verify using Administrator Account

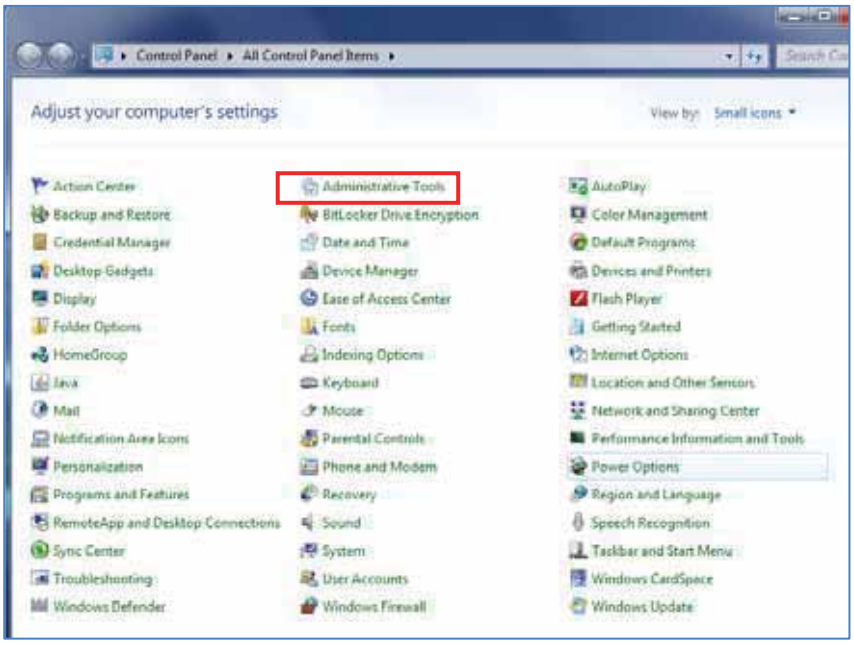
AfiFarm operates on an administrator account. It must be installed on the same administrator account under which it is expected to work. Changes in Windows settings, and in AfiFarm installation, must be done from an Administrator account of the computer.

To verify you logged-in using an administrator account

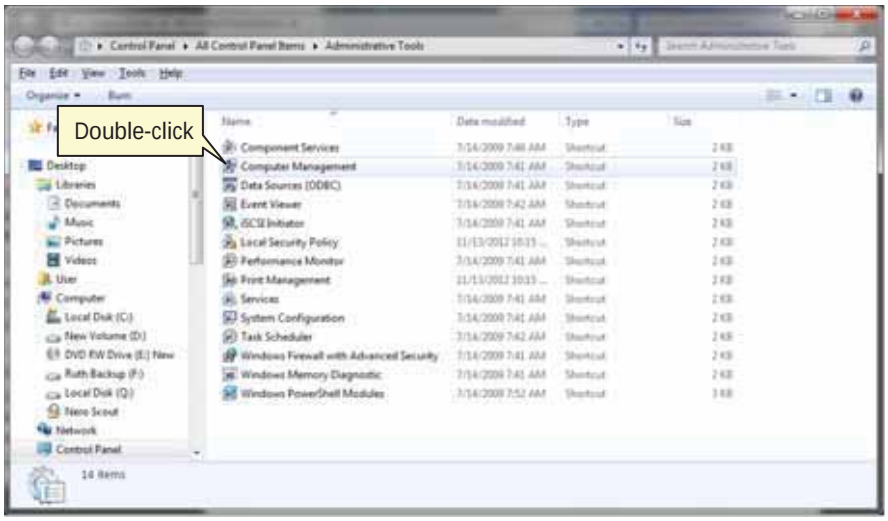
1. In your system tray, click the **Start** icon  , and select **Control Panel**



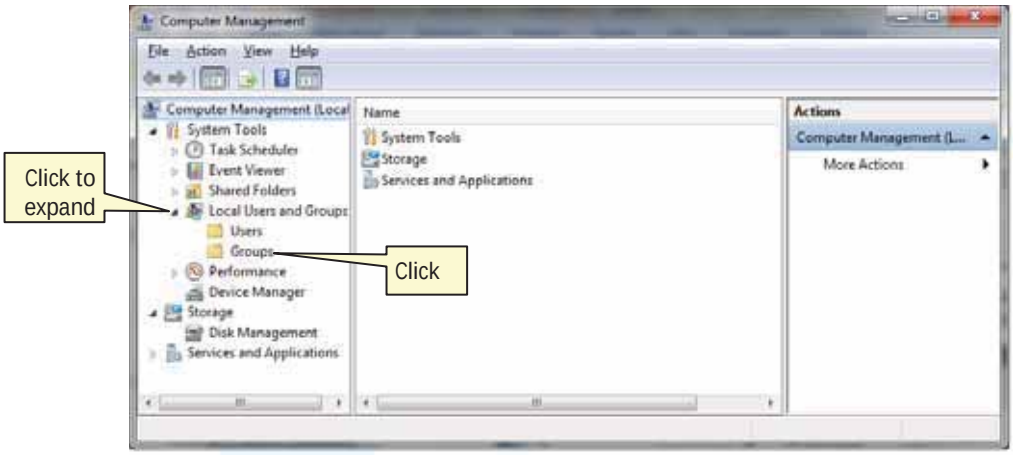
2. Click Administrative Tools.



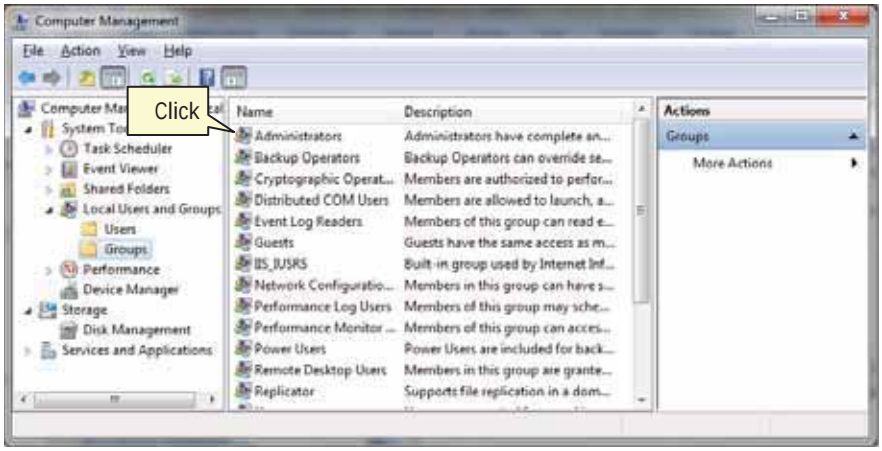
3. Double click on **Computer Management**



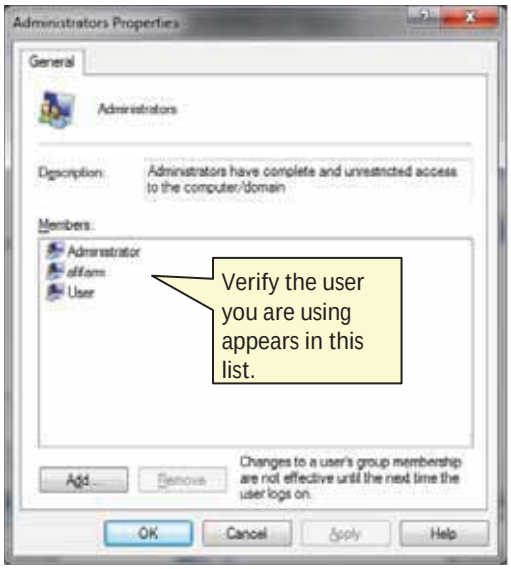
4. In the left pane of the computer management window, expand **Local users and groups**, then double-click the **Groups** folder.



5. In the list of users, double-click **Administrators**



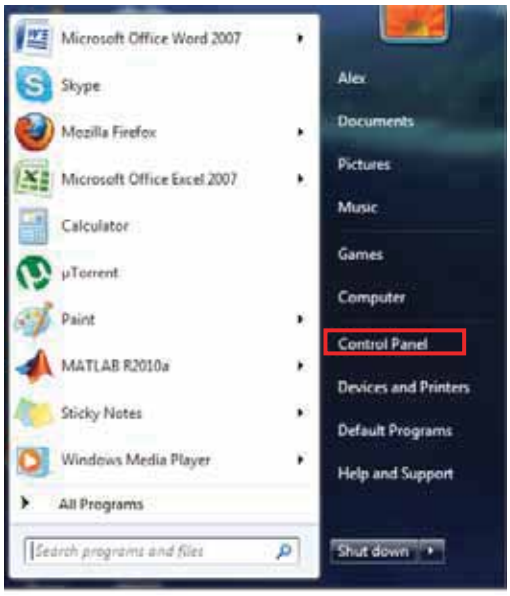
6. In the Administrators Properties window, verify that the user name under which you logged-in appears in the list of Administrators in the Members box.



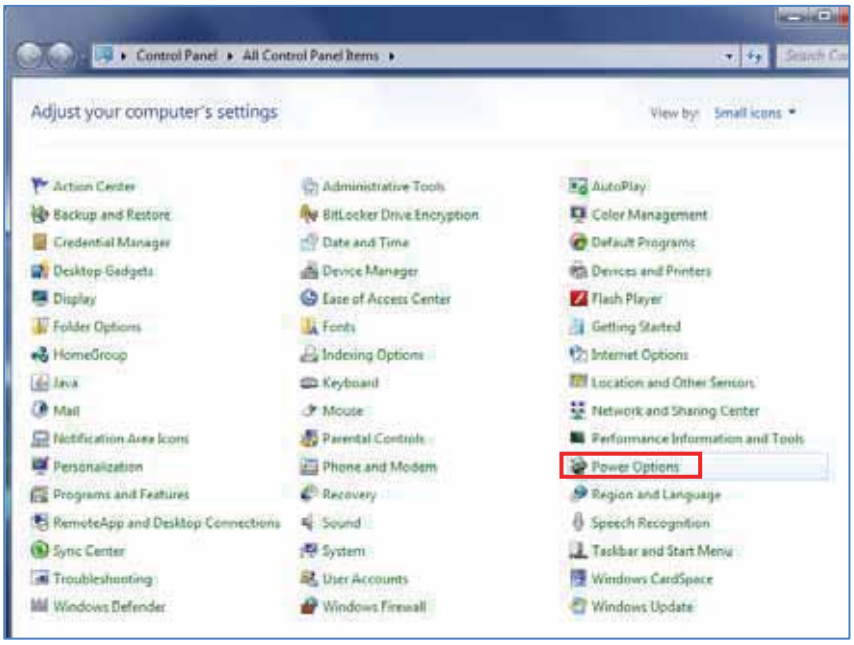
7. If the user name under which you logged-in does not appear, log-out, and log-in under an administrator user name.

2.4.4.2 Configure Power Settings

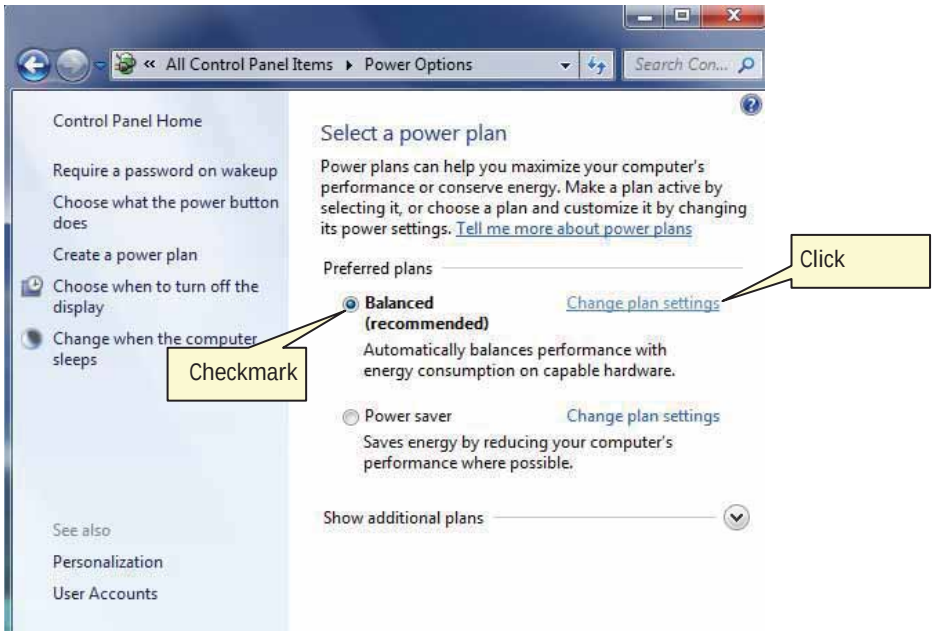
1. In your system tray, click the **Start** icon  , and select **Control Panel**



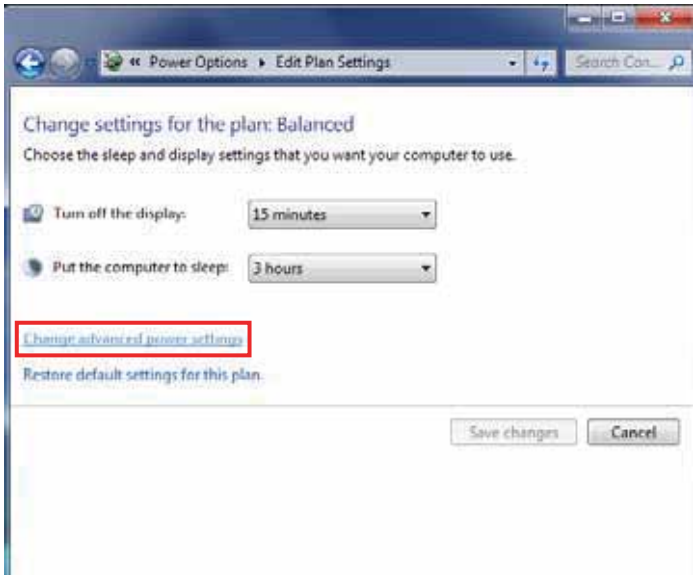
2. Click **Power Options.**



3. Checkmark **Balanced** and click **Change plan settings.**

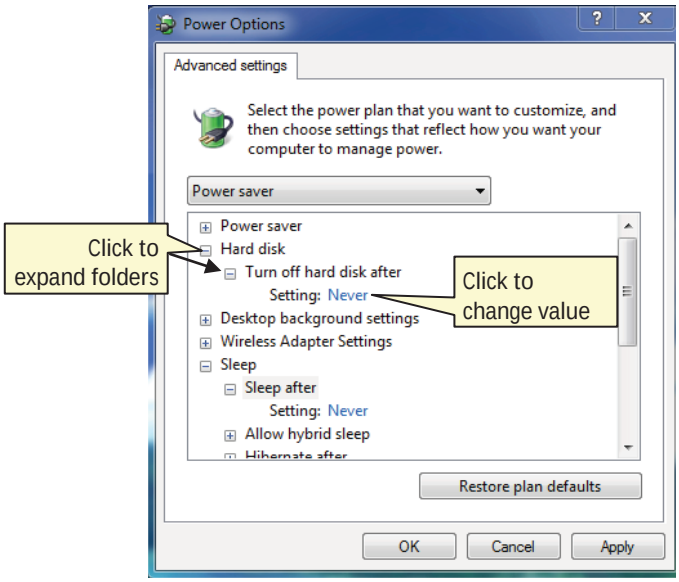


4. Click Change advanced power settings.



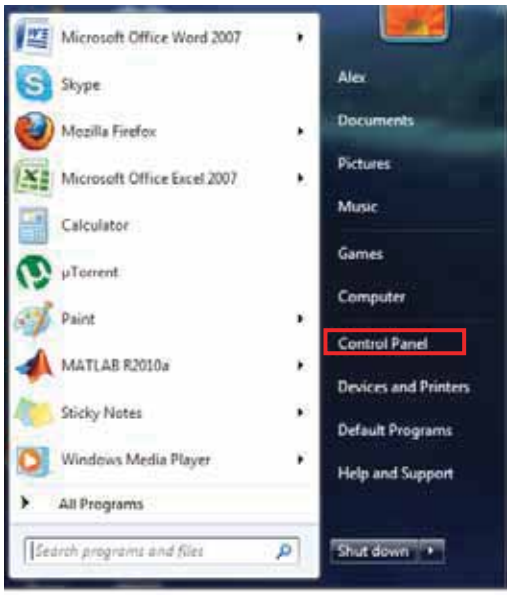
5. Expand the **Hard disk** folder (click the +sign near the folder). Then expand **Turn off hard disk after** and change to **Never.**

6. Expand **Sleep.** Then expand **Sleep after** and change to **Never.**

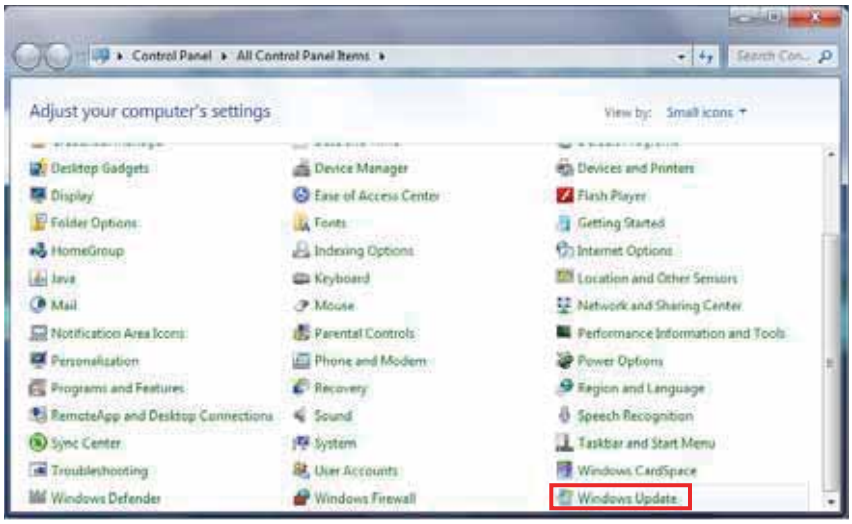


2.4.4.3 Install Windows Updates

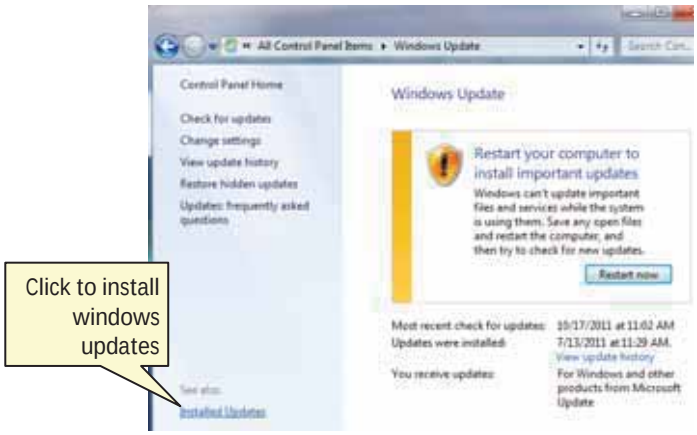
1. In your system tray, click the **Start** icon  , and select **Control Panel**



2. Click **Windows updates**

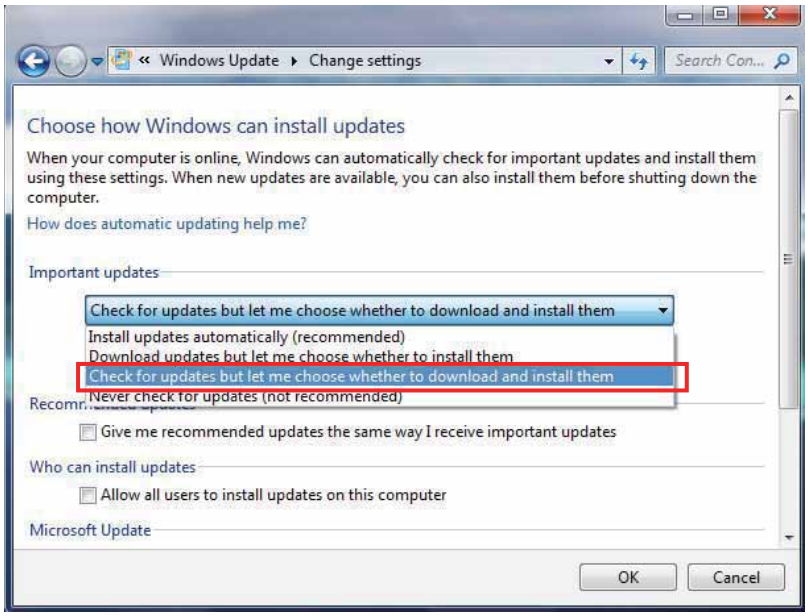


3. Click **Install updates** and follow the windows wizard to install all available updates.



4. Click **Change settings**.

5. In the displayed dialog, choose Check for updates but let me choose whether to download and install them.



6. Click **OK** to return to **Windows update** dialog.

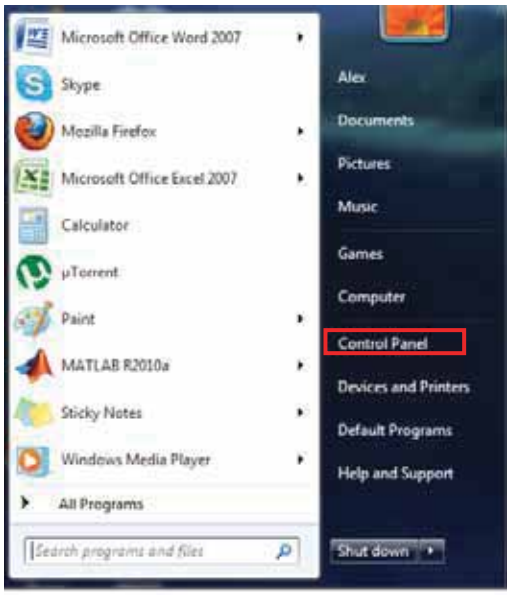
7. Click **View update history**.

8. Check the status column for any problems and fix if necessary (refer to vendor instructions).

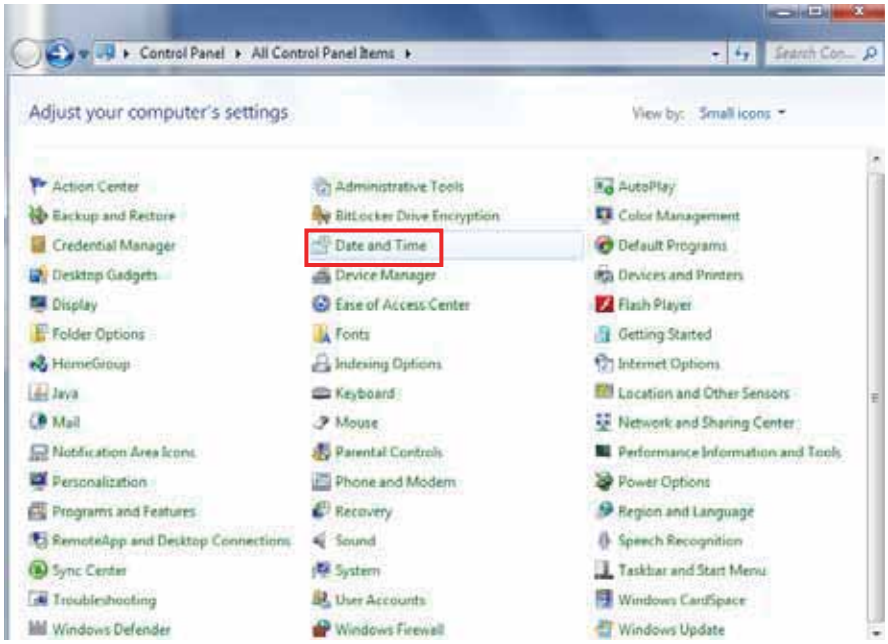
2.4.4.4 Set the Time and Synchronization

Disable the synchronization with the internet time server and check the time zone settings as follows:

1. In your system tray, click the **Start** icon  , and select **Control Panel**

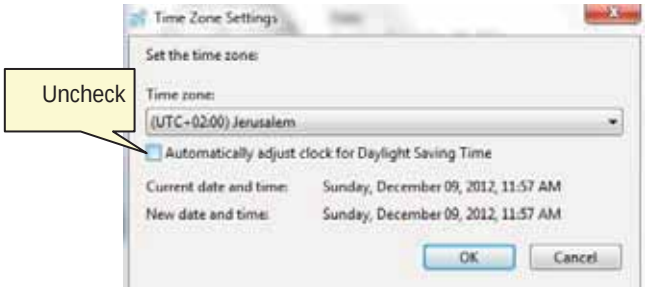


2. Click **Date and Time**



3. Click **Change time zone**

4. Uncheck Automatic adjustment of daylight saving Time.

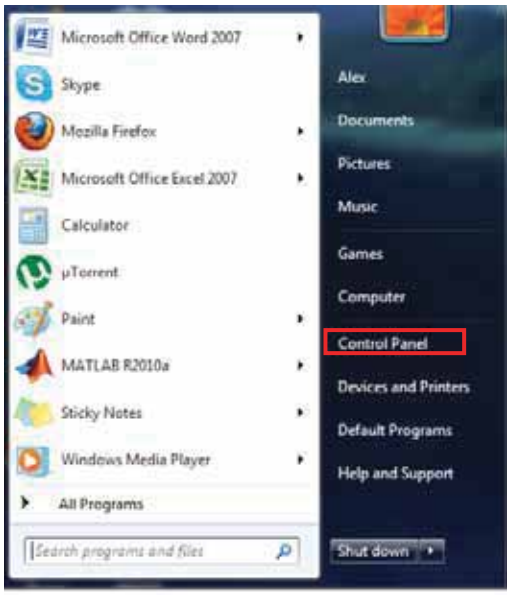


5. Verify that the **time zone** settings are identical in all the used PCs (in a multi PC system) (in the above *example*, all PCs should be set to the same time zone **UTC+02:00**)

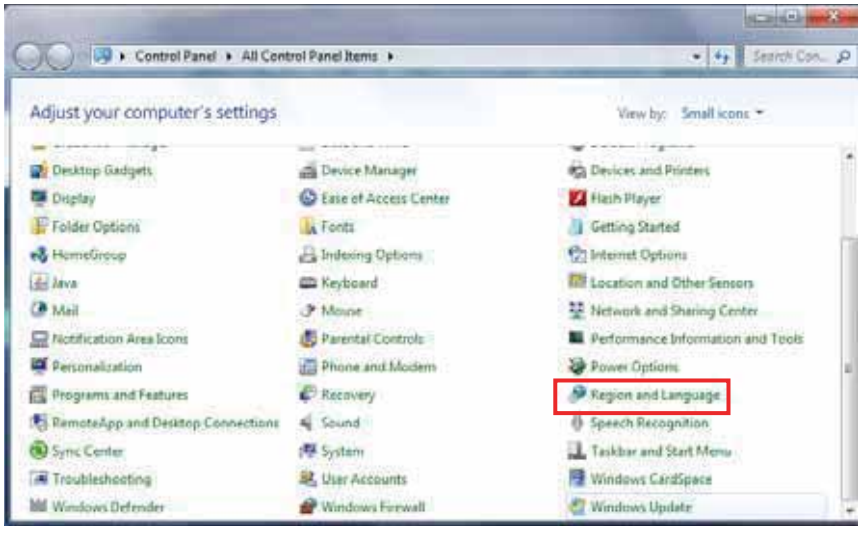
2.4.4.5 Verify Regional Parameters Configuration

For multiple PCs (integrated mode with AfiFarm systems) only: Check that the Region and Language settings are identical for all the PCs used (in multi PC system).

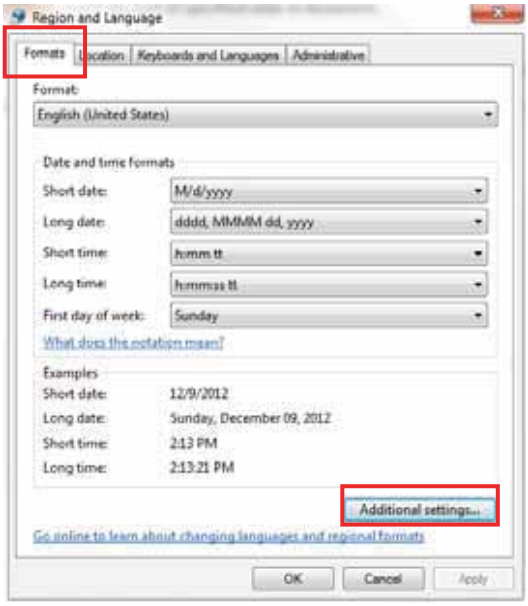
1. In your system tray, click the **Start** icon  , and select **Control Panel**



2. Click on **Region and Language**.



3. Choose the **Formats** tab and click **Additional settings**.

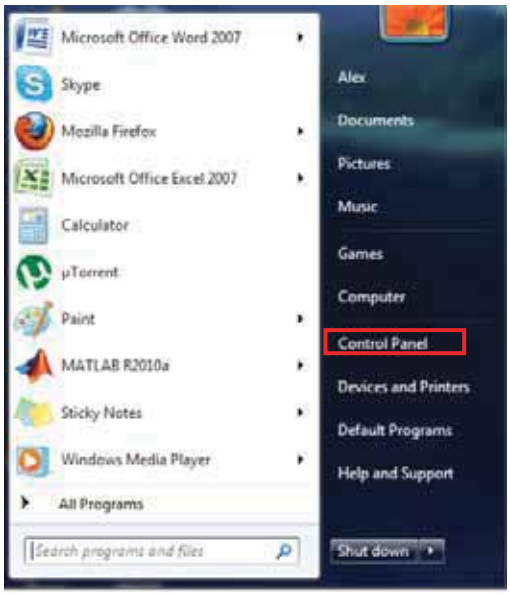


4. Record the settings and verify that all recorded attributes are identical for all the PCs used.
5. Click **OK** to return to the **Region and Language** dialog.
6. Click the **Location** tab. Record the settings and verify that all recorded attributes are identical for all the PCs used.
7. Click **OK** to return to the **Region and Language**.
8. Click **Administrative** tab. Record the settings and verify that all recorded attributes are identical for all the PCs used.

2.4.4.6 Confirm the File Sharing and Network Discovery

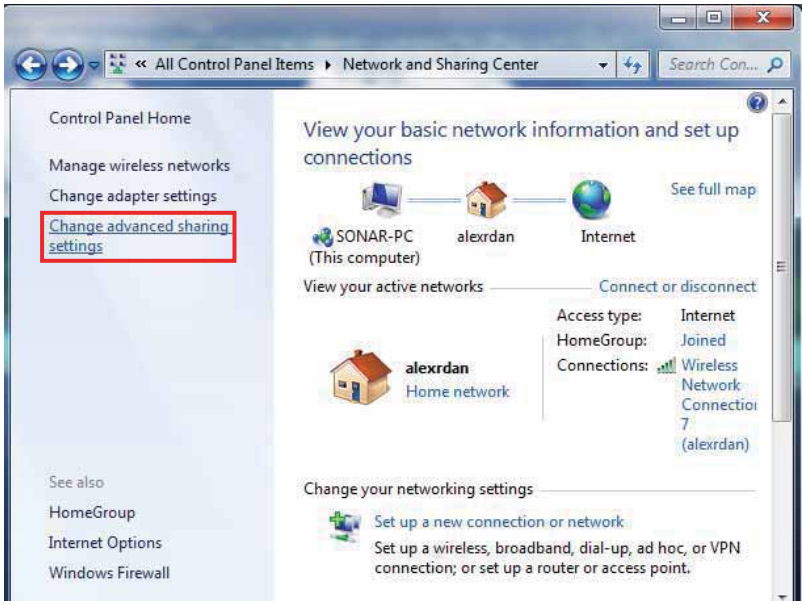
Verify proper file sharing setup as follows (for a multi PCs system):

1. In your system tray, click the **Start** icon  , and select **Control Panel**

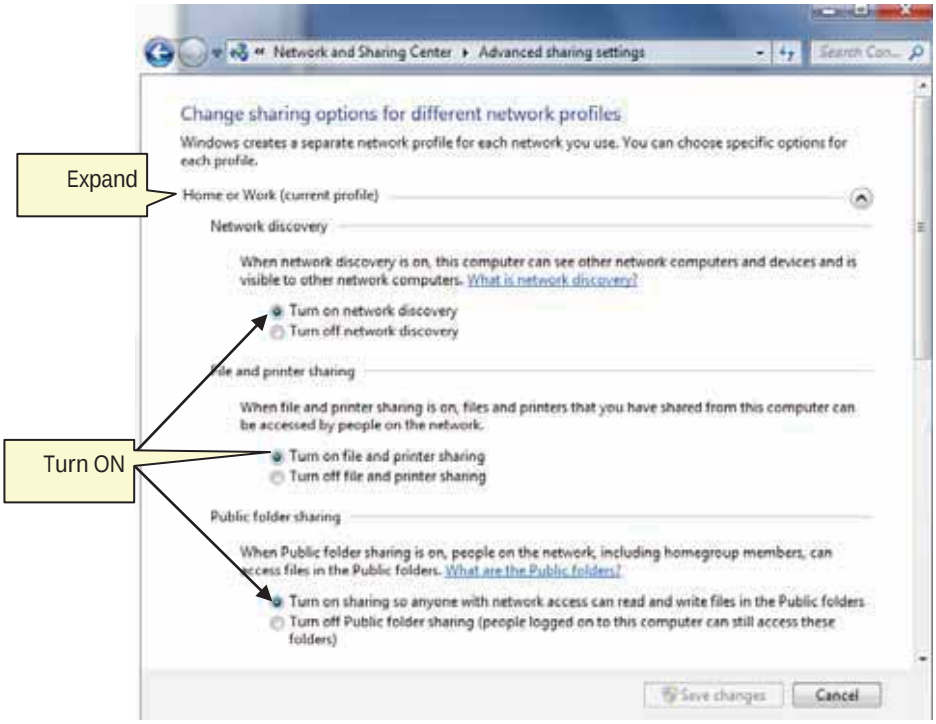


2. Click on Network and sharing center.

3. Click Change advanced sharing settings.



4. Expand **Home or Work** (click the arrow )

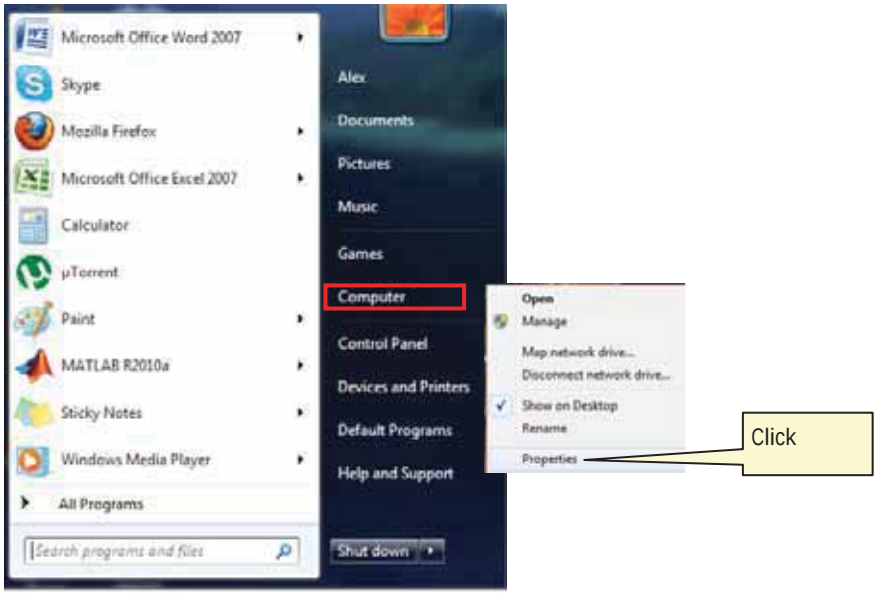


5. Verify the following attributes are turned **ON**:
   - Network discovery is **ON.**
   - File and printer sharing is **ON.**
   - Access to read and write files in Public folders for anyone with network access is **ON.**
   - Using user accounts and passwords to connect to other computers is **ON.**

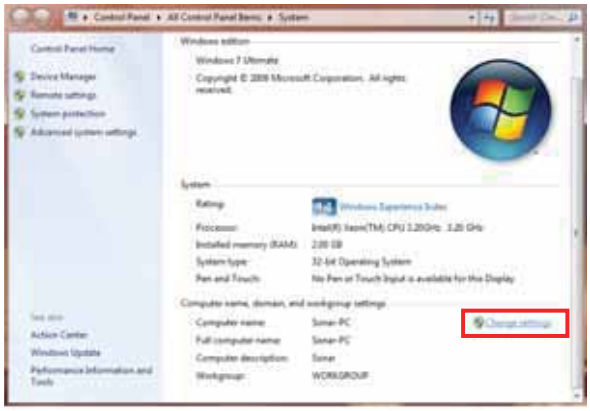
2.4.4.7 Verify Unique PC Names

Verify that all of the systems PCs have a Unique PC Name as follows:

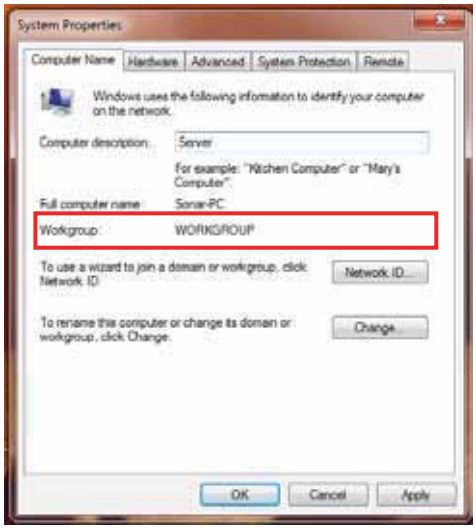
1. In your system tray, click the **Start** icon  , and right click on **Computer.**



2. Click **Properties**. The computer basic information dialog appears.



3. Click on **Change settings**.



4. In the **Computer description** field, write a meaningful PC name (e.g. “Server”, “Controller”, or “Client 1”,”Client 2”...).
5. Click **OK**

2.4.4.8 Verify Windows Firewall is Configured

Note: Only Windows Firewall is supported. Ensure that no other Antivirus or Firewall systems are installed.

Before the installation, the required rules are automatically enabled in WIN firewall, to allow the system to run properly with this FW on.

2.4.5 Verify System is Prepared

As the successful completion of the installation process is strongly dependent on the environmental preparations previously performed, it is essential at this phase, before starting to install the system, that the user performs preparations checkup.

Review the pre-requisites list and verify that all of them were implemented.

What Next?

Your system is now ready for installation.

3 Assemble the Reader Basic Elements

Before proceeding with the installation steps, the basic Reader assembly is performed. This includes:

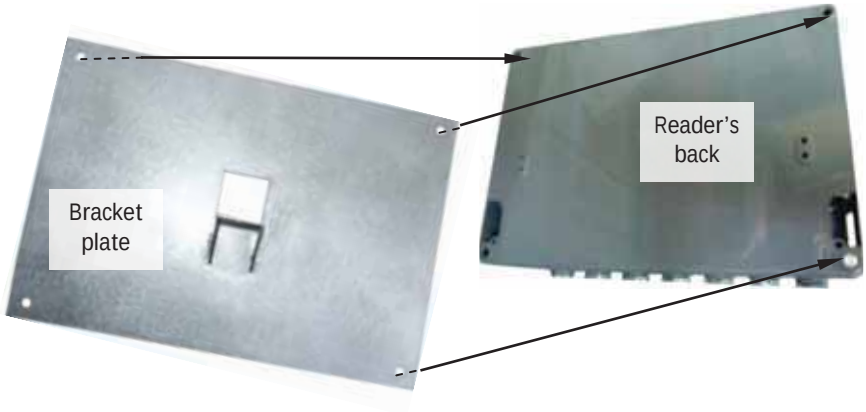
- Reader antennas
- Reader's bracket plate

To assemble the Reader basic elements

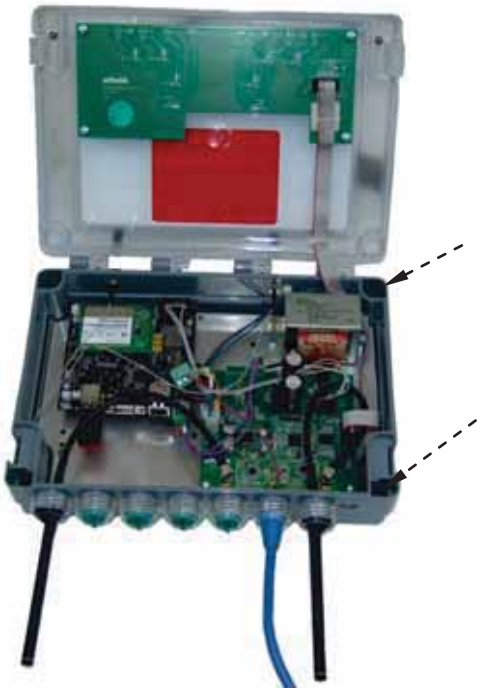
1. Open the Reader and the power-supply boxes, and verify that all of the elements are available (see 1.2.1, 1.2.2)
2. Connect the Lower LR Antennas:
   a. Place the nut and washer on the Reader's lower antenna connectors (located on the panel with the blue electricity cable).
   b. Insert the antennas into the outer connectors and screw them in ***GENTLY*** but tightly (turn them clockwise). Make sure the antennas are fastened "all the way" and are stable.

3. Connect the upper antennas (see 1.2.1) to the upper Reader connectors:
   a. Place the nut and washer on the Reader's upper antenna connectors (located on the panel without the blue electricity cable).
   b. Insert the antennas into the outer connectors and screw them in ***GENTLY*** but tightly (turn them clockwise). Make sure the antennas are fastened "all the way" and are stable.

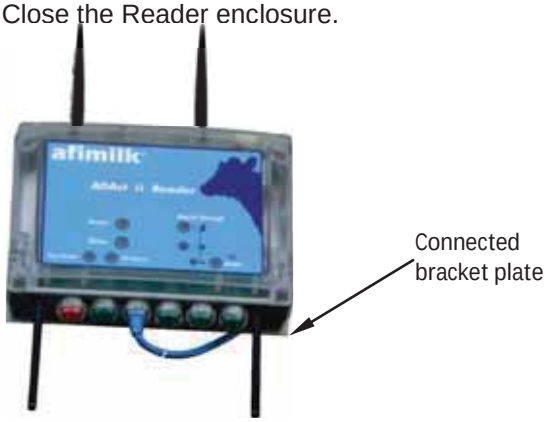
4. Connect the bracket plate to the Reader's back:
   - Place the bracket plate at the back side of the Reader (bracket's projecting part facing away from Reader), aligning the screw holes of both elements.



- Open the Reader enclosure (ensure the power is disconnected), and use the provided Allen screws (PN) and nuts to screw the plate and the Reader together.



5. Close the Reader enclosure.



4 Install and Set AfiAct II Software

AfiAct II software is installed on a single PC. It consists of two installed modules:

-  **AfiFarm5** – contains the AfiAct II program and reports. In farms that do not use other AfiFarm elements, the data entry screens and activities are also accessed through this component.
-  **Afimilk RT System module** – this module controls and monitors the system and collects data from the animals through the Reader.

This chapter details the installation phases of the two modules:

1. Install AfiFarm5, see 4.1
2. Install the RT (Real Time) system, see 4.2
3. Configure the RT System mandatory parameters (quick start), see 4.3
4. *For integrated mode with AfiFarm systems only*: Install the sync-agent in the existing AfiFarm4, see 4.4

4.1 Install AfiFarm5 Module

This section details the AfiAct II installation steps, as performed by following the instructions of the installation wizard. To install AfiFarm5 follow these steps:

1. Review general notes before starting, see 4.1.1
2. Initiate the installation wizard, see 4.1.2
3. Install the HASP (software license key) 
   firewall, database elements, see 4.1.3
4. Supervise the automatic installation steps, see 4.1.4

4.1.1 General Notes

Before starting, review the following general notes.

Installation time

The installation time varies according to the specific PC characteristics and specific issues or wrong configurations. Generally: clean installations may take around 50 minutes.

Process sub-steps

During the installation, the wizard automatically performs several steps, as required by the specific scenario. These include the installation of various components (SQL, .Net 4, drivers, database operations, configurations, etc.).

Note: In AfiAct II's AfiFarm5, the AfiFarm configuration is done via the RT System. While the main steps for the configuration are described in this manual (see Appendix C), an additional and more detailed description of the tool usage is provided in the RT System configuration manual (see referred documents, page vii).

Installation dialog layout

The following main dialog appears during the installation, displaying various messages and indications, allowing the user to follow the background phases. In addition, the lower area provides information on the overall installation progress:

NOTE

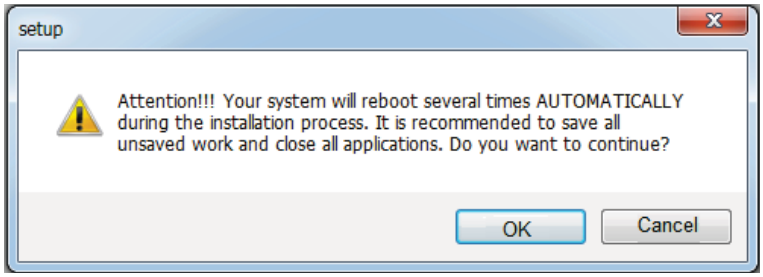
The installation procedure might vary slightly for different operating systems.

4.1.2 Set & Initiate the Installation Wizard

After verifying your PC is prepared for installation (see 2.4.5), initiate the installation wizard according to the following steps.

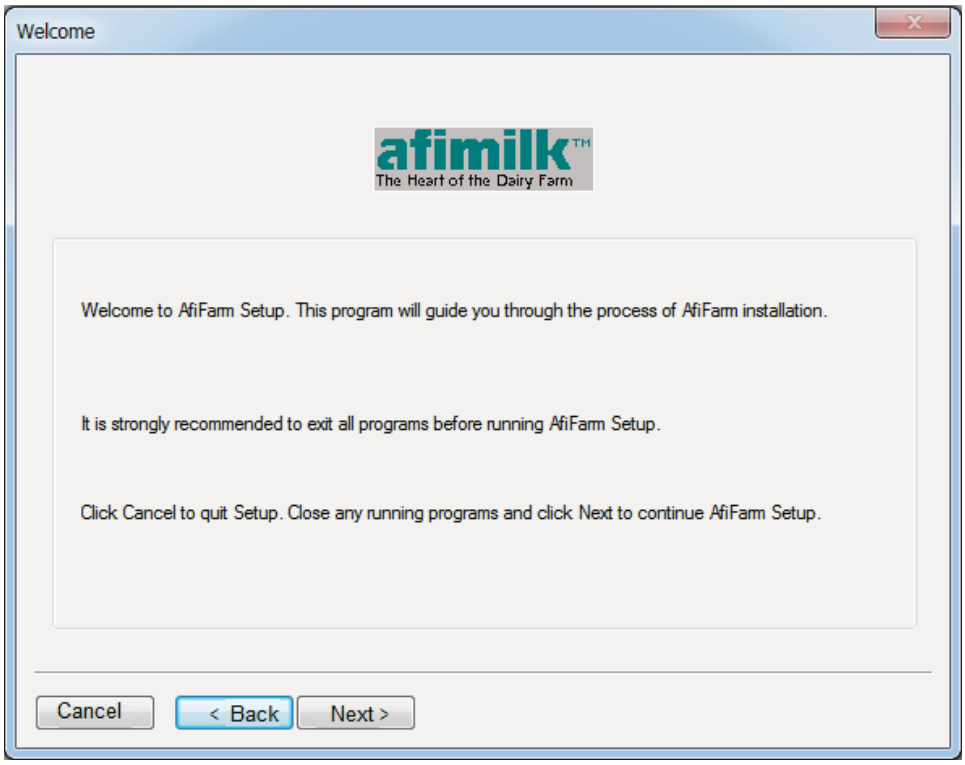
1. Insert the provided AfiFarm5 HASP USB key into the USB port of the PC.

2. Open AfiFarm5 DVD and double-click on the installation file: **setup.exe**. The installation wizard is launched and the following message appears:



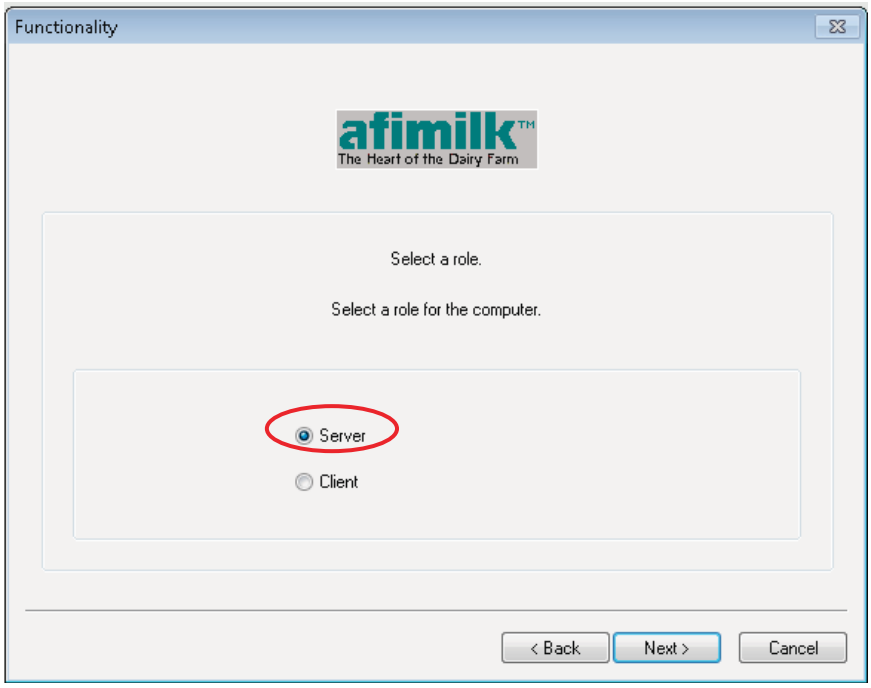
3. Click **OK**. The installation type dialog opens: choose **Install**.

4. Click **Next**. The welcome dialog opens. Make sure you close any programs running in the background.

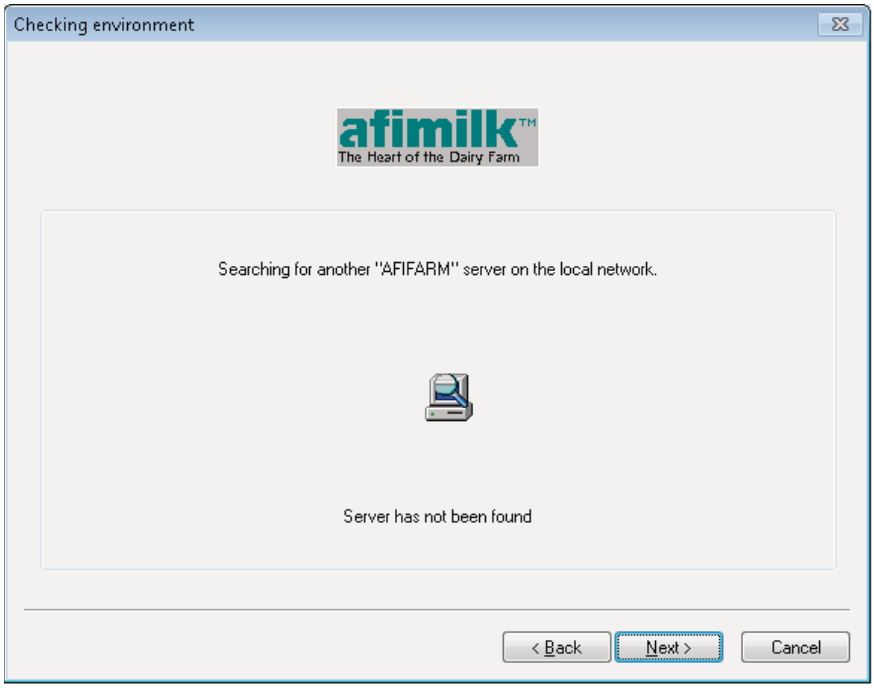


5. Click **Next**. The License Agreement dialog opens

6. Select **I accept the agreement** and click **Next**. The Functionality dialog opens



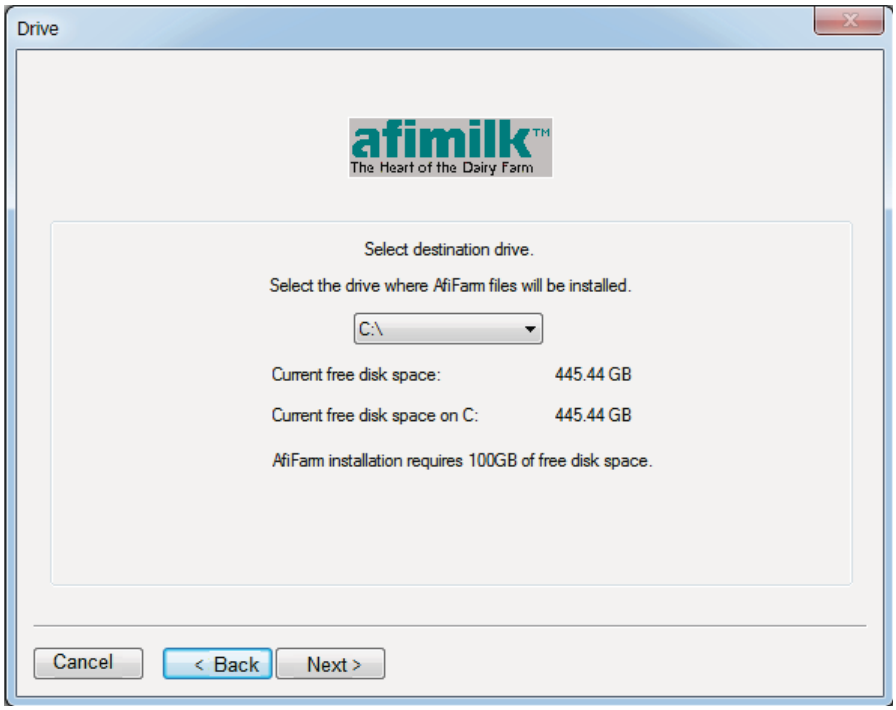
7. Choose **Server** and click **Next**. The system searches the local network to ensure there are no other servers found. When done searching, the **Next** button becomes available.



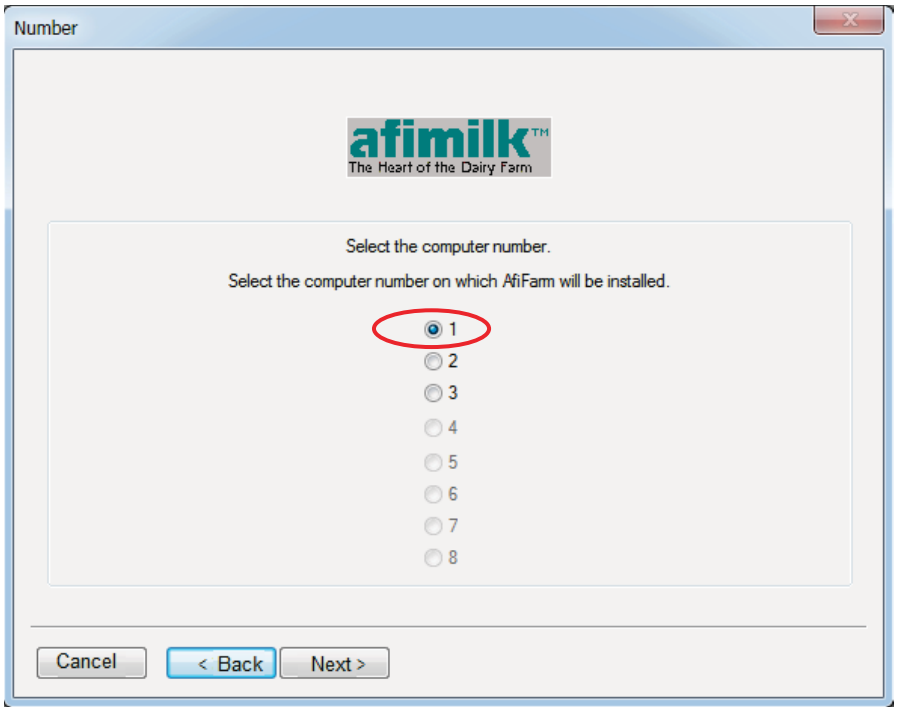
NOTE

If a server has been detected, the problem must be resolved before continuing the installation. Contact afimilk helpdesk, see page ii.

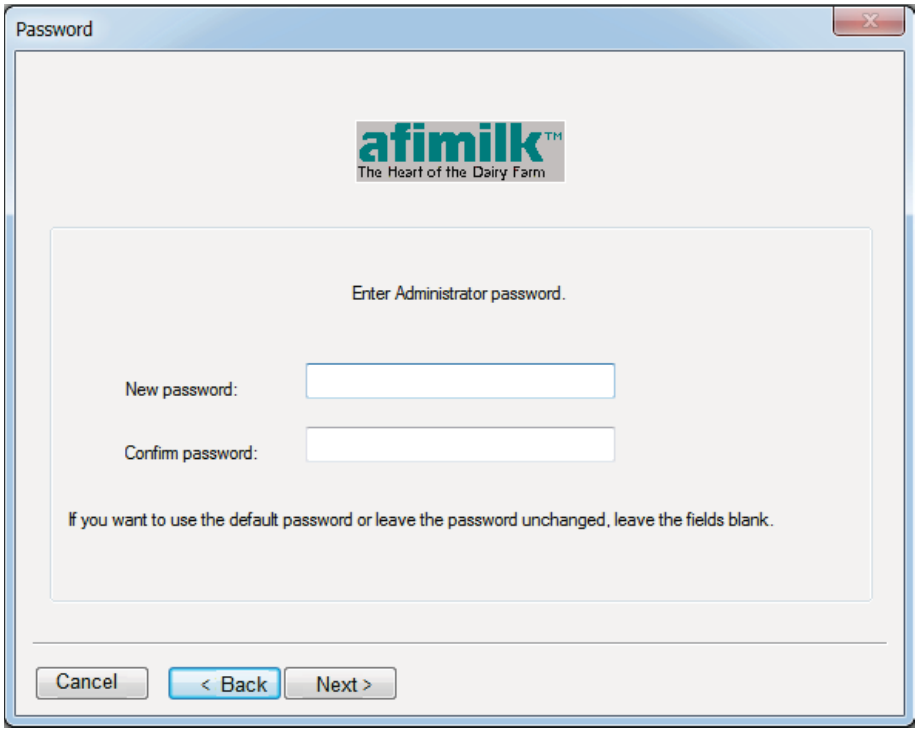
8. Click **Next.** The Drive dialog opens.



9. Select the **hard drive** where AfiFarm files are to be installed. This is the hard drive previously prepared, where there are at least 100GB of free space available (see 2.4.2.2). Click **Next**. The **Number** dialog opens:



10. Select a unique **computer number** for the computer you are installing (default: #1)
11. Click **Next**. The Password dialog opens, where the default password is **afi**.

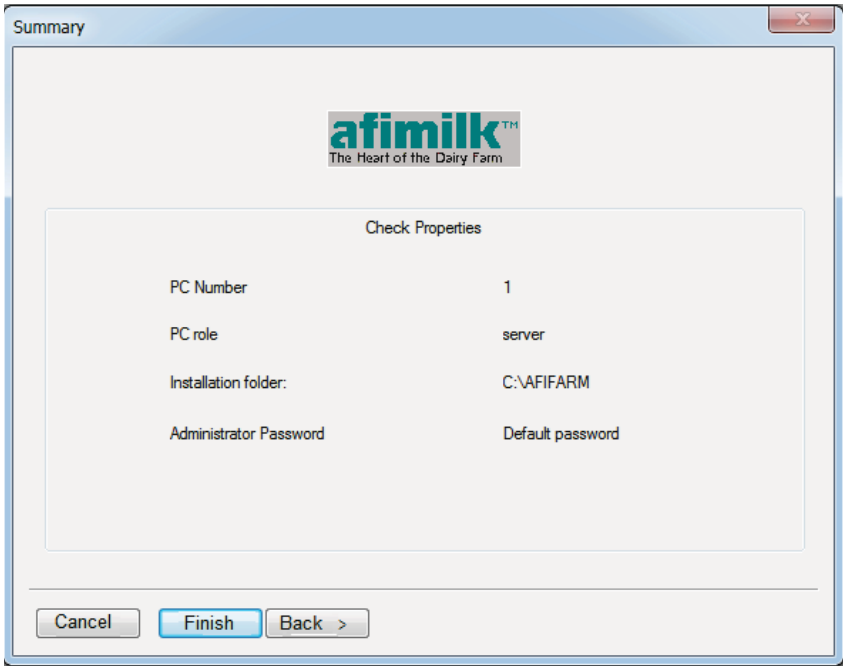


12. *To keep your existing password*: do not type any value into the boxes.

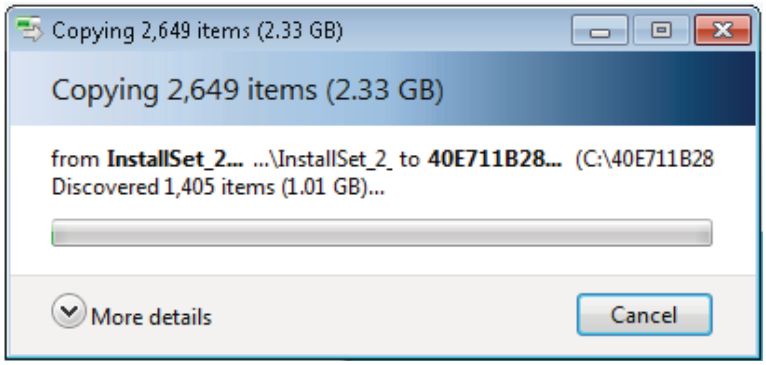
    To change the password: type the **new password**. Then re-type your password in the Confirm password box.

13. Click **Next**. The Language dialog opens, where the default language is check-marked in gray (in the following example: Vietnamese).

14. Select the desired language(s) and click **Next**. The Summary dialog opens



15. Click **Finish**. The automatic installation process starts, and the following dialog appears. (This may take a few minutes).

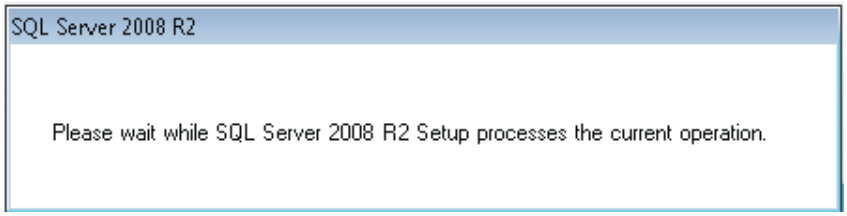


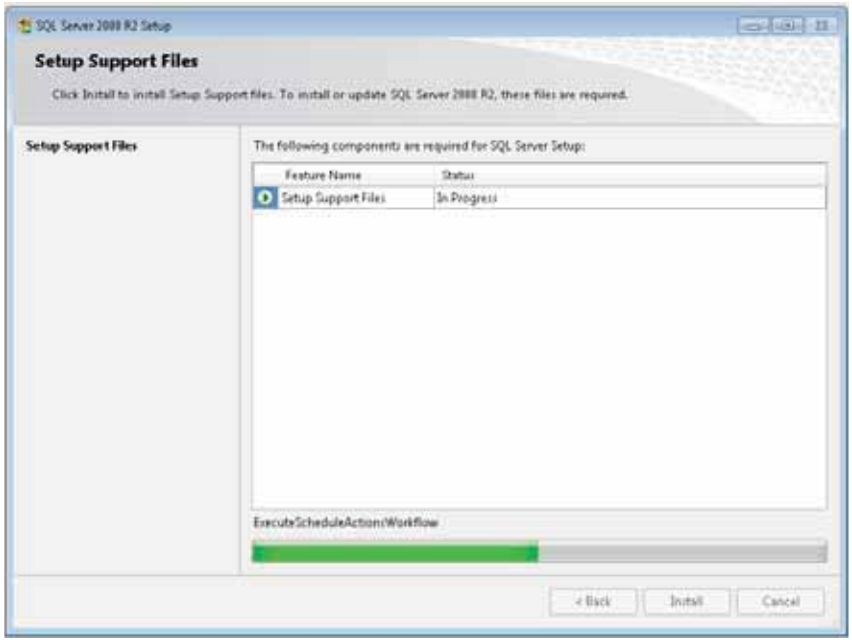
What next?

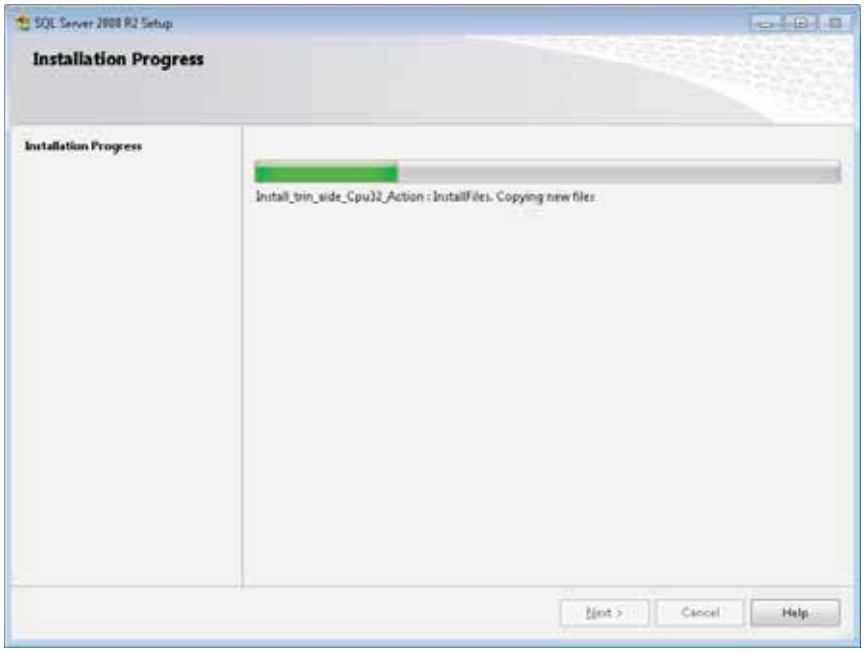
The installation wizard will now automatically perform the required background procedures. Verify that the process is done according to the following steps. If a problem occurs, refer to the troubleshooting chapter, or contact afimilk Helpdesk (see page ii for details).

4.1.3 Install HASP, Firewall and Database Elements

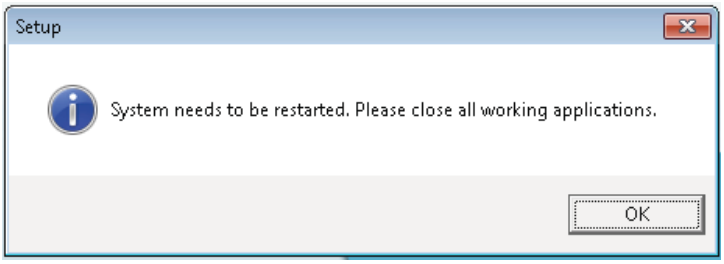
1. The next screens indicate that the database is being installed. The SQL installation may take 30-50 minutes.


SQL Server 2008 R2
Please wait while SQL Server 2008 R2 Setup processes the current operation.

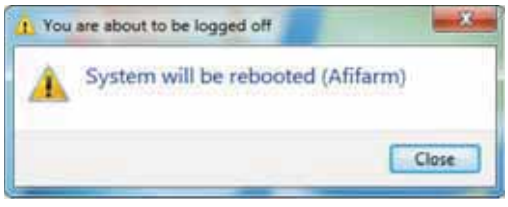

SQL Server 2008 R2 Setup
Setup Support Files
Click Install to install Setup Support files. To install or update SQL Server 2008 R2, these files are required.
Setup Support Files
The following components are required for SQL Server Setup:
Feature Name
Status
Setup Support Files
In Progress
ExecuteScheduleActionWorkflow
< Back
Install
Cancel


SQL Server 2008 R2 Setup
Installation Progress
Installation Progress
Install_bin_side_Cpu32_Action : InstallFiles. Copying new files
Next >
Cancel
Help

2. The system will need permission to restart: Click **OK**

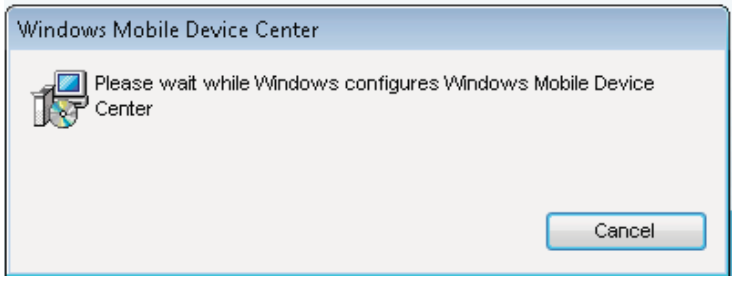


3. Reboot notification appears

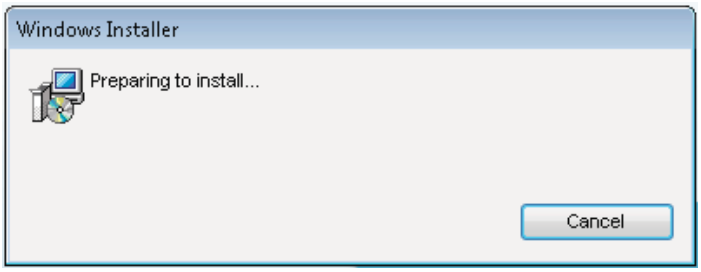


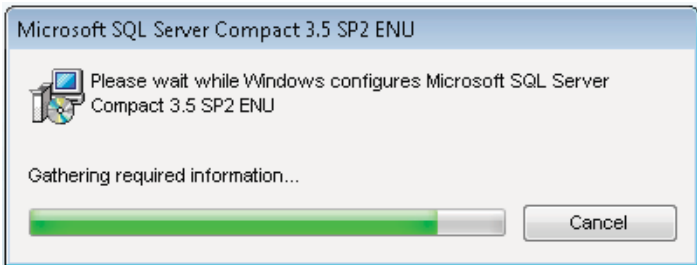
4.1.4 Supervise Automatic Installation Steps

1. After rebooting, the following dialogs appear, while the system installs the required elements. This process may take 10-15 minutes. Make sure that the progress bar shows (slow) progress. IMPORTANT! Do not touch any of the screens shown below during the process!



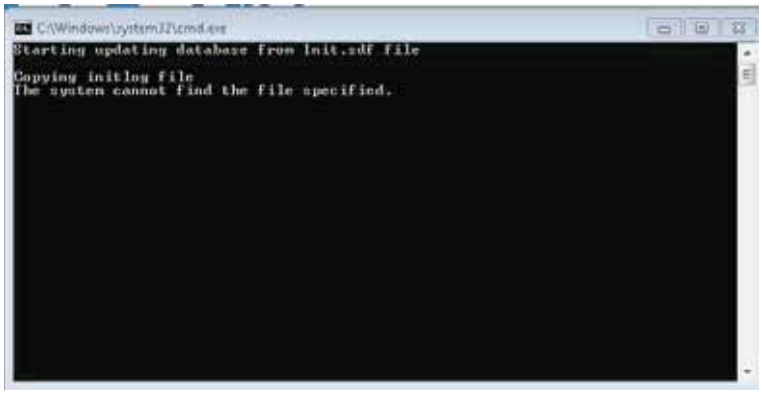

S.A.E. Afikim Installation
afimilk™
The Heart of the Dairy Farm
AfiFarm™
afimilk
1 Removing previous installation
2 Installing SQL 2008 R2
3 Installing additional components
4 Installing Afifarm


Windows Installer
Preparing to install...
Cancel

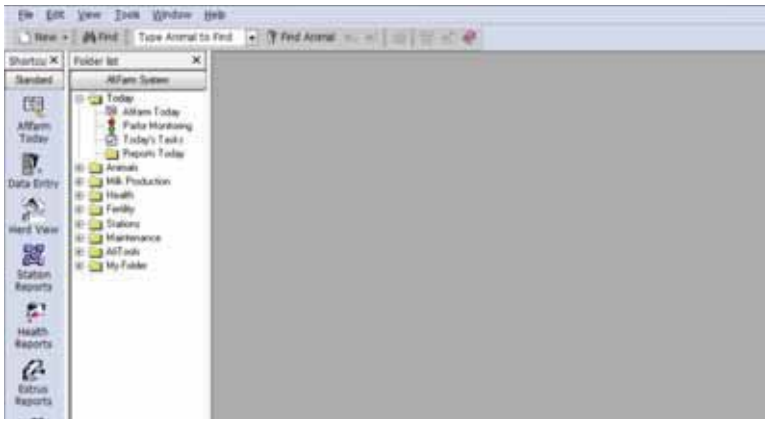

Microsoft SQL Server Compact 3.5 SP2 ENU
Please wait while Windows configures Microsoft SQL Server Compact 3.5 SP2 ENU
Gathering required information...
Cancel

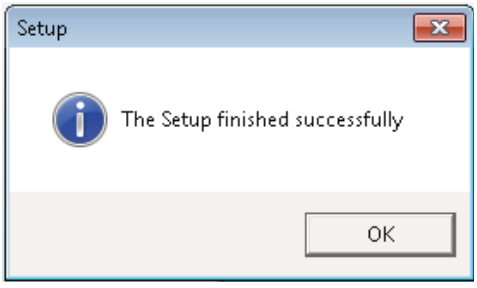

S.A.E. Afikim
Installation
afimilk™
The Heart of the Dairy Farm
AfiFarm™
afimilk
1 Removing previous installation
2 Installing SQL 2008 R2
3 Installing additional components
4 Installing Afifarm


S.A.E. Afikim
Installation
afimilk™
The Heart of the Dairy Farm
AfiFarm™
afimilk
1 Removing previous installation
2 Installing SQL 2008 R2
3 Installing additional components
4 Installing Afifarm

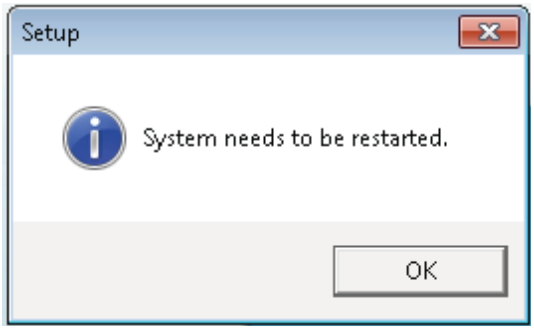


2. AfiFarm application will automatically be started by the system:





3. The installation process has been completed. Restart is required.



4.2 Install the AfiFarm RT System Module

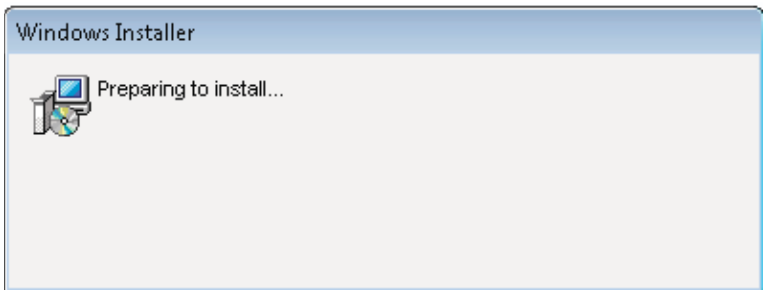
After the AfiFarm5 is installed, install the AfiFarm RT (Real Time) System. The AfiFarm RT System includes four elements that are installed separately. Three will be installed now, and the fourth is installed at a later phase, after performing basic system configuration.

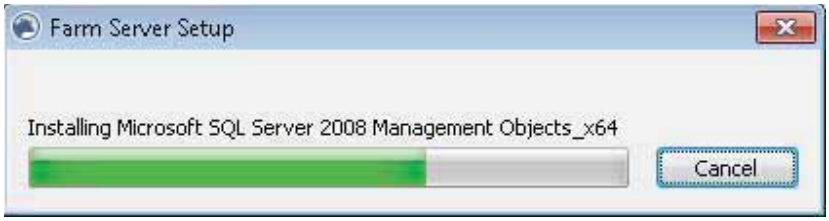
Install the AfiFarm RT system according to the following steps:

1. Install FarmServer Setup module: FarmServerSetup.exe (~15 minutes), see 4.2.1
2. Install Real Time Setup (RTMS) module: RTMSSetup.exe (~10 minutes), see 4.2.2
3. Install Real Time GUI (RTG) module: AfimilkRealTimeStudio.exe (2-5 minutes), see 4.2.3
4. Install Real Time Station Controller module: StationControllerSetup.exe (2-5 minutes), see 4.2.4

4.2.1 Install the Server Setup

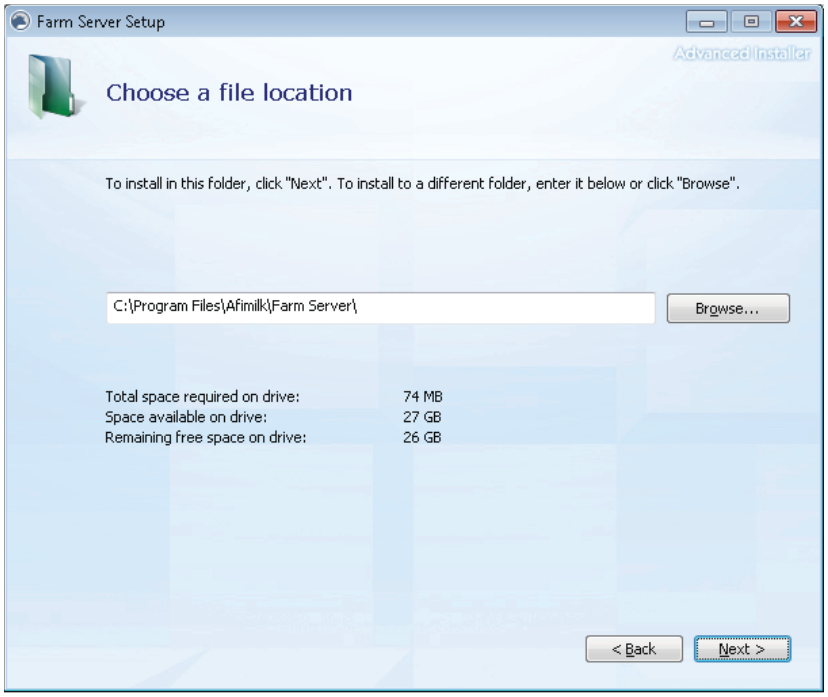
1. Open the AfiFarmRT folder and double click on FarmServerSetup.exe . The following pre-installation screens are displayed:



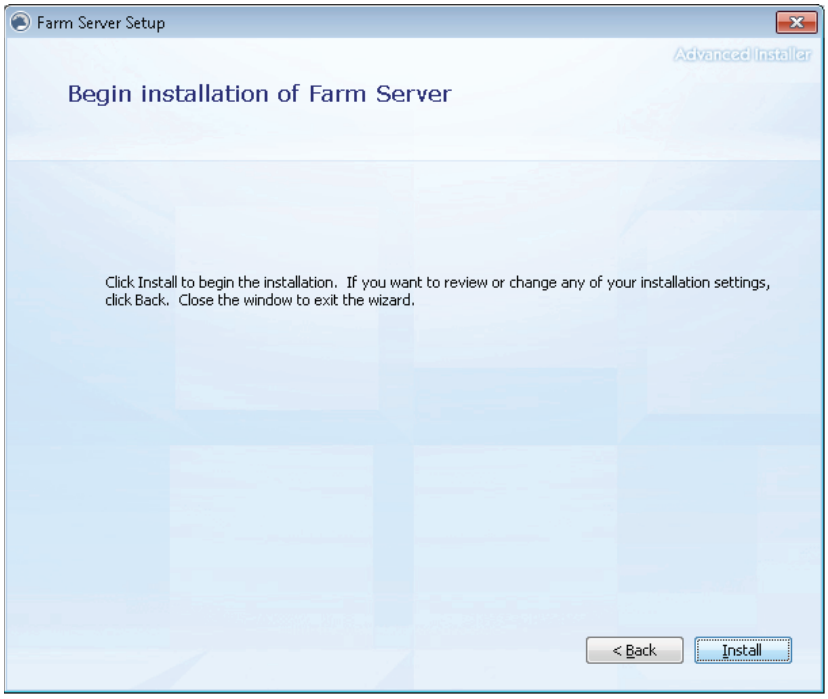


2. The setup wizard welcome screen appears. Click **Next**.

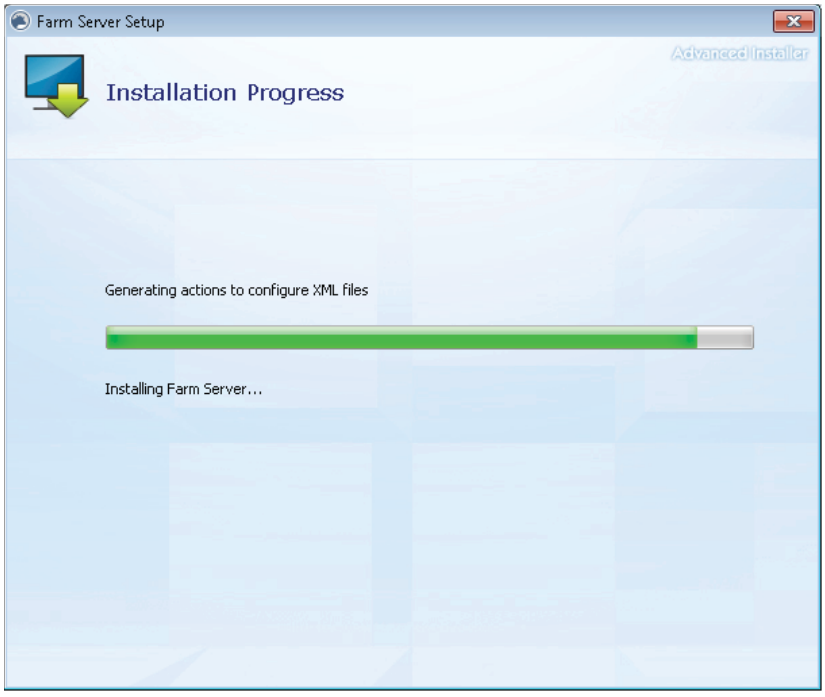
3. Select the **location** where the Farm server setup files are to be installed. The default appears automatically. Click **Next**.

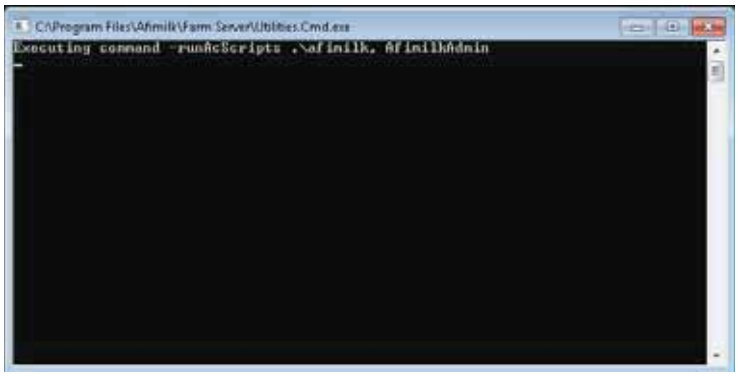


4. The **Begin Installation** screen appears.

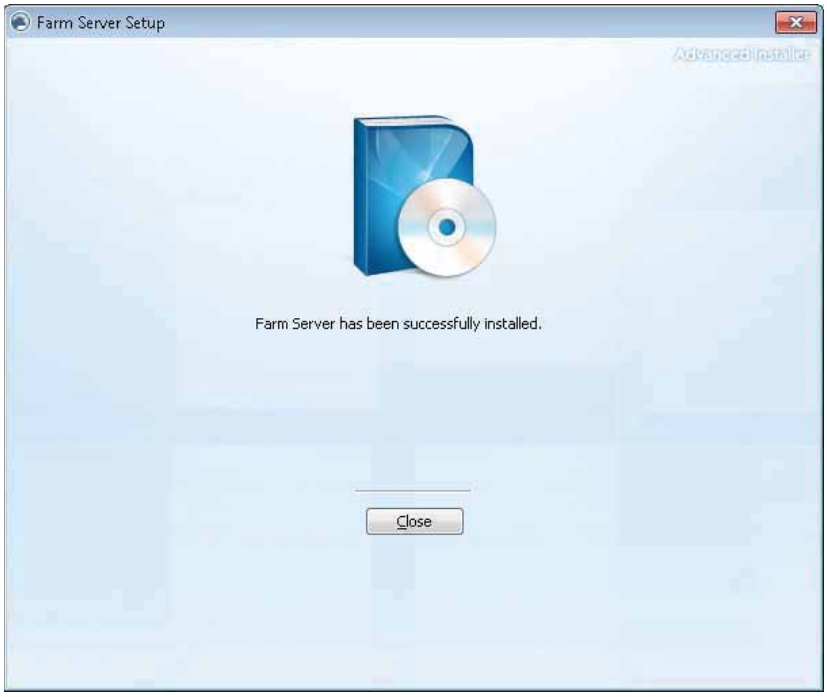


5. Click **Install**. The automatic installation process starts and the following progress screens appear. (This may take a few minutes).

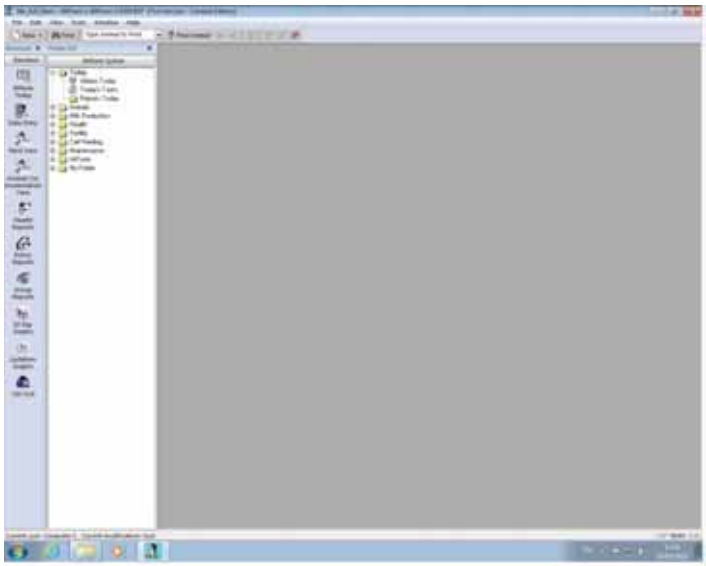




6. When the process ends, the following dialog appears. Click **Close**.



7. AfiFarm will automatically open

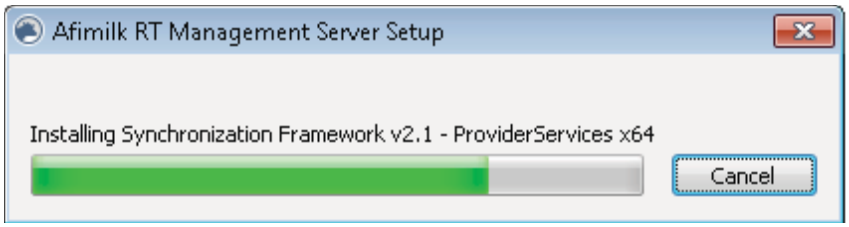


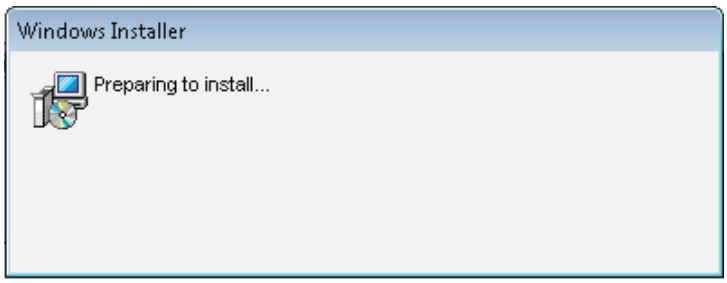
8. The server setup installation is complete.

4.2.2 Install the RTMS

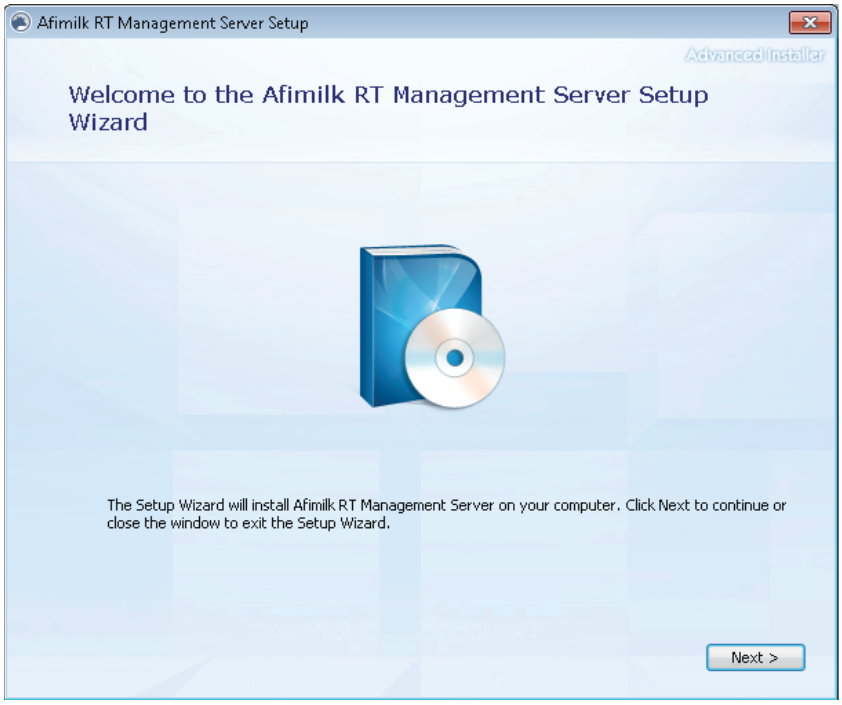
After the server setup completes successfully, install the RTMS as follows:

1. Open the AfiFarmRT folder and double click on RTMSSetup.exe . The following pre-installation screens are displayed:

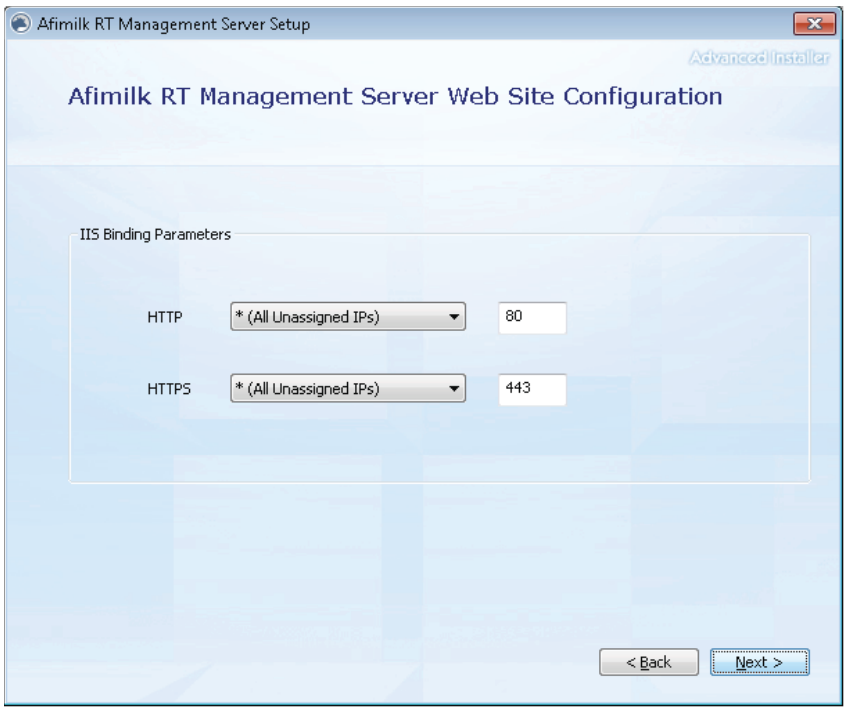




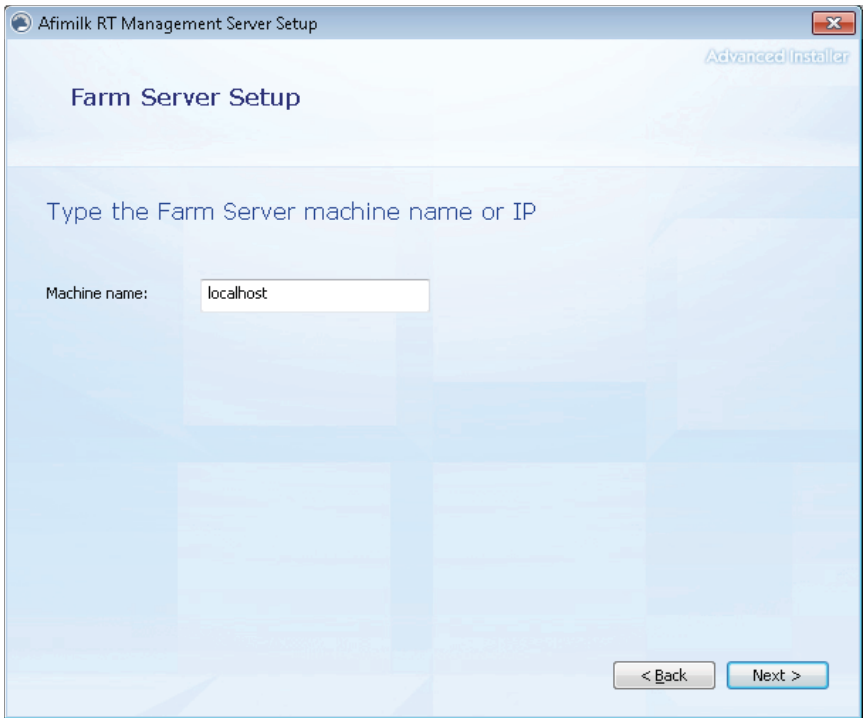
2. The setup wizard welcome screen appears. Click **Next**.



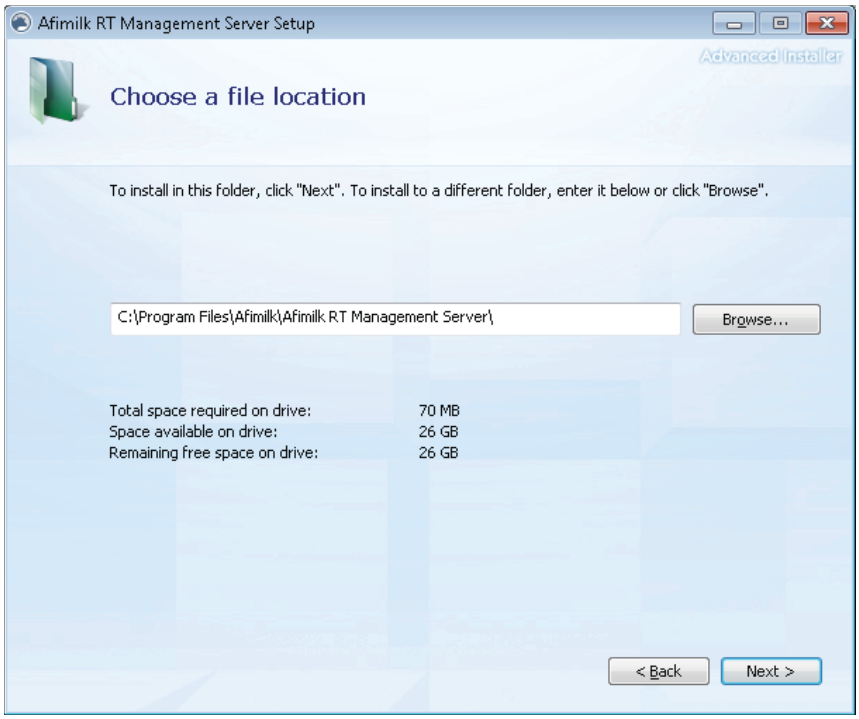
3. The default web configuration appears. Click **Next**.



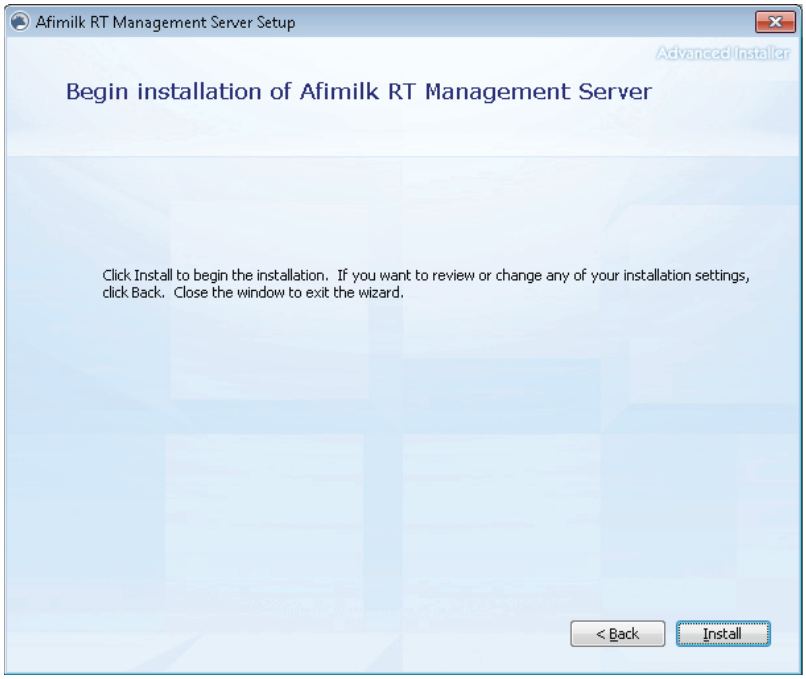
4. The user is requested to enter the server computer location. The default appears as ***localhost***, as the server is on the current machine. Click **Next**.



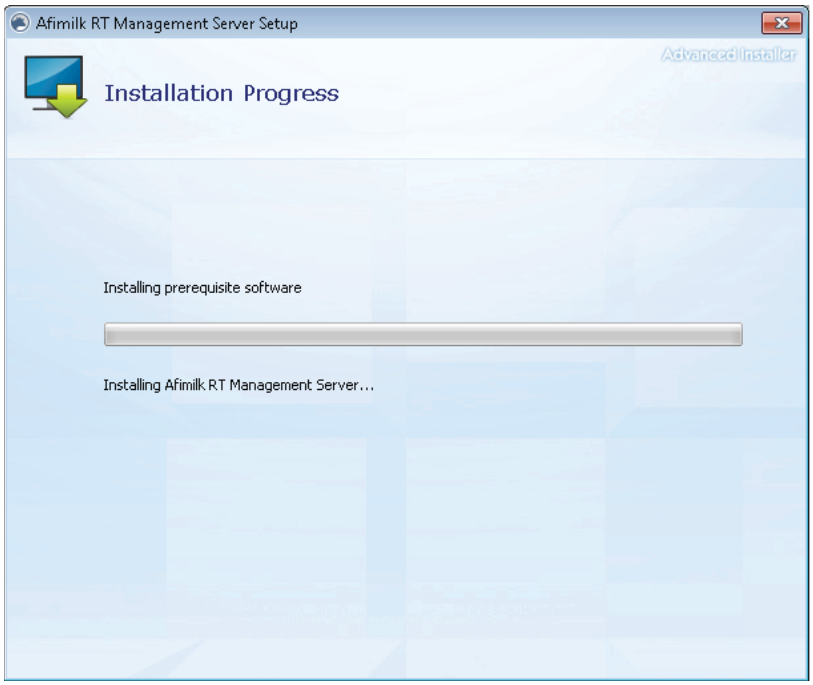
5. Select the **location** where RTMS files are to be installed. The default appears automatically. Click **Next**.



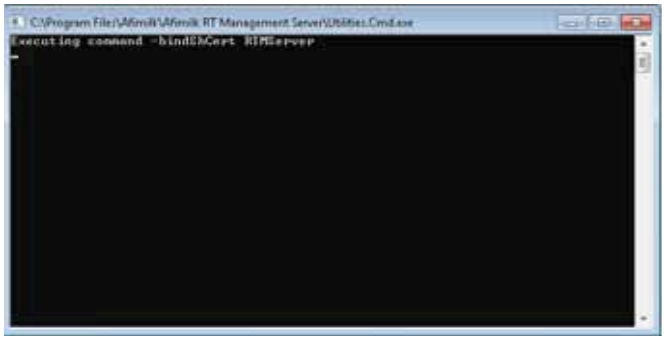
6. The **Begin Installation** screen appears.

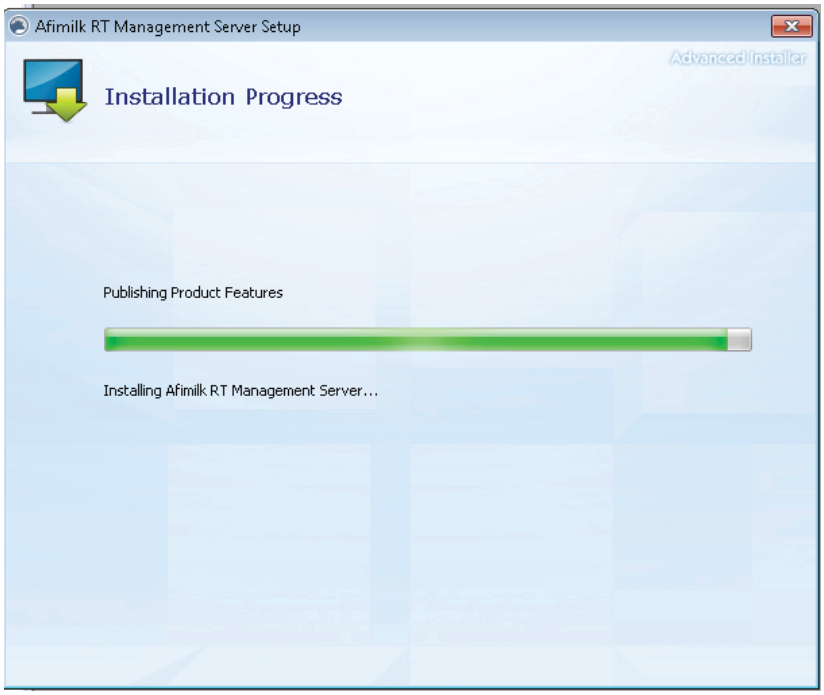


7. Click **Install**. The automatic installation process starts and the following progress screens appear. (This may take a few minutes).

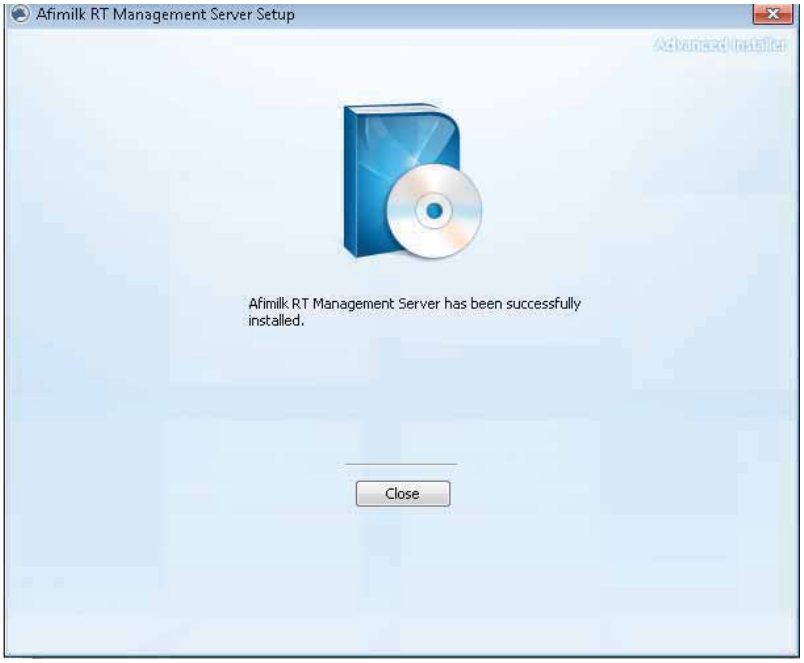


8. The user is requested to restart the computer. Click **Yes**.
9. After reboot, the RTMS wizard continues automatically, repeating steps 2-7 above (Note: If the process is not initiated automatically, re-run the process manually, by double-clicking on the RTMS module again RTMSSetup.exe). Then the following progress screens appear:





10. When the installation is complete, the following screen appears. Click **Close**.

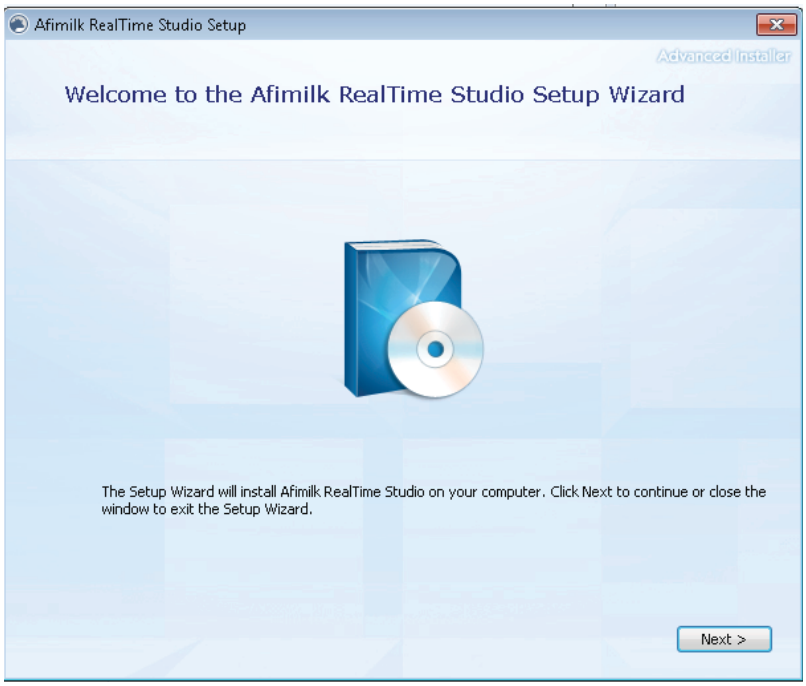


11. Now the AfiFarm application automatically opens. The RTMS installation is completed.

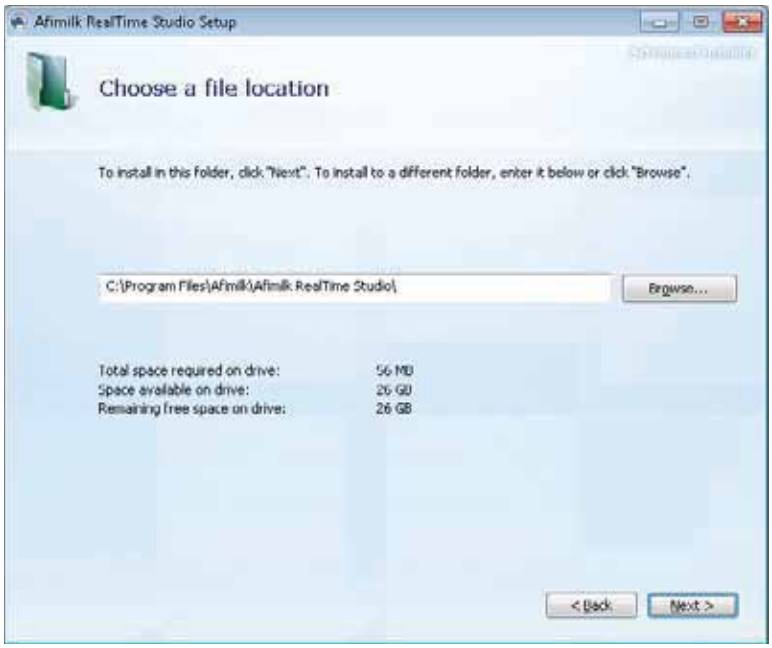
4.2.3 Install the RTG Component

After the RTMS installation completes successfully, install the RTG as follows:

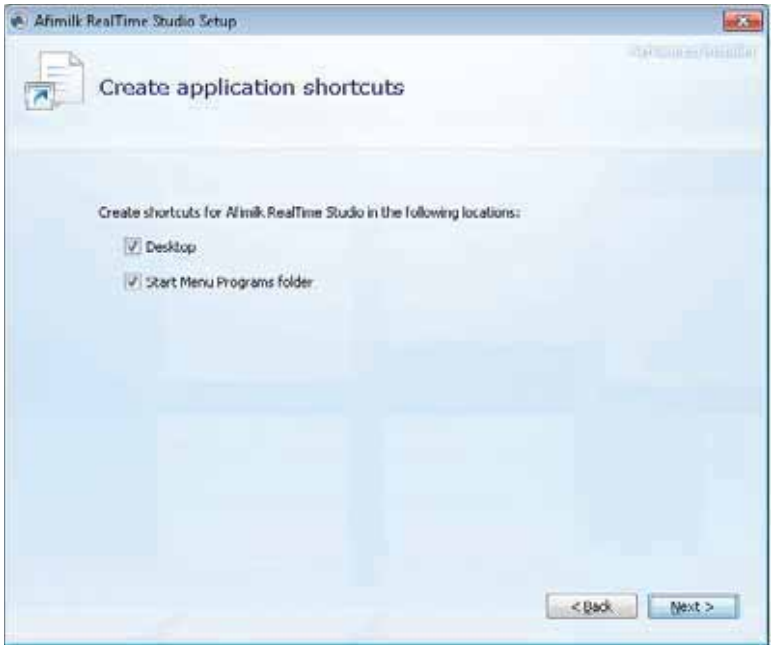
1. Open the AfiFarmRT folder and double click on AfimilkRealTimeStudio.exe. The setup wizard welcome screen appears. Click **Next**.



2. Select the **location** where RTG files are to be installed. The default appears automatically. Click **Next**.

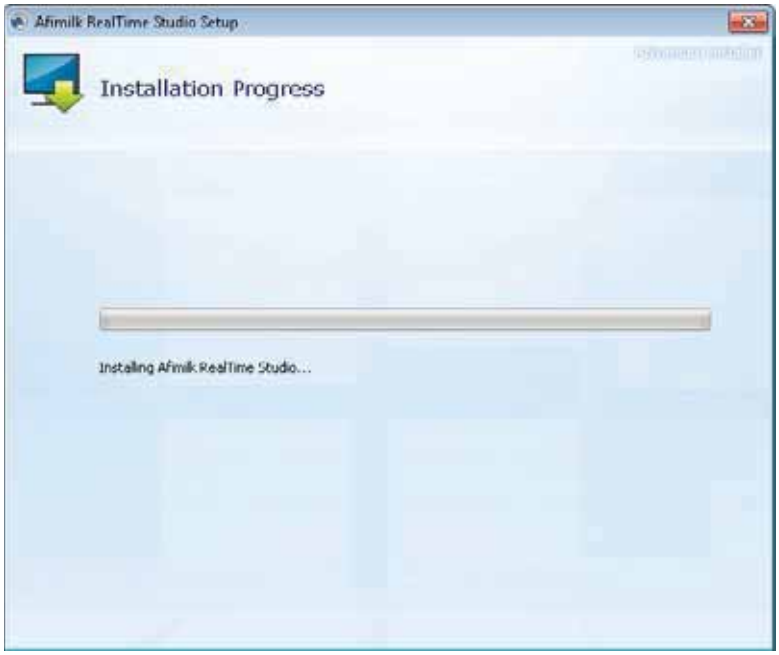


3. By default, the wizard generates a shortcut on the desktop and in the start menu. Click **Next**.



4. The **Begin Installation** screen appears.

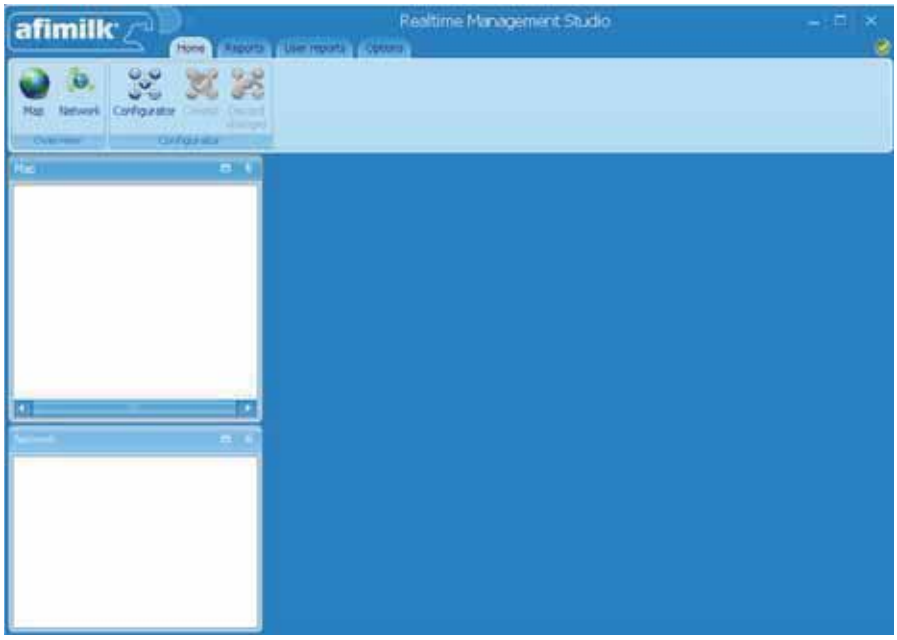
5. Click **Install**. The automatic installation process starts and the following progress screens appear. (This may take a few minutes).



6. When the installation is done, the following screen appears. Click **Run afimilk RealTime Studio**.

7. The login screen appears. Enter the following attributes:
   - **Server**: *localhost*
   - **User**: *admin*
   - **Password**: *admin*

8. Click Login. The Real Time GUI opens.

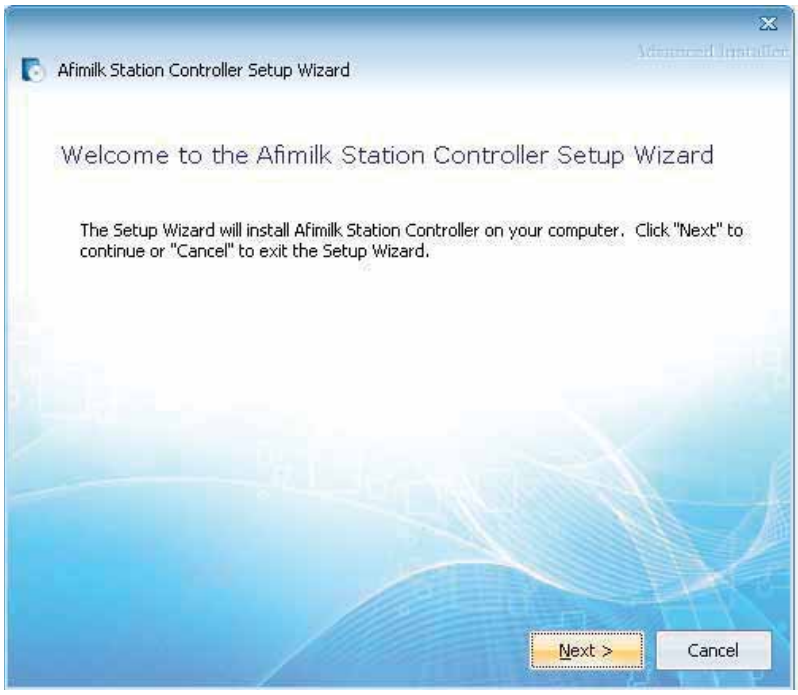


4.2.4 Install the RT Station Controller Component

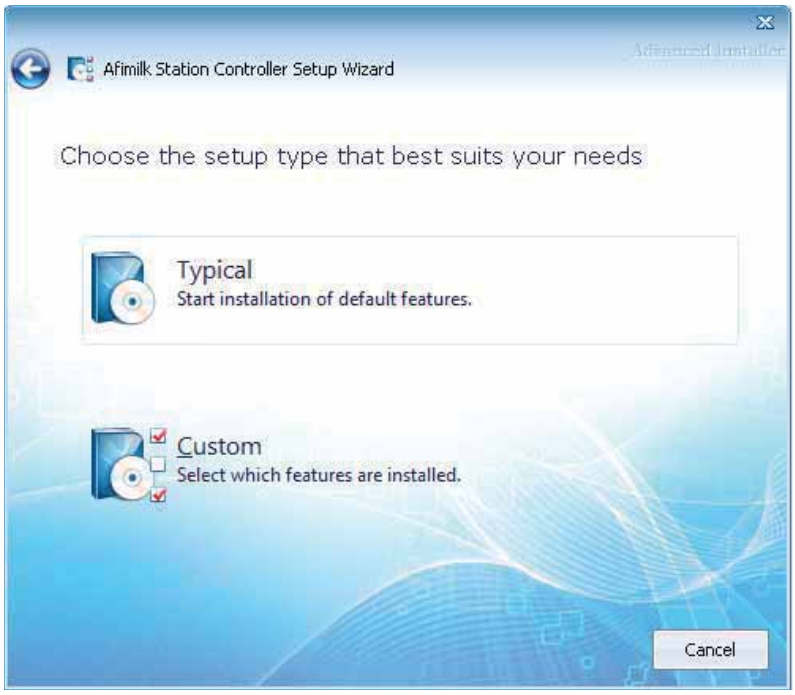
After installing the RTMS, the final RT module is installed: the RT Station Controller Setup RTC module: StationControllerSetup.exe .

To install the RT Station Controller Setup RTC

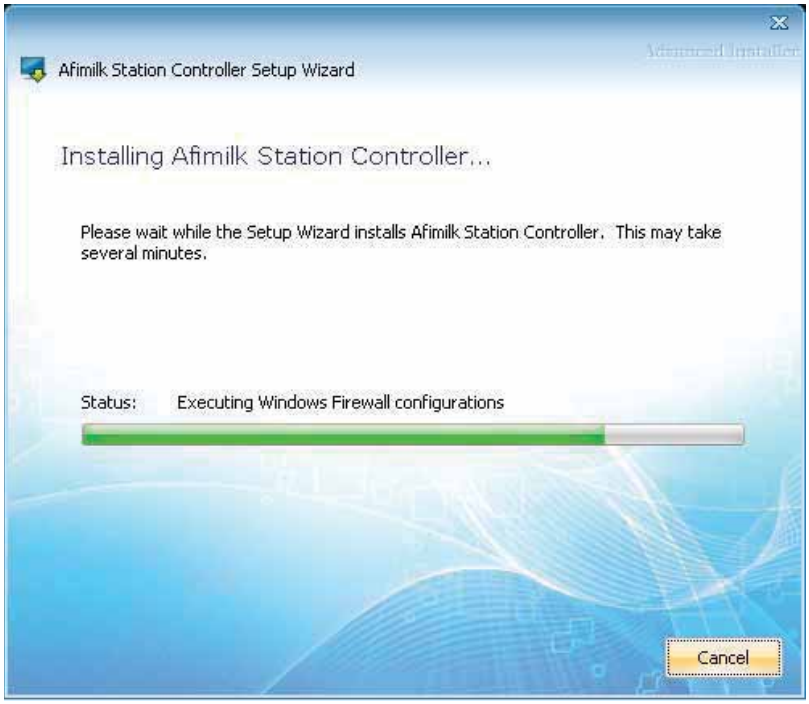
1. Open the AfiFarmRT folder and double click on StationControllerSetup.exe . The setup wizard welcome screen appears. Click **Next**.



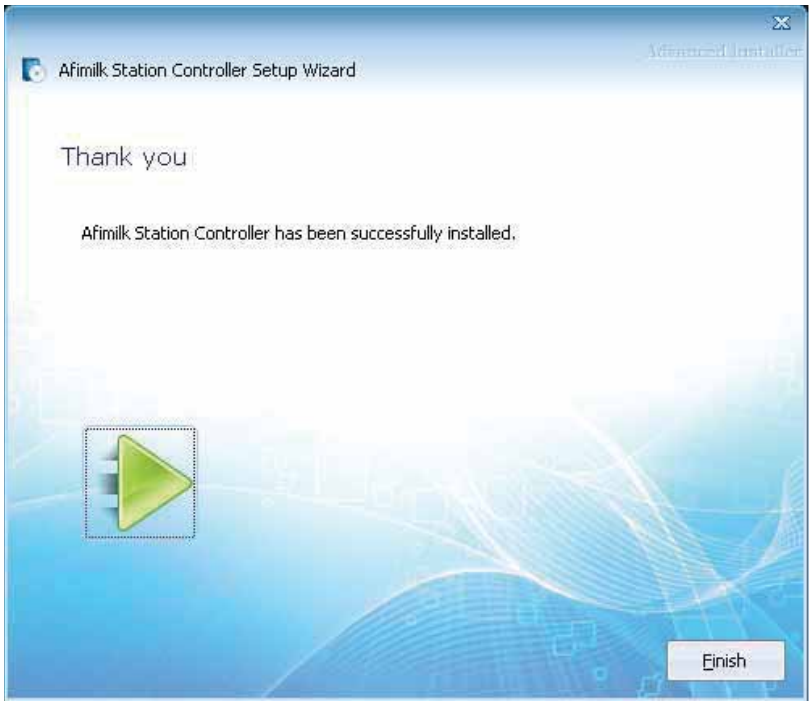
2. Select **Typical** for a standard configuration. Click **Next**.



3. The controller installation starts, showing a progress bar.



4. When the installation is done, the following screen appears. Click **Finish**.



4.3 Set the RT System (Quick Start)

AfiAct II components are connected via the network (wired or wireless), where the AfiFarm **RT System** manages the communication between the components (AfiAct II software, Reader, etc.).

The AfiFarm RT system client-server architecture involves three types of computer functions, *all running on the same PC for AfiAct II*: **Server** (manages herd database, system configuration and licensing); **Controller** (manages the real-time processes, and includes a small database to control the stations and collect data when the communication with the server is interrupted), **Client** (for user access to herd data).

To allow basic system functionality and overall system communication, the following basic parameters must be set in the AfiFarm RT System for quick-start:

- **HW system layout**: PCs, devices (e.g. Reader(s) Unique ID), adaptors, ports, etc.)
- **Logical system definitions**, reflecting the stations (i.e. AfiAct, AfiSort, milking-parlors,…), sites (aggregation of all the stations with the same identification system – usually geographically close to each other), tracks (monitored animals; heifers/milking cows) and required sampling sessions.
- Deployment of the software to support the previously defined site(s) (in this case: AfiAct II) via the tray configurator.

The following sections provide an overview of the RT System navigation, session-definition requirements, and explain how to set up the mandatory system fields via the AfiFarm RT System.

NOTENOTE

For better system monitoring, it is recommended to define a user report that detects tags not assigned to animals), see Appendix C.

NOTE

The setup done via the RT System interface is checked at a later stage, when the whole system is connected (including the Reader, see 5.2).

NOTE

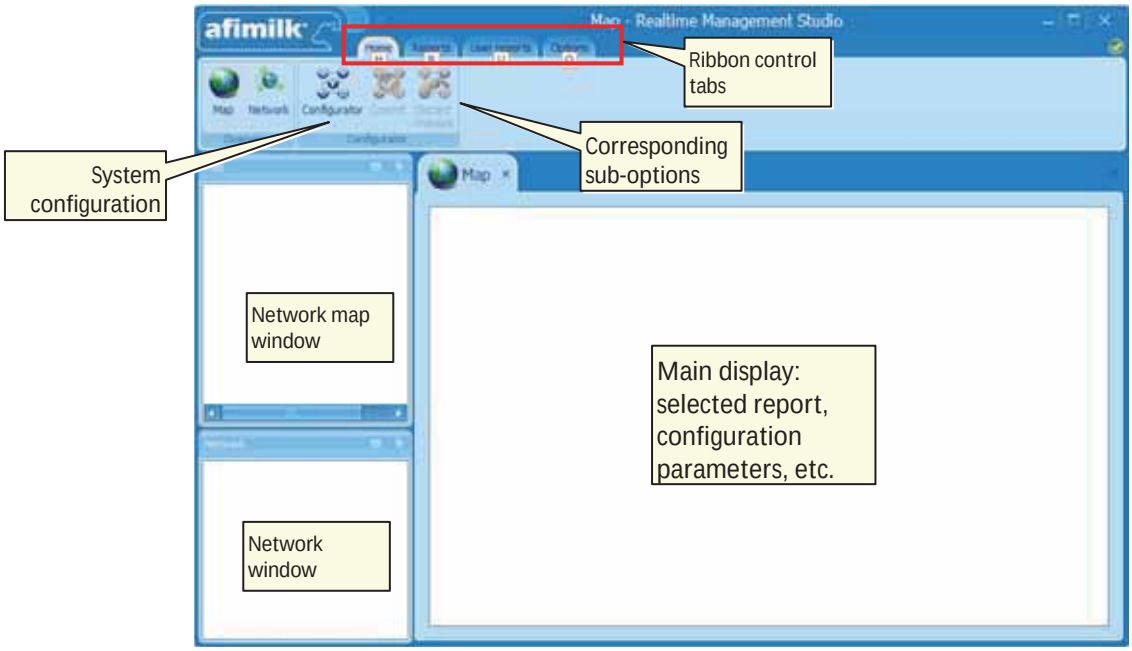
The AfiFarm RT system is a powerful tool, allowing the technician to perform Reader settings, tags identified by the system, view map of connected network elements, station reports, etc. For a summary on the AfiFarm RT System capabilities refer to Appendix C.

4.3.1 Navigating the RT System

The RT system includes two accessible GUI elements:

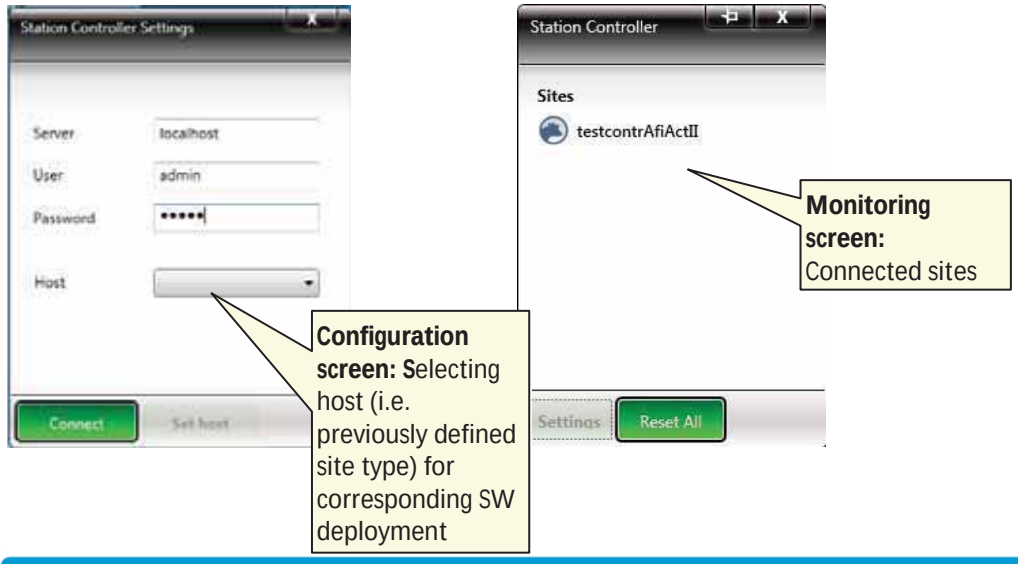
- **The RT Studio** screens – for configuring the system, managing reports, etc.
- **The Station Controller** screens – used for:
  - Deployment of the specific-site-type supporting software (here: AfiAct II)
  - Monitoring connections with the defined system sites

The RT Studio Screens are accessed via the AfiFarm RT icon  , and include the following areas (see Appendix C for details)



The Station Controller screens are accessed from the icon in the system tray

and displays the monitoring screen (connected sites) and the configuration screen (connecting to server host)



4.3.2 Determine the Required Sampling Sessions

To allow AfiAct II algorithms to analyze the data correctly, the system must be set to reflect the specific farm monitoring needs. These are set by the following parameters:

- **Tracks** –Tracks determine the type of animals that are monitored: heifers/cows.
- **Stations** – Stations determine the specific monitored activity: milking, AfiAct II, AfiSort, etc.
- **Sites** – The group of stations in the same geographical area, using the same identification system
- **Sessions** – The sessions are set to reflect the specific farm's daily scheduled activities. (E.g. milking times, breeding times, pasture times, feeding times, and other activities done in the farm).

To determine the above parameters correctly, the dealer personnel together with the farmer must collect and consider the relevant information. The following items provide guidelines for determining the farm's sessions via the RT System. Fine tuning may be done after running the system for a test period.

To determine the sessions, refer to the following criteria and guidelines

1. **Tracks** reflect the *specific animals* monitored (milking cows / heifers / both). Check what **types of animals** will be carrying tags.
2. Check when **breeding** is done during the day.
3. **Session times** are set according to the tracked animal as follows:
    - *For milking cows:* the session times are set based on milking times:
        - Check what are the **milking times** (i.e. when is the first group brought to the milking parlor; when does the last cow leave the milking parlor)
        - Start the session 1-1.5 hours *before* each milking time, and at least one hour *after* the preceding milking. If the gap time between milking is not long enough, configure the beginning time of the sessions to 1/2 an hour after the last cow of the preceding milking leaves the parlor.
    - *For heifers*: Configure one session of 24 hours.

      Check the heifers' data after 3-4 days. If there is very high activity during part of the day – configure two sessions: one for the high activity and one for lower activity. Configure the high activity session for 1.5 hours before the high activity occurs, and up to 1.5 hours after the high activity occurs.
4. The recommended number of sessions per day is between 1 and 3.
5. The session times must be continuous, ensuring 24 hours coverage

NOTE

If the session intervals or schedules are changed, contact afimilk representative to re-configure the system.

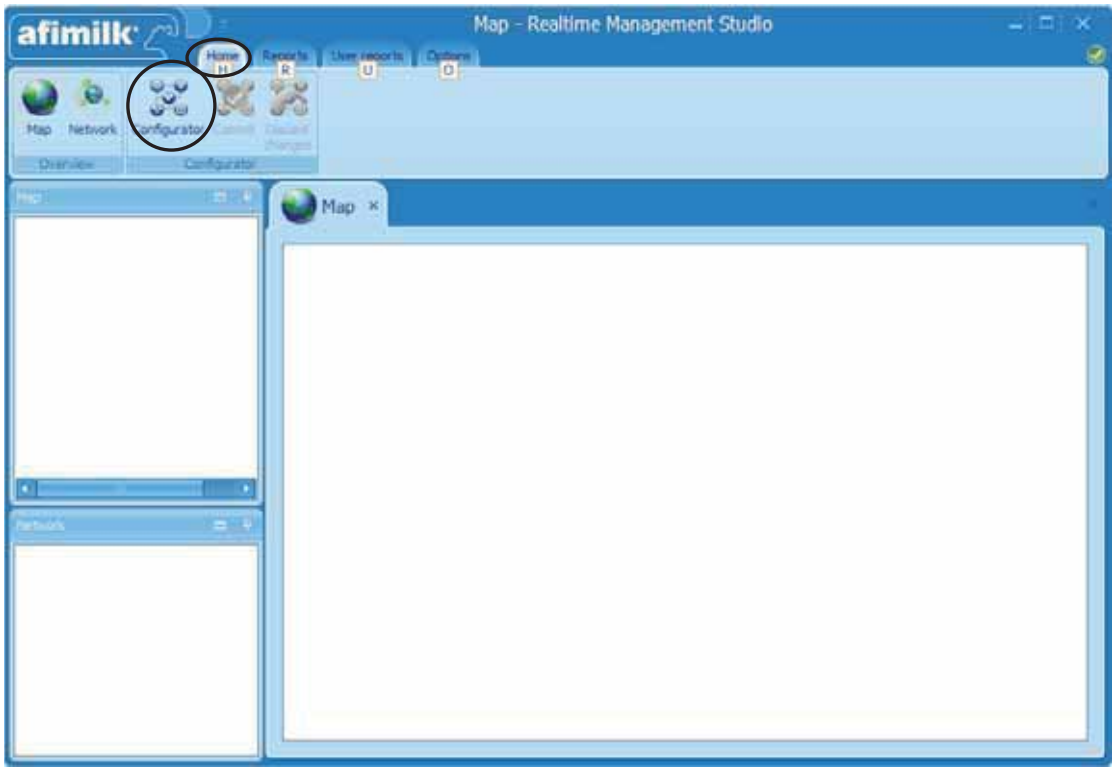
4.3.3 Set System Mandatory Parameters

To define the system computers (server and system controller)

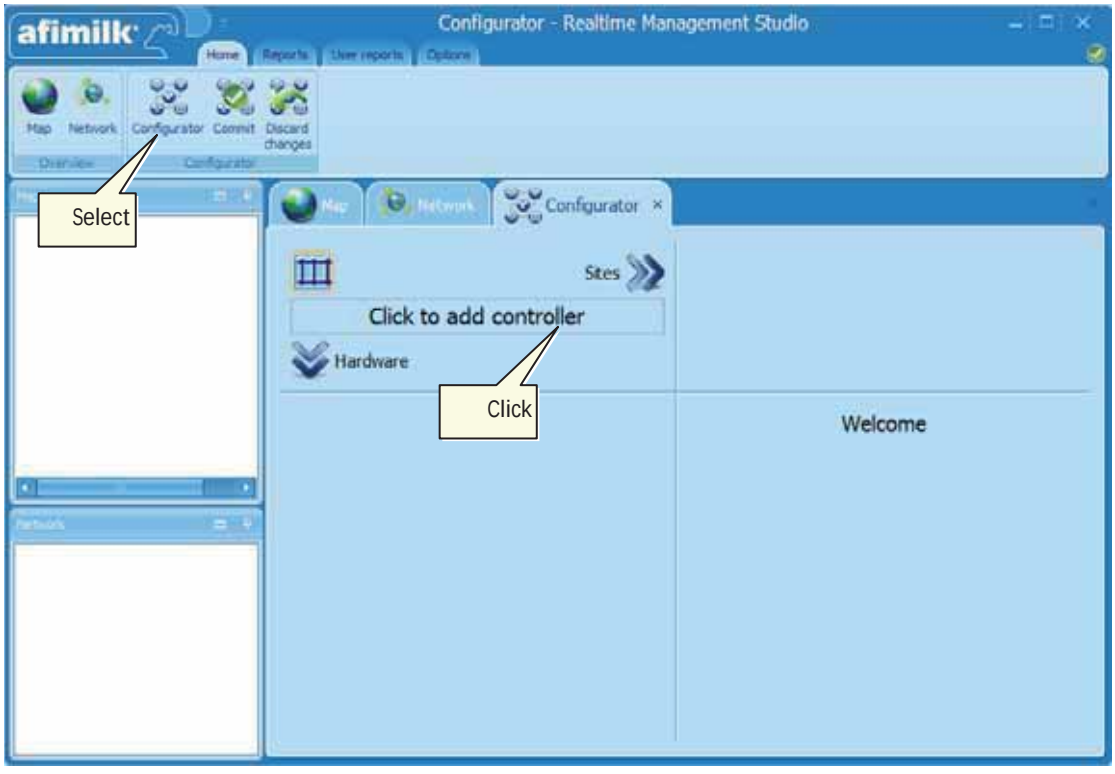
1. Verify that the Station Controller is up and running by checking the icon in the system tray 

2. Open the AfiFarm RT system (click the  icon).
3. The login screen appears. Enter the following login attributes:
   - **Server**: *localhost*
   - **User**: *admin*
   - **Password**: *admin*

4. Click **Login**. The RT main screen appears.



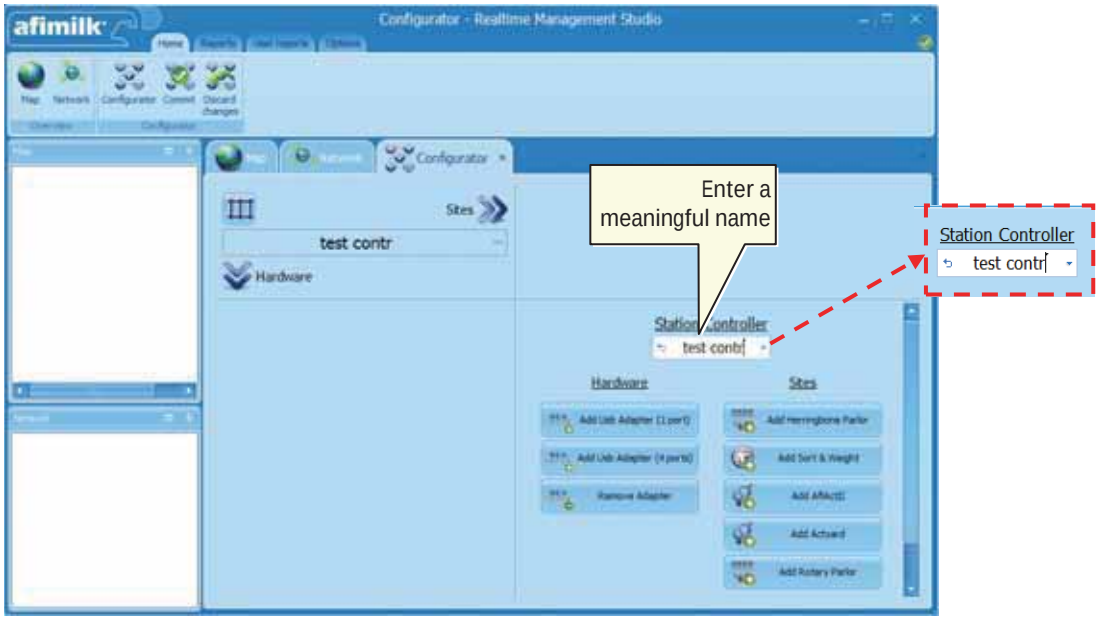
5. Under the **Home** tab, select **Configurator** from the tab sub-options.



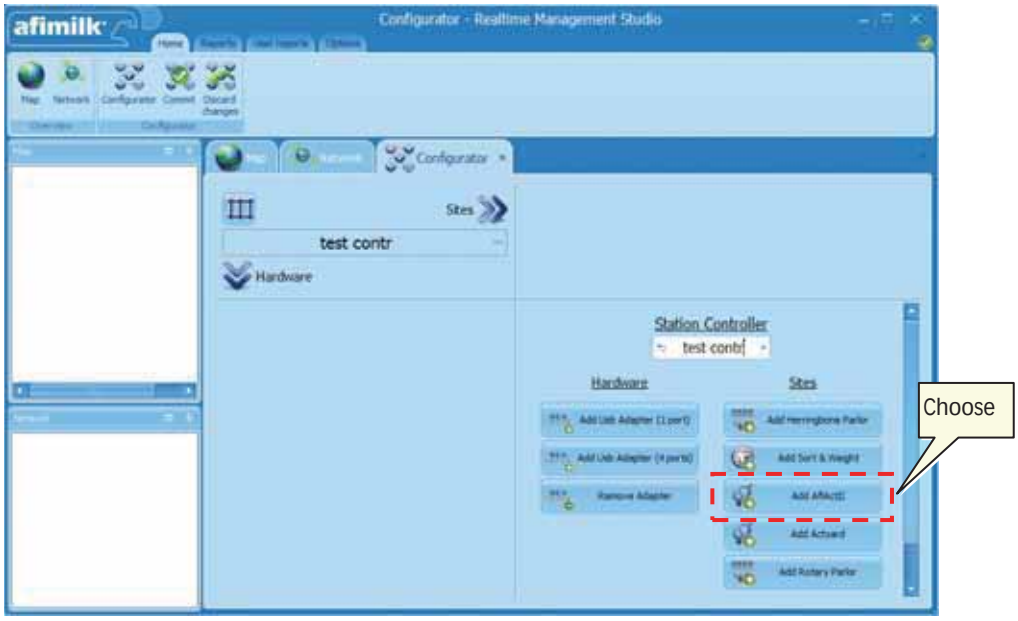
6. To determine the controller used click on the “Click to Add controller”

To define the new AfiAct II site

7. In the New Controller screen enter a meaningful name for the controller (in the following example: test contr), then choose Add AfiAct II from the Sites

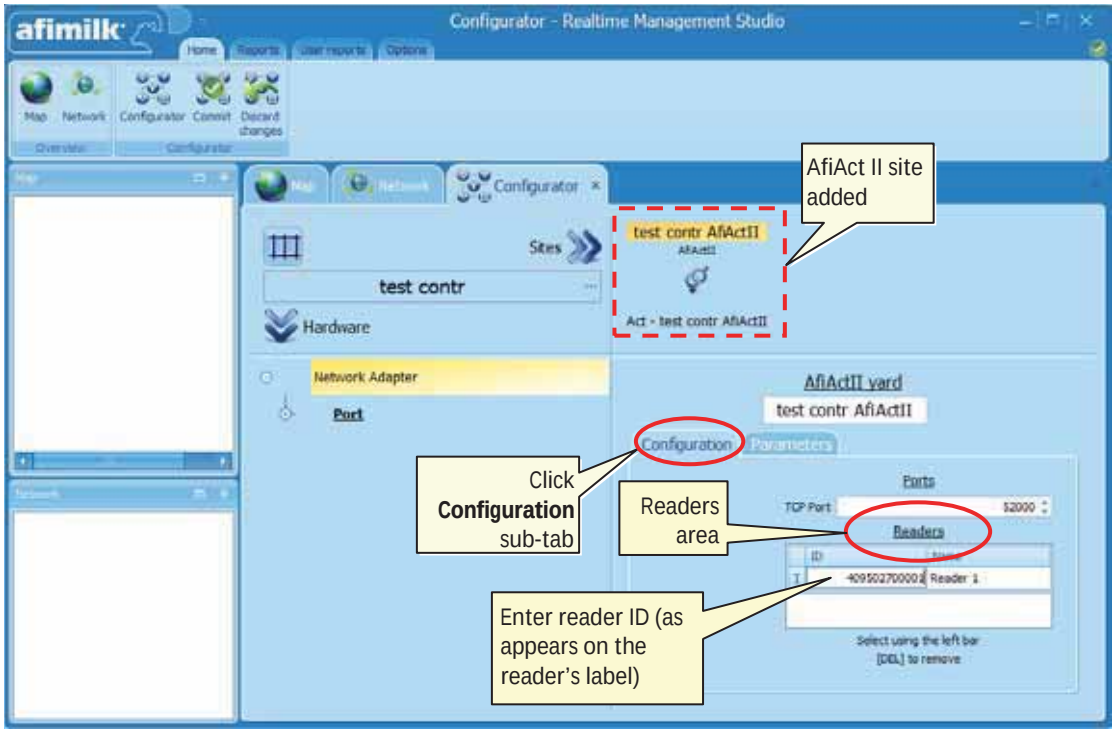


8. Add an AfiAct II site: Choose **Add AfiAct II** from the sites menu



Set the Reader(s) and Ports

9. Click the **Configuration** sub-tab. The relevant TCP port is set to the default value.

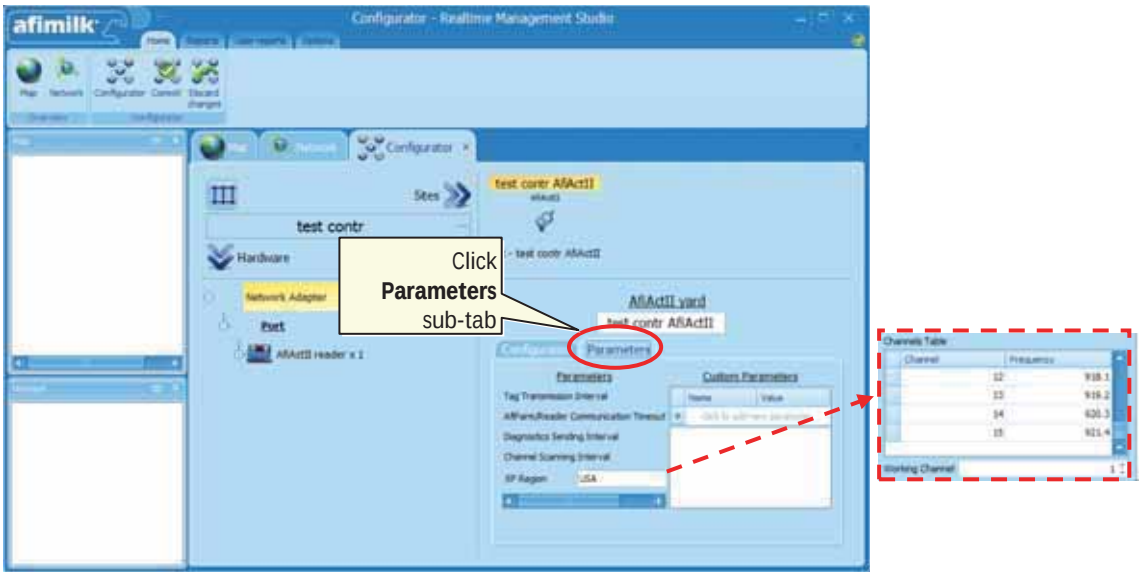


10. In the Readers area, enter the **Reader UID** (as obtained from the label on the Reader, see 1.3.4). Then enter a **Reader name**. Example:

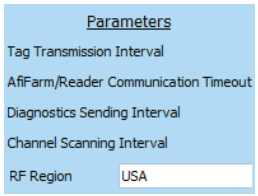
Note: If the system includes more than a single Reader, enter all of the Reader's UIDs and names.

Set the relevant parameters

11. To enter the relevant parameters, click on the **Parameters** sub tab



The following parameters are available:

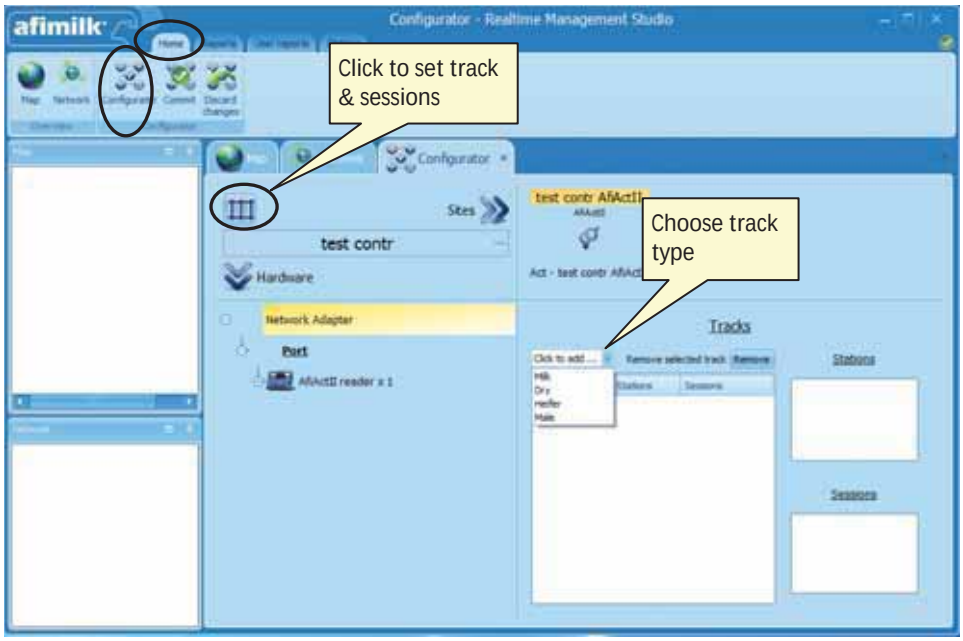


- **Tag transmission interval** - sets the interval in which the tags send their data to the Reader (default 15)
- **AfiFarm/Reader Communication Timeout** – not to be changed (default 3)
- **Diagnosis Sending Interval** – not to be changed (default 60)
- **Channel Scanning Interval** – not to be changed (default 60)
- **RF Region** – Determines the transmission region with its relevant frequency range. When clicked – a corresponding frequency channel table opens, allowing the user to select a different channel (in case of interferences). (Default is set according to your region (e.g. USA); your tags are factory-set to the same default channels as the Reader).

12. Select your **RF Region** and relevant **working channel**

Set a track with stations and their sessions

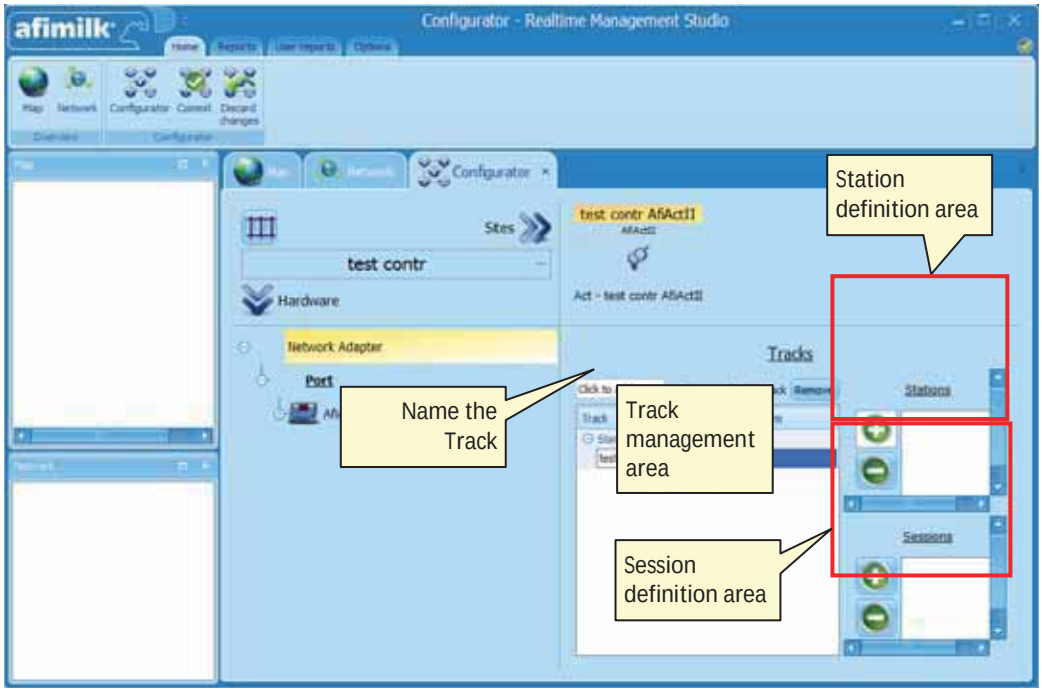
13. Under the **Home → Configurator** tab, click the Track  button, and select the type of track to be defined (**Milk** cows or **Heifers**).



14. The displayed screen shows the following main areas:

- Track management area
- Station definition area
- Sessions definition area

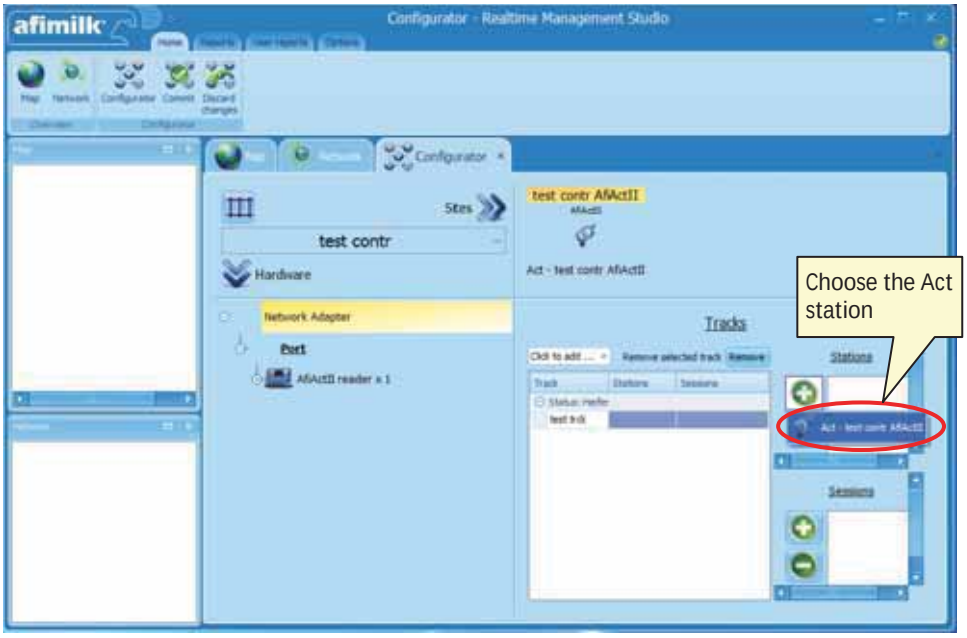
Enter a meaningful name to the track



15. Add the AfiAct II station to your track, as follows:

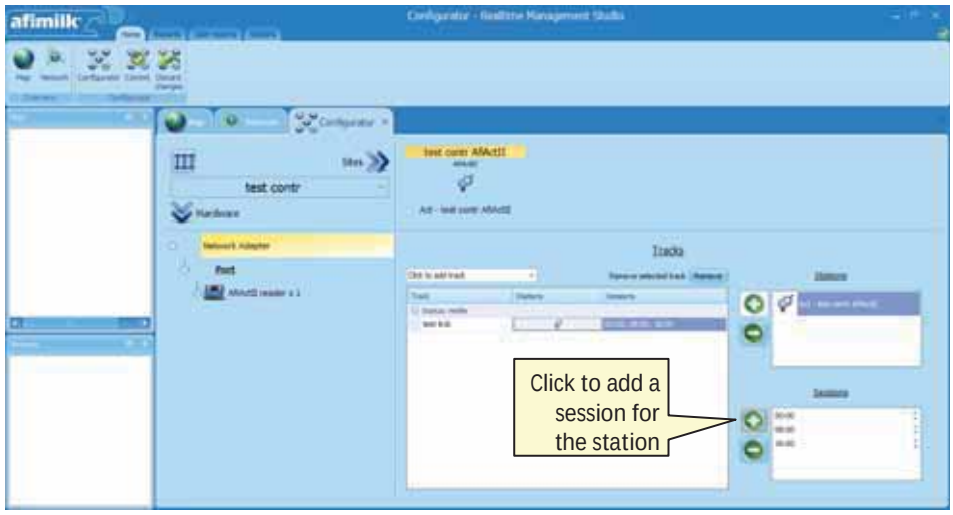
- In the station definition area, click the  sign.
- Choose the Act station from the roll-down list

Note: To remove a station, select the required station and click the  *sign*

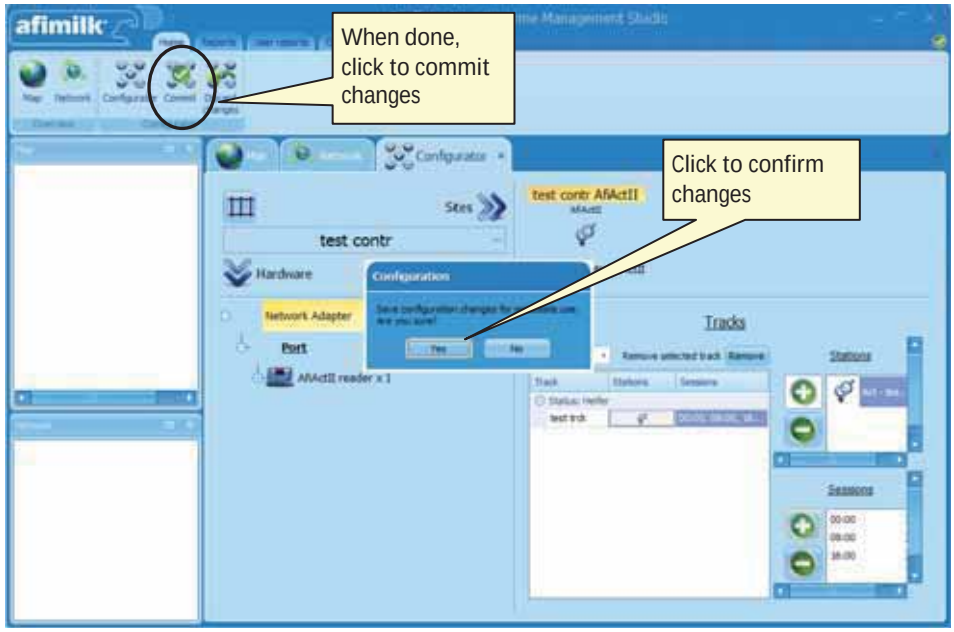


16. Define sessions for each defined track's station, corresponding to the farm schedule (Heifers will usually require only one or two sessions) as follows:
    - In the station definition area, select the station to be updated (in this example: Act on Test contrl).
    - In the session definition area, click the  sign to add a session. Repeat this to add the required number of sessions (in the following example: 3)
    - If the sessions are not distributed evenly during the 24 hours: For each session, select the time in which the session starts.

    Note: To remove a session, select the required session and click the  *sign*



17. When done updating, click **Commit**. A confirmation window appears.

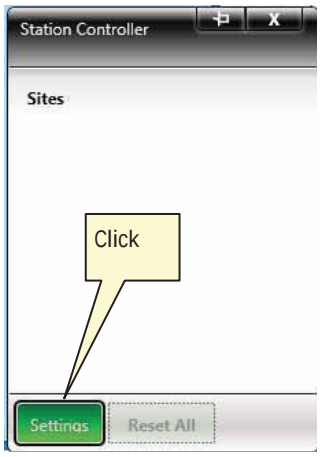


18. Click **Yes** to approve changes, Then wait a few seconds while AfiFarm restarts, and until all the processes are up and running.

Deployment of the software according to the defined station (i.e. AfiAct)

19. Open the **Station Controller** manager by clicking the icon in the system tray 

. The following dialog appears

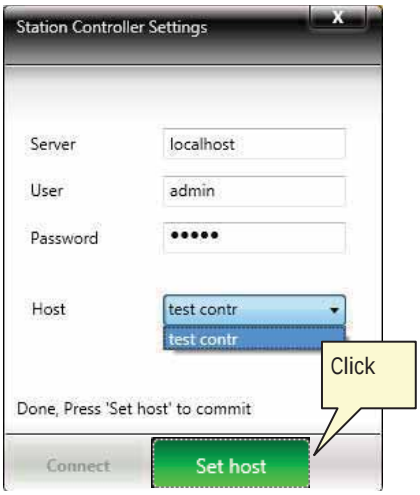


20. Click **settings**. The following **Station Controller Settings** dialog appears

21. Enter the following attributes:
    - Server: localhost
    - User: admin
    - Password: admin

    Click the **connect** button.

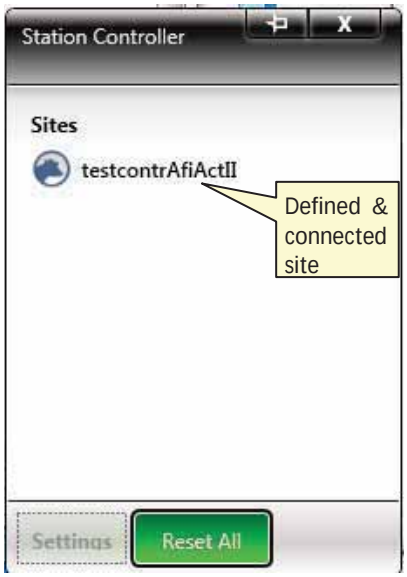
22. In the updated dialog, from the available list of hosts (i.e. computers with defined controllers), select the desired Host (in this example: test contrl).



23. Click the **Set host** button. The software configuration corresponding to the selected-defined track-station is now installed. Close the above settings window.

24. Open the **Station Controller** manager again by clicking the icon in the system tray 

. The following dialog appears



25. You will now be able to monitor the software that manages the defined Reader. (If the defined controller is not displayed, you may click **Reset All**).

Note: after configuring the station controller, when connecting the Reader (see 5), the Reader's PC comm. LED should indicate communication between the Reader and PC.

4.3.4 Additional RT Configurations and Monitoring

For better system monitoring, it is recommended to perform some basic settings:

- Define a user report for detecting unassigned tags.
- Verify that the newly defined site appears as an icon in the icon's tab. (Click on the site icon, and verify that it is connected; if the site is connected: the Reader name and IP_Address will be displayed).
- Check the list of faulty tags.
- Customize the system to your specific farm.

These setups may be fine-tuned or updated at any time after mounting the Reader. For details on system configurations and maintenance via the RT System, refer to Appendix C.

NOTE

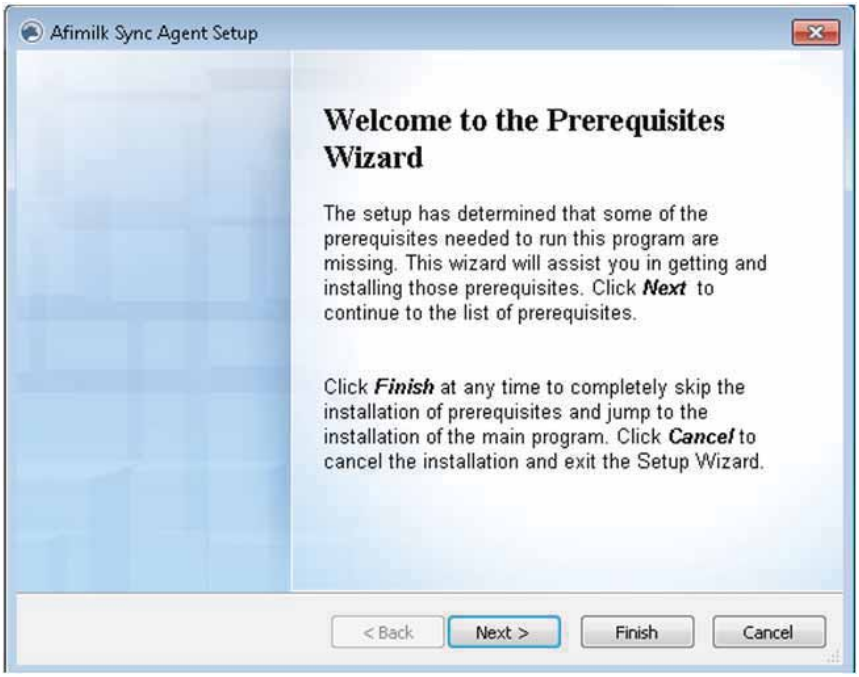
Before the system may be used for detecting cows in heat, average behavior performance baseline should be generated by the application. This can take 5 to 6 days

4.4 *In Integrated Systems*: Install the Sync Agent

In integrated mode with AfiFarm systems, where existing AfiFarm 4 software is already installed, install the Sync agent on the AfiFarm 4 computer. (The installation time is about 2-5 minutes).

To install the sync agent:

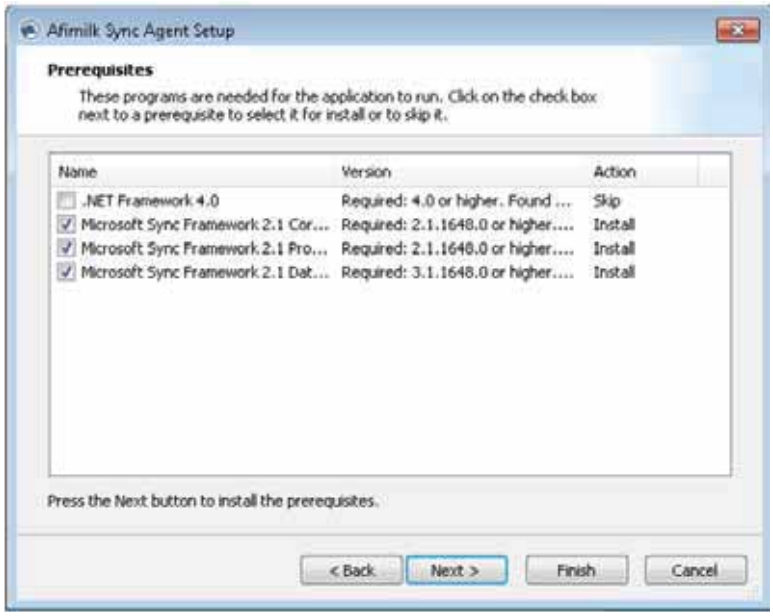
1. Open the AfiFarm folder (in the provided software CD) and double click on SyncAgentSetup.exe. The setup wizard Prerequisites welcome screen appears. Click **Next**.



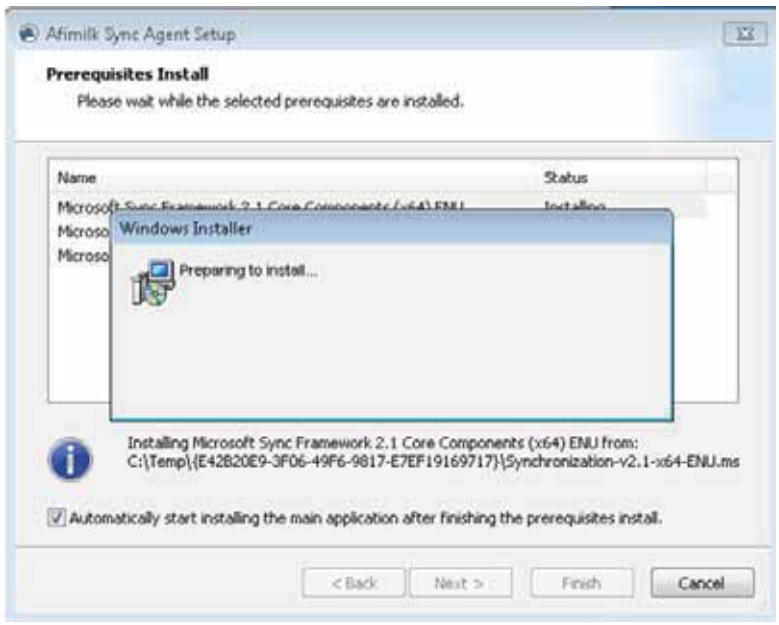
2. The default list of prerequisite programs that will be installed appears.

   Note: To change the default, you may uncheck the box near the element not to be installed. However, this is not recommended.

   Click **Next**.

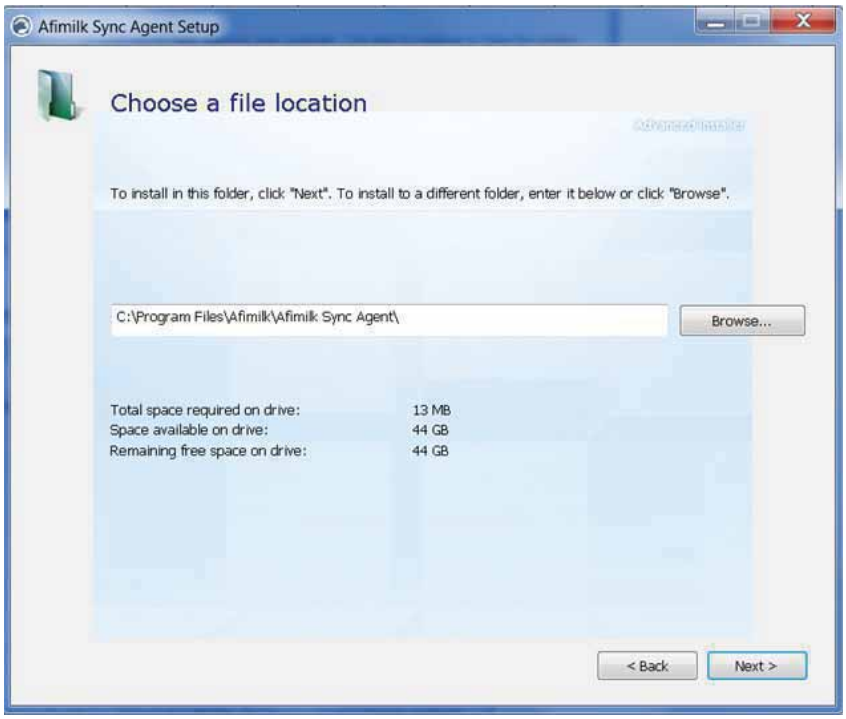


3. The following messages appear while the checked items are now being installed. This may take a few minutes.

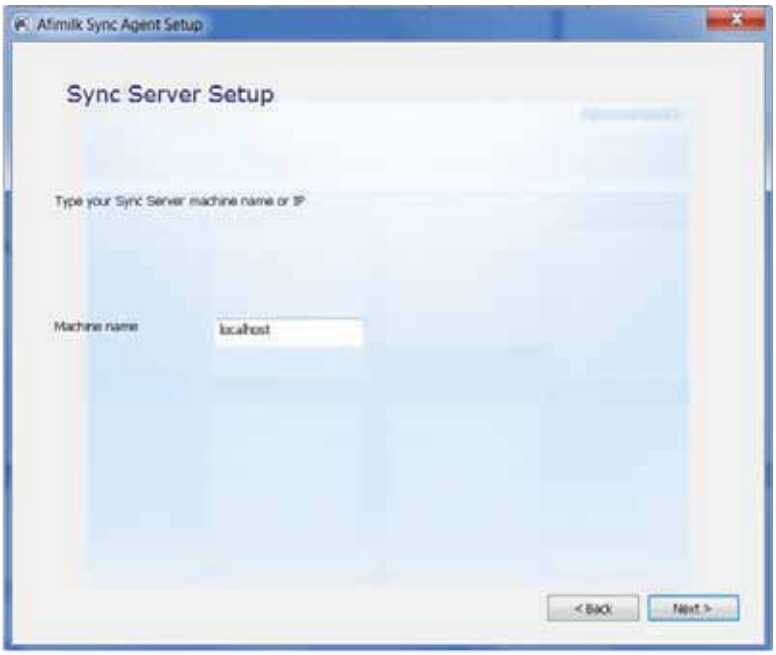


4. When the pre-requisite installation is complete, the Next button becomes available. Click **Next** to start the Sync setup. The Sync Agent Setup Welcome screen appears.

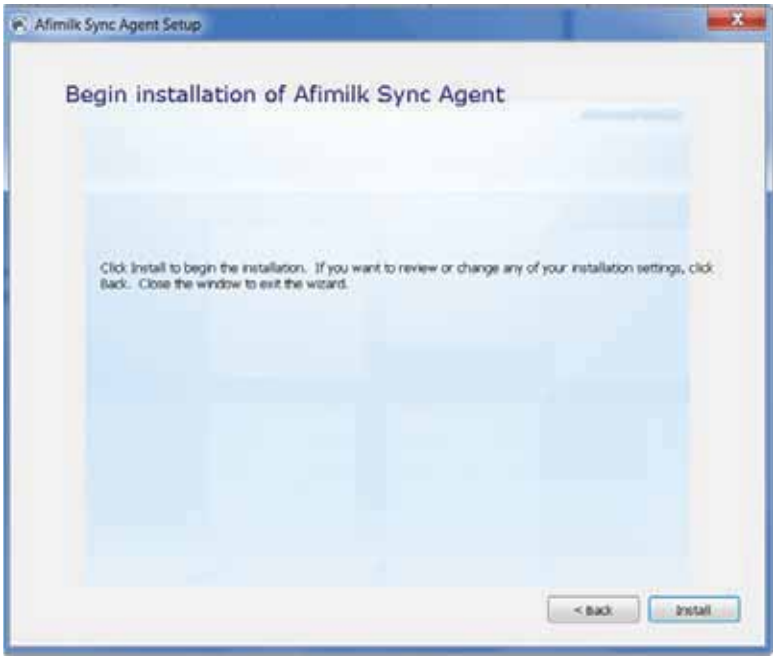
5. Click **Next**. The Choose file location dialog appears, displaying the default path where the sync files will be located. To change the default you may either type a different path or click the **Browse** button to navigate to your desired location.



6. Click **Next**. The following dialog appears, indicating the default name of the AfiFarm Server. Specify the name of Afifarm5 server.



7. Click **Next**. The following screen appears. Click **Install** to start the Sync agent installation.



8. The following dialog appears, showing the installation process progress bar.

9. At the end of the installation click **Finish**.

The Sync Agent is installed.

5 Initial Reader Communication

NOTE

It is recommended that the AfiAct II Reader initial connection is performed immediately after the AfiAct II SW was installed.

Before mounting the Reader, connect the Reader to the local network (same network as the computer) via a network cable, and verify connectivity with the AfiFarm RT system. The AfiFarm RT System locates the Reader's MAC and IP to perform a handshake (RT sends a broadcast message searching for the Reader unique ID; then the Reader replies to the sender (RT) providing its IP address).

Setting the Reader initial communication includes the following steps:

1. Connect the Reader to the wired network, see 5.1
2. Verify communication (handshake) via the RT system, see 5.2
3. *If Wi-Fi is used*, connect the Reader to the Wi-Fi network, see 5.3
4. Disconnect the Reader and transfer it to the shed, see 5.4

NOTE

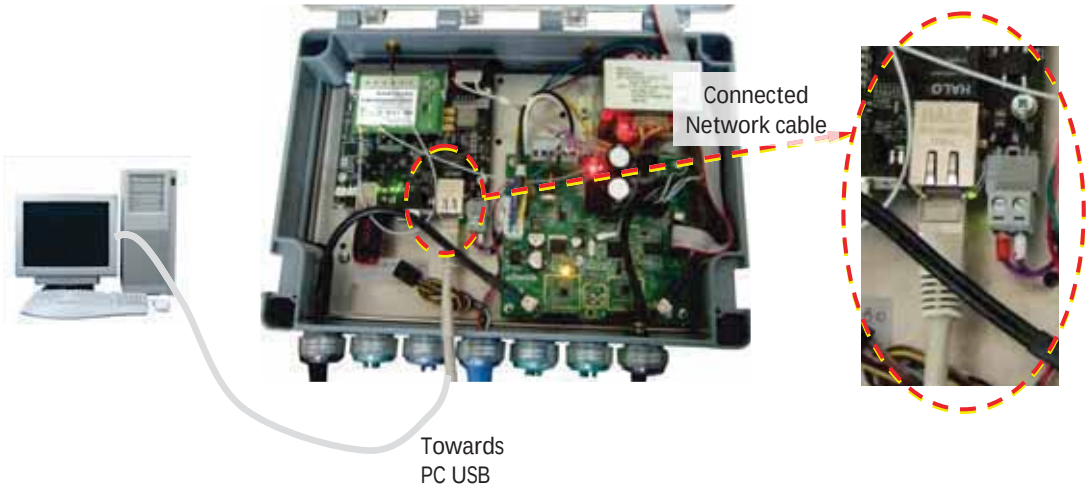
After each Reader restart, wait until the Reader's internal boot LED is blinking, see 1.3.6

5.1 Connect the Reader to the Wired Network

A network cable is used for connecting the Reader to the PC. Then the Reader is connected to the power source, and the connectivity is verified via the AfiFarm RT system.

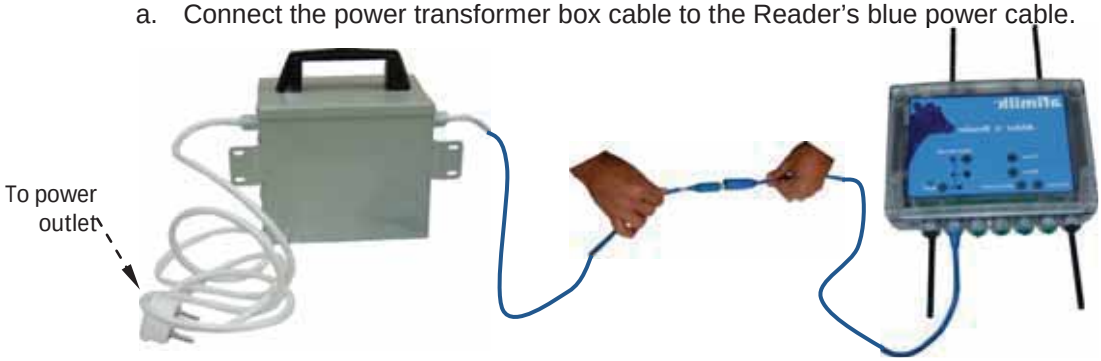
To connect the Reader to the network and obtain an IP address

1. **Connect network cable**: Open the Reader box and connect a network cable to the Reader's network connector. Connect the other side of the network cable to the PC USB connector.



2. **Connect to power**: Use the power supply transformer box to power the Reader on:

   a. Connect the power transformer box cable to the Reader's blue power cable.



   b. Connect the transformer box to the power outlet.

c. Turn on the transformer box switch, and verify that the Reader's LEDs are on.

3. If a DHCP exists and is configured to provide a dynamic IP to the Reader, the Reader will automatically obtain an IP. If not, the Reader will use the factory IP address 172.20.1.1.

   The Connector orange LED indicates physical connection (physical link), and the green LED blinks to indicate data flow over the network line. Verify that the connection has been established by checking that the Reader's main board Computer Network Interface Card (NIC) is blinking green:

NOTE

If the Reader does not show correct network connection (green blinks), restart the reader by turning the power off and on again.

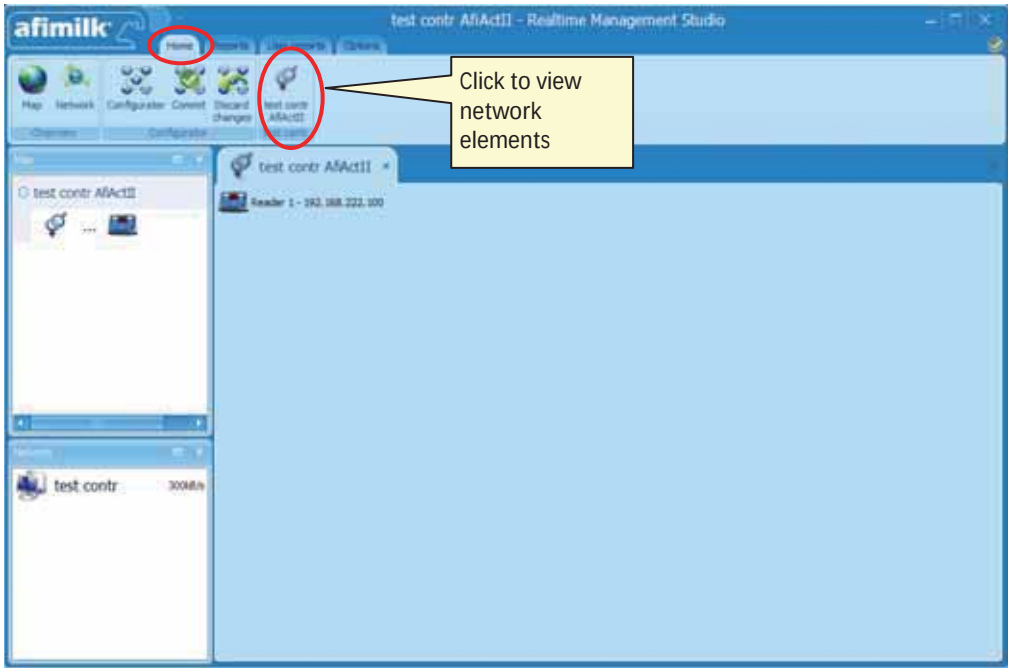
WARNING

Ensure taking all precautions when working with the high voltage components.

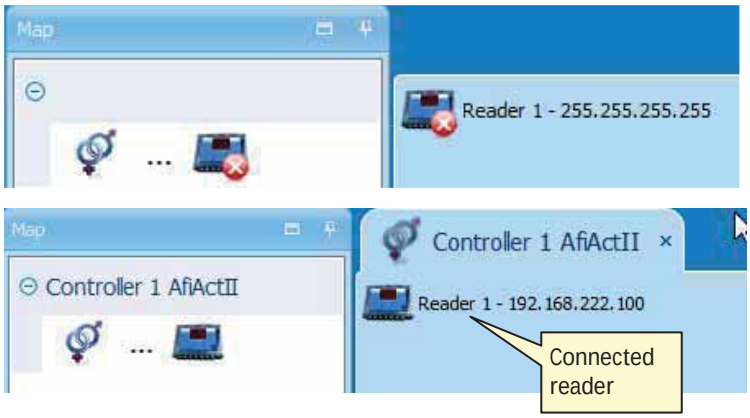
5.2 Verify Reader & RT System Communication

To ensure that the Reader handshake has been successful

1. (If not already open), open the AfiFarm RT system (click the  icon).
2. In the login screen enter the login attributes:
   - **Server**: *localhost*
   - **User**: *admin*
   - **Password**: *admin*
3. Under the Home tab, click on the new tab related to your controller (in this example: **Test Controller AfiAct II**)



4. The connected elements (readers) are shown, and are most likely to appear as disconnected (with a red X) during the first few seconds.



5. Wait a few seconds for the reader-controller connection to be established. When the connection is established, the RT System will show the reader as connected, with its relevant IP address, indicating that the Reader and RT system Controller are now communicating. In addition, the Reader's PC Comm LED will show that the Reader and PC are communicating.

   Write down this reader's dynamic IP address (in the above example: 192.168.220.100).

   Note: When there is no DHCP mechanism, you may use the Reader static IP address 172.20.1.10 for back-to-back connection, see 9.5

NOTE

For troubleshooting - The Reader is provided with a label showing its ID (and MAC), to which an IP address will be assigned during the connection procedure. You may obtain the IP address that has been assigned to your Reader, by using a standard IP/MAC scanner application (e.g. ip-scanner).

5.3 *If Needed*: Set Wi-Fi Communication

If the Reader is to use Wi-Fi communication, the Reader should be connected to the Wi-Fi network at the office, before proceeding with the Reader mounting. This is done via the Reader's direct **Wi-Fi networking GUI application (Luci)**, (accessed via the PC browser), which allows manual management and troubleshooting of the connection between the Reader's main board and the local network (e.g: entering the Wi-Fi network SSID (Service Set Identifier) manually).

NOTE

If there is NO Wi-Fi coverage in the office, the Wi-Fi network assignment will be set in the office as shown below, and the verification will be performed in the shed (Wi-Fi communication LEDs).

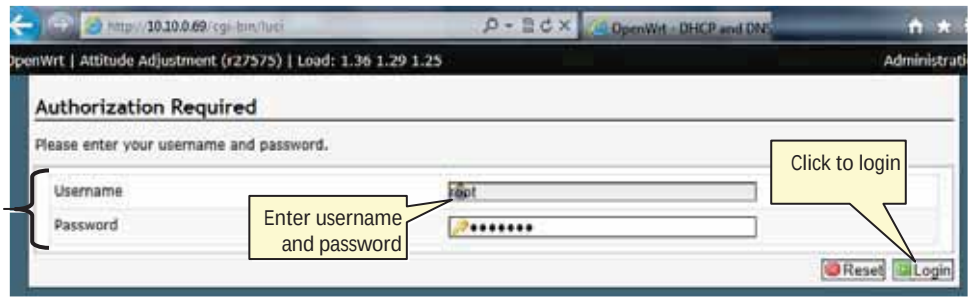
To Connect Wi-Fi Communication

1. Open your PC browser and enter the Reader interface by typing the following in the browser's navigation bar:

   http://*170.20.1.1*

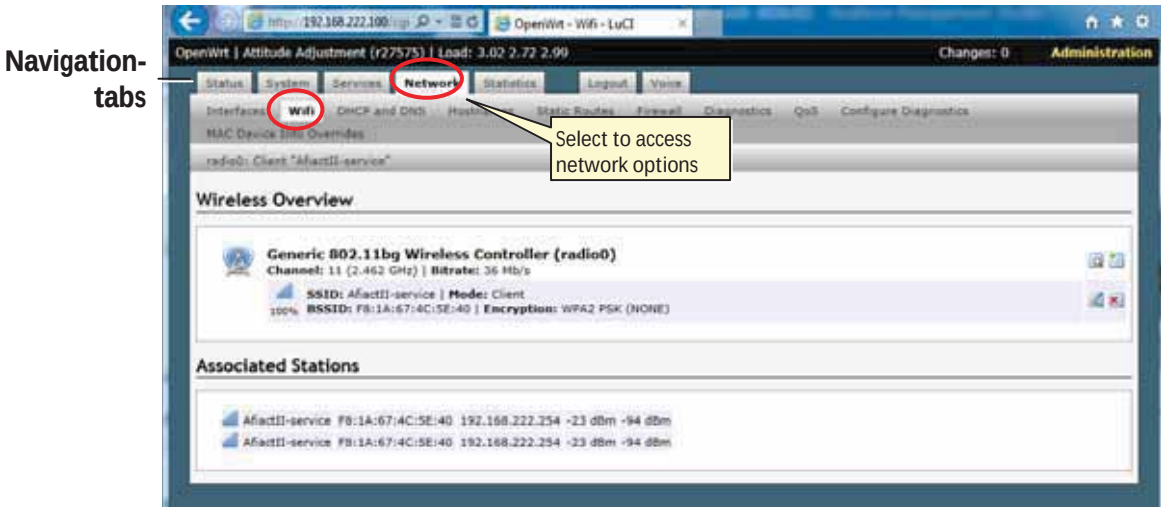
   (Note: Alternatively – you may also enter the IP address (Obtained from the Reader's map): http://reader_ip_address).

   The login screen appears:

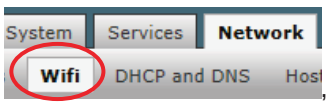


2. Enter the Reader username and password (default: user: *root*, password: *afimilk*). Then click the Login button.

3. In the displayed Reader communication options, select the Network tab from the navigation options.

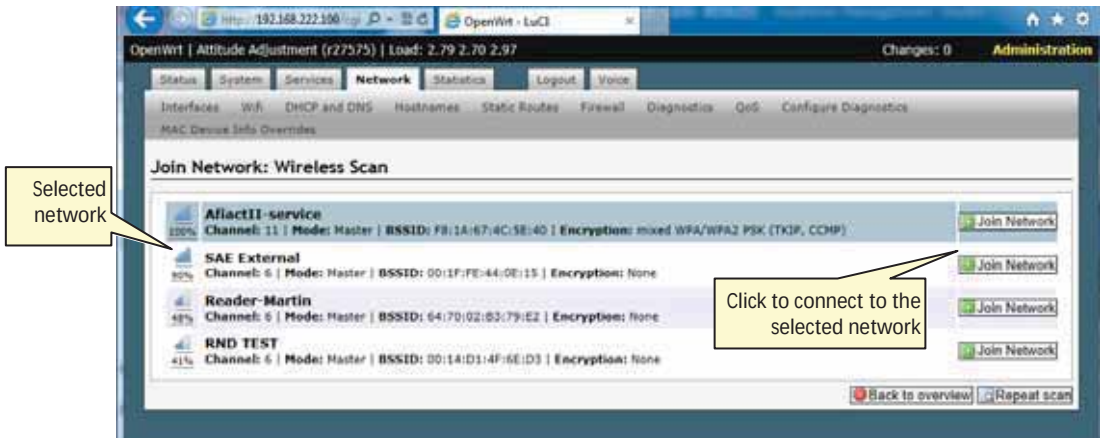


4. Under the Network tab sub-options select **Wi-Fi**

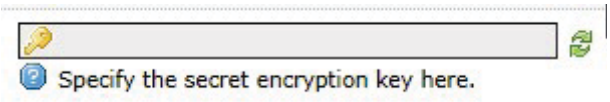


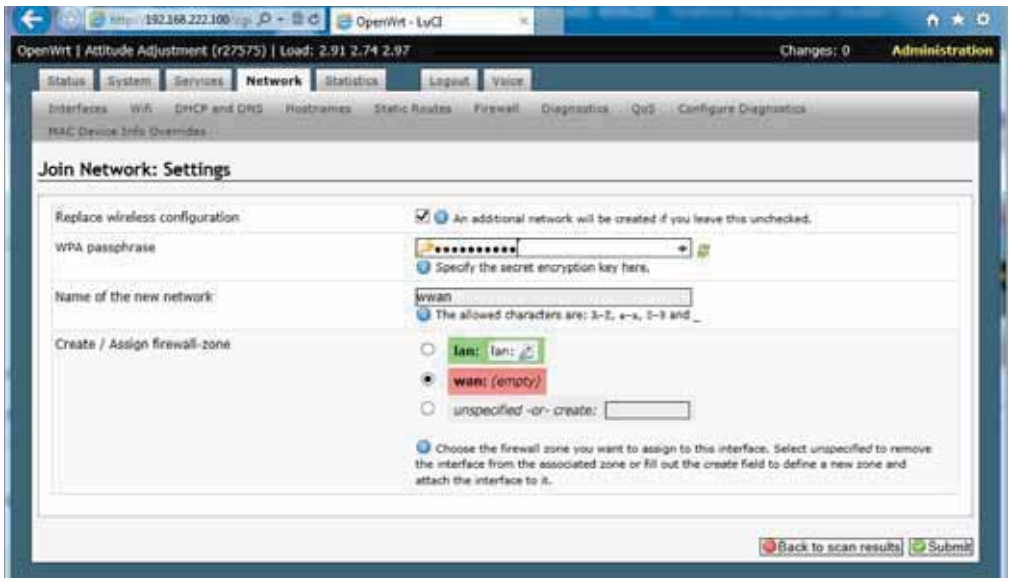
   and click the (OR Repeat scan) button at the bottom of the page to obtain the list of available Wi-Fi networks.

5. From the displayed list of available networks, select the requested network and click the Join Network button.



6. If the network is secured, the system will wait for the user to enter the protocol used and the password. Type the Wi-Fi Network password in the correct place:





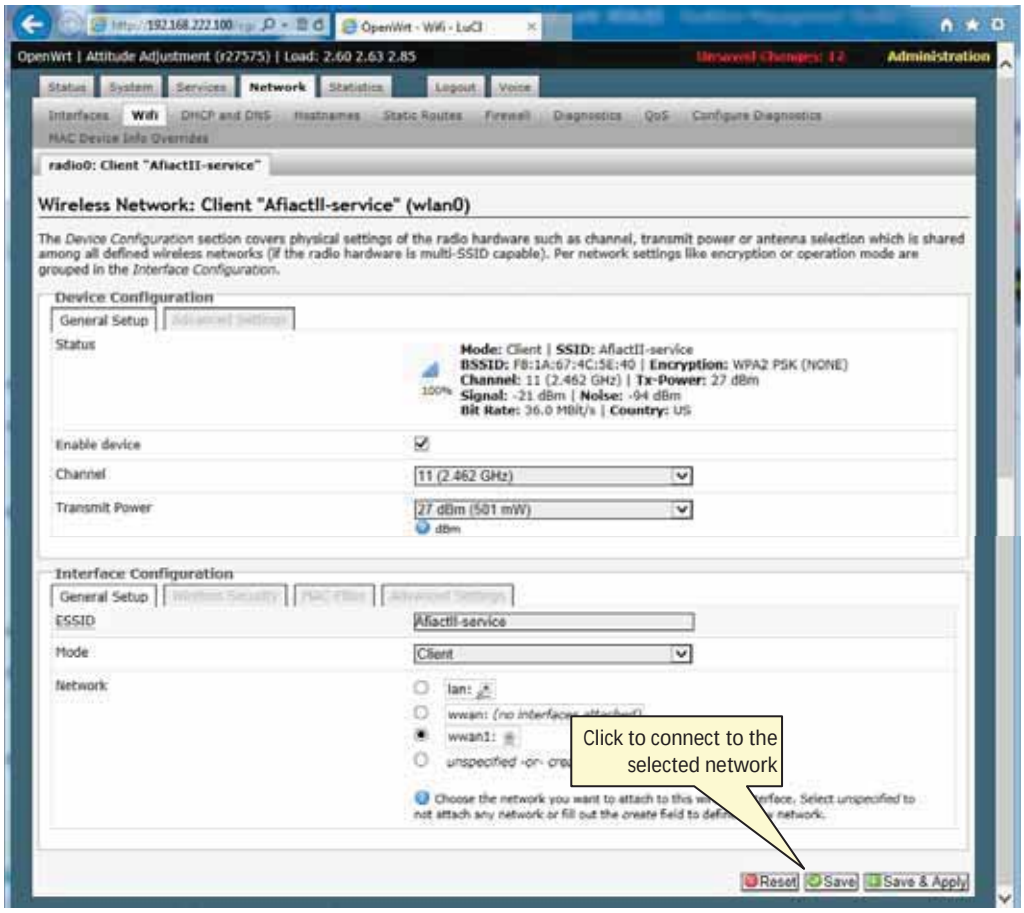
NOTE

It is the user's responsibility to verify that the correct password had been entered. Entering a wrong password will end with no network connection, and the whole process will need to be performed again (starting at phase 1 above)

7. Click Submit at the button to submit the new configuration.

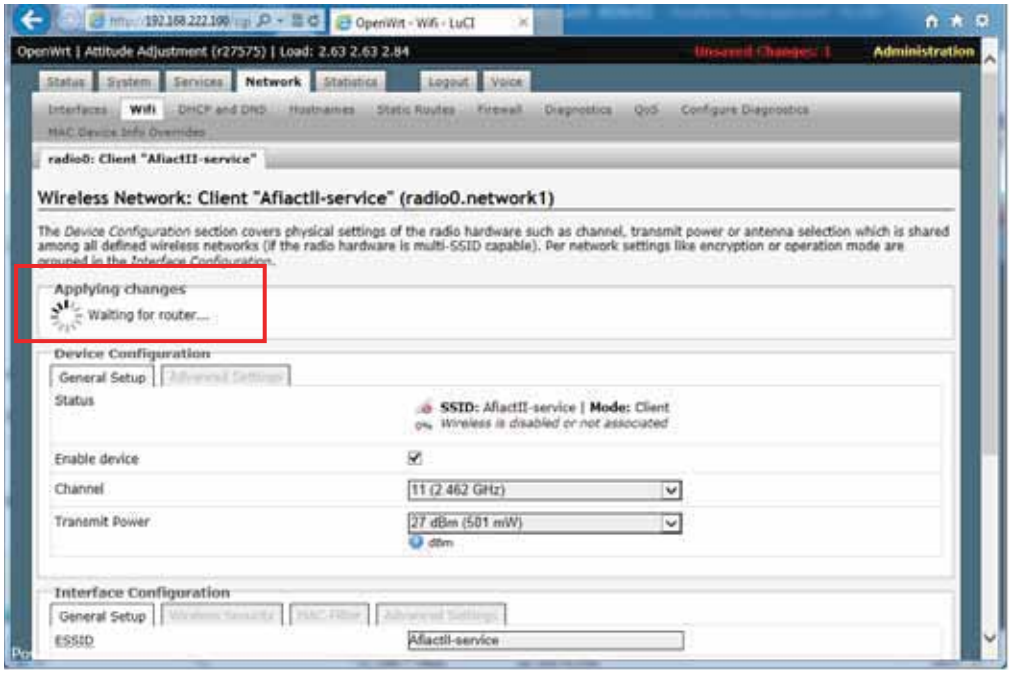
NOTE

To ensure that the connection to the wireless network is generated with the correct parameters, it is recommended that the WAN interface settings are deleted at this stage (only if the interface already exists) OR if there are problems connecting due to wrong network name – add the digit 1 to the name and re-try.



8. In the displayed screen all the details that will be sent to the device are displayed. Roll down and click **Save & Apply.**

9. Wait until the system is connected.



Note: If the connection takes too long (more than 30 seconds), restart the Reader (POWER OFF and then back ON.

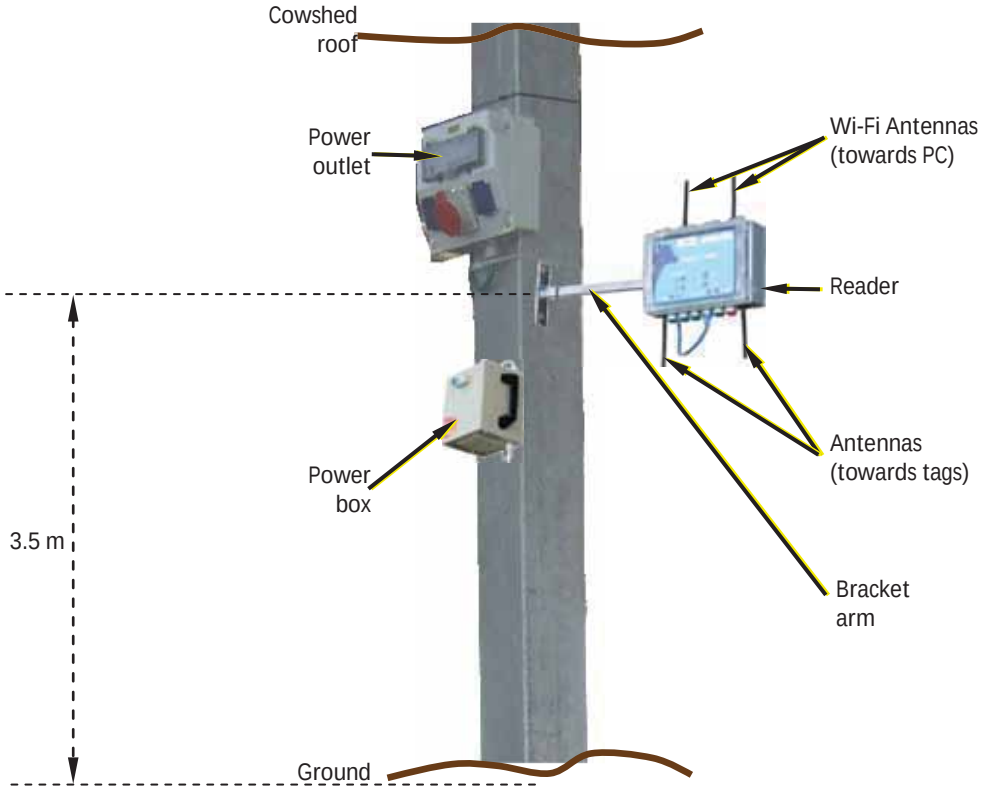
10. Verify that all the Wi-Fi LEDs (WLAN & signal strength) on the Reader are ON (see 1.3.1). If the Wi-Fi LEDs don't work then you will have to start this stage from the beginning.
11. After connecting to the wireless network, disconnect the network cable and re-start the Reader:
    a. Use the transformer power button to turn the device off.
    b. Disconnect the network cable.
    c. Power the Reader ON using the transformer switch
    d. Wait for the device to locate the network (~1 minute).
    e. The communication verification is now done by checking:
        - All the Wi-Fi (WLAN & signal strength) LEDs on the Reader are ON
        - The PC Comm LED is ON, indicating Reader / PC software connection
        - The AfiFarm RT system displays the Reader's IP, see 5.2
    f. Close the Reader configuration interface (browser)

5.4 Disconnect and Take the Reader to the Shed

1. Switch off the Reader's power via the transformer box switch.
2. Disconnect the Reader from the power cable (and from the network cable, if not already disconnected).
3. Close the Reader enclosure securely.
4. Bring the Reader, transformer box, laptop, and all other elements to the shed.

6 Mount the Reader

After configuring the Reader, mount the Reader and its power elements in the location determined previously (see 2.1, 2.2), after verifying that there is both tag and network coverage in the cowshed (Wi-Fi or cable, as determined by the customer).



6.1 Mounting Location Verification

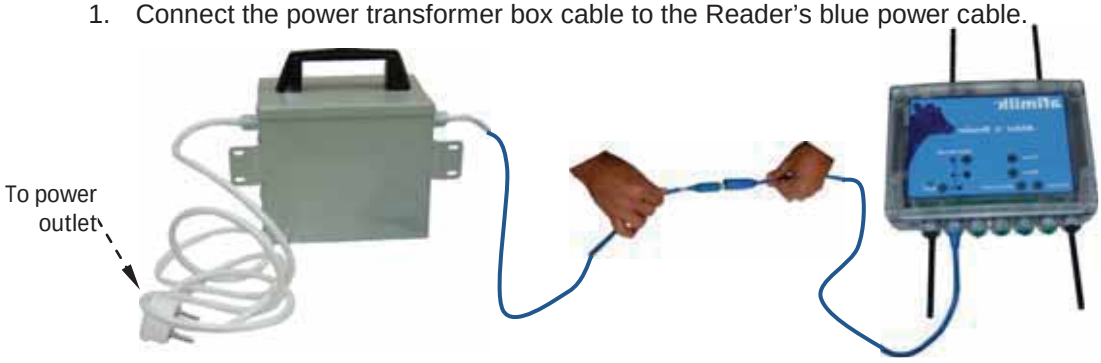
Verify the mounting location according to the following steps:

1. Check that the location has been properly defined (see 2.1,2.2)
2. Connect the Reader to the power ***temporarily***, see 6.1.1
3. Verify tag communication, see 6.1.2
4. *If Wi-Fi is used*: Verify Wi-Fi coverage, see 6.1.3
5. *If wired communication is used*: connect the communication cable, see 6.1.4
6. Disconnect the Reader from the temporary power connection, see 6.1.5

6.1.1 Connect the Reader to the Power *TEMPORARILY*

To connect the Reader to the power supply temporarily:

1. Connect the power transformer box cable to the Reader's blue power cable.



2. Connect the transformer box to the power outlet.
3. Turn on the transformer box switch, and verify that the Reader's LEDs are ON.

6.1.2 Tag LR RF Survey

To verify tag communication:

1. Change the Reader's transmission interval to 5 minutes, see 4.3.3 (the Reader will automatically change the Tags transmission interval to correspond to the Reader, so ther5e is no need to update test tags via the RPU).
2. Change the Reader's transmission interval via the RT System configurator to 5 minutes (before going out), see 4.3.3.
3. Locate tags statically at the required coverage area borderline.
4. Turn on the Reader. Make sure the PC Comm LED is on, see 1.3.1
5. Wait 15 minutes, check the **Activity Log Report**, and verify that all of the tags are identified in the report, with a message every 5 minutes.
6. When the location is approved, mount the Reader and set the steady state interval back to the default (15 minutes) in the configurator only.

6.1.3 *If Wi-Fi is used*: Coverage Verification

To test the mounting point for proper Wi-Fi coverage

Verify that at least two stable Wi-Fi Signal Strength LEDs (i.e. Low and Medium) are ON, indicating strong signal, see 1.3.1

Note: If the 2nd (Medium-strength) LED is not lit steadily (i.e. blinking) it is not good enough!

NOTE

For troubleshooting the connection, use back-to-back connection to your laptop, see 9.5

6.1.4 *If Wired Communication is used*: Setup

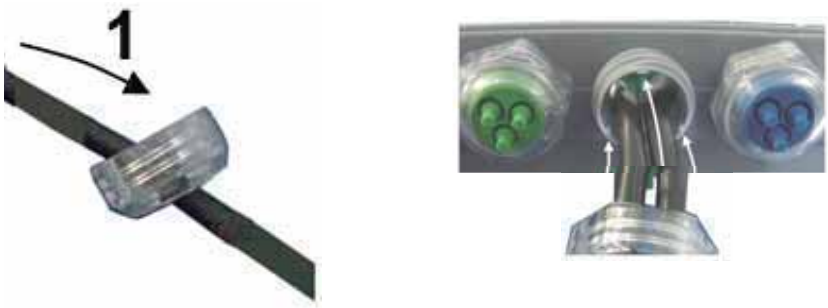
To connect the Reader to the network cable

1. Open the Reader box and **REMOVE** the RED grommet: Unscrew the grommet nut and remove the grommet.

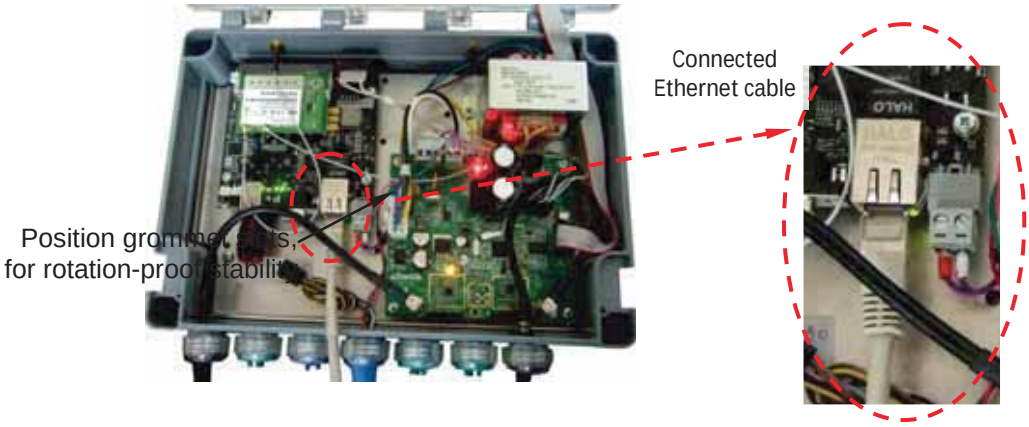
CAUTION

Remove a plug only where a cable will replace it. If grommet holes are left open, the box will not be waterproof, and components may be damaged.

2. Insert the network cable through the nut into the socket.



3. Rotate the nut one revolution on the threads, so that it is loosely held in position.
4. Connect the network cable to the Reader's network connector.



5. Close the Reader enclosure securely.
6. Verify that the Reader and RT System are communicating, see 5.2

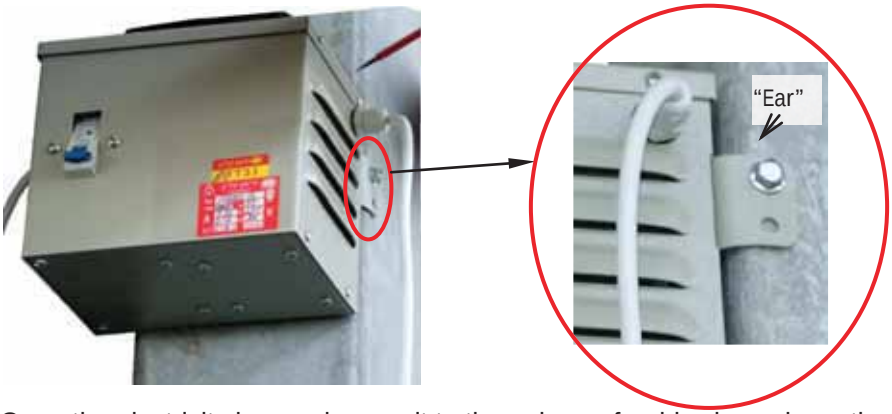
6.1.5 Disconnect the Reader from the Power

To disconnect the Reader from the temporary power connection

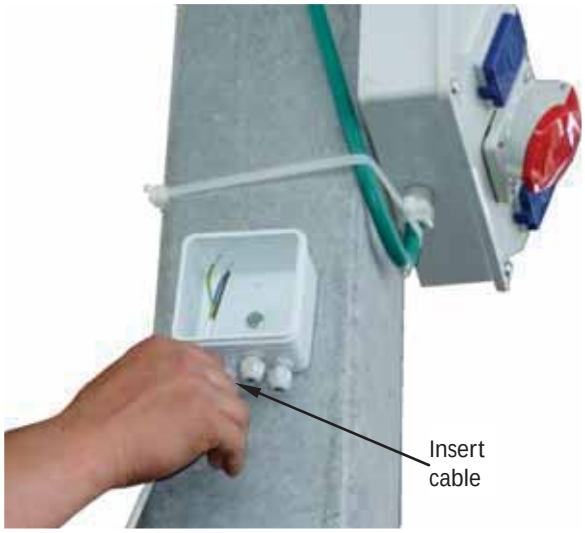
1. Switch off the Reader's power via the transformer box switch.
2. Disconnect the Reader from the power cable.
3. Close the Reader enclosure securely.

6.2 Mount the Power and Electricity Boxes

1. Connect the power supply unit to the pole, near the power outlet access:
   - Locate the box on the pole, higher than the cows can reach but accessible for maintenance. *If necessary* - bend the bracket ear manually to fit the pole.
   - Use the electric screwdriver to screw the bracket to the pole.



2. Open the electricity box and screw it to the pole, preferably close above the power box, using the supplied screw and an electrical screwdriver.



3. From the ***free end*** of the white power cable, strip 2 inches of the insulation to expose the conductors. Then insert the cable into the electrical box through its lower connection holes.

4. Thread the exposed blue and black conductors into a cable terminal box.

5. Strip 2 inches of the insulation of the blue extension power cable's ***free end***, to expose the conductors.

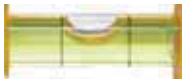
   Insert the exposed green and red cable-ends into the electrical box and thread the conductors into the cable terminal box.

6. If the blue cable has loose ends, secure the cable to the power box using cable ties.

7. Close the electrical connection box.

6.3 Mount the Reader to the Pole

1. Connect the bracket arm to the pole (3.5 meters from the ground level):
   - Use the supplied screws and an electrical screwdriver.
   - Verify that the bracket arm is leveled (use a leveling device).



2. Verify that the Reader antennas and bracket plate are assembled. If not – refer to 3.

3. Insert the bracket arm's free end into the plate attached to the Reader, and screw them together.

NOTE

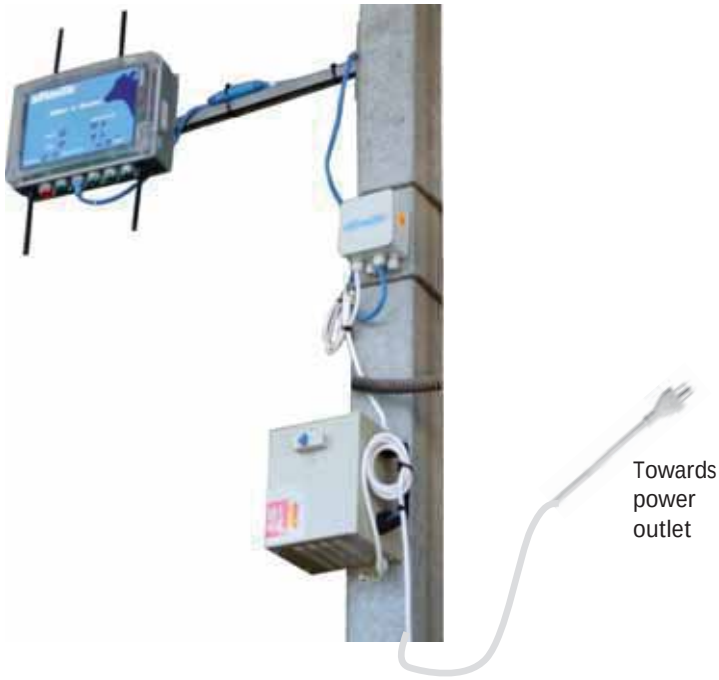
Before screwing the Reader to the arm, "play" with the Reader and antennas angle, until optimal transmission is shown via the Wi-Fi signal strength LEDs.

The Reader is now mounted on the pole.

6.4 Connect the Reader to Power

1. Connect the blue power cable from the Reader and the blue cable from the electrical power box.

2. Make sure that the blue power cable does not dangle under the Reader – it should not be parallel to the antenna. Secure the connector and remaining blue cable to the bracket arm using cable ties.



3. Connect the power box to the power outlet.
4. Power the Reader on, using the power switch located on the power box. Verify that the LEDs show good reception for both tags and Wi-Fi, see 1.3.1
5. When done with the installation, wait to see that the **Activity Log Report** is being updated with tag messages.

   Note: You may set the Reader's transmission interval via the RT System configurator to 5 minutes (see 4.3.3), so that you will be able to check that all tags transmit, within no longer than 15 minutes, and then change it back to 15 minutes. The tags can be viewed in the Activity log report, see Appendix C

NOTE

Before the system may be used for detecting cows in heat, average behavior performance baseline should be generated by the application. This can take 5 to 6 days.

7 Handle AfiTag II

AfiTag II is responsible for continuously sending cow data to AfiAct II system. It is factory-set to use the specific frequency and channel corresponding to your region. It is the farmer's responsibility to attach the tags to all cows in the group and enter their ID into the system. Furthermore, when a cow is removed from the group, it is the farmer's responsibility to remove the tag from its leg and inform the system. A removed tag may be stored or immediately re-used on another animal.

The tag is attached to the cow's leg using a flexible strap. It is mandatory to use an original afimilk strap.

This chapter provides detailed instructions for tag management:

- Tag attachment, see 7.1
- Tag replacement (when a tag is moved from one animal to another) , see 7.2
- Tag storage, see 7.3

Note: Technicians may manage (i.e. read and program) tag data via the Tag Reading/Programming Unit (RPU).

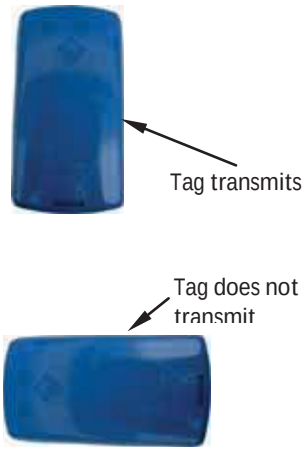
This includes changing channels, when needed (e.g. if the pre-set factory channel does not function due to interference). In this case, the Reader's channel frequency must also be changed to correspond with the tags channel (see 4.3.3)

For a description of the basic actions done via the RPU, refer to Appendix B. For full usage instructions of RPU, refer to the RPU document (see referred documents on page vii).

NOTE

The tags only transmit when held in vertical position. Therefore, when tags are transported, ensure they are in horizontal position.

When a cow is lying down, the data is collected, but will only be transmitted when the cow is up again.



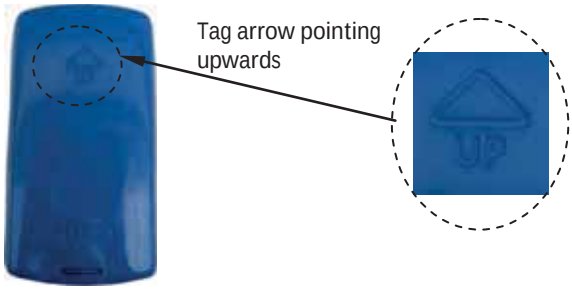
7.1 Attach AfiAct II Tags

To attach the tag onto a cow's leg:

1. Identify the tag elements, as shown below:

2. Connect the strap to the tag as follows:

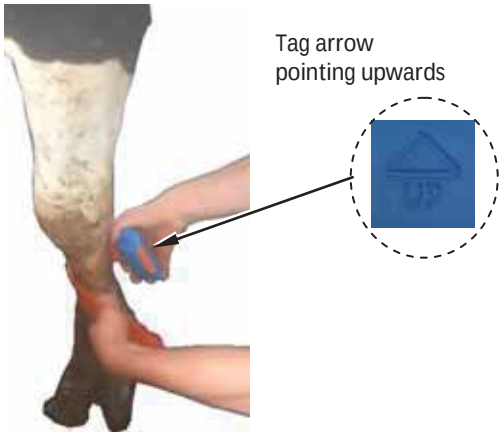
   a. Locate the tag with the arrow pointing upwards.



   b. Insert the narrow side of the strap through the back of the tag's "ear".

   c. Pull the strap to the right, until it is locked in the tag's "ear". (Ensure the strap is locked by pulling it back).

3. Prepare all tags for attachment as described in steps 1, 2.
4. Apply the tag to the cow's leg as follows:
   a. Position the arrow of the tag upwards and wrap the strap around the cow's leg above the hoof, about 20cm/8inch above floor level.



   b. Insert the narrow side of the strap through the tag's ear.

c. Pull the strap through the ear, ensuring the tag is not too tight, by inserting two fingers between the strap and the cow's leg.

CAUTION

The AfiTag II attached to a cow should be loose enough to rotate freely around the cows' leg, ***to avoid injuries or leg disease. This is especially important with heifers, where the legs are still growing.***

5. Cut off the excess length of strap.

6. Keep a record of each cow with its corresponding AfiTag II number.
7. When entering a new cow into AfiAct II software, enter its corresponding AfiTag II number. See 8.

7.2 Replace Tags

AfiTag II can be transferred from one cow to another, for example, on the following occasions:

- Removing from culled cows.
- Removing from cows that are dry until the time of their calving.
- Removing from a heifer that is ready for calving.

As the legs of a heifer grow, the straps can become too tight. In this case, it is highly recommended to remove the tag from a heifer before calving (if heifer heat detection is used). When the heifer starts its first lactation, the tag can be reattached with new straps.

To ensure proper maintenance and storage of tags and increase tag longevity, handle tags as follows:

- When removing a tag from a cow's leg, cut off the strap. Do not re-use straps.
- AfiTags II are encased in sealed plastic containers. A tag can be washed under running water (warm or cold) before storage or before attaching to new cows. However, tags should not be soaked in water for long periods (hours) of time.

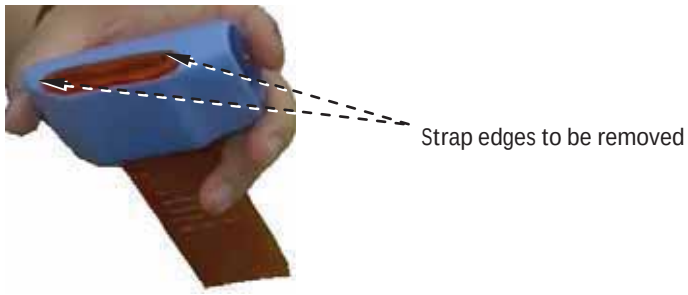
CAUTION

Soaking AfiTags in water for hours may reduce their life expectancy.

To remove a tag or move it to another animal's leg:

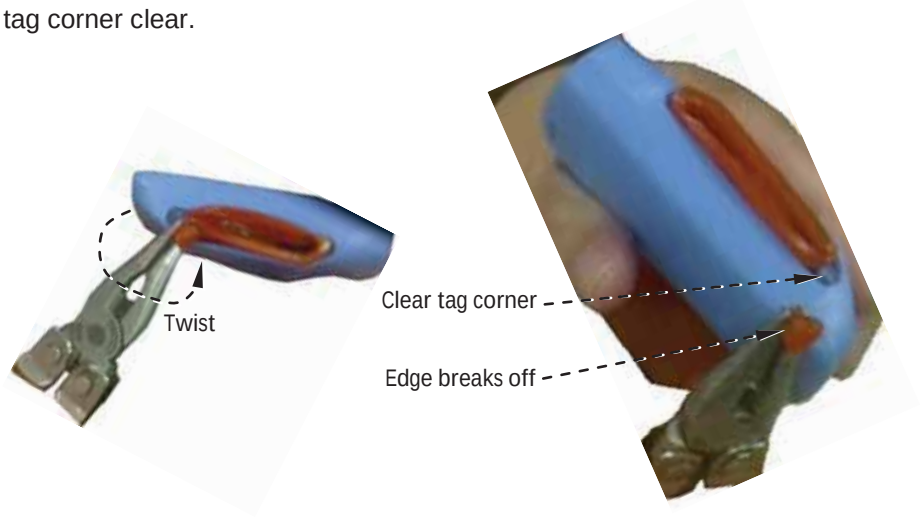
1. Use pruning-shears and carefully cut the strap of the attached tag.

2. Hold the tag removed from the cow's leg and use Leatherman pliers to remove the remaining strap edges as demonstrated below:

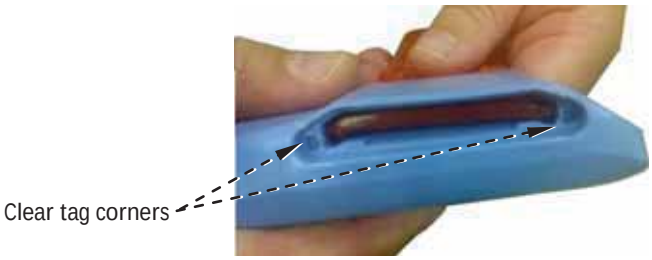


   a. Insert the pliers into the tag-ear and grip one of the strap edges.

b. Twist the strap edge using the pliers, until the edge breaks off, leaving the tag corner clear.



c. Repeat phase B with the second edge, leaving two clear corners.



3. Pull the strap out of the tag.

4. Your tag is now clear for re-use or storage. Make sure you record each cow with its corresponding AfiTag number. When a tag is removed – inform the system of the removed/replaced tag and the reason (e.g. culling), See 8.

7.3 Store Tags

When necessary, AfiTag II should be stored in a dry protected area. Storage should be at least 1 meter (3 feet) away from any radiating device such as main power cables, PC screens, electric crowd gates, and other high power devices.

In order to save battery life, it is recommended to lay the tag horizontally.

Following all recommendations for AfiTag II care will ensure smooth operation and maximize AfiTag II longevity.

CAUTION

Radiating devices may create an electromagnetic field that energizes the AfiTags, thus shortening their life expectancy.

8 Enter Herd's Data into AfiFarm

Animals to be tracked by the system must be entered into the AfiFarm application. The interface for entering the data depends on your specific configuration as follows:

- For standalone AfiAct II systems *without any other afimilk components* (i.e. no AfiFarm application is used) – the data is entered via AfiAct II report interface.
- For a comprehensive afimilk system (i.e. AfiFarm4 is installed) – the data is entered via the existing AfiFarm4 screens, and AfiAct II interface is only used for viewing reports.

To allow the system to perform an aggregated analysis that is based on activity and events, the following animal data is mandatory for using the AfiAct II system:

- *Tag Number* - AfiTag II has a unique number. This data is written on the tag case.
- *Cow Number* – The cow's unique ID is entered into the system manually.
- *Group Number*
- *Date of Birth*
- *Lactation Number*
- *Last calving date*
- *Last Heat/Breed date* (if the cow was in heat during the current lactation)
- *Any other event that could be relevant*

To enter the herd data via AfiAct II application, refer to AfiAct II user manual, see referred documents on page vii.

After entering the animal data, the following events must be entered regularly:

- Heat
- Bred
- PD+
- PD-
- Synch injection (drugs)
- Change group
- Hoof trimming
- Diseases (mastitis, lameness, other)

For details on entering events refer to AfiAct II user manual, see referred documents on page vii.

9 Fault Identification and Troubleshooting

The following sections detail the most common faults, their most probable cause, and the suggested solution.

9.1 Reader Connection to the RT System or Network Fault

The following table details the most common faults related to the Reader communication with the RT System OR with the network.

Table 9-1. Reader Connection to RT System or Network Problems

Description & Indication	Suggested Solution
Description: The RT System tool shows no Reader connection OR the Reader's communication LEDs show bad communication ***Indication***: RT system shows Reader as  OR communication LEDs show low reception  Low signal strength	***Most probable cause***: Wi-Fi network problem or bad network cable. ***Suggested solution:*** Consult with your farm network provider. If problem persists, restart the Reader
Description: Reader does not display the SSID of the wireless Network although other devices can see the Network.	Check the region configurations in the AP and in the Reader. For example: Reader is in USA region (11 channels) and AP is in Europe region (13 channels). The Reader and AP should be in the same region.
Description : Reader is not connected to the AP (after it was already configured and connected)	Restart the AP
Description : Configuring the wireless network doesn't end (see 5.3) ***Indication:*** The progress icon keeps rotating endlessly.	Turn the reader off and on (using the transformer switch).

Description & Indication	Suggested Solution
Description : After the initial configuration (using a network cable), the AfiFarm RT System still cannot connect to the reader ***Indication:*** RT system shows Reader as 	***Suggested solution:*** 1. In the Reader's internal panel, check if the green right LED of the NIC is blinking.  Blinking Green If not - Check that the network cable is tightly inserted to the NIC and connected to the network on the other side. 2. Check that the computer is connected to the same network as the reader and the network cable is tight (green blinks should appear on the computers NIC from time to time). 3. Try to turn the reader off and then back on (using the transformer switch) 4. In the RT System configurator – check that the UniqueID of the reader is correct. If not – correct it and click **commit** (see 4.3.3). 5. Reconnect the **station controller** to the new site by clicking the **Reset All** button and then reconnecting to the site (see 4.3.3). 6. If the above did not help there is a possibility that either the network is not configured correctly or the UniqueID registered in the MainBoard is not the same as written on the sticker. Please call Support to check that.

9.2 Reader Connection to the RT System Controller Fault

The following table details the most common faults related to the Reader communication with the RT Controller.

Table 9-2. Reader Connection to RT System Controller Faults

Description & Indication	Suggested Solution
Description : The RT System shows an unstable connection indication between the Reader and the RT Controller. ***Indication***: The Reader is shown as being connected and then disconnected every few seconds. The Reader's PC Comm LED is off, the Reader's icon in the RT System is blinking fault.	Check the firewall settings: if after disabling the FW, the Reader towards RT Controller connection is stable, change the RT Controller's PC firewall settings.
Description : The Reader does not connect with the RT Controller although there is ping between the RT Controller PC and the Reader. ***Indication:*** The Reader's PC Comm LED is off; The RT system shows Reader as 	Check the station controller indication. If the indication is not OK (error or warning), restart it.
Description: The Reader and RT System Controller are not set to the same time (tag messages' time stamp is wrong). ***Indication:*** The Reader's PC Comm LED is on but the tag messages in the Activity log report carry a wrong time stamp.	Execute the Reader-RT System Controller pairing process (change the unique ID in the configurator to a bogus number, commit and then set the correct unique ID and commit), see 4.3.3

9.3 Reader and Tag Communication Faults

The following table details the most common faults related to the Reader communication with the tags.

Table 9-3. Reader to Tag Connection Problems

Description & Indication	Suggested Solution
Description: The Reader is not receiving any tag messages ***Indication***: The Reader's **Status** LED is blinking, **PC Comm** LED is ON, but no new messages appear in the RT System ActivityLogReport.	***Most probable cause***: Wi-Fi network problem or bad network cable. ***Suggested solution:*** Verify that the tags and the reader are using the same channel (tag channel can be verified using opcode 65468 in the RPU, see Appendix B)
	The tags might be in channel detection mode. This might take up to 1.5 hours. Make sure the tags are in the coverage region of the Reader.

9.4 Reader's Luci Cannot be Accessed

Description:

You cannot log in to the Reader Management (Luci) GUI.

Most probable cause:

Wrong Reader IP address is used

Suggested solution:

1. Open the RT studio >> Home >> Act Module and see what is the current registered IP ADDRESS of the Reader.
2. Try to connect to the Reader again with this IP ADDRESS.

9.5 Back-to-Back Connection

Back-To-Back connection procedure allows the user to directly connect a laptop to the Reader using a network cable, and log in to the "Luci" management console for Wi-Fi network management.

This method allows communicating with the Reader in the field, when the Reader is not connected to the wireless network for some reason. It is a tool for solving field connection/general problems in the Reader (e.g. for switching the connection from one AP to the other), without taking the Reader into the office to connect it with a cable to the main computer.

The process is simple, and requires only that the user set the Reader's host static IP in the laptop NIC; then user may access the Luci interface.

Method:

Connect the Reader directly to your laptop:

1. Open the Reader box and connect a network cable to the NIC.
2. Connect the other side of the network cable to the laptop Ethernet port.
3. In the laptop, set the connected NIC to use static IP 172.20.1.10 and subnet mask 255.255.255.0. This procedure varies according to the laptop's Operating System. For example, instructions for the Windows 7 operating system are provided in Appendix A
4. After laptop's NIC is set to use static IP, then follow instructions on section 5.3 (you may now communicate with the Reader via the laptop, via the Luci interface. It is now possible to have access to the available wireless networks, and obtain connection).

9.6 Region Transmission Setup

Description:

Region transmission setup is wrong.

Suggested solution:

Set the Reader transmission area and channel via the RT System tool, see 4.3.3

9.7 AfiFarm Installation Problems

Description:

A problem occurs during the AfiAct software installation.

Most probable cause:

The system pre-requisites were not fully performed.

Suggested solution:

Review the system installation pre-requisites, see 2.4.