UHF_Middleware

Documentation

2019/12/04
Version 1.0R6

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UHF_Middleware User’s Manual

Contents

Introduction

UHF_Middleware helps you to save UHF tags' information which read by TS100 to Database (DB).

System Requirements

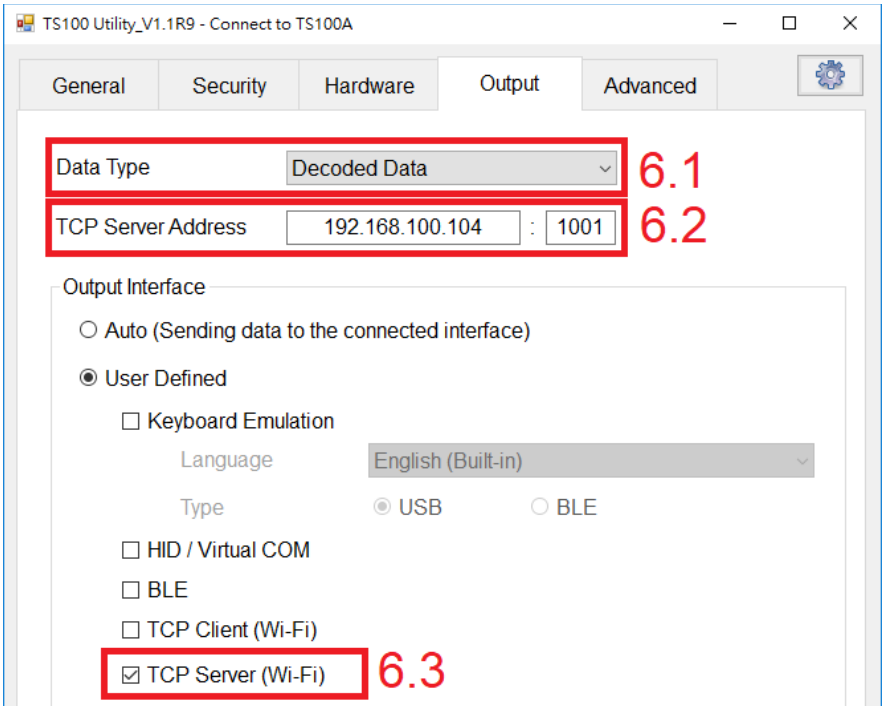
UHF_Middleware is a Windows-based program, following is the requirements:

- OS: Windows XP or later version.
- .NET Framework 4.0

Preparation

Before you start to use **UHF_Middleware**, you should set up TS100 with **TS100 Utility** as blow steps.

1. Open **TS100 Utility** (V1.1R2) program.
2. Plug in TS100 to your computer by USB.
3. Click [**Connect**] button to connect with TS100.
4. Select [**General**] tab and set up an Operating Mode.
5. Select [**Hardware**] tab / [**Wi-Fi Settings**] button to configure Wi-Fi settings in order to send tags' information to host via the network.
6. Select [**Output**] tab:



6.1. Set up [**Data Type**] to make TS100 sends different information to Middleware.

6.1.1. Select "*Decoded Data*" in general case.

6.1.2. Select *"Raw Data"* only when you need to retrieve "Remove Tag Event" and "EPC raw data".

6.2. Set [**TCP Server Address**] that is the IP and port used for Middleware to listen.

*Tip: When you click [**Start**] button in the **UHF_Middleware**, it shows which IPs & port are listening. (as below)*

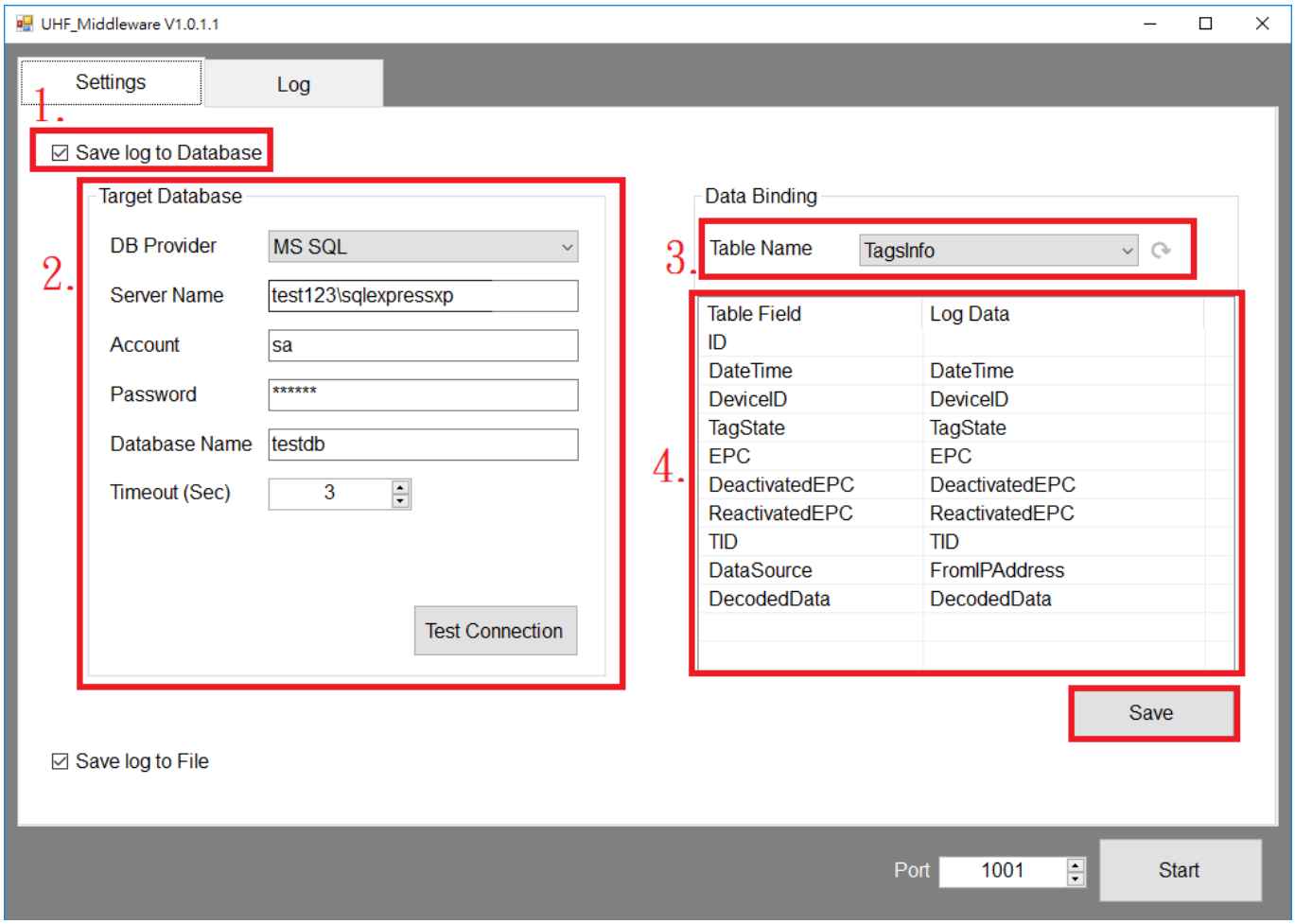
6.3. Select [**TCP Server (Wi-Fi)**] to enable TS100 send data to TCP Server.

7. Click [**Update**] button to save the modifications.

8. Close **TS100 Utility**.

Now, TS100 is ready to send tag's information to TCP Server via Wi-Fi.

Using UHF_Middleware



Set up DB parameters

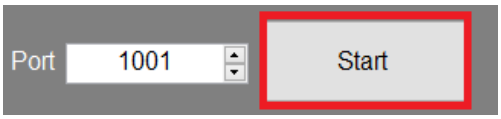
1. Select [**Save log to Database**] in order to save data to DB.
2. Fill up the [**Target Database**] form. Then Click [**Test Connection**] button to make sure the settings are correct.
3. Click [ ] button to update Table Name. And select the target table in the list to store tag data.
4. Mapping Table Fields with Log Data:
    4.1. Click empty data grid under [**Log Data**] field.
    4.2. Select a Log Data to bind to the table field.

Note: Refer to Log Data Table for more information.

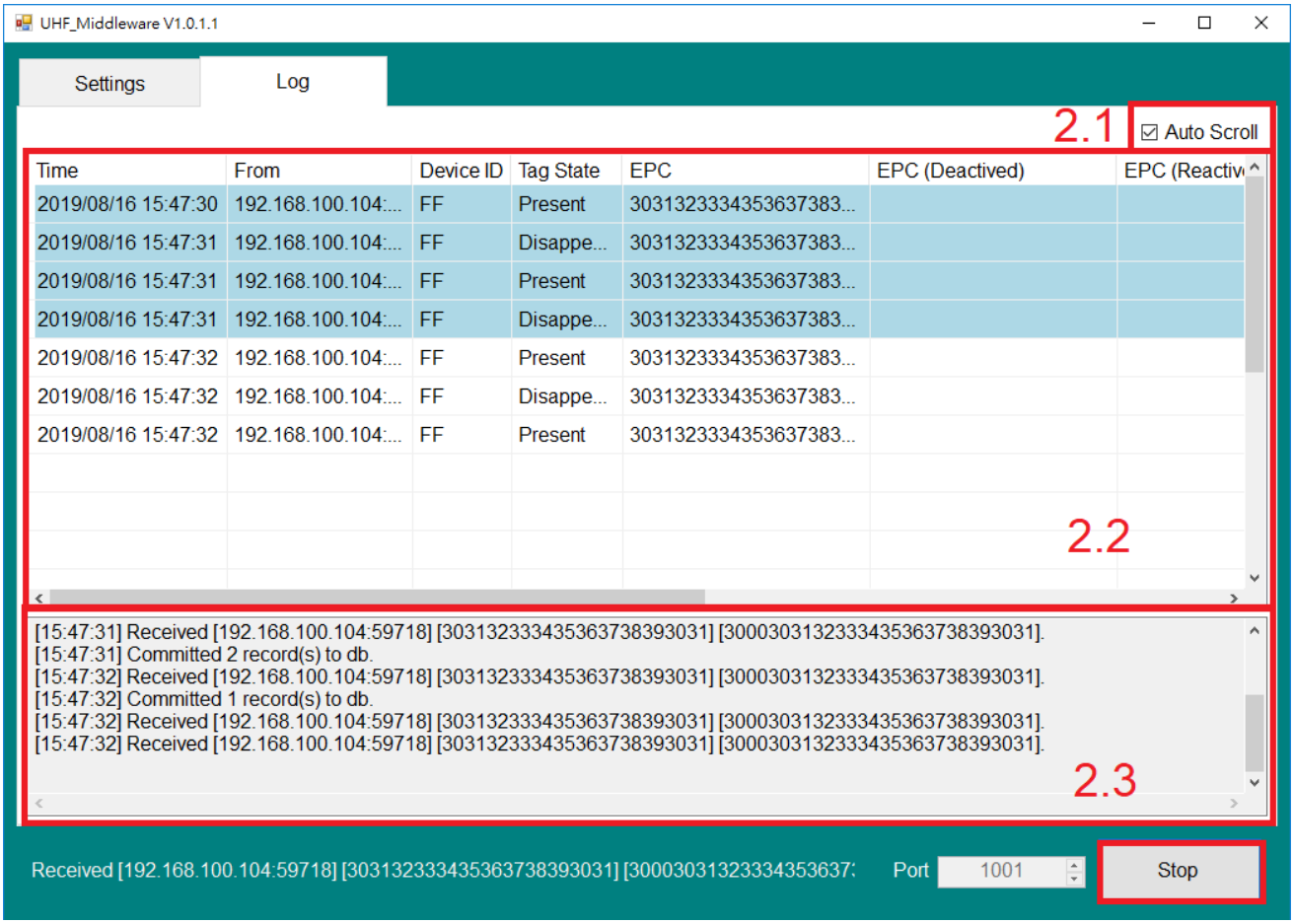
Click [**Save**] button to save the settings to registry.

Start the service

1. Click [**Start**] button to start the process of receiving tag data.



2. At the [**Log**] tab, you could view the received tag data and log:



2.1. Enable [**Auto Scroll**] to see the latest record in the below list.

2.2. The tag data received from TS100 shows in the list.

2.2.1. For the records that don't save to DB, the background color is white.

2.2.2. For the records that have saved to DB, the background is highlight.

2.3. History log. If you select [**Save log to File**], the log will be saved in the same folder of UHF_Middleware.

3. Click [**Stop**] button to end the process of receiving tag data.

Log Data Table

Name	Type	Description
DateTime	datetime	Time of data retrieved.
FromIPAddress	string	IP address and port of TS100.
DeviceID	string	device id of TS100.
DeviceSerialNumber	string	device serial number of TS100.
TagState	byte	Enable "*Remove Tag Event*" to retrieve tags removing state. 0:Present, 1:Disappeared
TID	string	TID of the tag.
EPC	string	EPC of the tag. (raw data) * Retrieve the data when *Data Type* is "Raw Data" or *Decoded Data* contains "*EPC*"
DeactivatedEPC	string	Deactivated EPC of the tag. * Retrieve the data when TS100 in "*Deactivated Mode"*.
ReactivatedEPC	string	Reactivated EPC of the tag. * Retrieve the data when TS100 in "*Reactivated Mode"*.
DecodedData	string	Decoded data of EPC. * Retrieve the data when *Data Type* is "*Decoded Data*".
TagSerialNumber	string	Serial number of UPC encoding. * Retrieve the data when 1. *Data Type* is "*Decoded Data*" 2. *Decoded Data* contains "*EAN/UPC*" or "*EAN/UPC + EAS*"
Ascii	string	EPC as ASCII. * Retrieve the data when 1. *Data Type* is "*Decoded Data*" 2. *Decoded Data* contains "*ASCII (EPC)*"

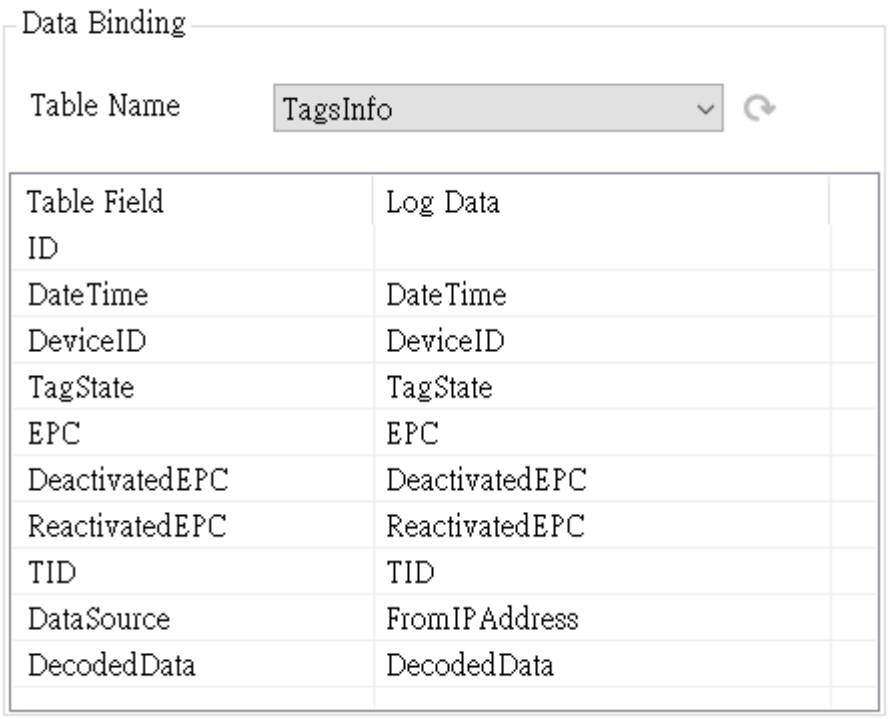
* The gray rows in the table means that data packets may not exist. It depends on the settings of TS100 a nd tags' data.

Sample SQL Schema

Using below sample schema to create a table for testing.

```
CREATE TABLE [dbo].[TagsInfo](
	[ID] [bigint] IDENTITY(1,1) NOT NULL,
	[DateTime] [datetime] NULL,
	[DeviceID] [varchar](10) NULL,
	[DeviceSerialNumber][varchar](20) NULL,
	[TagState] [tinyint] NULL,
	[EPC] [varchar](50) NULL,
	[DeactivatedEPC] [varchar](50) NULL,
	[ReactivatedEPC] [varchar](50) NULL,
	[TID] [varchar](50) NULL,
	[DataSource] [varchar](21) NULL,
	[DecodedData] [varchar](256) NULL,
	[TagSerialNumber] [varchar](10) NULL,
 CONSTRAINT [PK_TagsInfo] PRIMARY KEY CLUSTERED
(
	[ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]
```

In the UHF_Middleware, set data binding as below.



Q & A

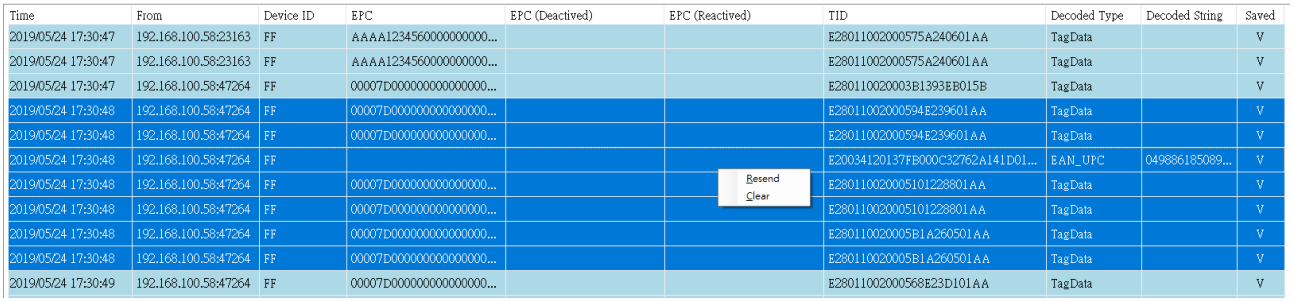
Q1. How to clear the tag data records and log message showing in the UI?

A1.

1. Right-click the list, in the drop-down menu, click to select [**Clear**]. (If there is any unsaved records, then they can not be clear.)
2. Double-click the Log text box to clear log message.
3. The log message will also be automatically clear if the record count reach to 2000.

Q2. How to re-save the record to DB?

A2. Select one or more than one records, right-click the list view, in the drop-down menu, click [**Resend**].



Time	From	Device ID	EPC	EPC (Deactived)	EPC (Reactived)	TID	Decoded Type	Decoded String	Saved
2019/05/24 17:30:47	192.168.100.58:23163	FF	AAAA1234560000000000...			E28011002000575A240601AA	TagData		V
2019/05/24 17:30:47	192.168.100.58:23163	FF	AAAA1234560000000000...			E28011002000575A240601AA	TagData		V
2019/05/24 17:30:47	192.168.100.58:47264	FF	00007D0000000000000000...			E280110020003B1393EB015B	TagData		V
2019/05/24 17:30:48	192.168.100.58:47264	FF	00007D0000000000000000...			E28011002000594E239601AA	TagData		V
2019/05/24 17:30:48	192.168.100.58:47264	FF	00007D0000000000000000...			E28011002000594E239601AA	TagData		V
2019/05/24 17:30:48	192.168.100.58:47264	FF				E20034120137FB000C32762A141D01...	EAN_UPC	049886185089...	V
2019/05/24 17:30:48	192.168.100.58:47264	FF	00007D0000000000000000...			E2801100200051012288O1AA	TagData		V
2019/05/24 17:30:48	192.168.100.58:47264	FF	00007D0000000000000000...			E2801100200051012288O1AA	TagData		V
2019/05/24 17:30:48	192.168.100.58:47264	FF	00007D0000000000000000...			E280110020005B1A260501AA	TagData		V
2019/05/24 17:30:48	192.168.100.58:47264	FF	00007D0000000000000000...			E280110020005B1A260501AA	TagData		V
2019/05/24 17:30:49	192.168.100.58:47264	FF	00007D0000000000000000...			E28011002000568E23D101AA	TagData		V

Update History

04Dec2019 release

- Version 1.0R6
- Update Sample SQL Schema.

22Nov2019 release

- Version 1.0R5
- Update Sample SQL Schema.
- Update Log Data Table.

16AUG2019 release

- Version 1.0R4
- Update Sample SQL Schema.
- Update the content according to UHF_Middleware (V1.1R1).
- Add Log Data Table.

2JUL2019 release

- Version 1.0R3
- Update Sample SQL Schema

11JUN2019 release

- Version 1.0R2
- Add Sample SQL Schema

3JUN2019 release

- Version 1.0R1