

Panasonic NFC-TAG Development kit Installation Manual

Version 2.70

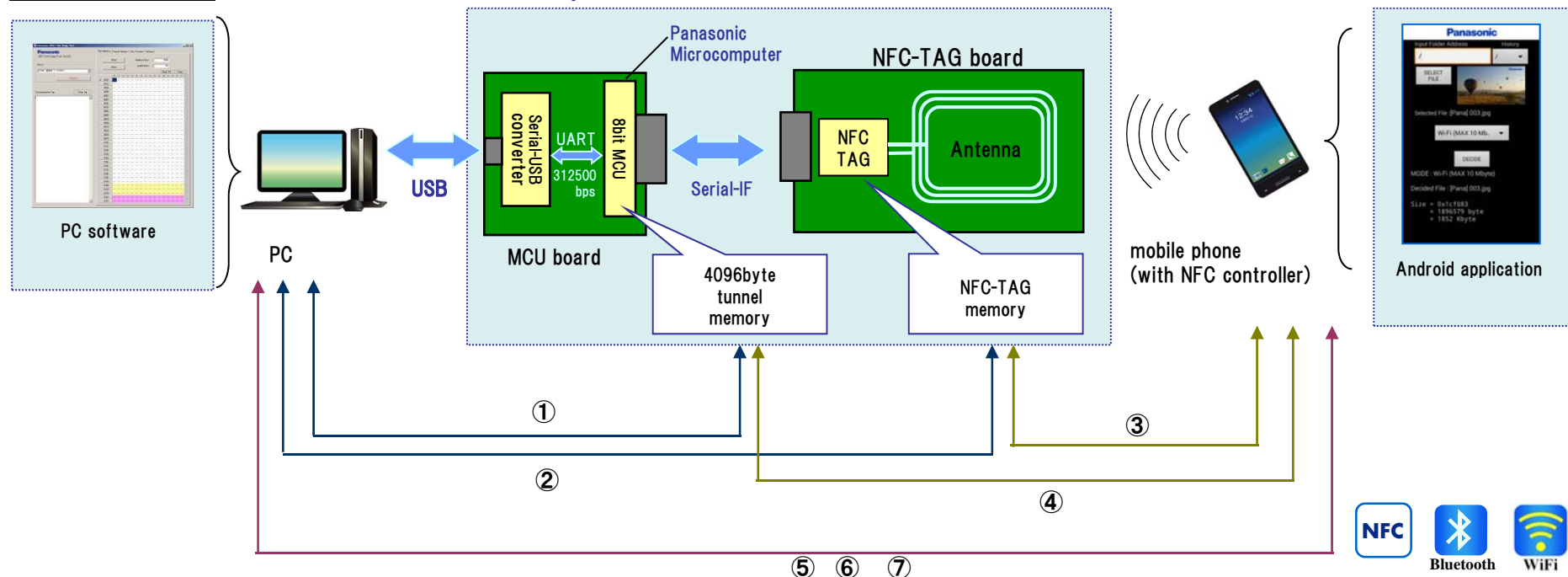
May 11, 2016

Panasonic Semiconductor Solutions Co., Ltd.

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Summary of Development kit (1)

1. Structure



※ NFC TAG memory = 512 byte : MN63Y1210A / MN63Y1213
 1024 byte : MN63Y1214 / MN63Y1221
 ※ tunnel memory = microcomputer memory
 ※ Serial-IF MN63Y1213 / MN63Y1214 / MN63Y1221 : I2C 100Kbps
 MN63Y1210A : UART 9600bps, 38400bps, Clock synchronous serial 1Mbps

2. Functions

- ① Read/write data in tunnel memory by PC.
- ② Read/write data in NFC-TAG memory by PC.
- ③ Read/write data in NFC-TAG memory by mobile phone with NFC function.
- ④ Read/write data in tunnel memory by mobile phone with NFC function.
- ⑤ Transfer the files from mobile phone to PC over NFC.
- ⑥ Transfer the files from mobile phone to PC over Bluetooth. (But a pairing-information is transferred over NFC.)
- ⑦ Transfer the files from mobile phone to PC over WiFi. (But a pairing-information is transferred over NFC.)

Summary of Development kit (2)

3. Software Version

In this document, we have assumed the use of the following software.

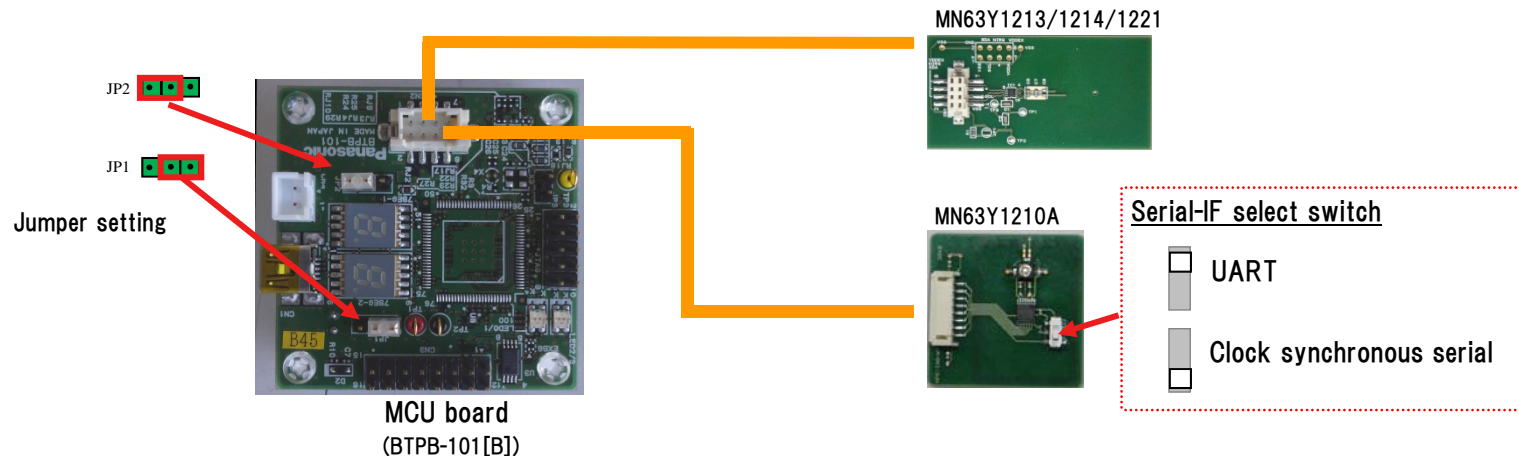
| Software | | Version | File Name | outline |
|------------------------------------|-----------------|---------|-----------------------------------|---|
| Microcomputer Software | | 2.42 | ※It is written in the MCU board | Microcomputer board control software |
| PC Software (control MCU board) | | 2.50 | NFCTAG_DumpTool_v250.exe | Read/Write the NFC-TAG/MCU memory from PC |
| | | 3.5.605 | InTheHand.Net.Personal.dll | Control the Bluetooth adapter when performing the file transfer by Bluetooth ※About how to obtain, please refer to [setup procedure (3)] |
| | | 1.0.1 | NfcWifiCtrl.dll | Control the WiFi adapter when performing the file transfer by WiFi |
| PC Software (control PC-R/W) | | 1.50 | NFCTAG_DumpTool_PCSC_V150.exe | Read/Write the NFC-TAG/MCU memory from PC-R/W (Sony PaSoRi) that is connect to the PC |
| | | 2.2.2 | NfcRW.dll | Control the 'PaSoRi' made by SONY Corporation |
| Android Application | Read/Write | 1.51 | Panasonic_TagRW_v151.apk | Read/Write the NFC-TAG/MCU memory from mobile phone |
| | File transfer | 1.55 | Panasonic_TagFileTx_v155.apk | transfer the files such as photos to the PC from the mobile phone |
| | NFC TAG setting | 1.50 | Panasonic_TagSetting1210_v150.apk | MN63Y1210A TAG setting |
| | | 1.50 | Panasonic_TagSetting1213_v150.apk | MN63Y1213 TAG setting |
| | | 1.54 | Panasonic_TagSetting1214_v154.apk | MN63Y1214 TAG setting |
| | | 1.01 | Panasonic_TagSetting1221_v101.apk | MN63Y1221 TAG setting |

Development kit setup procedure

Setup procedure (1)

Step1. Board setting

Refer board connection of the following figure.



Step2. Install driver and application (for PC)

(1) Copy an application file to a personal computer.

Sample application : NFCTAG_DumpTool_vXXX.exe

※Supported OS : Microsoft Windows 7 SP1

(2) Download and install [.NET Framework] from the following site.

•Microsoft .NET Framework 4 Client Profile

download site <http://www.microsoft.com/en-us/download/details.aspx?id=24872>

Setup procedure (2)

(3) Download and install [driver of the MCU board] from the following site.

-Virtual COM Port Driver (FTDI)

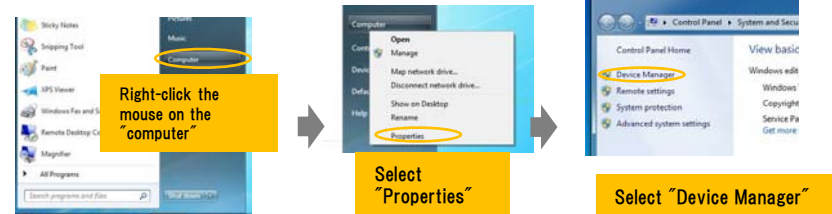
download site <http://www.ftdichip.com/Drivers/VCP.htm>

→ Please choose an appropriate driver from the item of VCP Drivers.

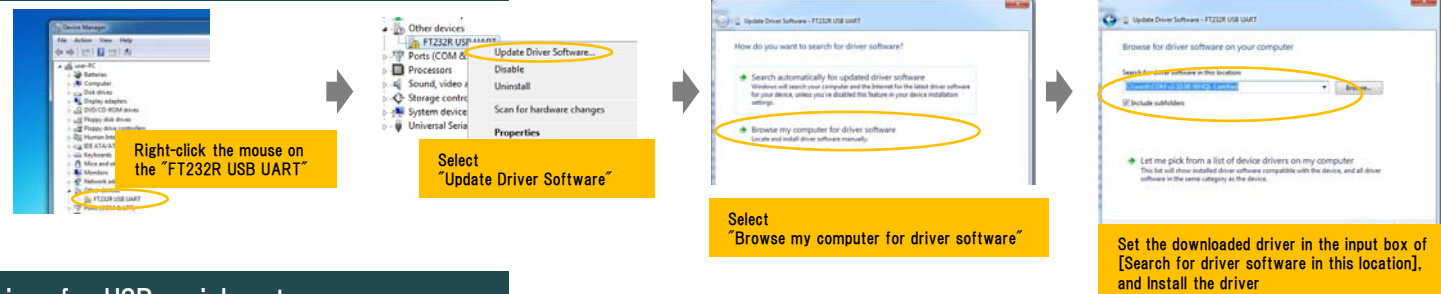
① Connect MCU Board to PC by USB



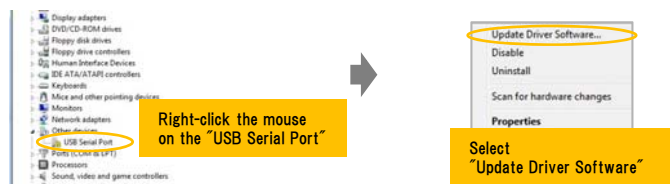
② Open the Device Manager



③ Install driver for FT232



④ Install driver for USB serial port



Setup procedure (3)

(4) Download and install [library] from the following site.

This procedure is necessary for performing a file transfer by Bluetooth

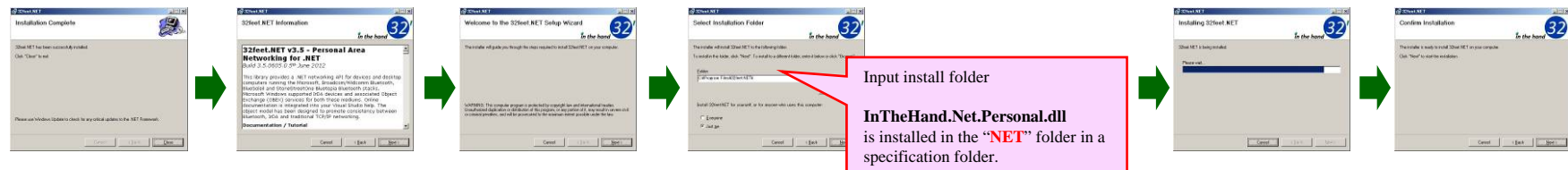
• 32feet.NET (<http://32feet.codeplex.com/>)

download site <http://32feet.codeplex.com/downloads/get/386489>

※ file name : 32feet.NET 3.5.zip

- PC application needs the library file that is included in “32feet.NET 3.5.zip”. (InTheHand.Net.Personal.dll)
- Install the library file (InTheHand.Net.Personal.dll) in the same directory as the PC application.

Install step (run Setup.exe)



※When using Bluetooth, Bluetooth function is required for the personal computer.

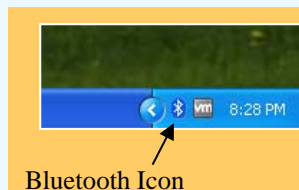
We use following USB-Bluetooth Adapter

BT-MicroEDR2X, BT-Micro4 (PLANEX COMMUNICATIONS INC.)

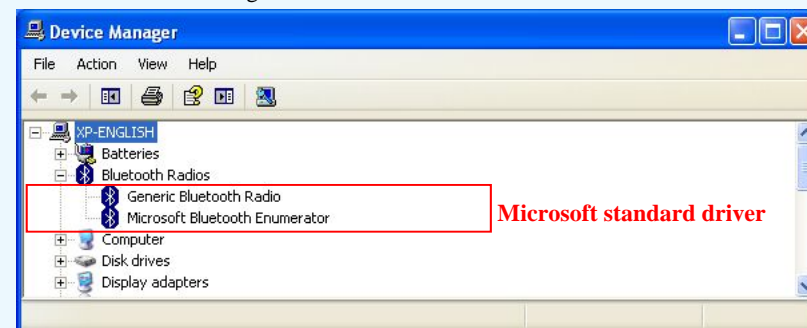
<http://www.planex.co.jp/product/bluetooth/bt-microedr2x/>

About Bluetooth driver

OS standard driver of Microsoft should be used for the Bluetooth driver.



Confirm in device manager



Setup procedure (4)

(5) Copy WiFi control library(DLL) to a personal computer.

This procedure is necessary for performing a file transfer by WiFi

Put the following library file in the same directory as the PC application.

- Library : NfcWifiCtrl.dll

※Supported OS : Microsoft Windows 7 SP1

※ When using WiFi, WiFi function is required for the personal computer.

We use following USB-WiFi Adapter
WLI-UC-GNM2 (BUFFALO INC.)

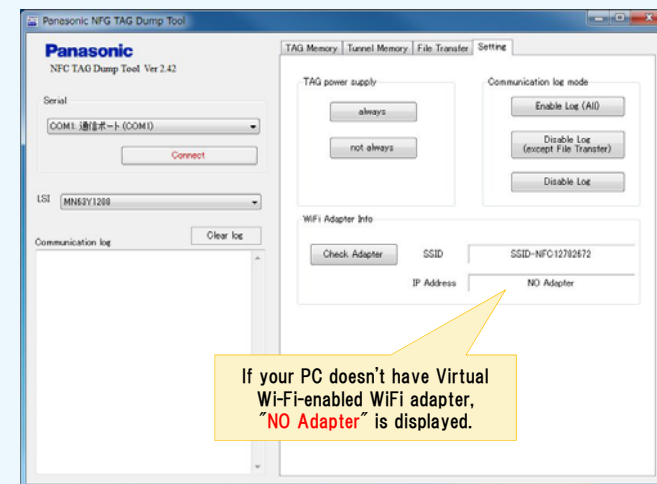
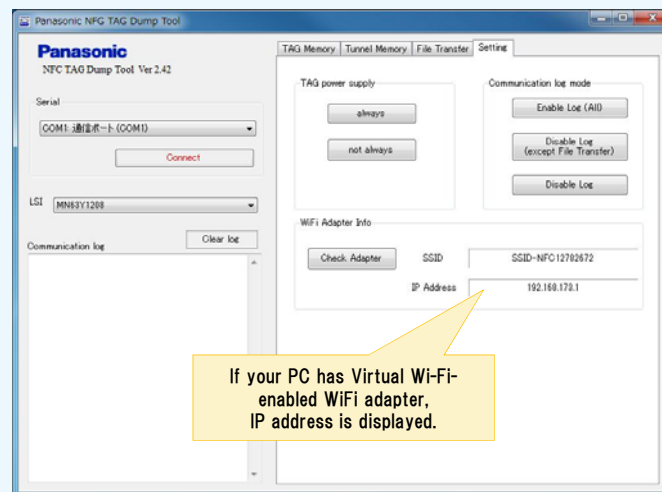
<http://buffalo.jp/product/wireless-lan/client/wli-uc-gnm2/>

About WiFi function

Our development kit uses "Virtual Wi-Fi (wireless hosted network)" that is Microsoft Windows7 standard function.
So Virtual Wi-Fi-enabled WiFi adapter is required.

(Our development kit supports one Virtual Wi-Fi-enabled WiFi adapter)

※After the PC software startup (startup as administrator),
you can see whether your PC has Virtual Wi-Fi-enabled WiFi adapter.



Setup procedure (5)

Step3. Install Android application

Install Android application to the mobile phone.

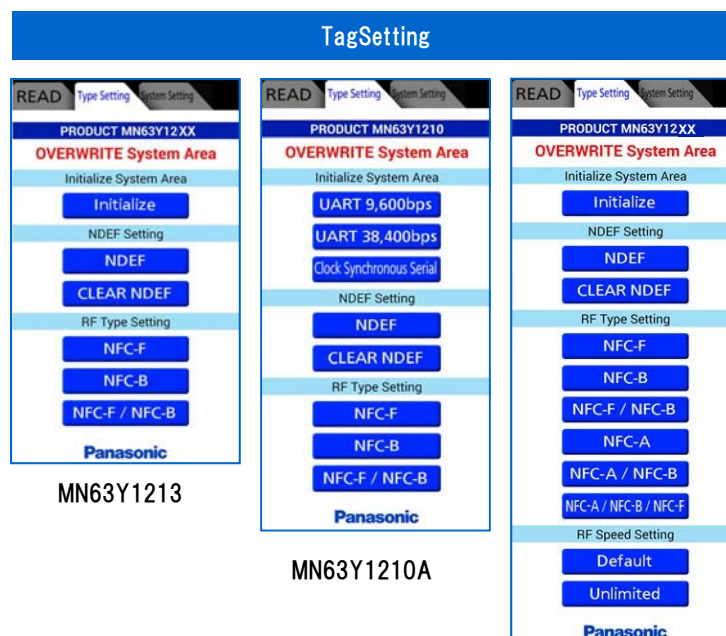
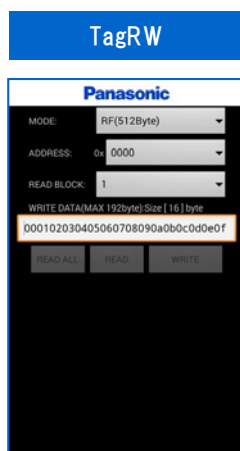
Android sample application

- Panasonic_TagRW_vXXX.apk
- Panasonic_TagFileTx_vXXX.apk
- Panasonic_TagSettingXXXX_vXXX.apk

(Data transfer application)

(File transfer application)

(MN63Y1210A/1213/1214/1221 TAG setting application)



MN63Y1213

MN63Y1210A

MN63Y1214
MN63Y1221

Usage of the applications, refer to each manuals.

Setup procedure (6)

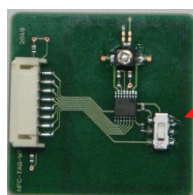
Step4. NFC TAG initial setting

The initial configuration of the NFC TAG board (antenna board)

■ MN63Y1210A

Serial Type : UART / Clock synchronous serial

(1) Board setting

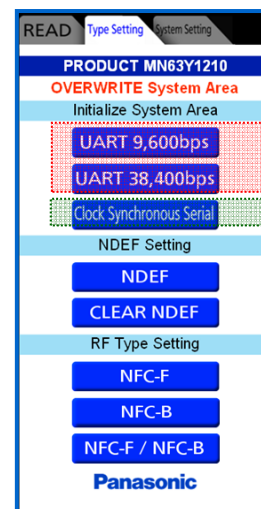


MN63Y1210

Serial-IF select switch

- ☐ UART
- ☐ Clock synchronous serial

(2) Writing initialization data (Serial Type setting)



UART

Clock synchronous serial

Initialize the TAG by using the application of TAG setting.
(Panasonic_TagSetting1210)

- (1) Start Android application.
- (2) Push the button of hope.
- (3) Bring the mobile phone close to the TAG to write initial data.

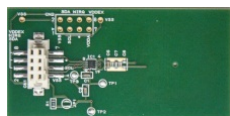
Setup procedure (7)

■ MN63Y1213/1214/1221

(1) Writing initialization data

Initialize the TAG by using the application of TAG setting.
(Panasonic_TagSetting 1213 / 1214 / 1221)

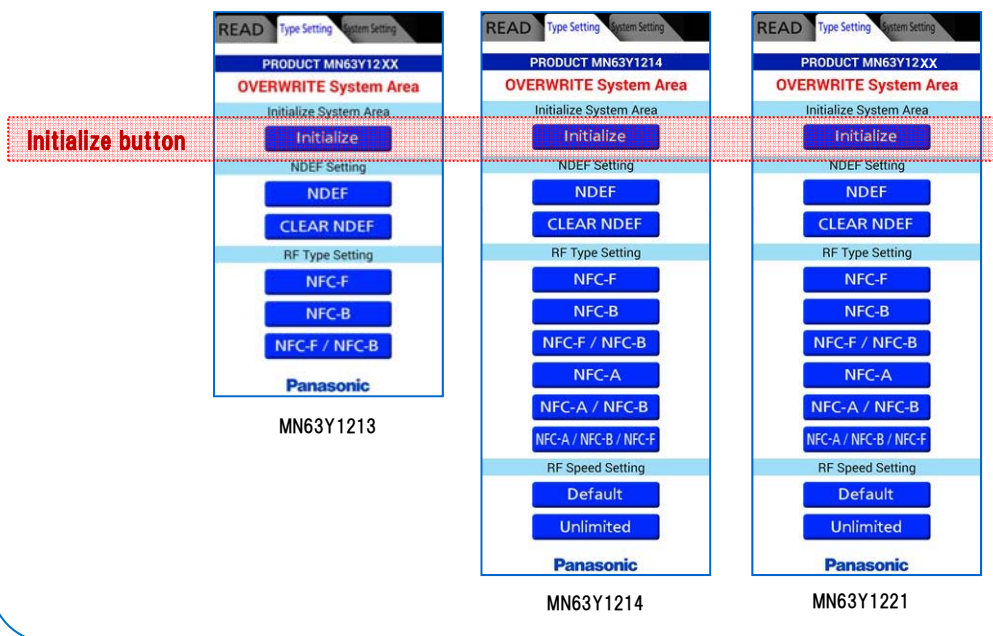
- (1) Start Android application.
- (2) Push "initialize" button.
- (3) Bring the mobile phone close to the TAG to write initial data.



MN63Y1213/1214/1221



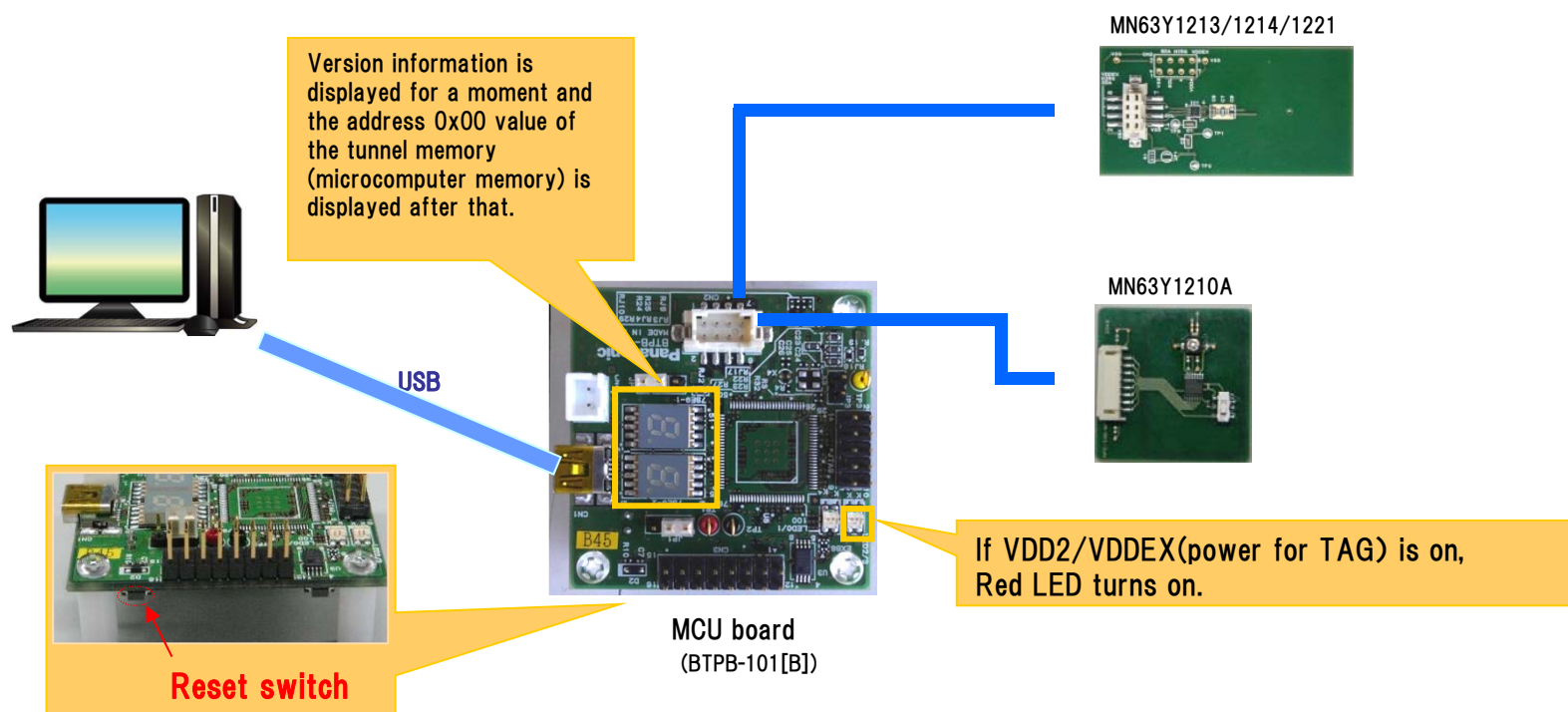
TAG setting application (Android)



Setup procedure (8)

Step5. Reset MCU board

After connecting the personal computer and MCU board by USB, push the reset switch on the MCU board.



Setup procedure (9)

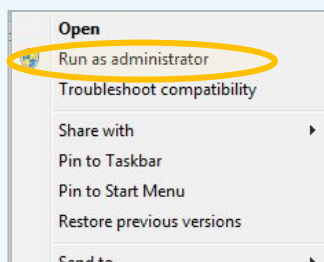
Step6. Start PC software

In case of performing the file transfer by WiFi

This procedure is necessary for performing a file transfer by WiFi

If you do the file transfer by WiFi, start the PC software **as administrator**.

※In order to use Microsoft Windows7 standard function "Virtual Wi-Fi (wireless hosted network)", you must start the application as administrator.

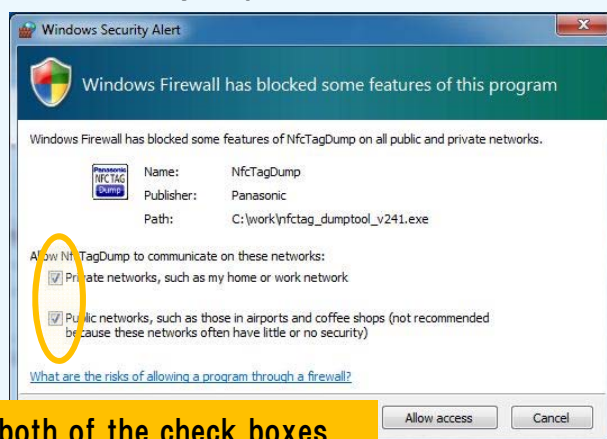


Click right button of the mouse on the software icon, and select [Run as administrator] in the menu.

When you start the PC software as administrator, the Security Alert screen will appear.

If you perform the file transfer by WiFi, check both of the check boxes.

※This is necessary to perform the data communication with mobile phones.



Check both of the check boxes

Development kit usage

Usage 1 (Read/Write TAG)

After performing the contents of the [start-up procedure], start the PC software.

TAG Read/Write

■ Connect to the target board

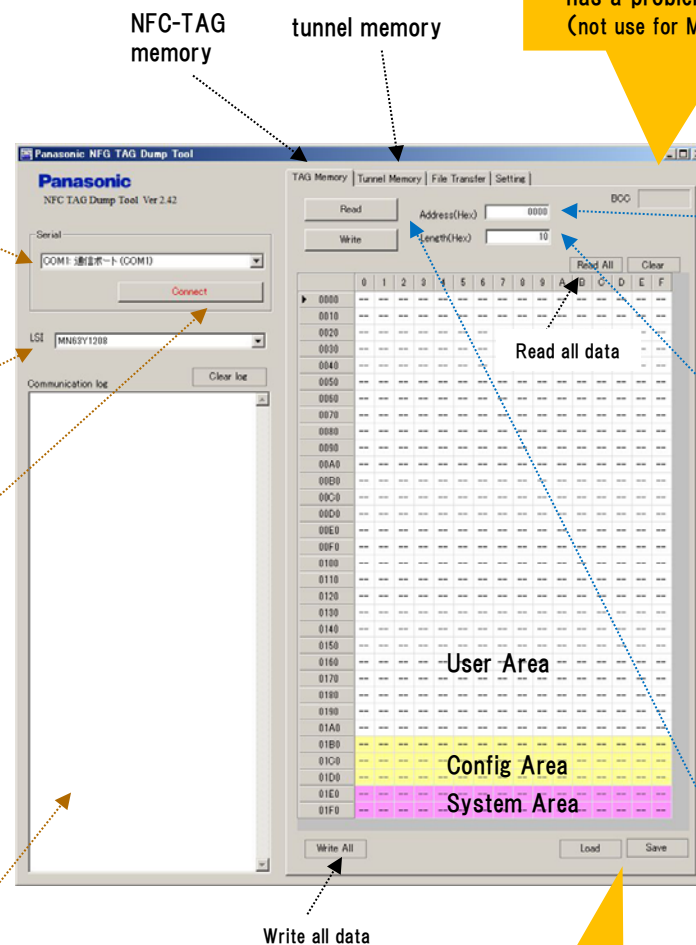
STEP1
Select virtual COM port
(connect to the board)

STEP2
Select the TAG LSI model

STEP3
Push the “Connect” button

STEP4
Push the reset switch on the board

STEP5
Starting log is displayed



■ Read/Write memory

STEP6
Input memory address
(16-byte alignment hexadecimal number)

※A click of a cell will input an address automatically

STEP7
Input length (hexadecimal number)

[NFC-TAG memory]

• MN63Y1210A/1213
0x01 ~ 0x200 [1~512 byte]

• MN63Y1214/1221
0x01 ~ 0x400 [1~1024 byte]

[tunnel memory]

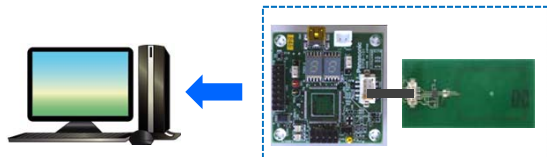
0x01 ~ 0x1000 [1~4096 byte]

STEP8
Push Read / Write button

※Before you write, set value to cell.

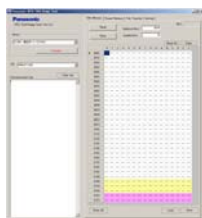
Usage 2 (file transfer1)

STEP 1



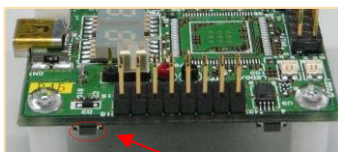
Connect MCU board to PC by USB

STEP 2



Start the PC software, and connect to the MCU board
(See previous page)

STEP 3



Reset switch

Push the reset switch on the MCU board (reset the board)

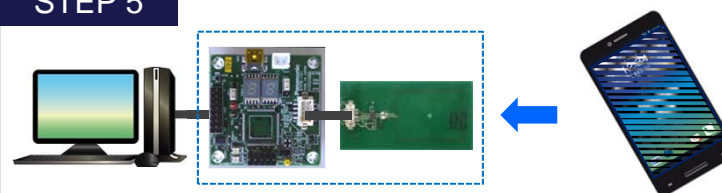
STEP 4



Android
file transfer application
(TagFileTx)

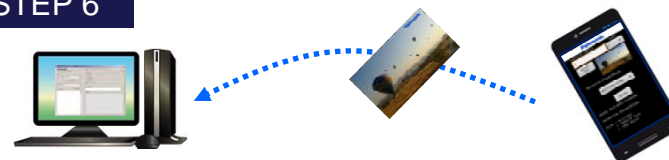
Start the file transfer application on mobile phone
and select the file that you want to transfer to the PC

STEP 5



Touch the tag by the mobile phone

STEP 6



Screen of the PC software switches automatically,
and file transfer is started (See next page)

Usage 3 (file transfer2)

file transfer screen

If the mobile phone that is performing android application (Panasonic_TagFileTx) is brought close to NFC-TAG, a file transfer will be started automatically and information will be displayed on the “file Transfer” tab.

The following icons are displayed during a file transfer by Bluetooth/WiFi.



Waiting for Bluetooth connection



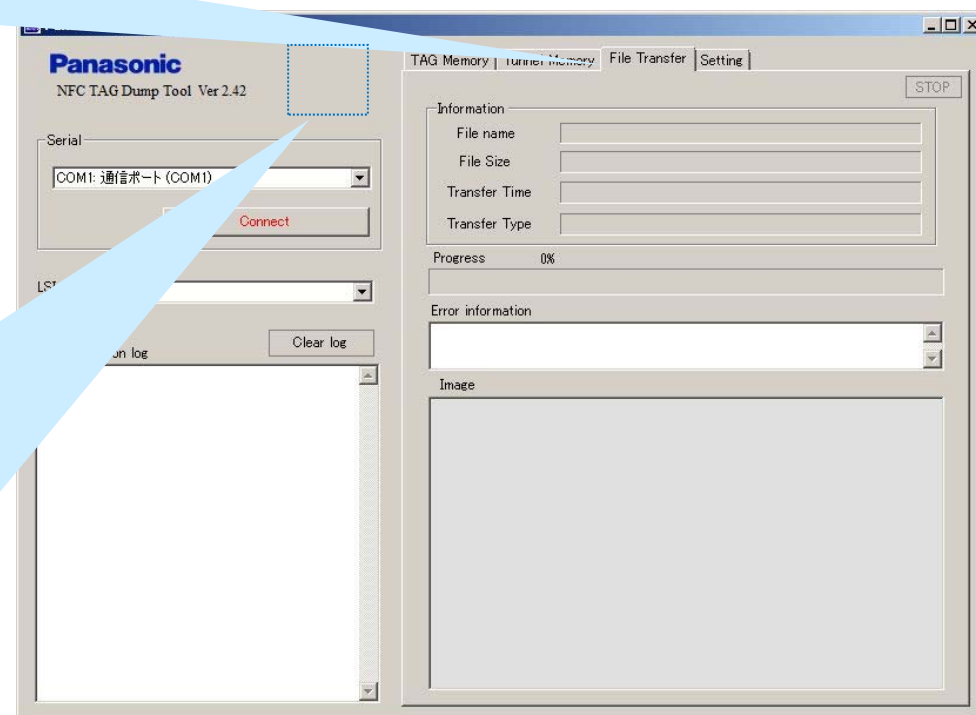
File transfer by Bluetooth



Waiting for WiFi connection



File transfer by WiFi



Usage 4 (setting)

■ Tag power supply

Control the power supply to the tag from the microcomputer
always : power supply to the tag always
not always : power supply to the tag when necessary

■ Communication log mode

set of log display

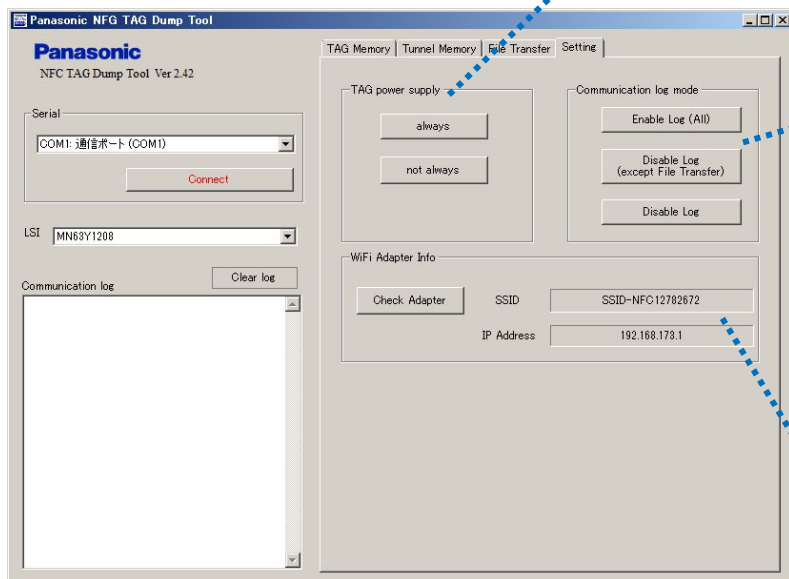
| | |
|------------------------------------|--|
| Enable Log (All) | : enable all log |
| Disable Log (except File Transfer) | : enable only necessary logs for file transfer |
| Disable Log | : disable all log |

■ WiFi adapter info

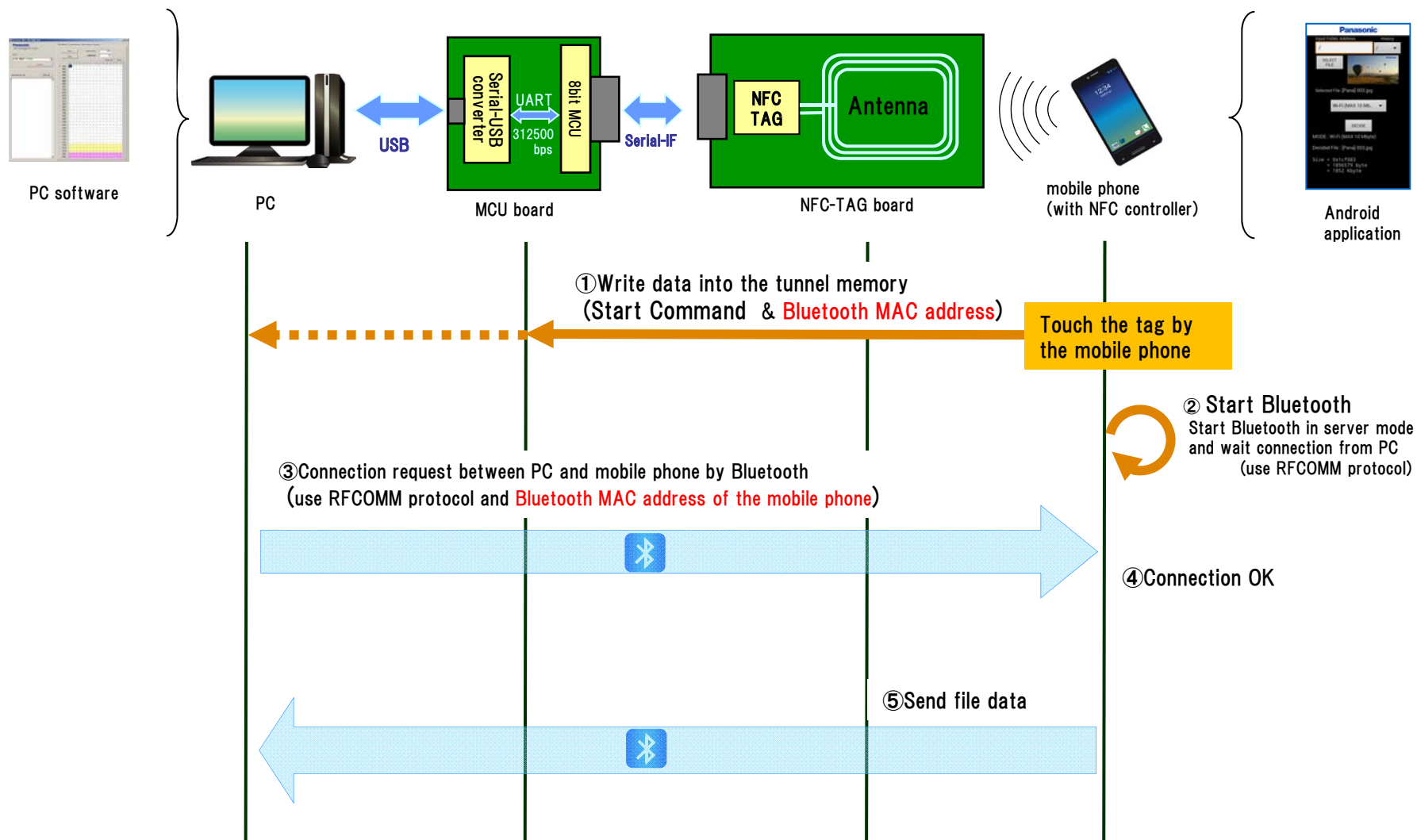
Display the information of WiFi adapter (PC will be the access point)

| | |
|------------|----------------------------------|
| SSID | : SSID of the access point |
| IP Address | : IP address of the access point |

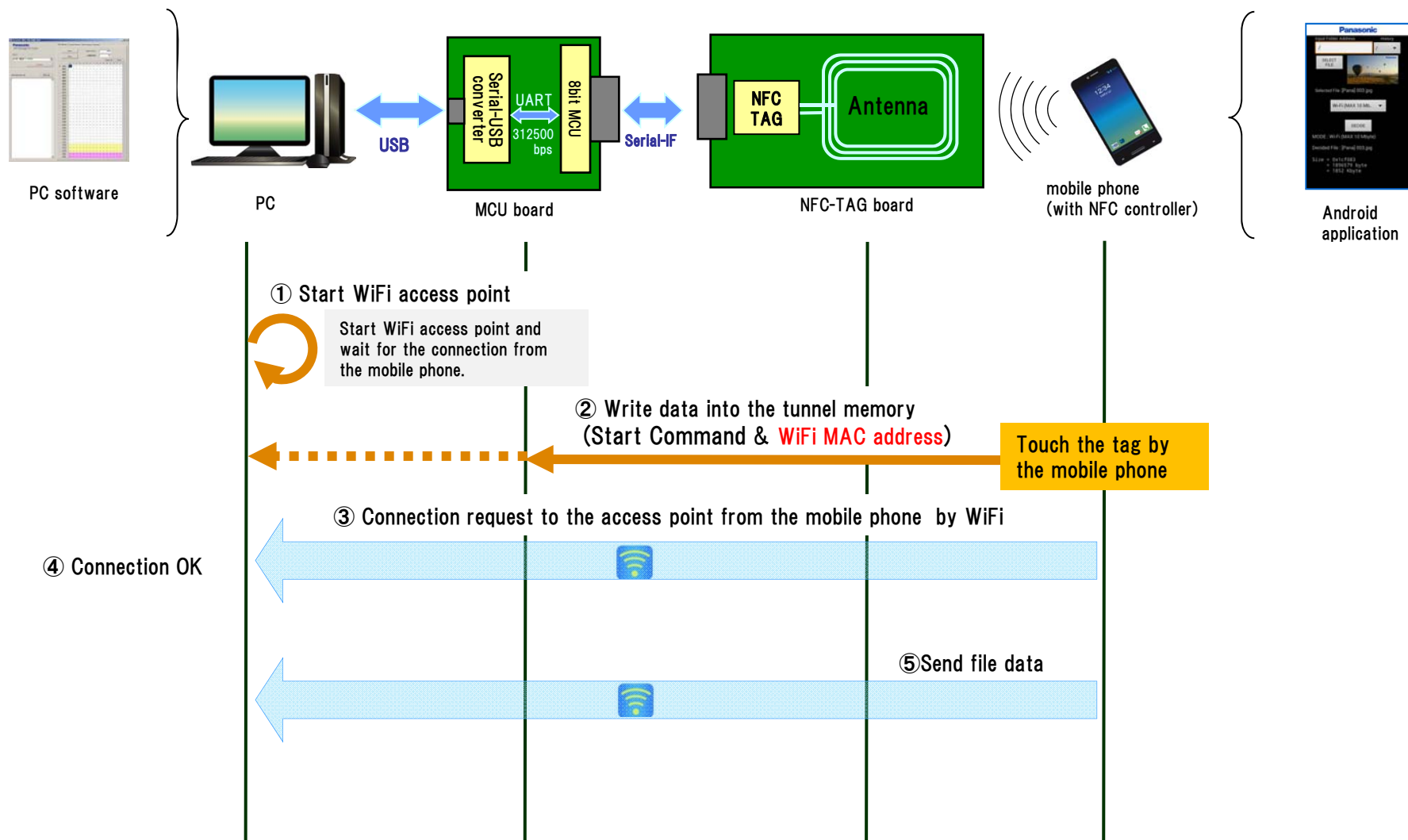
Check Adapter : update the information of WiFi adapter



(Supplement) Bluetooth file transfer sequence



(Supplement) WiFi file transfer sequence



Revision History

| Version | Date | Comments |
|---------|---------------|---|
| 2.00 | 2012/11/22 | Initial edition |
| 2.20 | 2013/09/05 | Version up of PC software/Android application |
| 2.21 | 2013/10/03 | add MN63Y1213 |
| 2.30 | 2013/10/25 | Version up of PC software |
| 2.41 | 2014/10/31 | add MN63Y1214/1217, support WiFi file transfer |
| 2.42 | 2015/01/08 | Version up of Microcomputer software / PC software / Android software |
| 2.50 | 2015/03/16 | add MN63Y1219 |
| 2.60 | April 6, 2016 | Added MN63Y1221. Modified some explanations. |
| 2.70 | May 11, 2016 | Deleted MN63Y1208, MN63Y1217 and MN63Y1219. |

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