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AfiCollar

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I This Presentation Will Include

- System Content 系统目录
 - Part numbers 产品料号
- System Architecture 系统架构
- AfiTagII vs AfiCollar 二代计步器VS项圈
- Installation - 安装
 - System Installation Prerequisites 系统安装前条件
 - Site Survey 现场调查
 - Environmental Specifications 环境要求
 - Considerations 注意事项
- Collected Data \ Supported Configurations 数据收集、支持配置



I This Presentation Will Include

- Reader Overview Reader概述
 - Connectors \ Connections \ Wiring
 - 连接元件\连接\接线
- AfiControl Configuration AfiControl配置
- Reader Connection to PC – Network Reader与电脑连接——网络
- PC Specifications 电脑要求
- Parlor Based AfiCollar 基于奶厅的项圈
- Troubleshooting 故障排除
- Product Literature 产品资料







System Content & Part Numbers

系统内容&产品物料号


I System Content & Part Numbers

Picture图片	Name 名字	Description 描述	PN 物料号
 	AfiAct II Reader 2.0 二代Reader 2.0	International (907-928 MHz) 国际版（907-928 MHz）	4256200 Backward compatibility = Reader I 4256000 兼容一代reader 4256000
		Europe (868 MHz) 欧洲版（868 MHz）	4256201 Backward compatibility = Reader I 4256001 兼容一代reader 4256001

I System Content & Part Numbers

Picture 图片	Name 名字	Description 描述	PN 物料号
	Mounting plate 安装背板	Mounting plate connected to the back (for connection to reader bracket arm)安装背板连接到后面reader的支撑臂	5001028
	Bracket arm 支撑臂	Bracket 支架 (screws for wall connection – not supplied. The fasteners must be determined by the installer, according to conditions: surface (e.g. concrete vs wood vs steel, etc.) and other specific variables)支撑臂用的连接到墙上的螺丝是不提供的。紧固件需要安装人员根据现场的条件表面（混凝土、木头、钢）	9030050

I System Content & Part Numbers

Image 图片	Primary P/Ns 主要P/Ns		Secondary P/Ns 次要P/Ns	
	Description 描述	PN 物料号	Description描述	P\N 物料号
	AfiCollar 项圈 907MHz\200KHz ASSY *	8002020*	AfiCollar项圈 908.1MHz\200KHz ASSY	8002070
	AfiCollar 项圈 868.1MHz\80KHz ASSY *	8002030*	AfiCollar项圈 868.3MHz\80KHz ASSY	8002040
	AfiCollar项圈 868.1MHz\200KHzASSY *	8002050*	AfiCollar项圈 868.3MHz\200KHz ASSY	8002060
	AfiCollar项圈 915.5MHz\80KHz ASSY*	8002080*	AfiCollar项圈 915.7MHz\80KHz ASSY	8002090

I System Content & Part Numbers

NOTE –

- The shaded columns in the table above indicate the four primary P/Ns
- 表格中的不带阴影列表示四个主要物料号
- The primary and secondary P/Ns differ in sub-g frequency. For example, primary P/N 8002020 sub-g frequency is set to 907MHz and its secondary P/N 8002070 sub-g freq. set to 908.1MHz
- 主要和次要物料表示在不同的SUB-G频率里。例如主要P/N8002020sub-g频率设置在907MHz并且它次要物料8002070的sub-g的频率设置在908.1
- By default, dealers should order the primary P/Ns; however, if there is a problem with the primary sub-g frequency (such as a nearby farm/s, known RF noises, etc.), then dealers could order their secondary sub-g frequency
- 在默认情况下，代理商订购主要物料号，但是，如果主要的sub-g频率遇到了问题（例如附近已经有一个牧场在使用主要频率，或者有射频干扰等）这样代理商可以订购次要的物料号



Hello AfiCollar – Nice to Meet You

你好 项圈-很高兴见到你

Assembly Parts 零件装配

HW Overview 硬件概述

Working Modes 工作模式

Overview – AfiCollar assembly Parts 概述-项圈零部件组装

- Tag 项圈
- Weight 配重
- Strap 项带
- Belt Keeper (Plastic)
- 项带固定套 (塑料)
- Oval loop 椭圆环



I Tag Hardware Overview 项圈硬件概述

- Sub-G Communication 860-870MHz, 902-928MHz
- Sub-G 通讯 860-870MHz, 902-928MHz
- Short Range Communication 80/200KHz
- 短程通讯 80/200KHz
- NFC Communication (NFC Sticker = Near Field Comm) 近距离通讯
- Regulations & Standards - FCC, CE, EAC, RoHS
法规和标准-FCC,CE,EAC,RoHS





System Architecture

系统架构

AfiCollar- System Architecture





AfiTagII vs AfiCollar

二代计步器VS 项圈

AfiTagII vs Aficollar

Parameters 参数	AfitagII 二代计步器	Aficollar 项圈
Serial Number 序列号	xxxxxxx – xxxx – xxxxx (16 Bit) P\N Indicator – Vendor - Numerator	xx – x – xxxxxx (can support 32 Bit) P\N indicator – Vendor - Numerator
Tag ID TAG 号	Tailor made 5 digits CCPPXXXXX = Country code – Site number – Tag ID	Unique ID of the shelf = serial number
SubG Protocol SubG 协议	V2	V10
NFC Sticker 近距离通讯贴纸	None	NFC sticker inside the tag body with tag serial number
Reader FW	1.x.x.x\2.x.x.x = 5.4	2.x.x.x = 5.4 - reduced tag's data loss & improved performance
Ideal FW	26.x.x.x	27.x.x.x = ONLY tag ID sent to PC
Afifarm Version 软件版本		=< 5.4

Installation – 安装

Overview 概述

Site Survey 现场查看

Prerequisites 先决条件

Environment Specifications 环境条件要求

Operating Conditions 操作条件

I System Installation Prerequisites Overview

系统安装条件概述

Planning

- Determine the area the Aficollar system must cover
- 确定识别区域必须被项圈识别系统覆盖
- determine the number of readers and mounting points
- 确定Reader的数量和安装点

Preparations

- Farmer\Dealer: set network coverage (wired / Wi-Fi) 牧场\代理商: 设置网络范围 (有线/WI-FI)
- Farmer\Dealer: prepare Power plugs for the readers 牧场\代理商: 准备Reader的电源
- Farmer\Dealer: prepare PC according to 5.4 Spec + Add another NIC to separate the Reader from office network 牧场\代理商: 根据5.4的要求准备电脑, 增加一个网卡, 将办公室的电脑网络与reader分开

SW Installation

- Software Installation 软件安装
- Software Configuration 软件配置

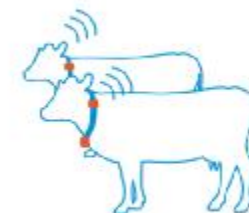
I System Installation Overview

Reader\tag Installation

- Reader Mounting Reader Reader安装
- Collars Mounting (after range Tests) 项圈安装（在测试范围后）

System Testing

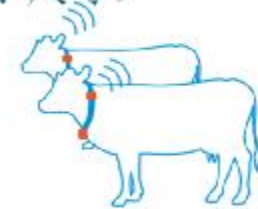
- Collars <-> reader 项圈<-> reader
- Reader <-> afifarm reader<-> 软件



I Site Survey 现场查看

Reader location Reader 位置

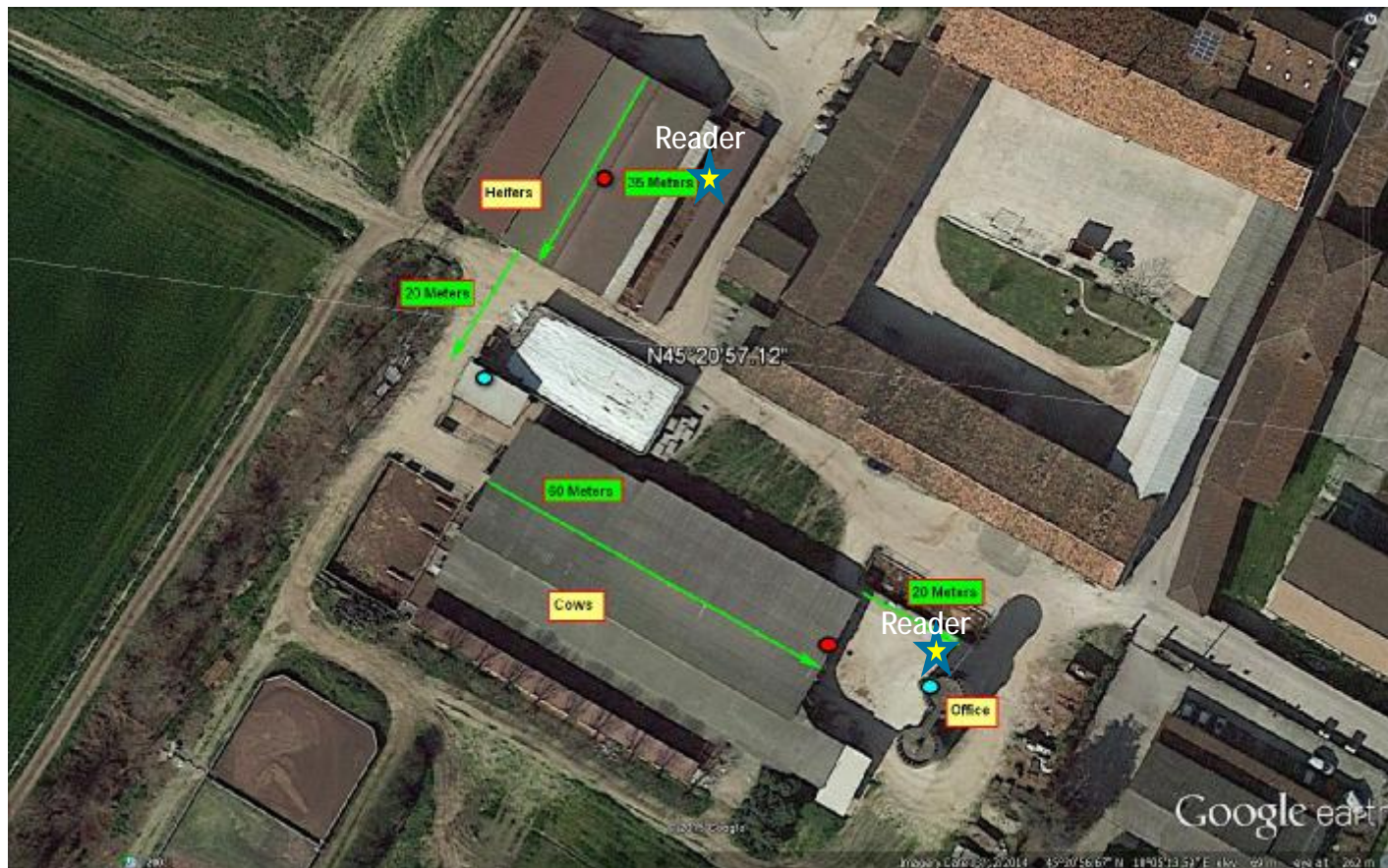
- Understand the terrain the system should cover 了解系统应该被覆盖的地形
- Determine reader's mounting point according to: 确定reader的安装点根据:
 - Area to be covered 被覆盖的区域
 - Power supply availability 电源的可用性
 - Future service needs – do not forget that a technician might have to access the reader for service purposes 未来服务需求-不要忘记技术人员需要接触reader进行服务
 - Try to Cover The “must pass” zones – zones where the cows are SURE to pass 试着去覆盖奶牛必须通过的区域
- Reader positioning rules of thumb: Reader 安装位置原则
 - At least 200M\220Y radius coverage 至少200米半径
 - If Sheds are closed - 1 Reader for each shed (maybe more – depends on size)
 - 如果是封闭式牛舍，每个牛舍至少一个reader（也许需要更多-取决于尺寸）
 - Remember that RF can't penetrate:记住射频无法穿透
 - Sheet metal fences 金属围栏板
 - Concrete – built-in high troughs \ fences 混凝土-内有高墙、栅栏
 - Chicken wire fences 铁丝网围栏



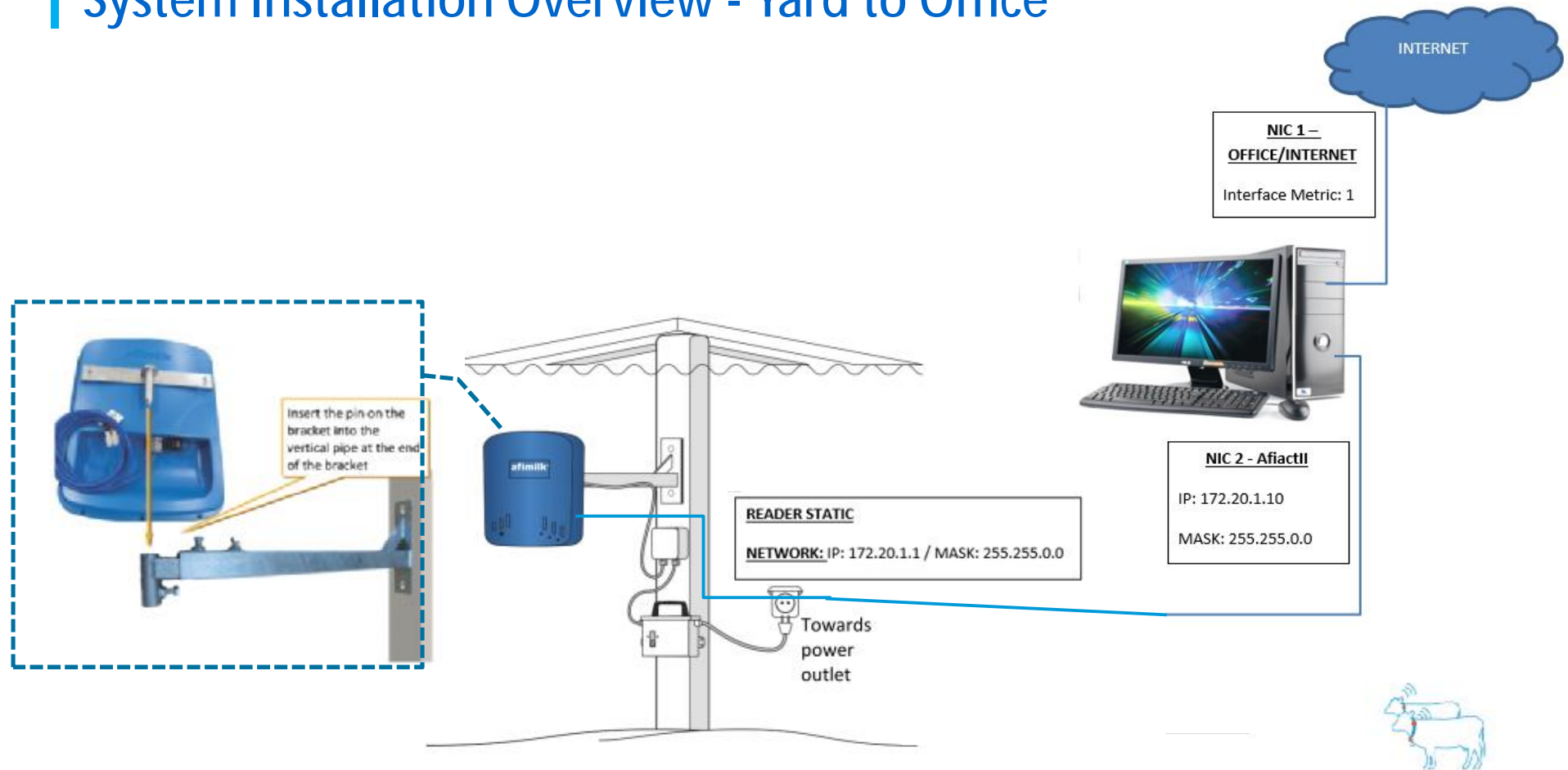
| Site Survey – Example 1



Site Survey – Example 2

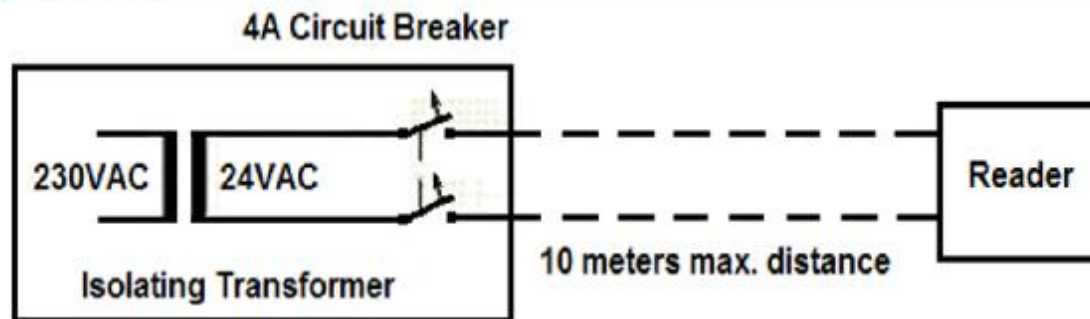


System Installation Overview - Yard to Office



I Environmental Specs

Item	LED Label
Voltage 电压	AC: Nominal voltage of 24Vac (min 21.6Vac to max 27.5Vac) 交流：额定电压24V（21.6-27.5Vac） DC: 12V 直流：12V
Current 电流	AC: 0.6A max 50/60Hz 交流：0.6A max 50/60Hz DC: 1A max 直流：最大1A
Power per unit 每个功率	16.5 Watts (i.e. a VA rating of at least 20 VA for the transformer) 16.5W





Collected Data &
Supported Configurations

数据收集&支持配置

Collected Data \ Reports & Alerts

数据收集、报告&警报

Aficollar tags collect and send to the PC the following data:

项圈数据收集并将如下数据发送到电脑

- Ruminant 反刍
- Eating 进食
- Motion 活动量

Aficollar system identifies and produces reports and alerts for:

项圈系统识别和生产报告和警报:

- Heat events 发情事件
- Cows \ heifers health issues 奶牛\青年牛健康事件
- Digestion issues affecting group\ 消化事件影响组别



Collected Data \ Reports & Alerts

数据收集\报告&警报

Aficollar system produces reports and alerts for:

项圈系统产生报告和预警

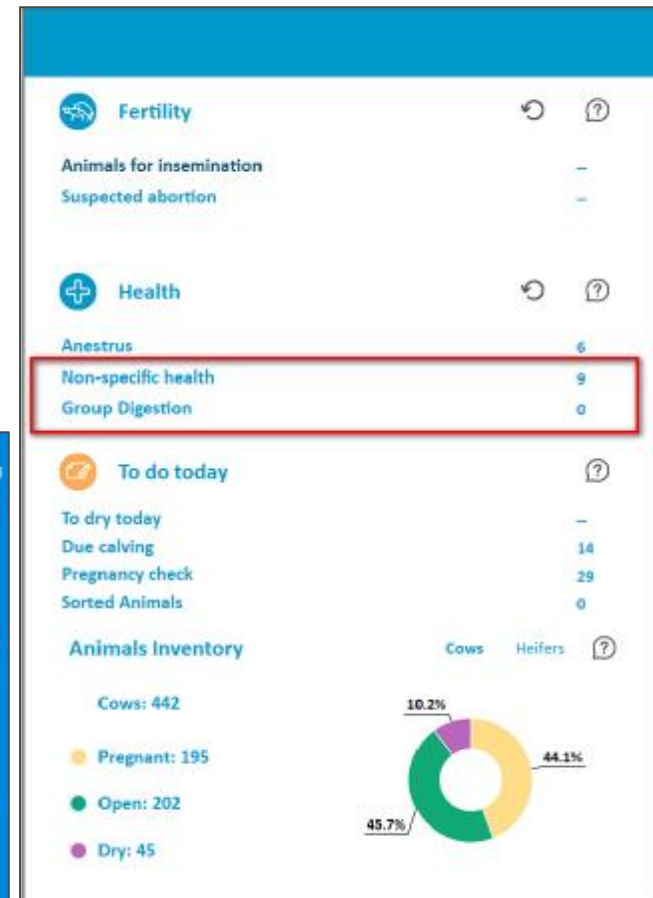
Afifarm Based - 基于afifarm

- Heat events 发情事件
- Cows \ heifers health issues 牛\青年牛健康事件
- Health & comfort issues affecting group\
- 健康和舒适度事件影响组别

Aficontrol Based – 基于aficontrol

- Collar Data 项圈数据
- Collar Assignment 项圈任务
- Collar Monitor 项圈监控
- Collar Malfunction 项圈故障

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Supported Parlour Configurations 支持奶厅的配置

Parlor types which will be Supported in the future
支持奶厅的类型

- Parallel 并列
- Herringbone, 鱼骨
- Rotary 转台
- In the future there will be an option of using passive ear tags in conjunction with Aficollar system
- 未来将会有耳标和项圈系统相兼容
- Rotating chest bar and entrance ID are not\will not be supported
- 转台胸栏和入口门识别不被支持

**NOTE - You can not mix in the same farm leg Tags and Collars.
Only one type can be used in the same farm**

注意：计步器和项圈不能在同一个牧场使用





Reader Overview – Reader 概述

Front Cover LEDs 面板指示灯

Connection \ Connectors Reader 连接

| Reader Overview – Front Cover LEDs Explained





Reader Overview – Front Cover LEDs Explained

Item	LED Label	Description
1	Tag Comm 计步器通讯 	<p>Communication with tags: 与计步器通讯</p> <p>Blinking Yellow – good communication 闪烁黄色-通讯良好</p> <p>Off – No communication 不显示-没有通讯</p> <p>NOTE: This LED blinks for a short period every time a tag message is received in the Reader</p> <p>注意：当Reader接收到计步器的信息时，LED灯会闪烁一小段时间</p>
2	PC comm 电脑通讯 	<p>Communication with the PC AfiAct II application</p> <p>软件通讯指示灯</p> <p>Yellow – The Reader is communicating with the AfiAct II</p> <p>黄色-Reader与软件通讯正常</p> <p>Off –Reader could not connect with AfiAct II</p> <p>关闭-Reader与软件没有通讯</p>

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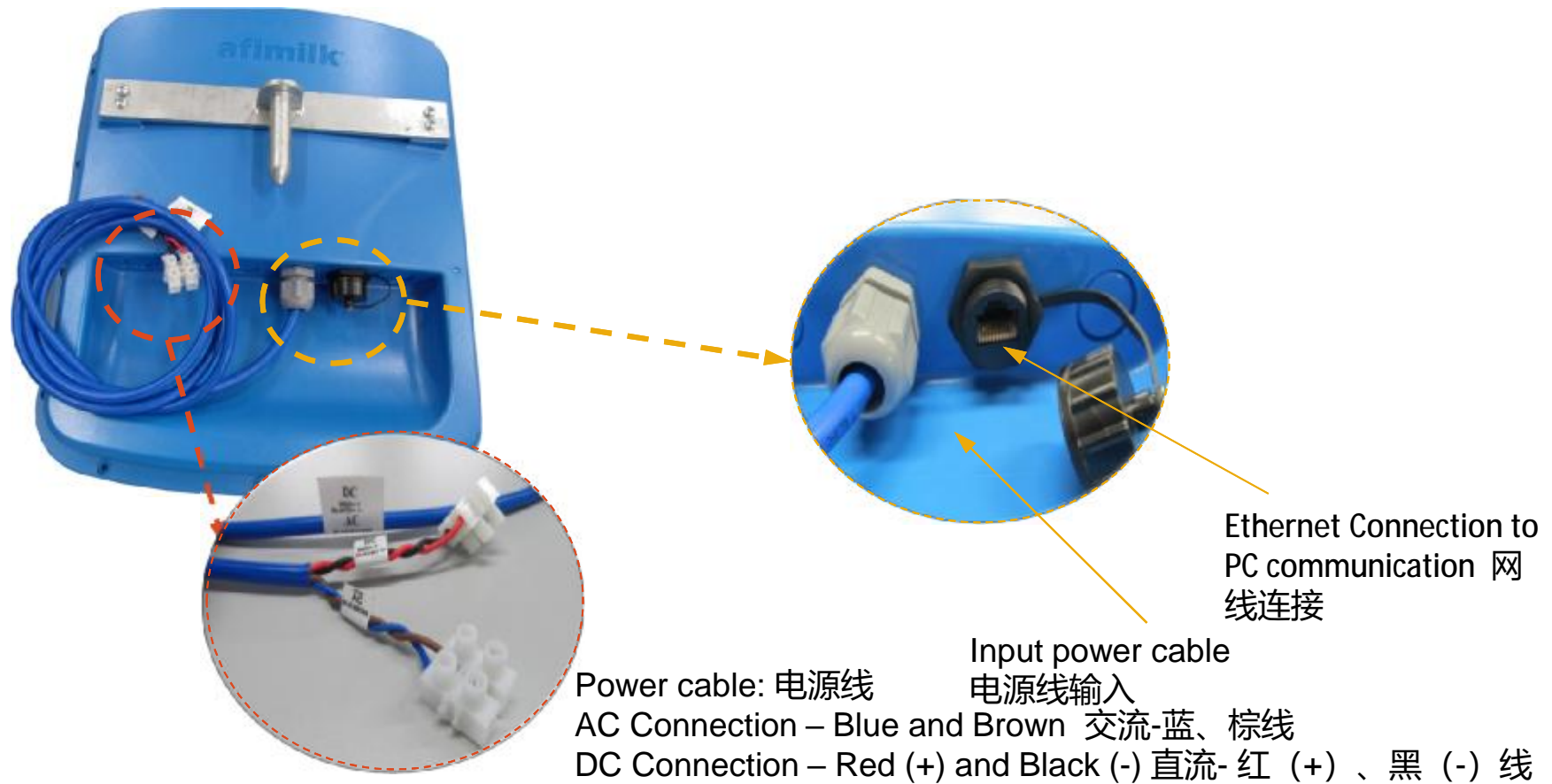


Reader Overview – Front Cover LEDs Explained

3	Power	 <p>GREEN – ON (no faults detected) 绿色-没有报警信息 RED – a FAULT is detected 红色-有报警信息</p>
4	Signal strength	<p>Indicates Wi-Fi communication strength, after the WLAN LED shows successful association between the Reader and the AP 当网络接通后，Wi-fi通讯强度显示</p> <div>  <p>Low signal strength (between -80 and -90 dbm) 低信号强度 (-80到-90之间)</p> <p>Good signal strength (> -60 dbm) 好的信号强度</p> <p>Medium signal strength 中信号强度 (between -60 and -80 dbm)</p> </div> <p>NOTE: When no strength LED indication 注意：当没有信号强度显示时，这信号强度在 -90以下 is on and the WLAN LED is on, the signal strength is below -90</p>



| Reader Overview – Connectors & Connections reader概述-reader的连接

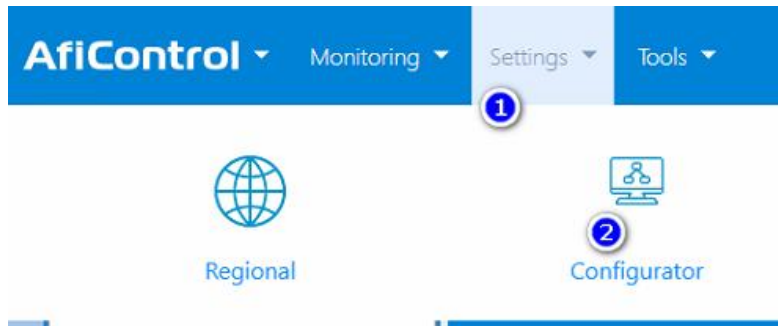


A faint network diagram is visible in the top right corner of the slide. It shows a series of interconnected nodes and lines, representing a network topology. Some nodes are highlighted with larger circles, and there are arrows indicating the direction of flow or connection.

AfiControl Configuration

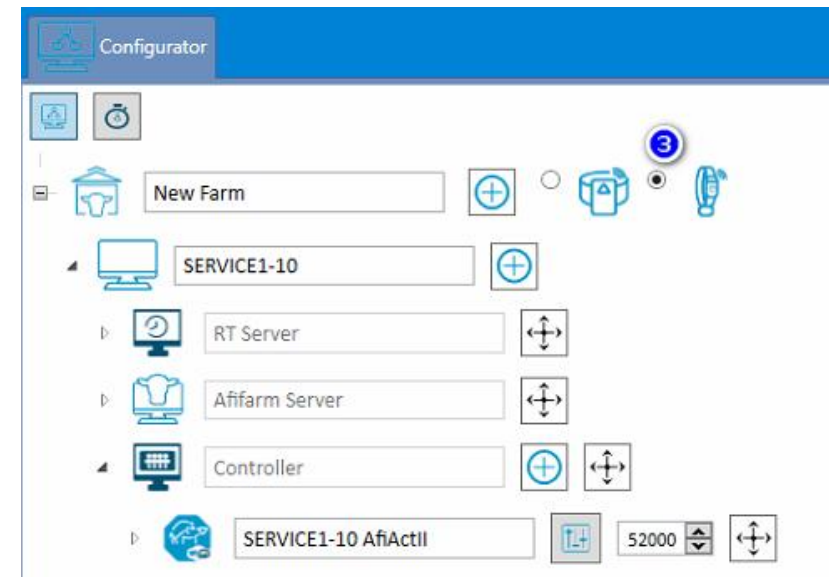
aficontrol 配置

Software Configuration



In Technician Aficontrol press – 进入aficontrol技术人员界面

1. Settings 设置
2. Configurator 配置器
3. Choose Aficollar 选择项圈



Software Configuration

4.Add Controller

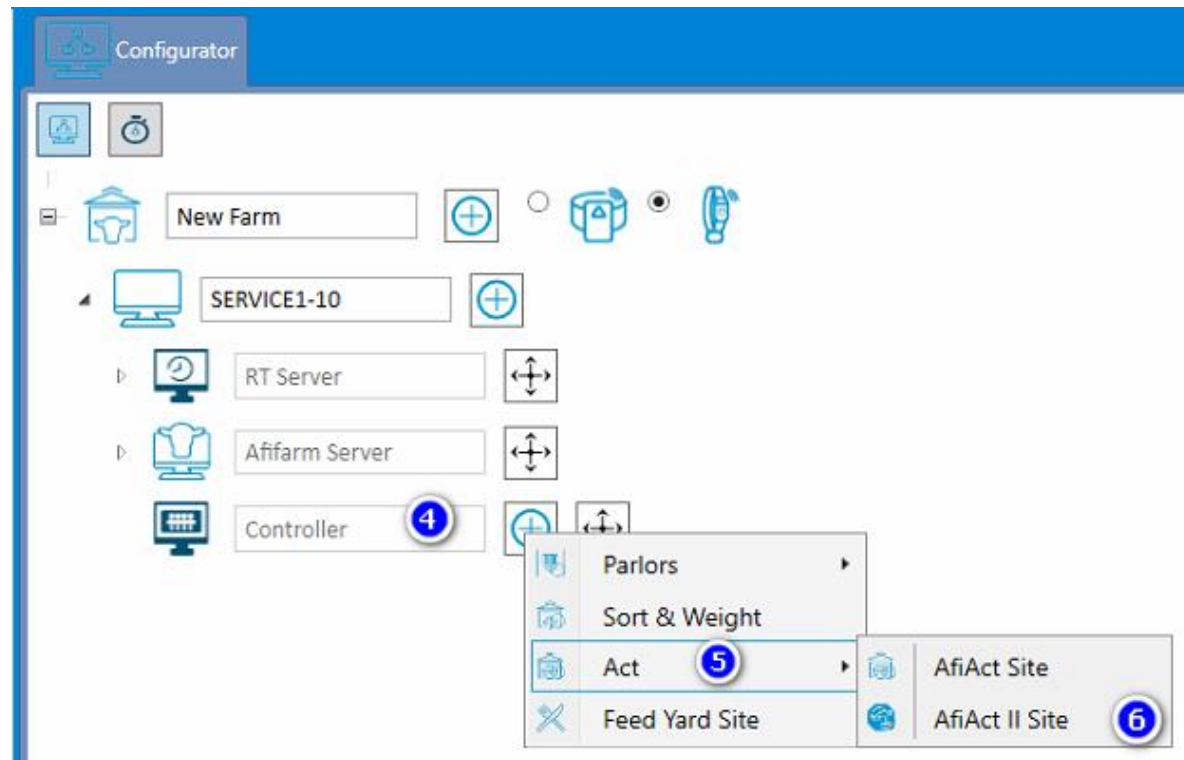
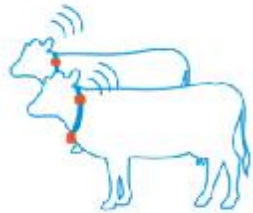
增加一个控制器

5.Add Act site

增加一个发情站台

6.Choose ActII Site

选择AfiAct II



Software Configuration

7.Open Site parameters

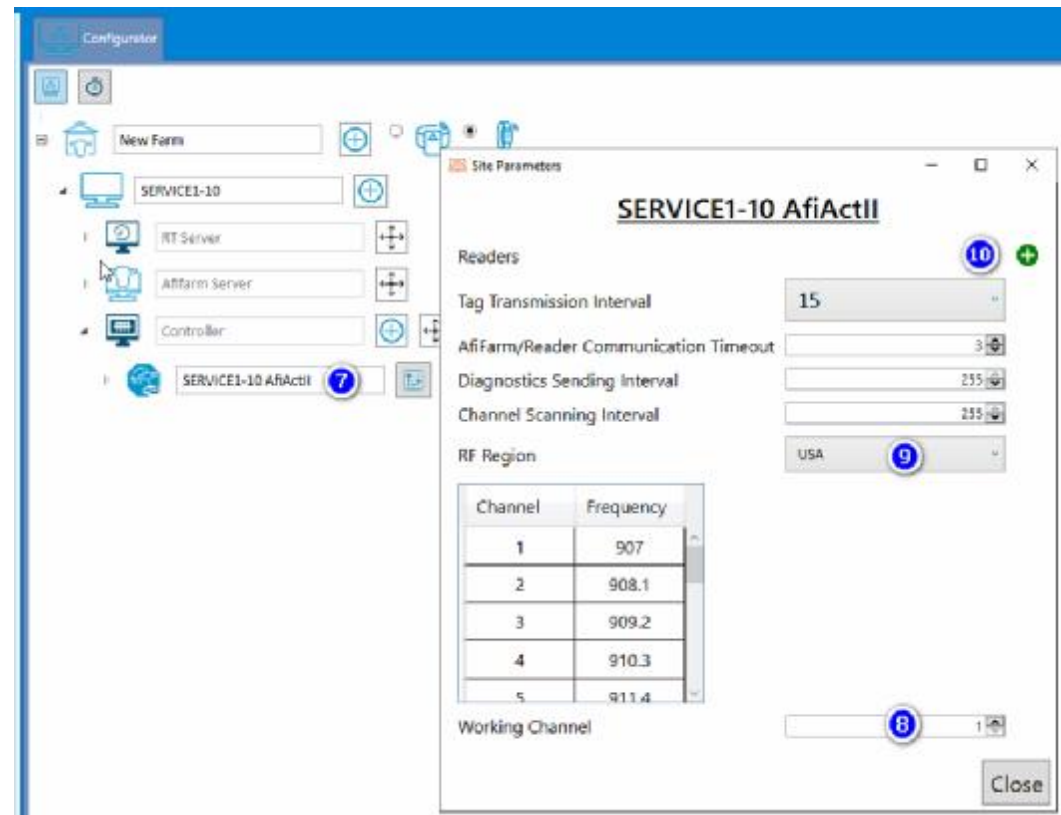
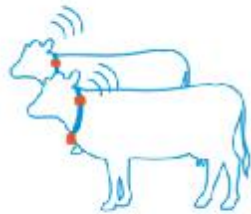
打开参数设置

8.Choose Working channel

选择工作频道

9.Choose RF region 选择射频地区

10.Press + to add Reader 添加reader



Software Configuration

11. Register the Reader unique ID

注册reader的唯一ID号

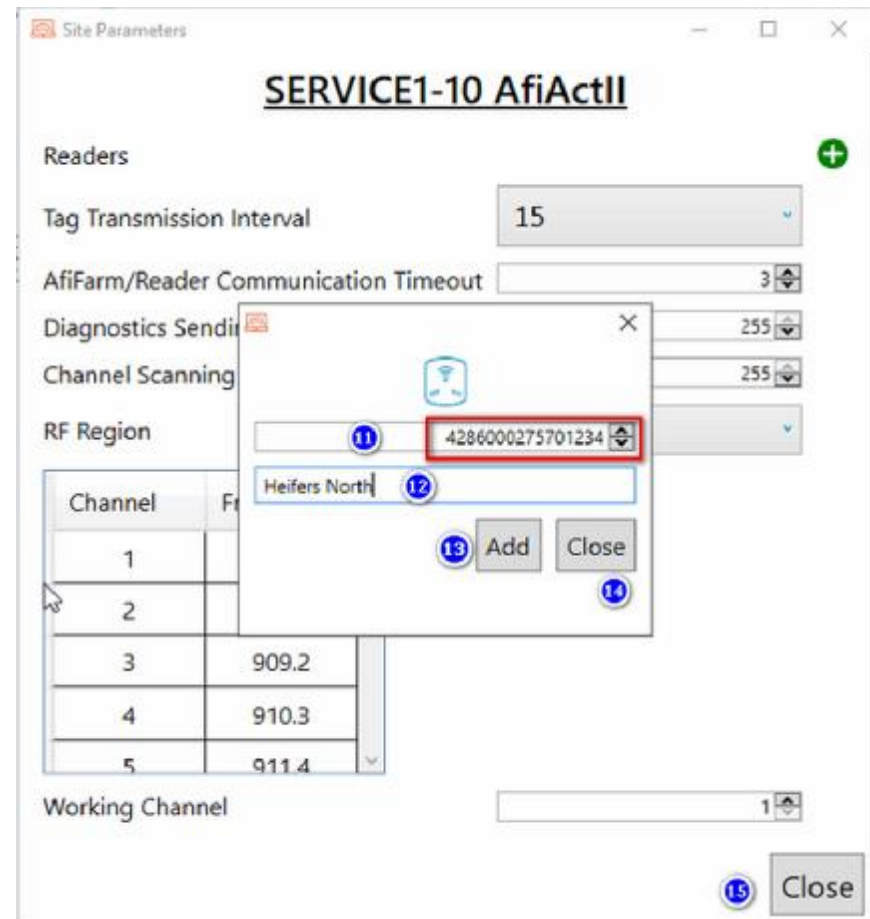
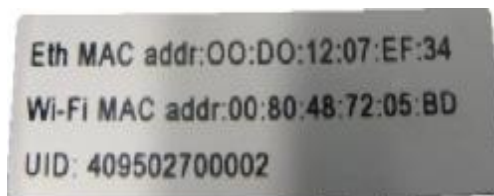
12. Choose the Reader's name (To find in site reports)

填写reader名字

13. Press tab Add 按添加键

14. Press tab Close 按关闭键

Reader unique ID

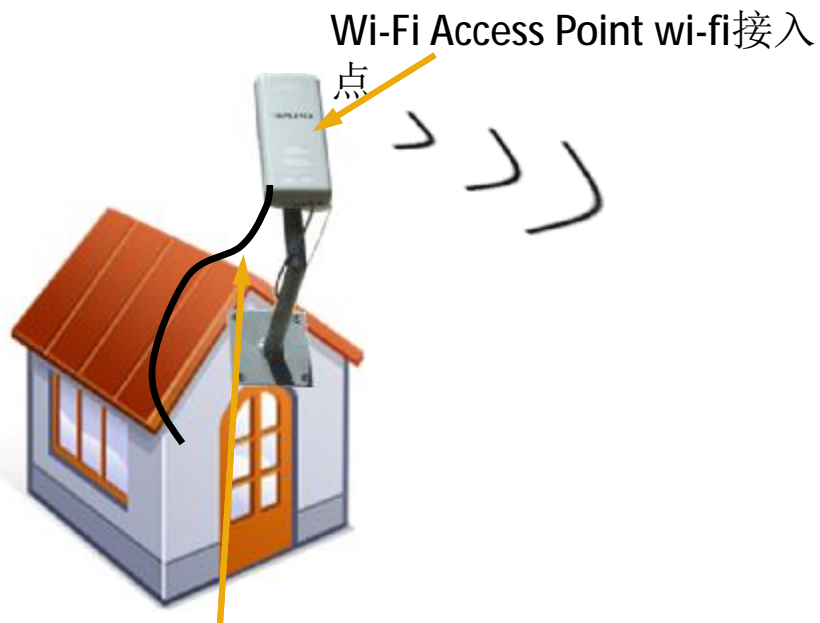




Reader Connection to PC – Network

Reader网络连接

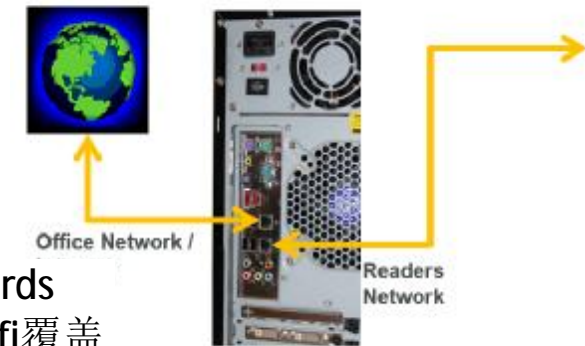
Reader Connection to PC - Network



Wired connection towards office Wi-Fi router 有线连接到办公室Wifi路由器上

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2 network cards Network Scheme



Wi-Fi coverage towards cowshed reader Wi-fi覆盖到牛舍的reader



Reader Connection to PC - Network

Cable \ AP \ Bridge

Bridge Installation

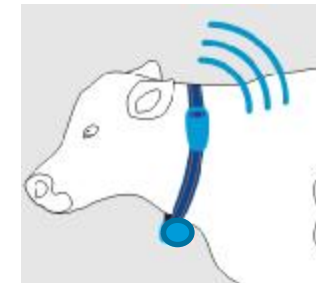
Reader

AP Installation

Cable
Installation

Computer

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Reader Connection to PC - Network

Item	Value
Network 互联网	<p>TCP/IP protocol network TCP/IP协议网络</p> <p>Network shall have an operative DHCP server 网络应该有一个可操作的DHCP服务</p> <p>Any commercial access point 任何商业入口</p> <p>Carrier grade (99.999% service).</p>
Access Point 接入点	<p>Any commercial access point 任何商业接入点</p> <p>In case of an OUTDOOR installation – outdoor weatherproof grade AP according to the installation environment and lightning protection design.如在室外安装-室外防风雨等级AP根据安装环境和防雷设计。</p> <p>Carrier grade (99.999% service)</p>
WiFi certification supports 认证支持	<p>802.11g (802.11n is supported only if it can be set to work with 2.4 GHz bandwidth).</p> <p>802.11g (802.11n只有在2.4 GHz带宽下才能被支持)。</p>



Reader Connection to PC - Network

Item	Value
Encryption method default 加密方式默认	Preferable: WPA-PSK/WPA2-PSK The following methods are also supported: WEP, WPA/WPA2, WPA-PSK/WPA2-PSK and IEEE 802.1X standard.
Preferable SSID 推荐的用户名	afiact2
Preferable password 推荐的密码	afimilk123
Signal and Noise 信号和噪音	<ul style="list-style-type: none">· The SNR at Reader mounting point must be greater than 15 dB.· RSSI must be higher than -80dBm. <p>Note: Preferred RSSI is -65 dBm to -55 dBm in the designated Reader mounting point (WIFI analyzer – Mobile application)</p>

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I Reader Connection to PC – Network \ WIFI Scenarios

	Scenario	Effective distance	Connection type	Wireless AP needed	Popularity (low, normal, high)	Current Effort (low, normal, high, very high)
1	Reader is close to the office	Up to 100M	Cabled		High	Low
2	Reader(s) are far from office but in range of one regular 180°AP	Up to 500M	AP	1	High	High
3	Readers are far from office not in range of one regular 180°AP	Up to 500M	AP	2	Normal	Very high
4	One Reader is very far from office or blocked (inside a closed barn)	Up to 1.5-2 Km	AP Bridge	2	Low	High
5	Multiple closed barns	Up to 1.5-2 Km	P2MP (point-to-multipoint)	Main AP + n stations	Low	Very high



PC Specifications

电脑配置要求

I PC Specifications - Farm Definitions -

Farm Category	Number of Animals in Herd 动物数量	Maximum Number of Parlors 最大奶厅数量	Maximum Number of Yard Sites 最大牧场数量	Maximum Number of Parlor Stalls 最大位数	Minimum Number of PCs 最小电脑数量
Small to Medium	Up to 1,000 Animals	1	2	30	1
Medium to Large	1,000-3,500 Animals	1	4	80	3
Very Large	3,500-5,000 Animals	12	32	120	PC per parlor 一个奶厅一个电脑 PC per 2 sites
Mega Farm	Over 5,000 Animals	Contact Afimilk for a tailored PC recommendation.			

PC Specifications – Server 服务器

No. of Animals	Up to 1000	1001-5000	More than 5001
Windows Version 系统版本	Windows10 PRO (64bit) Windows10 专业版64位	Windows10 PRO (64bit) 专业版64位	Windows10 PRO (64bit) 专业版64位
RAM(GB) 内存	Min: 32 最小32G	Min: 32最小32G	Min: 32最小32G
Processor 处理器	i7	i7	i7
Primary HD 主硬盘	500GB Enterprise or Commercial Level SSD 500G固态硬盘	500GB Enterprise or Commercial Level SSD500G固态硬盘	1000GB Enterprise or Commercial Level SSD500G固态硬盘
Recommended secondary non-SSD HD for backup 次硬盘	500GB 64MB cache / 7,200 RPM	500GB 64MB cache / 7,200 RPM	1000GB 64MB cache / 7,200 RPM
Additional required items 额外需求	<ul style="list-style-type: none"> UPS unit – mandatory (Server without UPS may suffer irreversible loss of data) 不间断电源 Secondary network interface card for AfiAct II reader is recommended 		

I PC Specifications – Controller 控制机

No. of Animals		Up to 5000	More than 5000
Windows Version	Windows10 PRO(64bit)	Windows10 PRO (64bit)	Windows10 PRO (64bit)
RAM(GB)		16	32
Processor		i7	i7
HD type		Enterprise or Commercial Level SSD	Enterprise or Commercial Level SSD
Primary HD free space		500GB	500GB
Additional required items		<ul style="list-style-type: none"> UPS unit – mandatory (controller without UPS may suffer irreversible loss of data) Secondary network interface card for AfiActII reader is recommended 	
Monitor		<ul style="list-style-type: none"> Supported resolution: 1920X1080 Size: 21.5 inch and larger 	

I PC Specifications – Reporter

No. of Animals		Up to 5000	More than 5000
Windows Version	Windows10 PRO(64bit)	Windows10 PRO(64bit)	Windows10 PRO(64bit)
RAM(GB)		16	16
Processor		Min: i5 Recommended: i7	i7
HD type		7200 RPM	7200 RPM
HD free space		500 GB	500GB
Monitor		<ul style="list-style-type: none"> Supported resolution: 1920X1080 Size: 21.5 inch and larger 	



Parlour Based Aficollar Examples

项圈安装实例

| Parlour Based Aficollar Parallel Rapid Exit – NOT RELEASED



Parlour Based Aficollar Parallel Rapid Exit – NOT RELEASED



| Parlour Based Aficollar Parallel Rapid Exit – NOT RELEASED



I Parlour Based Aficollar – H”B Stationery Chest-Bar – NOT RELEASED



I Parlour Based Aficollar – H”B Stationery Chest-Bar – NOT RELEASED



Parlour Based Aficollar – H”B Stationery Chest-Bar – NOT RELEASED



I Parlour Based Aficollar – H”B Stationery Chest-Bar – NOT RELEASED



I Parlour Based Aficollar – Rotary – NOT RELEASED



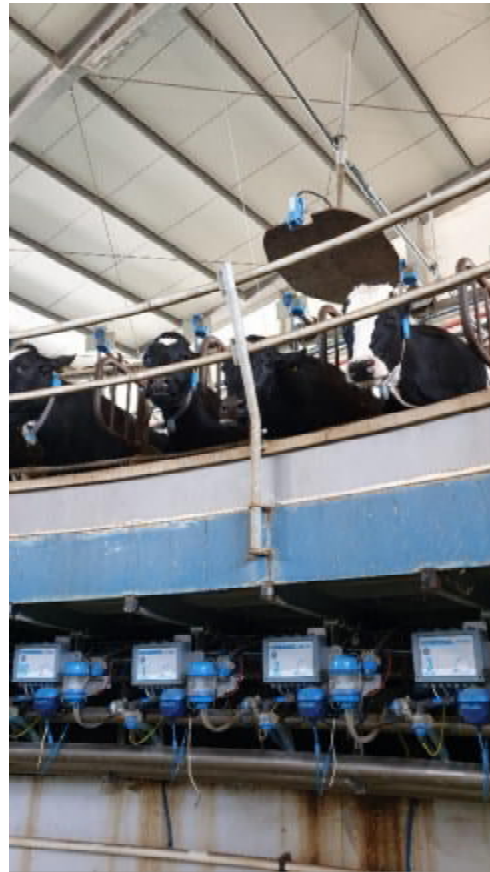
Parlour Based Aficollar – Rotary – NOT RELEASED



Parlour Based Aficollar – Rotary – NOT RELEASED



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Troubleshooting

问题解决

I Basic Troubleshooting

Problem	Indication	Suggested Solution
Reader is not receiving any collar messages Reader没有接收到数据	<ul style="list-style-type: none"> Status LED is blinking 状态等闪烁 PC COM LED is ON 电脑通讯灯正常 No new collar messages appear in Aficontrol 没有项圈信息进入到aficontrol里面 	<ol style="list-style-type: none"> 1. Verify (with Afimilk coverage test tool) that collars are in the covered area of the reader for more than 15 minutes 测试项圈是否在reader的覆盖区域内，保证项圈要在测试范围内15分钟 2. Verify working channel is set correctly according to your region in Aficontrol 验证工作通道是否正确在Aficontrol里 3. Verify the reader firmware version is the latest released with the official Afifarm 5.4 验证固件版本是否是最近版本
Rumination/Eating/Motion data from collars looks strange 项圈的反刍/进食/运动数据看起来很异常	10 Days graph reflects abnormal or strange activity that is inconsistent with the animal's actual activity 10天图反映了异常或奇怪的活动，与动物的实际活动不一	Verify the collar is mounted on the animal neck as instructed in the Manual 验证项圈是否安装标准
All other problems 所有其他问题		Please open a service call for Afimilk support team: support@afimilk.com



Product Literature

产品资料

I Product Literature – Partner Portal

- Aficollar User Guide - <https://wp.afimilk.com/AfimilkB2B/knowledge-center/focus/274>
- Aficollar Attachment Guide - <https://wp.afimilk.com/AfimilkB2B/knowledge-center/focus/275>
- Aficollar Product Release - <https://wp.afimilk.com/AfimilkB2B/knowledge-center/focus/276>
- Aficollar Product Introduction - <https://wp.afimilk.com/AfimilkB2B/knowledge-center/focus/278>
- Aficollar Flyer - <https://wp.afimilk.com/AfimilkB2B/knowledge-center/focus/281>



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Thank You